North Haiwee Dam No. 2 Project

Draft Environmental Impact Report/ Environmental Assessment

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Prepared by:

Los Angeles Department of Water & Power
Environmental Affairs
111 North Hope Street, Room 1044
Los Angeles, California 90012

Bureau of Land Management
Ridgecrest Field Office
300 South Ridgecrest Road
Ridgecrest, California 93555

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Executive Summary

ES.1 Introduction

In accordance with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA), the City of Los Angeles (City), represented by the Los Angeles Department of Water and Power (LADWP), and the U.S. Bureau of Land Management (BLM) have prepared this joint Draft Environmental Impact Report/Environmental Assessment (EIR/EA) for the North Haiwee Dam No. 2 Project (Proposed Project).[1] LADWP is identified as the lead agency for the Proposed Project under CEQA for its direct undertaking of governmental action (CEQA Guidelines Section 15002[b]). BLM is identified as the lead agency for the Proposed Project under NEPA for the approval to construct on federal land.

LADWP, in cooperation with BLM, proposes to improve the seismic reliability of North Haiwee Reservoir (NHR), which is located in the Owens Valley in Inyo County, California, approximately 150 miles north of Los Angeles (Figure ES-1). LADWP owns and operates North Haiwee Dam (existing Dam or NHD), an existing earthfill dam constructed in 1913. NHD and NHR are essential components of the Los Angeles Aqueduct (LAA) system, which transports water from the Owens Valley to the City. The LAA provides approximately 35 percent of the annual average water supply for the City. Should NHD fail, this portion of the City's water supply would be cut off at the Owens Valley.

Therefore, LADWP is proposing the North Haiwee Dam No. 2 Project, which includes the construction of North Haiwee Dam No. 2 (new Dam or NHD2) to the north of the existing Dam to improve the seismic reliability of NHR in the event NHD is damaged by an earthquake event, thereby ensuring public health and safety. Construction of NHD2 would require the realignment of a portion of the existing Cactus Flats Road and the realignment of a portion of the LAA. Once NHD2 is constructed, LADWP would construct a diversion channel and a notch in NHD, along with other improvements to NHD and the area to the north of the existing Dam, in order to utilize the area between NHD2 and NHD as a basin.

ES.2 Project Background

The LAA system, owned and operated by LADWP, is comprised of two aqueducts that span 340 miles from the Mono Basin through the Owens Valley to the City of Los Angeles. Draining from the eastern Sierra Nevada Mountains for more than 150 miles, the system transports water from the Owens River entirely by gravity, following a natural and man-made course south towards Los Angeles. Originally conceived by William Mulholland in the early 1900s, the LAA system provided a reliable water source that allowed the City to grow and prosper into the second-largest city in the country. The first aqueduct, First Los Angeles Aqueduct (First LAA), is 223 miles long and has a capacity of 485 cubic feet per second (cfs).

[1] For the purposes of this joint EIR/EA, the Proposed Project under CEQA is equivalent to the Proposed Action under NEPA. For consistency, the term Proposed Project is used throughout the document.

Source: Esri Maps & Data, 2017; Prepared By: AECOM, 2017.

0 3 6 Miles

Los Angeles Aqueduct System

Project Site

Figure ES-1
Project Vicinity

LADWP conducted a seismic stability evaluation of NHD and concluded that the existing Dam could experience structural failure in the event of a Controlling Maximum Credible Earthquake (MCE) scenario. The MCE is the largest earthquake that could possibly occur at a fault, based on the characteristics of that particular earthquake fault. The seismic stability evaluation identified two MCE scenarios for the analysis: a 7.5 event on the Haiwee segment of the Sierra Nevada Fault Zone, located 2.8 miles (4.5 km) from NHD; and a 6.5 event on an unnamed fault 0.3 miles (0.5 km) east of NHD. During a MCE scenario, extensive liquefaction would occur in the foundation of NHD, causing the crest of the existing Dam to settle up to nine feet. This would result in an uncontrollable release of water from NHR, thereby creating a flooding and safety hazard to the residents of the Owens Valley. Subsequent to the flooding event, LADWP would be prevented from transporting water along the LAA from the Owens Valley to the City, thus severing a major water supply for the City. Therefore, LADWP recommended that remedial construction work be performed at NHD to improve its seismic reliability.

Based on this evaluation, the California Department of Water Resources (DWR), Division of Safety of Dams (DSOD), has directed LADWP to operate NHR at a restricted maximum surface water elevation of 3,757.5 feet, instead of the previous unassisted (without flashboards at Merritt Cut) maximum elevation of up to 3,760 feet, in order to prevent an uncontrolled release of water and flooding in the event of dam failure resulting from an MCE. These restrictions placed on operations of NHR provide a narrow range of elevations that meet the requirements of DSOD while still allowing the LAA system to operate effectively. In order to resume operations of NHR of up to 3,760 feet, LADWP needs to comply with DSOD requirements, and has been in coordination with DSOD regarding continuous progress on seismic improvements.

ES.2.1 Project Location and Setting

The Proposed Project is located in the Owens Valley in unincorporated areas of Inyo County, California. The Owens Valley is generally a dry landscape that extends 100 miles from north to south and six to 20 miles from east to west. It is bordered by the Sierra Nevada Range on the west, Chalfant Valley on the north, Inyo Mountains on the east, Coso Range on the southeast, and Rose Valley on the south. Communities located within the Owens Valley include Bishop, Big Pine, Aberdeen, Haiwee, Independence, Lone Pine, and Olancha.

The Project Site is defined as the primary construction area that encompasses the existing infrastructure that would be modified and the new infrastructure that would be constructed as part of the Proposed Project. The Project Site does not include the existing mine in Keeler, CA (Figure ES-1), which is approximately 20 miles northeast of the Project Site and would only be used as a point of purchase for materials. The majority of the Project Site is designated as a Natural Resources (NR) land use by the Inyo County General Plan (ICGP). The NR land use designation applies to land or water areas that are essentially unimproved and which the County has determined in the general plan should remain open in character and provides for the preservation and management of natural resources and recreational uses. The Project Site is zoned by Inyo County as Open Space with a 40 acre minimum size (OS 40).

The Project Site is also located within the 1980 BLM California Desert Conservation Area (CDCA) Plan area, and the 2016 BLM Desert Renewable Energy Conservation Plan (DRECP) Land Use Plan Amendment (LUPA) area. The key objectives of the DRECP are to streamline renewable energy development and to provide for long-term conservation and management of special-status species, vegetation, and other resources within the DRECP Plan area. The DRECP LUPA applies to BLM-managed lands, including the southwestern portion of the Project Site. The Project Site contains lands designated as California Desert National Conservation Lands (CDNCLs), and is partially within the Olancha Greasewood Area of Critical Environmental Concern (ACEC) and the Olancha Dunes Special Recreation Management Area (SRMA) (BLM, 2016). Many of the Conservation and Management Actions (CMAs) specified in the DRECP apply to the Project Site, and are evaluated in detail in Appendix B of this EIR/EA.

The construction of NHD2 would require various materials to construct the new earthen embankment dam. Riprap, gravel, and sand materials would be used to construct the new Dam and would be sourced from the LAA Excavation Area and the existing mine in Keeler. The LAA Excavation Area would be excavated to construct the LAA Realignment, and the excavated materials (silty sand) would be used to construct the new Dam. The LAA Excavation Area is located adjacent to the western side of the existing LAA, and consists of land that is owned by both LADWP and BLM. Portions of the site have been previously disturbed by construction of the existing LAA and use of excavation materials for construction of NHD. Materials in the LAA Excavation Area consist of alluvial fan deposits overlying Coso Formation bedrock. The use of materials from this site for the construction of NHD2 would require approval of a Conditional Use Permit from the Inyo County Planning Department. The BLM-managed portions of the Project Site are located within the DRECP LUPA, as described above, and include the CDNCL Basin and Range Ecoregion Subarea, Olancha Greasewood ACEC, and Olancha Dunes SRMA (BLM, 2016).

The second source of materials that would be used to construct NHD2 is from an existing mine in Keeler, which is located near the northeastern shore of Owens Lake. The existing mine is an active dolomite mine site located on privately owned land and operated by F.W. Aggregate Inc. LADWP has previously purchased gravel from this existing mine. Because materials used to construct NHD2 would be sourced from this existing mine, LADWP would not conduct any new mining activities, and activity related to construction of the Proposed Project would be limited to the purchase and hauling of materials. Therefore, the existing mine in Keeler is excluded from analysis in this EIR/EA, with the exception of haul routes. Discussion of activities and current conditions at the existing mine are provided where necessary for context, but the Proposed Project does not include any new mining, reclamation, or other activities at this existing mine site.

ES.3 Project Purpose, Need, and Objectives

LADWP supplied approximately 197 billion gallons (604,570 acre-feet) of water annually to the City's 676,000 residential and business services over the five-year period from 2007 to 2011 (LADWP, 2015). The dependability of the water supply has significantly contributed towards the tremendous growth and development of Los Angeles. While conservation efforts reduce water demand, the increasing population of the City has led to an increase in aggregate water demand. Southern California's growing economy, ideal location, and climate induces a constant influx of new residents, adding to the increasing demand for water. The City's population is estimated to grow to more than 4.4 million people, and water demand to increase to 711,000 acre-feet by the year 2035 (LADWP, 2011). Therefore, a new dam that provides seismic reliability and ensures the continuing function of the LAA system is pertinent to maintaining adequate water supplies to the City.

The fundamental purpose of the Proposed Project is to improve the seismic reliability of NHR through construction of a new dam, NHD2, to the north of NHD, in order to maintain the function of an essential water conveyance infrastructure component for the City, as well as to protect local populations from a hazardous flooding event. The proposed NHD2 would serve to improve the seismic reliability of NHR in the event the existing Dam is damaged or breached by an earthquake event, thereby ensuring public health and safety and securing the City's water source.

The following are the objectives of the Proposed Project:

- Preventing an uncontrolled release of water from NHR when NHD is subjected to an MCE event, thereby ensuring public safety;
- Complying with DSOD mandates for action to improve the seismic reliability of NHR;
- Maintaining a reliable water supply to the City;
- Meeting the operational needs of NHR and the LAA; and

- Providing minimal disruption to reservoir operations during construction.

ES.4 Project Description

This EIR/EA includes the evaluation of two Build Alternatives, the Cement Deep Soil Mixing (CDSM) Alternative and the Excavate and Recompact Alternative, and the No Project Alternative. The CDSM Alternative is the Preferred Alternative under CEQA. Both of the Build Alternatives consist of the following four components:

1. Construction of NHD2 components, including construction of NHD2 and east and west berms, grading the area between NHD and NHD2 for the basin, and purchase of materials (riprap, gravel, sand) from the existing mine in Keeler;
2. Realignment of Cactus Flats Road;
3. Realignment of the LAA, which includes excavation of various materials (gravel and sand) in the LAA Excavation Area for the construction of NHD2, and construction of the diversion structure and temporary bridge; and
4. Construction of the diversion channel and NHD modifications.

The differentiating component between the two Build Alternatives is the method of construction of the foundation of NHD2, which affects the timeline and construction efforts of the NHD2 components. Figure ES-2 shows the Proposed Project components.

ES.4.1 Cactus Flats Road Realignment

Construction of NHD2 would intersect the existing Cactus Flats Road. Cactus Flats Road is not a primary roadway, but it is used mainly by mining vehicles traveling to and from local mining sites, as well as by LADWP personnel and other motorists. As shown in Figure ES 2-1, the existing Cactus Flats Road would need to be realigned to accommodate the new Dam; therefore, the realignment of Cactus Flats Road would be required in order to maintain access for this public road (Cactus Flats Road Realignment). The Cactus Flats Road Realignment would occur on LADWP-owned land only.

The Cactus Flats Road Realignment would have an approximate length of 4,413 feet and width of 28 feet, a grade of up to ten percent, and would incorporate compacted base material along the roadway and drainage system. The new road profile would range from several inches above ground level to a maximum height of 18 feet above ground level. Approximately 2,700 feet of the Cactus Flats Road Realignment where the road traverses a slope would be paved with asphalt. A 710-foot long portion of existing access road which travels north-south on the Project Site would also be realigned to intersect with the Cactus Flats Road Realignment. The realigned access road would remain a dirt road, as under existing conditions. For drainage purposes, a four-foot wide ditch, approximately 2,500 feet long, would be constructed just north of the Cactus Flats Road Realignment. In addition, two two-foot by four-foot concrete culverts would be constructed within the Cactus Flats Road Realignment embankment. The existing Cactus Flats Road would not be demolished, except where the new Dam and basin would be located. The remaining portions of the existing road would be retained by LADWP to provide access to the dam structures.

ES.4.2 Los Angeles Aqueduct Realignment

The existing LAA is an open flow channel with continuous water flows. The westerly abutment of NHD2 would encroach upon a portion of the existing LAA. The realignment of the LAA is required for the construction of NHD2 since the footprint of the new Dam would be physically in the same location as a segment of the existing LAA. In order to construct NHD2 and maintain operations of the LAA system, the Proposed Project includes realignment of approximately 1,900 feet of the existing LAA (LAA Realignment). The materials excavated in the LAA Excavation Area is proposed as a source of silty sand materials for the new Dam, and is located within and around the area where excavation for and

construction of the LAA Realignment would occur. The quantity of materials required from the LAA Excavation Area and the associated number of haul trucks would vary by Build Alternative, as described in Sections 2.4.3 and 2.4.4. The existing LAA and LAA Realignment are located on LADWP property and BLM-managed land. A BLM ROW grant would be required for the LAA Realignment.

The cross section of the LAA Realignment would closely match the existing LAA's cross section, and would consist of a trapezoidal concrete channel, with an approximate width of 32 to 35 feet and approximate depth of 12 to 15 feet. The concrete liner would be approximately six to 10 inches thick with steel reinforcement. Along both sides of the LAA Realignment, 20-foot wide unpaved access roads would be constructed. These roads would be connected to the existing access road across BLM-managed land which connects the LAA to US-395. This road would be widened by up to five feet, and would be extended by up to 200 feet to connect with the new LAA Realignment access roads. Where possible, side casting would be avoided for construction of these access roads. In total, the US-395 access road for the LAA Realignment would be approximately 3,800 feet long, including the existing roadway and proposed extension. A BLM ROW grant would be required for the construction and operation of access roads on BLM-managed lands.

Once the LAA Realignment is constructed, the flow of water through the existing LAA would be halted temporarily to connect the newly built segment to the existing LAA. Construction of the LAA Realignment would include installation of a diversion structure. A bridge would be constructed adjacent to the diversion structure, and would provide access across the diversion channel (discussed below). After the LAA is reconnected, the obsolete existing LAA segment would be demolished and backfilled. Soil from the LAA Realignment would be used as building material for NHD2.

ES.4.3 North Haiwee Dam No. 2

The two Build Alternatives (CDSM Alternative and Excavate and Recompact Alternative) would construct NHD2, but would use different methods to construct a seismically sound foundation for the new Dam. These construction methods are described in detail in Section 2.4.1. The following description of NHD2 is pertinent to both Build Alternatives.

NHD2 would be constructed on LADWP property north of NHD. NHD2's axis would be located approximately 800 feet north and roughly parallel to the existing Dam's axis. Figure ES-2 shows the new Dam's location relative to the location of the existing Dam. NHD2 would be a zoned earthen embankment dam (comprised of shell, core, filter and drain materials) based on design specifications and the type of fill material available. Seepage control would be provided by the core, filter and drain zones. The proposed location of NHD2 provides a basin and a new accessible length of aqueduct channel between NHD and NHD2, which may be utilized for water quality and sediment management purposes. NHD2 would be constructed to comply with DSOD's mandate and to meet the operational requirements of NHR, and it would be designed to retain water contained in NHR in the event of failure of NHD.

The bottom of the basin would be graded during earthwork for NHD2 to create a level bottom at an approximate elevation of 3,745 feet (25 feet below the crest of NHD2). The east and west berms would be constructed at the same time. The east and west berms would be constructed to contain water within the basin. The berms would ensure that water from NHR would be retained within the basin area once NHD2 is completed, as the berms would prevent water from flowing out of the basin to the west and east. In addition, once all construction and approvals are completed for all Proposed Project components (including the DSOD Certificate of Approval for filling the basin), the berms would contain water within the basin area during regular operations of the basin. The existing mine in Keeler would be utilized during the construction of NHD2, and as described above, the existing mine is developed and operational, and Proposed Project activities would be limited to the purchase and hauling of riprap and gravel.

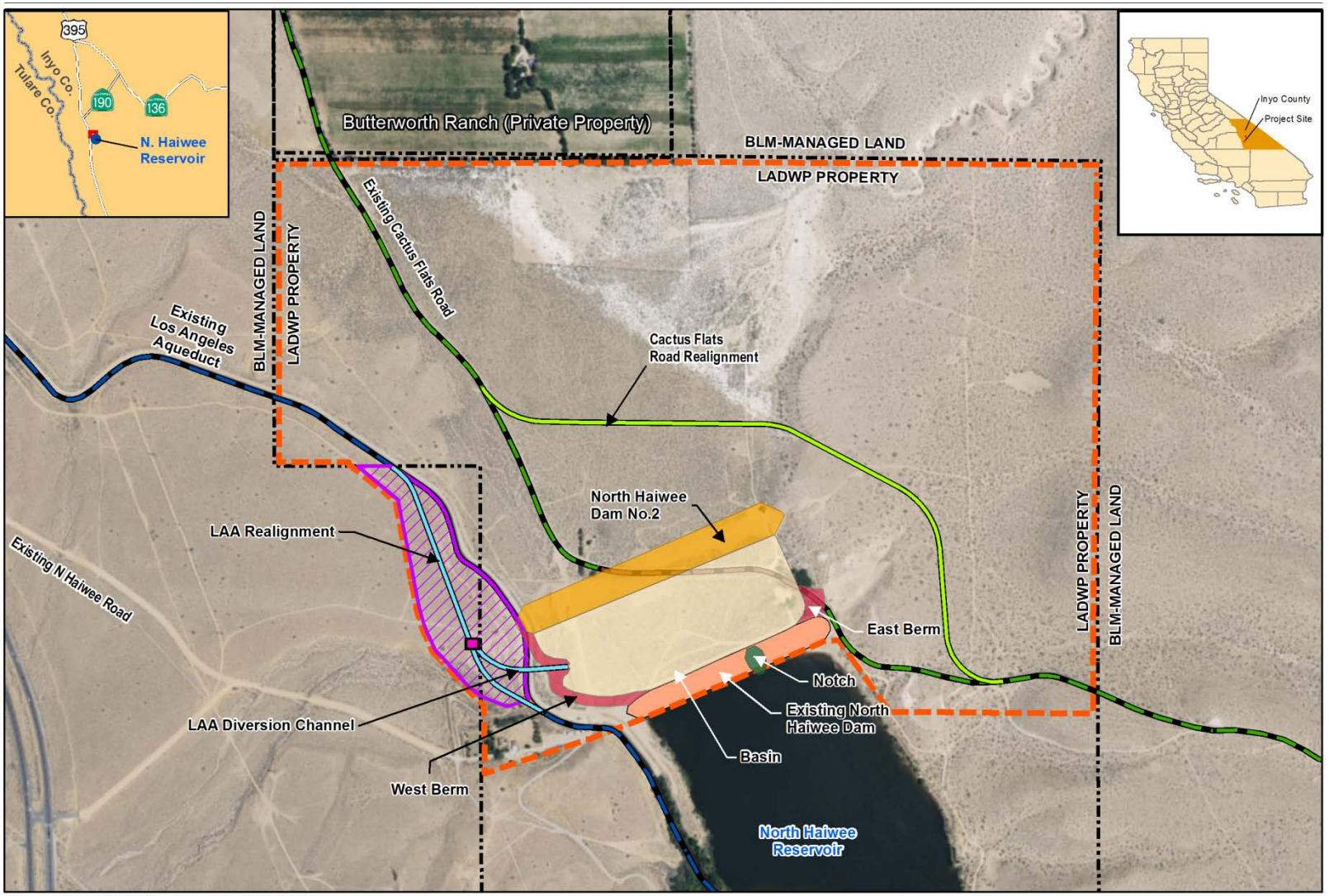

Figure ES-2

Proposed Project Components at Project Site

ES.4.4 Diversion Channel and NHD Modifications

The diversion channel would convey water from the newly aligned LAA through the diversion structure into the basin. The diversion channel would be approximately 675 feet long. A notch would be cut into the existing NHD to connect the basin and NHR, allowing water to flow from the basin into NHR. LADWP proposes to temporarily lower the water elevation in NHR to below 3,750 feet above sea level (asl) in order to construct the notch in NHD. The lowering of NHR would require the implementation of a temporary operations plan for NHR and South Haiwee Reservoir, as well as the LAA system, during construction. However, NHR and the LAA system would remain in service as flow rates in and out of NHR could be adjusted to maintain the lower water elevation. Should water need to be pumped out of NHR (rather than gravity fed, due to lower water levels), the existing pump at Merritt Spillway could be utilized. The notch would be constructed through mechanical excavation and then reinforced with concrete.

Slope protection for NHD would be implemented, including the removal of one to two feet of soil on the downstream face of NHD followed by installation of measures to protect the slope. In addition, a geomembrane would be installed on the bottom of the basin to minimize erosion and water quality issues once the basin is filled.

Upon completion of NHD2, the diversion channel and notch would match the design parameters for the LAA Realignment, allowing the basin to handle the LAA system's maximum flow rate of 900 cfs. The basin would not be filled with water until all of the construction activities described above is completed. Upon completion of construction, water would be diverted into the basin in order to test the performance of NHD2, and upon completion of testing, the basin would operate as a permanent part of NHR.

ES.5 Alternatives to the Proposed Project

As described above, the No Project Alternative and two Build Alternatives are evaluated in this EIR/EA for the Proposed Project. The different Build Alternatives provide two alternative methods for construction of a seismically sound foundation for NHD2.

ES.5.1 No Project Alternative

The CEQA Guidelines Section 15126.6(e) requires that an EIR describe and analyze current environmental conditions as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans. The No Project Alternative is also required to be analyzed under NEPA (40 CFR 1502.14(d)).

Under the No Project Alternative, the Proposed Project would not be implemented in any manner. NHD2 would not be constructed. The existing Dam would remain as-is, and NHR would operate at the levels required by DSOD. No berms would be constructed and no grading would occur in the basin area, and the area north of NHD would remain dry as under existing conditions. No modifications would be made to the existing Dam. However, as it is known that there could be a catastrophic failure of the existing Dam during an MCE, it is possible that DSOD could place further restrictions on the use of NHR.

Under the No Project Alternative, the LAA would not need realignment and Cactus Flats Road would similarly remain as-is since NHD2 would not be constructed. Furthermore, no diversion structure or channel would be constructed. Operation of the LAA and Cactus Flats Road would continue as they do today, along with minor repairs and typical maintenance that would progress regardless of Proposed Project implementation.

Under the No Project Alternative, NHD2 would not be constructed, so no materials from the existing mine in Keeler would be needed. The existing mine is an operational mine, and mining operations would continue as they do today under the No Project Alternative.

ES.5.2 No Action Alternative

In accordance with NEPA regulations, EAs shall include brief discussion of alternatives as required by FLPMA. Section 102(2)(E) of the NEPA regulations provides that agencies shall develop and describe appropriate alternatives to recommended courses of action concerning alternative uses of available resources. Although the regulation makes no specific mention of the No Action alternative with respect to EAs, the Council on Environmental Quality (CEQ) has interpreted the regulations generally to require some consideration of a No Action alternative in an EA. The No Action alternative is evaluated as the No Project Alternative (see above) throughout this Draft EIR/EA.

ES.6 Project Construction

Construction of the Proposed Project would commence in February 2018. The CDSM Alternative is expected to last approximately five and a half years, ending in August 2023, and the Excavate and Recompact Alternative is expected to last approximately six and a half years, ending in February 2024. Construction of the Proposed Project would occur in four phases.

ES.7 Project Operations and Maintenance

Once NHD2 is constructed, a Certificate of Approval would be obtained from DSOD for operation of NHR of up to 3,760 feet. Historically, LADWP has not operated NHR over 3,759 feet, and LADWP does not propose to do so as part of the Proposed Project. The Certificate of Approval would permit operation of NHD2 and expansion of NHR to include the basin.

During operation, NHD2 would require similar maintenance as NHD currently requires. LADWP's NHR reservoir keeper, whose residence is adjacent to NHD, will remain on-site and will be the primary person responsible for monitoring the new Dam, LAA Realignment, and basin, along with the existing NHD, LAA, and NHR. The LAA Realignment and Cactus Flats Road Realignment would operate similarly to their existing counterparts, and would require similar infrequent maintenance. LADWP would continue to maintain and operate the LAA Realignment as part of its overall LAA system, and Inyo County would operate and maintain the Cactus Flats Road Realignment in the same manner as the existing road is operated and maintained.

At the unassisted operating level of up to 3,760 feet, the basin would contain approximately 600 acre-feet of water. Generally, operations of the basin would require minimal maintenance, and would be similar in scale to operation of NHR. Water that flows into the basin from the LAA would settle in the basin prior to flowing into NHR; as such, sediments may accumulate in the basin over time, and it is anticipated that dredging would be required every 10 to 15 years in order to remove these sediments. Sediments that may be dredged or removed as part of operation and maintenance would be handled and transported in compliance with all applicable regulations, and if disposal would be required, sediments would be hauled to a landfill permitted to accept such wastes.

ES.8 Areas of Known Controversy

Air Quality, Biological Resources, Cultural Resources, Noise and Vibration, Tribal Cultural Resources, and Water Resources and Quality are areas of known controversy in the Project vicinity. The Draft EIR/EA includes a thorough analysis of these resources in Chapter 3, Affected Environment, with supporting technical analyses provided in Volume II: Appendices.

ES.9 Summary of Environmental Impacts

An analysis of environmental impacts potentially caused by the Proposed Project has been conducted and is contained in this Draft EIR/EA. Nineteen environmental issue areas are analyzed in detail in Chapter 3.0. Table ES-1 provides a summary of the environmental impacts that would result during

construction and operation of the Proposed Project, mitigation measures that would lessen significant environmental impacts, and the level of significance of the environmental impacts after implementation of mitigation measures under CEQA. For those impacts determined to be less than significant or no impact, and therefore requiring no mitigation measures, a "Not Applicable" determination is stated under the "CEQA Significance after Mitigation" column within Table ES-1.

The Proposed Project would create short-term significant impacts to air quality, biological resources, cultural resources, hydrology and water quality, noise, tribal cultural resources, and transportation and traffic requiring mitigation measures. Specific mitigation measures have been identified which would reduce impacts to biological resources, hydrology and water quality, tribal cultural resources, and transportation and traffic to a less than significant level. With incorporation of mitigation measures, temporary construction impacts under CEQA related to air quality, cultural resources, and noise would be reduced to the greatest extent feasible, but would result in a significant unavoidable adverse impact. The Proposed Project would not lead to any long-term significant operational impacts. Therefore, the impacts summarized in Table ES-1 below reflect construction of the Proposed Project.

TABLE ES-1
SUMMARY OF CONSTRUCTION-RELATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Environmental Impacts	CEQA Significance Determination		Mitigation Measures Applicable to Build Alternatives	CEQA Significance After Mitigation	
	CDSM Alternative	Excavate and Recompact Alternative		CDSM Alternative	Excavate and Recompact Alternative
AESTHETICS					
AES-1: Would the project have substantial adverse effect on a scenic vista?	Less than Significant	Less than Significant	No mitigation measures are required.	Not applicable	Not applicable
AES-2: Would the project substantially degrade the existing visual character or quality of the site and its surroundings?	Less than Significant	Less than Significant	No mitigation measures are required.	Not applicable	Not applicable
AES-3: The Proposed Project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area. No impact would occur.	Less than Significant	Less than Significant	No mitigation measures are required.	Not applicable	Not applicable
AGRICULTURE AND FORESTRY RESOURCES					
AFR-1: Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?	No Impact	No Impact	No mitigation measures are required.	Not applicable	Not applicable
AIR QUALITY					
AQ-1: Would the project conflict with or obstruct implementation of the applicable air quality plan?	Less than Significant	Less than Significant	No mitigation measures are required.	Not applicable	Not applicable
AQ-2: Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?	Significant	Significant	**AQ-A:** Use of Tier 4 Equipment **AQ-B:** Activity management to prevent overlap of construction **AQ-C:** Minimization of equipment idling time to no more than 5 minutes **AQ-D:** Maintenance of construction equipment in proper working condition	Significant and Unavoidable	Significant and Unavoidable

TABLE ES-1
SUMMARY OF CONSTRUCTION-RELATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Environmental Impacts	CEQA Significance Determination		Mitigation Measures Applicable to Build Alternatives	CEQA Significance After Mitigation	
	CDSM Alternative	Excavate and Recompact Alternative		CDSM Alternative	Excavate and Recompact Alternative
AQ-3: Would the project result in cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	Significant	Significant	**AQ-A:** Use of Tier 4 Equipment **AQ-B:** Activity management to prevent overlap of construction **AQ-C:** Minimization of equipment idling time to no more than 5 minutes **AQ-D:** Maintenance of construction equipment in proper working condition	Significant and Unavoidable	Significant and Unavoidable
AQ-4: Would the project expose sensitive receptors to substantial pollutant concentrations? *-Exposure to pollutant concentrations*	Significant	Significant	**AQ-A:** Use of Tier 4 Equipment **AQ-B:** Activity management to prevent overlap of construction **AQ-C:** Minimization of equipment idling time to no more than 5 minutes **AQ-D:** Maintenance of construction equipment in proper working condition	Significant and Unavoidable	Significant and Unavoidable
AQ-4: Would the project expose sensitive receptors to substantial pollutant concentrations? *-Health Risk Assessment*	Significant	Significant	**AQ-A:** Use of Tier 4 Equipment **AQ-B:** Activity management to prevent overlap of construction **AQ-C:** Minimization of equipment idling time to no more than 5 minutes **AQ-D:** Maintenance of construction equipment in proper working condition	Less than Significant	Less than Significant
AQ-5: Would the project create objectionable odors affecting a substantial number of people?	Less than Significant	Less than Significant	No mitigation measures are required.	Not applicable	Not applicable

TABLE ES-1
SUMMARY OF CONSTRUCTION-RELATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Environmental Impacts	CEQA Significance Determination		Mitigation Measures Applicable to Build Alternatives	CEQA Significance After Mitigation	
	CDSM Alternative	Excavate and Recompact Alternative		CDSM Alternative	Excavate and Recompact Alternative
BIOLOGICAL RESOURCES					
BIO-1: Would the project have a substantial adverse effect, either directly or indirectly or through habitat modification, on any species identified as endangered or threatened in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	Significant	Significant	**BIO-A** Biological Monitor **BIO-B** Worker Education Training **BIO-C** Special-Status Wildlife Surveys **BIO-D** Preconstruction Nesting Surveys **BIO-H** Topsoil Salvage and Revegetation Plan **BIO-I** Timing of Ground-clearing Activities **BIO-J** Avoid Wildlife Entrapment **BIO-K** Minimize Construction-Related Impacts **BIO-L** Personnel Guidelines and Traffic **BIO-M** Integrated Weed Management Plan **BIO-N** Night Lighting Control **BIO-O** Joshua Tree, Cactus, and Nolina Salvage Plan	Less than Significant	Less than Significant
BIO-2: 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 California Department of Fish and Game or U.S. Fish and Wildlife Service?	Significant	Significant	**BIO-A** Biological Monitor **BIO-B** Worker Education Training **BIO-C** Special-Status Wildlife Surveys **BIO-D** Preconstruction Nesting Surveys **BIO-E** Roosting Bat Surveys **BIO-F** American Badger and Desert Kit Fox Exclusion Plan **BIO-G** Special-Status Plant Species Surveys **BIO-H** Topsoil Salvage and Revegetation Plan **BIO-I** Timing of Ground-clearing Activities **BIO-J** Avoid Wildlife Entrapment **BIO-K** Minimize Construction-Related Impacts **BIO-L** Personnel Guidelines and Traffic **BIO-M** Integrated Weed Management Plan **BIO-N** Night Lighting Control	Less than Significant	Less than Significant

TABLE ES-1
SUMMARY OF CONSTRUCTION-RELATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Environmental Impacts	CEQA Significance Determination		Mitigation Measures Applicable to Build Alternatives	CEQA Significance After Mitigation	
	CDSM Alternative	Excavate and Recompact Alternative		CDSM Alternative	Excavate and Recompact Alternative
BIO-3: Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulation or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	Significant	Significant	**BIO-D** Preconstruction Nesting Surveys **BIO-K** Minimize Construction-Related Impacts	Less than Significant	Less than Significant
BIO-4: Would the project have a substantial adverse effect on federally protected wetlands, as defined by Clean Water Act Section 404 (including but not limited to marsh, vernal pool, and coastal wetlands) through direct removal, filling, hydrological interruption, or other means?	Significant	Significant	**BIO-A** Biological Monitor **BIO-B** Worker Education Training **BIO-H** Topsoil Salvage and Revegetation Plan **BIO-K** Minimize Construction-Related Impacts	Less than Significant	Less than Significant
BIO-5: 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 substantially impede the use of native wildlife nursery sites?	Significant	Significant	**BIO-B** Worker Education Training **BIO-I** Timing of Ground-clearing Activities **BIO-L** Personnel Guidelines and Traffic **BIO-N** Night Lighting Control	Less than Significant	Less than Significant
BIO-6: Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	Significant	Significant	**BIO-H** Topsoil Salvage and Revegetation Plan **BIO-M** Integrated Weed Management Plan **BIO-O** Joshua Tree, Cactus, and Nolina Salvage Plan	Less than Significant	Less than Significant

TABLE ES-1
SUMMARY OF CONSTRUCTION-RELATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Environmental Impacts	CEQA Significance Determination		Mitigation Measures Applicable to Build Alternatives	CEQA Significance After Mitigation	
	CDSM Alternative	Excavate and Recompact Alternative		CDSM Alternative	Excavate and Recompact Alternative
BIO-7: Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state conservation plans?	No Impact	No Impact	No mitigation measures are required.	Not applicable	Not applicable
CULTURAL RESOURCES					
CR-1: Would the project cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5, or would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	Significant	Significant	**AR-A** Conduct Archaeological Training **AR-B** Flagging of Avoidance Areas **AR-C** Conduct Archaeological Monitoring in Areas of Sensitivity **AR-D** Inadvertent Discovery **AR-E** Comply with State and Federal Law for Human Remains **AR-F** Phase III Data Recovery to Reduce Adverse Effects **HR-A** Historical Resources Recordation	Significant and Unavoidable	Significant and Unavoidable
CR-2: Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	Significant	Significant	**PR-A** Retention of Principal Paleontologist and Paleontological Resources Survey **PR-B** Conduct Paleontological Training **PR-C** Flagging of Avoidance Areas **PR-D** Conduct Paleontological Monitoring in Areas of Sensitivity, Halt Work in the Event of a Discovery **PR-E** Recover Resources and Place in Repository	Less than Significant	Less than Significant
CR-3: Would the project disturb any human remains, including those interred outside of formal cemeteries?	Significant	Significant	**AR-E** Comply with State and Federal Law for Human Remains	Less than Significant	Less than Significant

TABLE ES-1
SUMMARY OF CONSTRUCTION-RELATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Environmental Impacts	CEQA Significance Determination		Mitigation Measures Applicable to Build Alternatives	CEQA Significance After Mitigation	
	CDSM Alternative	Excavate and Recompact Alternative		CDSM Alternative	Excavate and Recompact Alternative
ENVIRONMENTAL JUSTICE					
EJ-1: Would the project result in environmental impacts that are disproportionately high and adverse on minority and low in-income populations?	EJ is not a topic analyzed under CEQA. Refer to Section 3.6 for more details.		No mitigation measures are required.	Not applicable	Not applicable
GEOLOGY AND SOILS					
GEO-1: Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, strong seismic ground shaking, seismic-related ground failure, including liquefaction, or landslides?	Less than Significant	Less than Significant	No mitigation measures are required.	Not applicable	Not applicable
GEO-2: Would the project result in substantial soil erosion or the loss of topsoil?	Less than Significant	Less than Significant	No mitigation measures are required.	Not applicable	Not applicable
GEO-3: 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 on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	Less than Significant	Less than Significant	No mitigation measures are required.	Not applicable	Not applicable

TABLE ES-1
SUMMARY OF CONSTRUCTION-RELATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Environmental Impacts	CEQA Significance Determination		Mitigation Measures Applicable to Build Alternatives	CEQA Significance After Mitigation	
	CDSM Alternative	Excavate and Recompact Alternative		CDSM Alternative	Excavate and Recompact Alternative
GEO-4: Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	Less than Significant	Less than Significant	No mitigation measures are required.	Not applicable	Not applicable
GREENHOUSE GAS EMISSIONS					
GHG-1: Would the project generate GHG emissions, either directly or indirectly, that may have a significant cumulative impact on the environment?	Less than Significant	Less than Significant	No mitigation measures are required.	Not applicable	Not applicable
GHG-2: Would the project conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs?	No Impact	No Impact	No mitigation measures are required.	Not applicable	Not applicable
HAZARDS AND HAZARDOUS MATERIALS					
HAZ-1: 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	Less than Significant	No mitigation measures are required.	Not applicable	Not applicable
HAZ-2: 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	Less than Significant	No mitigation measures are required.	Not applicable	Not applicable

TABLE ES-1
SUMMARY OF CONSTRUCTION-RELATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Environmental Impacts	CEQA Significance Determination		Mitigation Measures Applicable to Build Alternatives	CEQA Significance After Mitigation	
	CDSM Alternative	Excavate and Recompact Alternative		CDSM Alternative	Excavate and Recompact Alternative
HAZ-3: Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	Less than Significant	Less than Significant	No mitigation measures are required.	Not applicable	Not applicable
HAZ-4: Would the project expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	Less than Significant	Less than Significant	No mitigation measures are required.	Not applicable	Not applicable
HYDROLOGY, WATER QUALITY, AND GROUNDWATER					
HWQ-1: Would the project violate any water quality standards or waste discharge requirements? Would the project otherwise substantially degrade water quality?	Significant	Significant	**HWQ-A** Sediment Management Plan	Less than Significant	Less than Significant
HWQ-2: Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	Less than Significant	Less than Significant	No mitigation measures are required.	Not applicable	Not applicable

TABLE ES-1
SUMMARY OF CONSTRUCTION-RELATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Environmental Impacts	CEQA Significance Determination		Mitigation Measures Applicable to Build Alternatives	CEQA Significance After Mitigation	
	CDSM Alternative	Excavate and Recompact Alternative		CDSM Alternative	Excavate and Recompact Alternative
HWQ-3: Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	Less than Significant	Less than Significant	No mitigation measures are required.	Not applicable	Not applicable
HWQ-4: Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	Less than Significant	Less than Significant	No mitigation measures are required.	Not applicable	Not applicable
HWQ-5: Would the project create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	Less than Significant	Less than Significant	No mitigation measures are required.	Not applicable	Not applicable
HWQ-6: Would the project expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	Less than Significant	Less than Significant	No mitigation measures are required.	Not applicable	Not applicable

TABLE ES-1
SUMMARY OF CONSTRUCTION-RELATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Environmental Impacts	CEQA Significance Determination		Mitigation Measures Applicable to Build Alternatives	CEQA Significance After Mitigation	
	CDSM Alternative	Excavate and Recompact Alternative		CDSM Alternative	Excavate and Recompact Alternative
HWQ-7: Would the project expose people or structures to a significant risk of loss, injury, or death involving inundation by seiche, tsunami, or mudflow?	Less than Significant	Less than Significant	No mitigation measures are required.	Not applicable	Not applicable
LAND USE AND PLANNING					
LUP-1: Would the project physically divide an established community?	No Impact	No Impact	No mitigation measures are required.	Not applicable	Not applicable
LUP-2: Would the project conflict with any applicable land use plan, policy, or regulation with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	Significant	Significant	**BIO-H** Topsoil Salvage and Revegetation Plan	Less than Significant	Less than Significant
LUP-3: Would the project conflict with any applicable habitat conservation plan or natural community conservation plan	No Impact	No Impact	No mitigation measures are required.	Not applicable	Not applicable
MINERAL RESOURCES					
MIN-1: 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?	Less than Significant	Less than Significant	No mitigation measures are required.	Not applicable	Not applicable

TABLE ES-1
SUMMARY OF CONSTRUCTION-RELATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Environmental Impacts	CEQA Significance Determination		Mitigation Measures Applicable to Build Alternatives	CEQA Significance After Mitigation	
	CDSM Alternative	Excavate and Recompact Alternative		CDSM Alternative	Excavate and Recompact Alternative
MIN-2: 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	No Impact	No mitigation measures are required.	Not applicable	Not applicable
NOISE AND VIBRATION					
NV-1: Would the project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies, or would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	Significant	Significant	**NV-A:** Construction equipment maintenance and mufflers **NV-B:** Use of rubber-tired equipment on flat terrain **NV-C:** Minimization of equipment idling time to no more than 5 minutes **NV-D:** Locate construction staging areas away from sensitive uses **NV-E:** Public Liaison **NV-F:** Ear protection to sensitive receptors	Significant and Unavoidable	Significant and Unavoidable
NV-2: Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	Less than Significant	Less than Significant	No mitigation measures are required.	Not applicable	Not applicable
NV-3: Would the project result in substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	Less than Significant	Less than Significant	No mitigation measures are required.	Not applicable	Not applicable

TABLE ES-1
SUMMARY OF CONSTRUCTION-RELATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Environmental Impacts	CEQA Significance Determination		Mitigation Measures Applicable to Build Alternatives	CEQA Significance After Mitigation	
	CDSM Alternative	Excavate and Recompact Alternative		CDSM Alternative	Excavate and Recompact Alternative
POPULATION AND HOUSING					
POP-1: Would the project induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	Less than Significant	Less than Significant	No mitigation measures are required.	Not applicable	Not applicable
PUBLIC SERVICES AND RECREATION					
PSR-1: Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental 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 schools, day care centers, libraries, and senior centers?	No Impact	No Impact	No mitigation measures are required.	Not applicable	Not applicable

TABLE ES-1
SUMMARY OF CONSTRUCTION-RELATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Environmental Impacts	CEQA Significance Determination		Mitigation Measures Applicable to Build Alternatives	CEQA Significance After Mitigation	
	CDSM Alternative	Excavate and Recompact Alternative		CDSM Alternative	Excavate and Recompact Alternative
PSR-2: Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental 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 parks? 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? Would 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	No Impact	No mitigation measures are required.	Not applicable	Not applicable

TABLE ES-1
SUMMARY OF CONSTRUCTION-RELATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Environmental Impacts	CEQA Significance Determination		Mitigation Measures Applicable to Build Alternatives	CEQA Significance After Mitigation	
	CDSM Alternative	Excavate and Recompact Alternative		CDSM Alternative	Excavate and Recompact Alternative
SAFETY AND SECURITY					
SS-1: Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental 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 fire protection?	Less than Significant	Less than Significant	No mitigation measures are required.	Not applicable	Not applicable
SS-2: Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental 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 police protection?	Less than Significant	Less than Significant	No mitigation measures are required.	Not applicable	Not applicable

TABLE ES-1
SUMMARY OF CONSTRUCTION-RELATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Environmental Impacts	CEQA Significance Determination		Mitigation Measures Applicable to Build Alternatives	CEQA Significance After Mitigation	
	CDSM Alternative	Excavate and Recompact Alternative		CDSM Alternative	Excavate and Recompact Alternative
TRANSPORTATION AND TRAFFIC					
TT-1: Would the project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	Less than Significant	Less than Significant	No mitigation measures are required.	Not applicable	Not applicable
TT-2: Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	Significant	Significant	**TT-A:** Place a flagman at the intersection of US-395 and Cactus Flats Road for nine months during hauling of materials from the existing mine in Keeler	Less than Significant	Less than Significant
TT-3: Would the project conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	Less than Significant	Less than Significant	No mitigation measures are required.	Not applicable	Not applicable

TABLE ES-1
SUMMARY OF CONSTRUCTION-RELATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Environmental Impacts	CEQA Significance Determination		Mitigation Measures Applicable to Build Alternatives	CEQA Significance After Mitigation	
	CDSM Alternative	Excavate and Recompact Alternative		CDSM Alternative	Excavate and Recompact Alternative
TRIBAL CULTURAL RESOURCES					
TCR-1: 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 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)?	Significant	Significant	**TCR-A:** Flagging of Avoidance Areas **TCR B:** Conduct Tribal Monitoring in Areas of Sensitivity; Halt Work in the Event of a Discovery **TCR-C:** Inadvertent Discovery **TCR-D:** Phase III Data Recovery to Reduce Adverse Effects	Less than Significant	Less than Significant

TABLE ES-1
SUMMARY OF CONSTRUCTION-RELATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Environmental Impacts	CEQA Significance Determination		Mitigation Measures Applicable to Build Alternatives	CEQA Significance After Mitigation	
	CDSM Alternative	Excavate and Recompact Alternative		CDSM Alternative	Excavate and Recompact Alternative
TCR-2: 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 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 Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?	Significant	Significant	**TCR-A:** Flagging of Avoidance Areas **TCR B:** Conduct Tribal Monitoring in Areas of Sensitivity; Halt Work in the Event of a Discovery **TCR-C:** Inadvertent Discovery **TCR-D:** Phase III Data Recovery to Reduce Adverse Effects	Less than Significant	Less than Significant

TABLE ES-1
SUMMARY OF CONSTRUCTION-RELATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Environmental Impacts	CEQA Significance Determination		Mitigation Measures Applicable to Build Alternatives	CEQA Significance After Mitigation	
	CDSM Alternative	Excavate and Recompact Alternative		CDSM Alternative	Excavate and Recompact Alternative
UTILITIES, SERVICE SYSTEMS, AND ENERGY					
UT-1: Would the project require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	Less than Significant	Less than Significant	No mitigation measures are required.	Not applicable	Not applicable
UT-2: Would the project require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	Less than Significant	Less than Significant	No mitigation measures are required.	Not applicable	Not applicable

TABLE ES-1
SUMMARY OF CONSTRUCTION-RELATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Environmental Impacts	CEQA Significance Determination		Mitigation Measures Applicable to Build Alternatives	CEQA Significance After Mitigation	
	CDSM Alternative	Excavate and Recompact Alternative		CDSM Alternative	Excavate and Recompact Alternative
UT-3: Would the project require, or result in, the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	Less than Significant	Less than Significant	No mitigation measures are required.	Not applicable	Not applicable
UT-4: Would the project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	Less than Significant	Less than Significant	No mitigation measures are required.	Not applicable	Not applicable
UT-5: Would the project result in wasteful, inefficient, and unnecessary consumption of energy during construction and operation of the Project?	Less than Significant	Less than Significant	No mitigation measures are required.	Not applicable	Not applicable

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1.0 Introduction

In accordance with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA), the City of Los Angeles (City), represented by the Los Angeles Department of Water and Power (LADWP), and the U.S. Bureau of Land Management (BLM) have prepared this joint Draft Environmental Impact Report/Environmental Assessment (EIR/EA) for the North Haiwee Dam No. 2 Project (Proposed Project).[2] LADWP is identified as the lead agency for the Proposed Project under CEQA for its direct undertaking of governmental action (CEQA Guidelines Section 15002[b]). BLM is identified as the lead agency for the Proposed Project under NEPA for the approval to construct on federal land.

1.1 Project Overview

LADWP, in cooperation with BLM, proposes to improve the seismic reliability of North Haiwee Reservoir (NHR), which is located in the Owens Valley in Inyo County, California, approximately 150 miles north of Los Angeles (Figure 1-1). LADWP owns and operates North Haiwee Dam (existing Dam or NHD), an existing earthfill dam constructed in 1913. NHD and NHR are essential components of the Los Angeles Aqueduct (LAA) system, which transports water from the Owens Valley to the City. The LAA provides approximately 35 percent of the annual average water supply for the City. Should NHD fail, this portion of the City's water supply would be cut off at the Owens Valley.

LADWP conducted a seismic stability evaluation of NHD and concluded that the existing Dam could experience structural failure in the event of a Controlling Maximum Credible Earthquake (MCE) scenario. The MCE is the largest earthquake that could possibly occur at a fault, based on the characteristics of that particular earthquake fault. The seismic stability evaluation identified two MCE scenarios for the analysis: a 7.5 event on the Haiwee segment of the Sierra Nevada Fault Zone, located 2.8 miles (4.5 km) from NHD; and a 6.5 event on an unnamed fault 0.3 miles (0.5 km) east of NHD. During a MCE scenario, extensive liquefaction would occur in the foundation of NHD, causing the crest of the existing Dam to settle up to nine feet. This would result in an uncontrollable release of water from NHR, thereby creating a flooding and safety hazard to the residents of the Owens Valley. Subsequent to the flooding event, LADWP would be prevented from transporting water along the LAA from the Owens Valley to the City, thus severing a major water supply for the City.

Based on this evaluation, the California Department of Water Resources (DWR), Division of Safety of Dams (DSOD), has directed LADWP to operate NHR at a restricted maximum surface water elevation of 3,757.5 feet,[3] instead of the previous unassisted (without flashboards at Merritt Cut) maximum elevation of up to 3,760 feet, in order to prevent an uncontrolled release of water and flooding in the event of dam failure resulting from an MCE. These restrictions placed on operations of NHR provide a narrow range of elevations that meet the requirements of DSOD while still allowing the LAA system to operate effectively. In order to resume operations of NHR of up to 3,760 feet, LADWP needs to comply with DSOD requirements, and has been in coordination with DSOD regarding continuous progress on seismic improvements. Therefore, LADWP is proposing the North Haiwee Dam No. 2 Project, which includes the construction of North Haiwee Dam No. 2 (new Dam or NHD2) to the north of the existing Dam to improve the seismic reliability of NHR in the event NHD is damaged by an earthquake event, thereby ensuring public health and safety. Construction of NHD2 would require the realignment of a portion of the existing Cactus Flats Road and the realignment of a portion of the LAA.

[2] For the purposes of this joint EIR/EA, the Proposed Project under CEQA is equivalent to the Proposed Action under NEPA. For consistency, the term Proposed Project is used throughout the document.

[3] All elevations are referenced to the National Geodetic Vertical Datum of 1929.

Once NHD2 is constructed, LADWP would construct a diversion channel and a notch in NHD, along with other improvements, such as installation of a geomembrane liner, to NHD and the area to the north of the existing Dam, in order to utilize the area between NHD2 and NHD as a basin.

Components of the Proposed Project are grouped based on construction phasing and are analyzed as shown in Table 1-1, and as described further in Section 2.2 and throughout this EIR/EA document. Table 1-1 provides a summary of the Proposed Project components, which are common to both Build Alternatives analyzed in this EIR/EA.

TABLE 1-1
SUMMARY OF PROPOSED PROJECT COMPONENTS

Project Component	Key Elements
NHD2	• Construction of NHD2 • Construction of east and west berms • Grading for the basin • Purchase of materials (riprap, gravel, sand) from the existing mine in Keeler
Cactus Flats Road Realignment	• Realignment of Cactus Flats Road
LAA Realignment	• Realignment of LAA • Construction of diversion structure • Construction of diversion structure bridge • Excavation of various materials (gravel and sand) for the construction of NHD2 (LAA Excavation Area)
Diversion Channel and NHD Modifications	• Construction of diversion channel • Construction of a notch in NHD • Installation of a geomembrane liner within the basin and on the north face of NHD

1.2 Project Location

1.2.1 Regional Setting

The Proposed Project is located in the Owens Valley in unincorporated areas of Inyo County, California. The Owens Valley is generally a dry landscape that extends 100 miles from north to south and six to 20 miles from east to west. It is bordered by the Sierra Nevada Range on the west, Chalfant Valley on the north, Inyo Mountains on the east, Coso Range on the southeast, and Rose Valley on the south. Communities located within the Owens Valley include Bishop, Big Pine, Aberdeen, Haiwee, Independence, Lone Pine, and Olancha.

1.2.2 Project Site

The Project Site is defined as the primary construction area that encompasses the existing infrastructure that would be modified and the new infrastructure that would be constructed as part of the Proposed Project, as listed in Table 1-1. The Project Site does not include the existing mine in Keeler, which is approximately 20 miles northeast of the Project Site and would only be used as a point of purchase for materials. The majority of the Project Site is designated as a Natural Resources (NR) land use by the Inyo County General Plan (ICGP). The NR land use designation applies to land or water areas that are essentially unimproved and which the County has determined in the general plan should remain open in character and provides for the preservation and management of natural resources and recreational uses. The Project Site is zoned by Inyo County as Open Space with a 40-acre minimum size (OS-40).

Source: LADWP, 2017; AECOM, 2017; Esri Maps & Data, 2017; Prepared By: AECOM, 2017.

0 15 30 Miles

County Boundary

Figure 1-1

Regional Map

The Project Site is located within the 1980 BLM California Desert Conservation Area (CDCA) Plan area, and the 2016 BLM Desert Renewable Energy Conservation Plan (DRECP) Land Use Plan Amendment (LUPA) area. The key objectives of the DRECP are to streamline renewable energy development and to provide for long-term conservation and management of special-status species, vegetation, and other resources within the DRECP Plan area. The DRECP LUPA applies to BLM-managed lands, including the southwestern portion of the Project Site. The Project Site contains lands designated as California Desert National Conservation Lands (CDNCLs), and is partially within the Olancha Greasewood Area of Critical Environmental Concern (ACEC) and the Olancha Dunes Special Recreation Management Area (SRMA) (BLM, 2016). Many of the Conservation and Management Actions (CMAs) specified in the DRECP apply to the Project Site, and are evaluated in detail in Appendix B of this EIR/EA. The list of applicable and non-applicable CMAs is included under each environmental resource area in Chapter 3.

Applicable CMAs that are not related to an environmental resource area but applicable to the Proposed Project include: LUPA-SW-11 and LUPA-COMP-1. LUPA-SW-11 directs projects to avoid side casting where road construction requires cut-and-fill procedures. LUPA-COMP-1 includes provisions for compensation activities.

CMAs that are not related to an environmental resource area and not applicable to the Proposed Project include: LUPA-WC-1, 2, 3, 5; LUPA-COMP-2; DFC-WC-1, 2; GPL-5; and GPL-LANDS-2.

North Haiwee Dam and North Haiwee Reservoir

As shown in Figure 1-2, NHD is located approximately 1.1 miles southeast of the community of Olancha, and approximately 0.9 miles north of the community of Haiwee (Inyo County, 2001). The Project Site is bordered on the south by NHR, on the east by undeveloped LADWP-owned property, on the north by the privately owned Butterworth Ranch, and on the west by undeveloped BLM public lands (Figure 1-3). The existing Dam is located at the north end of NHR approximately 0.7 miles east of U.S. Highway 395 (US-395) and is accessed via the partially paved North Haiwee Road from the west and via the partially paved Cactus Flats Road from the north and east. The existing Dam is approximately 1,500 feet long and has a crest elevation of 3,768 feet, 34 feet above the original ground surface. North of NHD is undeveloped, open land, with minor dirt roads and native brush. Photographs 1 and 2 provide existing aerial views of the Haiwee Reservoirs and NHD.

NHD and NHR are primarily used to regulate the flow of the LAA system. NHR cannot be bypassed, and maintains an operating water elevation level of up to 3,760 feet for operational flexibility and full capacity usage of the LAA system. Since July 2012, DSOD has directed LADWP to operate NHR at a restricted maximum surface water elevation of 3,757.5 feet in order to reduce the risk of flooding due to dam failure in the event of an MCE. Prior to implementing the restriction, the maximum unassisted water elevation was 3,760 feet, with a capacity of 11,533 acre-feet, and could temporarily operate with an assisted maximum elevation of 3,764 feet with flashboards placed at Merritt Spillway, upon approval from DSOD. Merritt Spillway has an elevation of 3,759 feet, and historically, LADWP has not operated NHR over 3,759 feet.

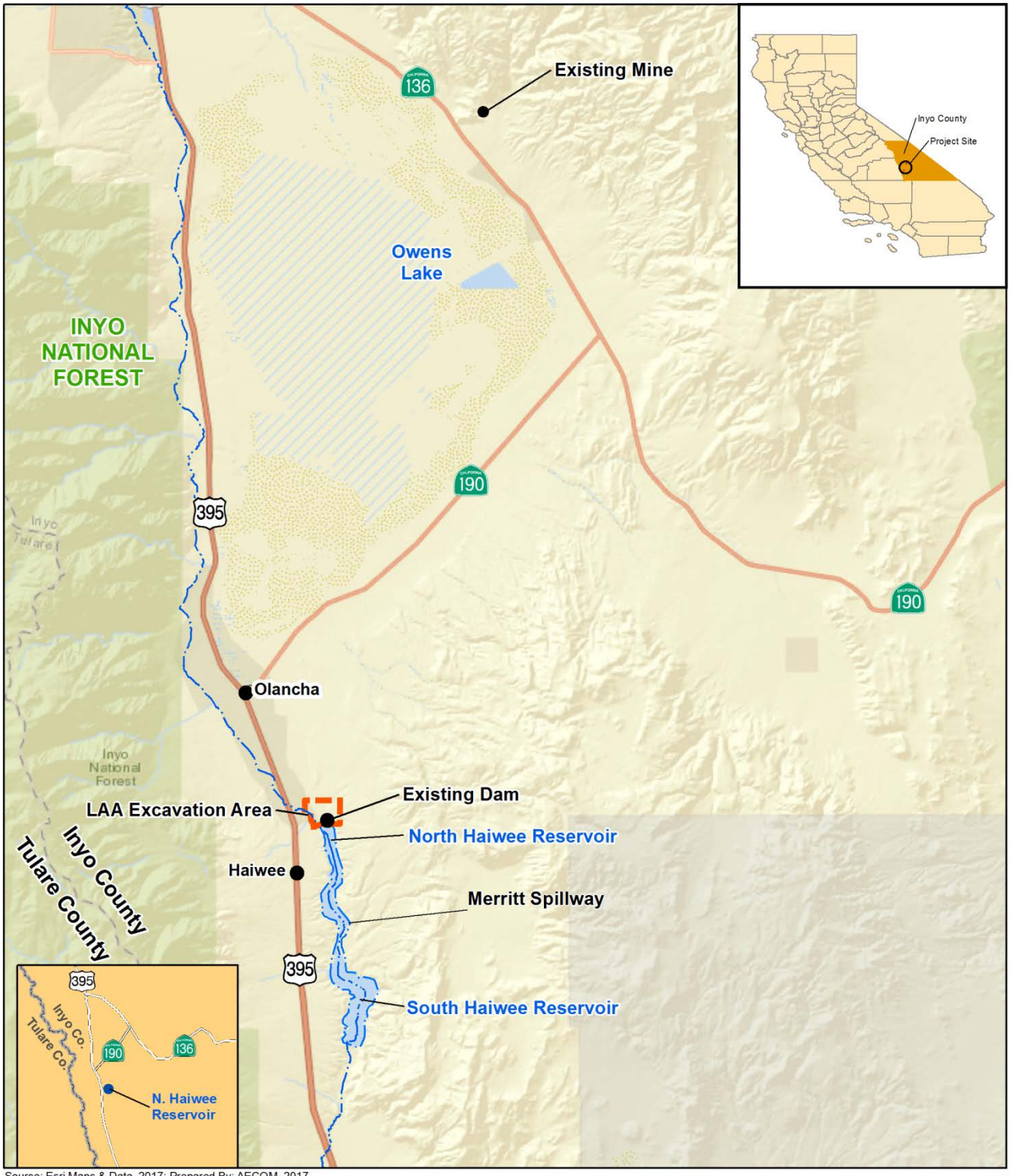
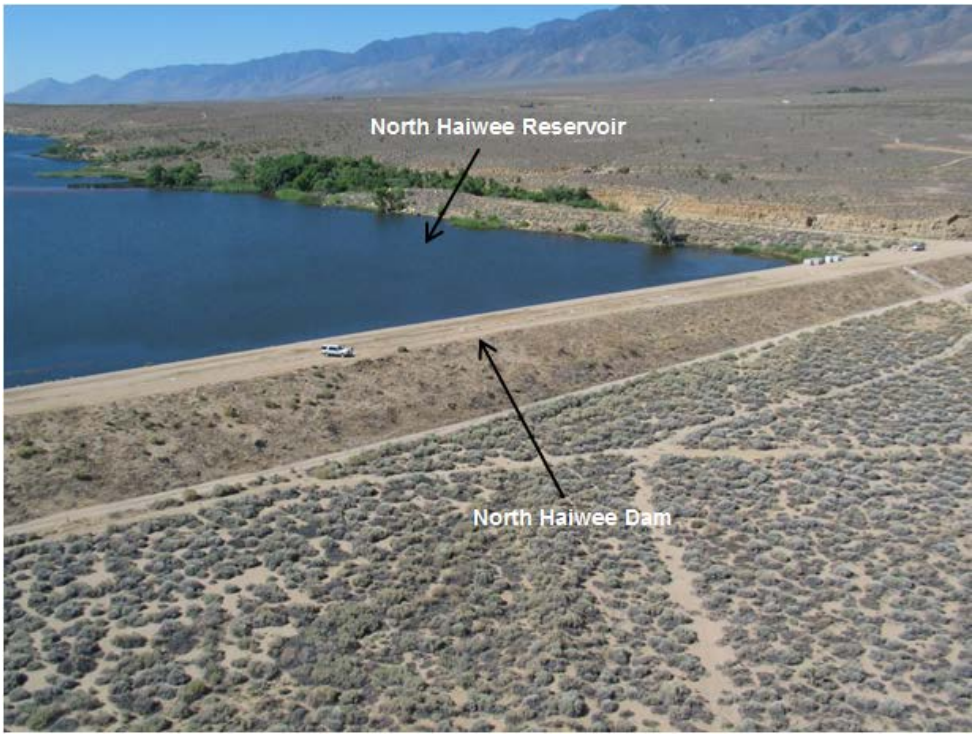


Figure 1-2

Project Vicinity

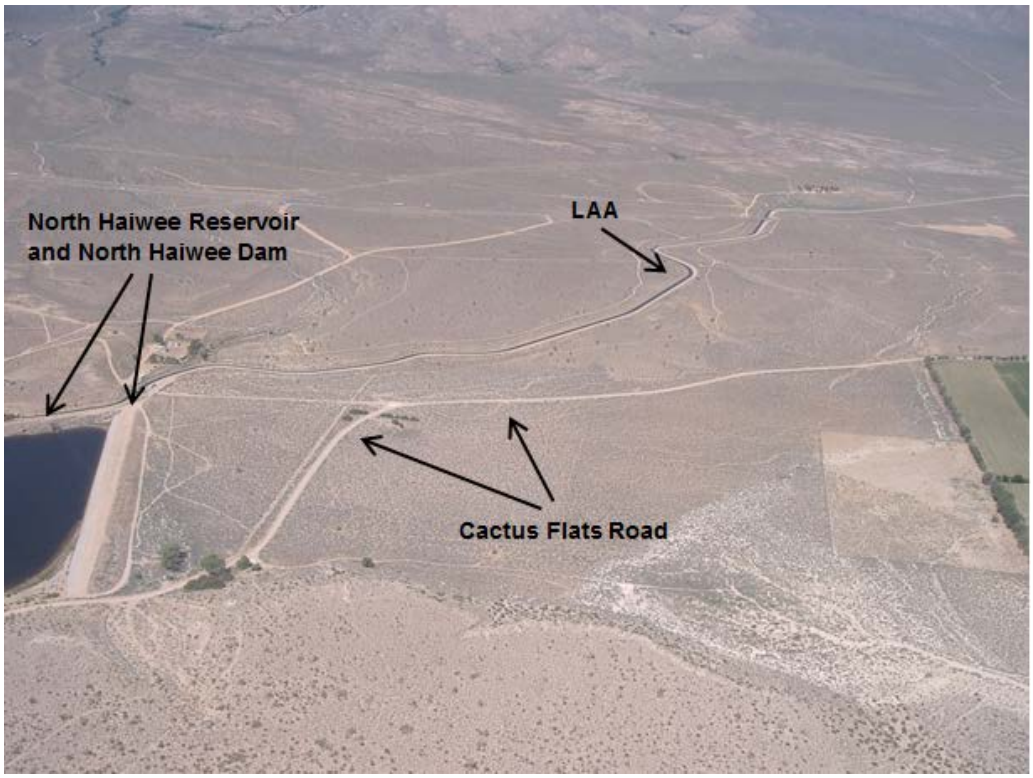
Photograph 1: View of Haiwee Reservoirs, facing northwest.



Photograph 2: View of North Haiwee Reservoir and North Haiwee Dam, facing southwest.

Cactus Flats Road

The existing Cactus Flats Road is a partially paved road maintained by Inyo County that provides access to public lands. Cactus Flats Road approaches the Project Site from the northwest, near a private agricultural property, and crosses the Project Site approximately 800 feet north of the existing Dam (Figure 1-3). It then continues eastward, providing access for LADWP personnel, mining vehicles, and other motorists for recreational uses, and allows access to public lands. Photograph 3 provides an existing aerial view of Cactus Flats Road.



Photograph 3: View of the Project Site, including North Haiwee Reservoir, North Haiwee Dam, Cactus Flats Road, and LAA, facing west.

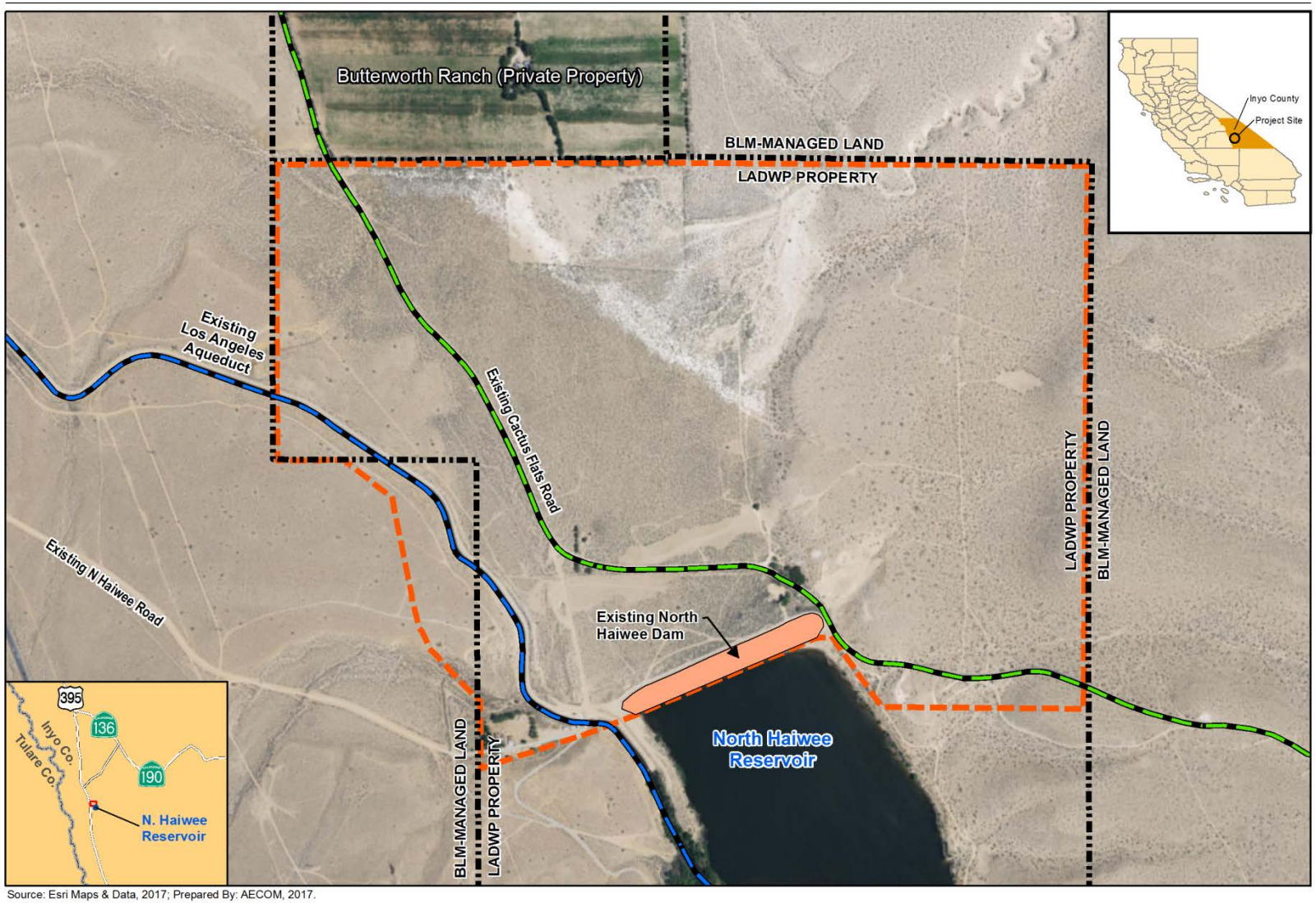


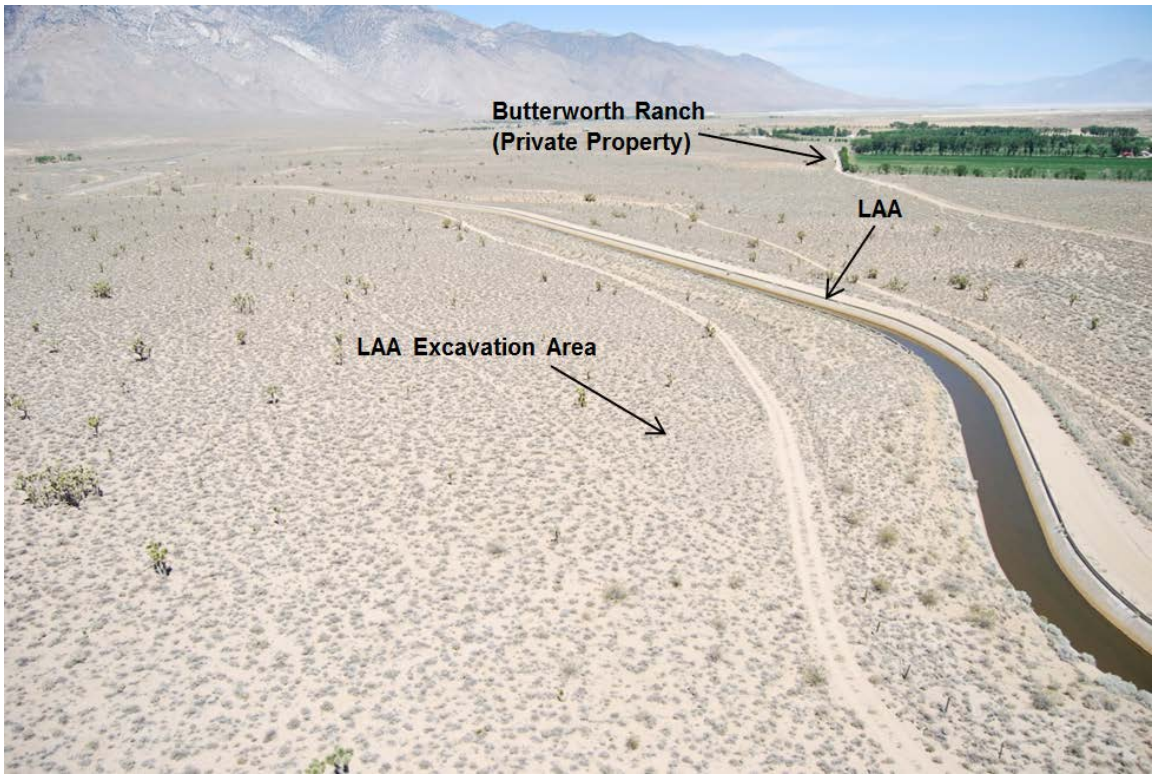
Figure 1-3

Project Site Existing Conditions

Los Angeles Aqueduct

The portion of the LAA in the Project area is located within both LADWP property and BLM-managed land (Figure 1-3), which are designated in the ICGP as State and Federal Lands (SFL) use. The SFL designation is applied to state- and federally-owned parks, forests, recreation, and/or management areas that have adopted management plans (Inyo County, 2001). The LAA approaches NHR from the northwest, and enters NHR approximately 0.25 miles south of the existing Dam.

The realignment of the LAA requires the movement of earth around the existing LAA. LADWP will utilize the materials excavated for the LAA Realignment as a proposed source of silty sand for materials for construction of the new Dam (LAA Excavation Area). The LAA Excavation Area is located adjacent to the western side of the LAA, and consists of land that is owned by both LADWP and BLM. Photograph 4 provides an existing view of the LAA and LAA Excavation Area. Portions of the LAA Excavation Area have been previously disturbed by construction of the existing LAA and use of excavation materials for construction of the existing Dam. Materials in the LAA Excavation Area consist of alluvial fan deposits overlying Coso Formation bedrock. The use of materials from this site for the construction of NHD2 would require approval of a conditional use permit from the Inyo County Planning Department. The BLM portions of the Project Site are located within the DRECP LUPA, as described above, including the CDNCL Basin and Range Ecoregion Subarea, the Olancha Greasewood ACEC, and the Olancha Dunes SRMA (BLM, 2016).



Photograph 4: View of LAA, LAA Excavation Area, and Butterworth Ranch, facing north.

Existing Mine in Keeler

The existing mine in Keeler is located near the northeastern shore of Owens Lake. It is an active dolomite mine site located on privately owned land, and operated by F.W. Aggregate Inc. LADWP has previously purchased gravel from this existing mine. Because materials used to construct NHD2 would be sourced from this existing mine, LADWP would not conduct any new mining activities, and activity related to

construction of the Proposed Project would be limited to the purchase and hauling of materials. Therefore, the existing mine is excluded from analysis in this EIR/EA, with the exception of haul routes to/from the existing mine. Discussion of activities and current conditions at the existing mine are provided where necessary for context, but the Proposed Project does not include any new mining, reclamation, or other activities at this existing mine site.

1.2.3 Surrounding Uses

NHD is surrounded by sparsely populated areas, with minimal infrastructure, and vast open desert areas. The land use designation of the area to the northeast, east, southeast, and west of the Project Site is SFL. The area south of the Project Site (NHR and its surroundings) has a land use designation of NR. Butterworth Ranch, to the north of the Project Site, is designated as Agricultural, and is an active agricultural site. The area surrounding the Project Site is zoned as OS-40, the same designation as the Project Site (Inyo County, 2001, p.4-24). The portions of the area surrounding the Project Site which are owned by BLM also fall within the DRECP LUPA as described above, including the Basin and Range Ecoregion Subarea CDNCL, the Olancha Greasewood ACEC, and the Olancha Dunes SRMA. The CDNCL Basin and Range Ecoregion Subarea surrounds the Project Site on all sides. The Olancha Greasewood ACEC extends northward from the Project Site, and the Olancha Dunes SRMA extends northward and westward from the Project Site.

The nearest communities to the Project Site include the community of Olancha, which has a population of 192 (2010 US Census) and is mainly designated as Residential (Ranch and Estate) land use and SFL, and the community of Haiwee, which has a population of approximately 20 (Inyo County, 2001) and is mainly designated Residential, Open Space and Recreation (OSR), and SFL. The area to the west of the Project Site has land use designations of OSR, Residential, NR, and SFL (Inyo County, 2013).

1.3 Project Background

1.3.1 Los Angeles Aqueduct System

The LAA system, owned and operated by LADWP, is comprised of two aqueducts that span 340 miles from the Mono Basin through the Owens Valley to the City of Los Angeles. Draining from the eastern Sierra Nevada Mountains for more than 150 miles, the system transports water from the Owens River entirely by gravity, following a natural and man-made course south towards Los Angeles. Originally conceived by William Mulholland in the early 1900s, the LAA system provided a reliable water source that allowed the City to grow and prosper into the second-largest city in the country. The first aqueduct, First Los Angeles Aqueduct (First LAA), is 223 miles long and has a capacity of 485 cubic feet per second (cfs).

Needing a larger and more dependable flow of water to the LAA, LADWP undertook the Mono Basin Project. Completed in 1940, this 105-mile northward extension of the LAA system diverts water from Lee Vining, Parker, Walker, and Rush creeks to the LAA. The extension helped obtain a high quality water supply for over 500,000 people.

While the City had taken virtually its full Mono Basin entitlement for several years between 1941 and 1970, it found it could not divert the full amount authorized by the 1940s water rights permits on a long-term basis without constructing additional conveyance facilities downstream from Mono Basin. Therefore, the Second Los Angeles Aqueduct (Second LAA) was constructed and completed in 1970 and increased the LAA system's capacity by 50 percent. The Second LAA begins south of South Haiwee Dam and runs for 137 miles.

Along with the construction of the First LAA, three large reservoirs were built: Haiwee, Fairmont, and San Fernando. From 1921 to 1929, five more reservoirs were built (Tinemaha on the Owens River, Upper San Fernando [Van Norman], Stone Canyon, Encino, and Hollywood), allowing the water system to

provide thousands of new service connections to the City. The LAA system currently has a total of eight reservoirs (Grant Lake Reservoir, Crowley Lake Reservoir, Pleasant Valley Reservoir, Tinemaha Reservoir, Haiwee Reservoirs, Fairmont Reservoir, Bouquet Reservoir, and Los Angeles Reservoir). Lacking a drainage basin of its own, Haiwee Reservoir is used to regulate the flow of water in the LAA from a variable supply into a steady flow. Haiwee Reservoir, which includes NHR and South Haiwee Reservoir, has a capacity of 63,800 acre-feet (19,551,000 gallons of water). Haiwee Reservoir measures roughly 6.5 miles long and encompasses a water surface area of 3.33 square miles (LADWP, 2015).

The LAA system has conveyed 35 percent of LADWP's water supply over the five years from 2010 to 2014. Since 1970, the two aqueducts have delivered an average of 337,000 acre-feet per year to the City, and have served a population of approximately four million people (Inyo County Water Department, 2015).

1.3.2 North Haiwee Dam Seismic Stability Evaluation, 2001

In 2001, LADWP investigated the seismic stability of NHD under typical operating conditions in order to assess the ability of the existing Dam to safely retain NHR in the event of an MCE (LADWP, 2001). The evaluation analyzed the geologic setting, foundation soils, and materials used to construct NHD, using historical records and laboratory and field investigations to determine critical sections of NHD that would be affected in an MCE. Using four different MCE simulations, the investigation found that liquefaction would occur in the NHD embankment and foundation soils, causing the crest to settle up to nine feet, potentially resulting in an uncontrollable release of water from NHR. Even if water was not released from NHR by an MCE, NHD would be damaged and may need to be lowered or drained to ensure public safety. In addition, LADWP would not be able to transport water along the LAA, thereby severing a major water supply for the City. Therefore, LADWP recommended that remedial construction work be performed at NHD to improve its seismic reliability.

The methods used for evaluation of NHD's seismic performance in the 2001 study were provided in a separate report, *North Haiwee Dam Seismic Stability Evaluation Using Multiple Field and Analytical Methods* (LADWP, 2009). It provided an overview of the findings from the 2001 investigation detailing the historical development of NHD, field investigations undertaken, and analyses performed to evaluate the existing Dam's potential seismic performance.

1.3.3 Division of Safety of Dams Requirements and Mandate

DSOD is a division of the California DWR that regulates dams in order to protect people against loss of life and property from dam failures. To ensure safety, DSOD has the authority to impose a restriction that places a limit on the water surface levels of reservoirs. Based on the 2001 *North Haiwee Dam Seismic Stability Evaluation*, DSOD restricted the maximum water level in NHR to an elevation of 3,757.5 feet, under the requirement that continued progress is made toward the completion of the seismic improvements for NHD. DSOD has mandated that LADWP progress seismic improvements. LADWP has coordinated with DSOD regarding the review of the design and construction phases of the proposed NHD2.

1.4 Project Purpose, Need, and Objectives

An EIR is required to include a statement of the objectives to be achieved by the Proposed Project (CEQA Guidelines, §15124(b)). The objectives help the implementing agency develop a reasonable range of alternatives and assist decision-makers in preparing findings or a statement of overriding considerations, if necessary. Similarly, NEPA regulations require that an EA discuss the need for the Action (40 Code of Federal Regulations [CFR] §1508.9(b)).

1.4.1 Project Purpose and Need

LADWP supplied approximately 197 billion gallons (604,570 acre-feet) of water annually to the City's 676,000 residential and business services over the five-year period from 2007 to 2011 (LADWP, 2015). The dependability of the water supply has significantly contributed towards the tremendous growth and development of Los Angeles. While conservation efforts reduce water demand, the increasing population of the City has led to an increase in aggregate water demand. Southern California's growing economy, ideal location, and climate induces a constant influx of new residents, adding to the increasing demand for water. The City's population is estimated to grow to more than 4.4 million people, and water demand to increase to 711,000 acre-feet by the year 2035 (LADWP, 2011). Therefore, a new dam that provides seismic reliability and ensures the continuing function of the LAA system is pertinent to maintaining adequate water supplies to the City.

The fundamental purpose of the Proposed Project is to improve the seismic reliability of NHR through construction of a new dam, NHD2, to the north of NHD, in order to maintain the function of an essential water conveyance infrastructure component for the City, as well as to protect local populations from a hazardous flooding event. The proposed NHD2 would serve to improve the seismic reliability of NHR in the event the existing Dam is damaged or breached by an earthquake event, thereby ensuring public health and safety and securing the City's water source.

1.4.2 Project Objectives

Specific objectives related to the fundamental purpose of the Project to improve the seismic reliability of NHR include the following:

- Preventing an uncontrolled release of water from NHR when NHD is subjected to an MCE event, thereby ensuring public safety;
- Complying with DSOD mandates for action to improve the seismic reliability of NHR;
- Maintaining a reliable water supply to the City;
- Meeting the operational needs of NHR and the LAA; and
- Providing minimal disruption to reservoir operations during construction.

1.4.3 Federal Need for the Project

In accordance with the Federal Lands Policy and Management Act of 1976 (FLPMA) (Section 102(a)(7), 43 United States Code [U.S.C.] §1701(a)(7)), public lands are to be managed for multiple uses that take into account the needs of future generations for renewable and non-renewable resources. The Secretary of the Interior is authorized to grant right-of-ways (ROWs) on public lands for the impoundment, storage, transportation, or distribution of water (Section 501(a)(1), 43 U.S.C. §1761(a)(1)).

A FLPMA ROW application request was submitted by the Applicant (LADWP) to construct, operate, maintain, and decommission a segment of the LAA on public lands administered by BLM, in compliance with FLPMA, BLM ROW regulations, and other applicable federal laws and policies. LADWP requested that BLM issue a ROW grant to allow construction, operation, maintenance, and decommissioning of a portion of the LAA, use of materials from the LAA Excavation Area to construct NHD2, and use of the grading and staging area to the east of the LAA Realignment; and issue a ROW grant for the temporary use and permanent improvement of haul routes and permanent improvement of an access road from US-395 to the LAA. BLM's need is to determine whether to issue the requested ROW grants, as requested, or with modifications, or to not issue the ROW grants.

1.5 Federal, State, and Local Actions and Required Permits

1.5.1 Responsible and Trustee Agencies

Several agencies have special roles with respect to the Proposed Project and may use this EIR/EA as the basis for their decisions to issue approvals and/or permits that might be required. Section 15381 of the CEQA Guidelines defines a responsible agency as:

> "…a public agency which proposes to carry out or approve a project, for which a Lead Agency is preparing or has prepared an EIR or Negative Declaration. For the purpose of CEQA, the term 'Responsible Agency' includes all public agencies other than the Lead Agency which have discretionary approval power over the project."

Additionally, Section 15386 of the CEQA Guidelines defines a trustee agency as:

> "…a state agency having jurisdiction by law over natural resources affected by a project which are held in trust for the people of the State of California."

The environmental documentation for the Proposed Project would be used to facilitate compliance with federal and state laws, as well as granting permits by various state and local agencies having jurisdiction over one or more aspects of the Project. Responsible and trustee federal, state, and local agencies that may rely on this EIR/EA in a review capacity or as a basis for issuance of a permit for the recommended plan or for related actions are listed in Table 1-2.

TABLE 1-2
SUMMARY OF REQUIRED PERMITS, APPROVALS, AND ACTIONS

Agency	Permits and Approvals
Federal	
BLM	Issuance of Decision Record for Final EA, verifying that the Final EA and Finding of No Significant Impact (FONSI) were prepared in accordance with NEPA, Council on Environmental Quality (CEQ), and other applicable codes and guidelines
	ROW grant (SF299) for the realignment of the LAA, including diversion structure, LAA Excavation Area, and grading and staging areas to the east of the LAA Realignment
	ROW grant (SF299) for the construction and improvement of haul routes and access road
Advisory Council on Historic Preservation (ACHP)	Section 106 Consultation and Memorandum of Agreement (MOA) to resolve adverse effects to cultural resources
U.S. Fish and Wildlife Service (USFWS)	Biological Opinion (on Biological Assessment as part of NEPA process)
State	
DSOD	Approval of NHD2 Design
	Certificate of Approval issued upon a finding that NHD2 and the enlarged NHR are safe to impound water at the unassisted maximum elevation of up to 3,760 feet
California Department of Fish and Wildlife (CDFW)	2081 Mohave Ground Squirrel Incidental Take Permit
	2081 Consistency with Biological Opinion and Habitat Conservation Plan
California Department of Transportation (Caltrans)	Potential coordination/ permits (on US-395) for traffic control, if required
California State Historic Preservation Officer (SHPO)	Section 106 consultation and Memorandum of Agreement (MOA) to minimize or mitigate significant impacts to cultural resources
State Water Resources Control Board (SWRCB)	Stormwater General Construction Permit for construction activities

TABLE 1-2
SUMMARY OF REQUIRED PERMITS, APPROVALS, AND ACTIONS

Agency	Permits and Approvals
Regional and Local	
LADWP	Recommendation by the LADWP Board of Commissioners for approval by the City Council that the Draft EIR was prepared in accordance with CEQA and other applicable codes and guidelines
	Recommendation of a Build Alternative by the LADWP Board of Commissioners for approval by the City Council
Inyo County Planning Department & Planning Commission	Permit for the realignment of Cactus Flats Road
	Conditional Use Permit (CUP) to excavate the LAA Excavation Area
Inyo County Department of Public Works	Encroachment permit and Dedication for construction of Cactus Flats Road Realignment, including connection with existing Cactus Flats Road
	Grading permit for Cactus Flats Road Realignment
	Relinquishment for a portion of existing Cactus Flats Road to be removed from public use
Inyo County Environmental Health Services	Abandonment of existing monitoring/observation wells under NHD2 and basin
Lahontan Regional Water Resources Quality Control Board (Lahontan)	Section 401 Water Quality Certification and Waste Discharge Requirements
	Dewatering Permit for construction of NHD2 foundation and for other Proposed Project construction, if needed
	Timber Waiver, if needed

Note: Permit details will be refined and finalized through the agency coordination process.

1.5.2 Reviewing Agencies

The following is a list of reviewing agencies for the Proposed Project.

- ACHP
- USACE
- USFWS
- DSOD
- CDFW
- California Department of Forestry and Fire Protection (CAL FIRE)
- Caltrans
- SHPO
- SWRCB
- Lahontan Regional Water Quality Control Board (RWQCB)
- Inyo County Planning Department
- Inyo County Sheriff's Office
- Inyo County Fire Department
- Inyo County Department of Public Works
- Inyo County Water District
- Inyo County Environmental Health Services

1.6 Scope and Content of the EIR/EA

The scope of analysis and content for this EIR/EA was established based on the nature of the Proposed Project, Appendix G of the CEQA Guidelines, BLM's standard NEPA practices, and comments received during the Notice of Preparation (NOP) review process for the Project.

Impacts to the following resources may be potentially significant and, therefore, are evaluated in this EIR/EA. These issues are discussed by resource area in Chapter 3.

- Aesthetics
- Agricultural and Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Environmental Justice
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology, Water Quality, and Groundwater
- Land Use and Planning
- Mineral Resources
- Noise and Vibration
- Population and Housing
- Public Services and Recreation
- Safety and Security
- Transportation and Traffic
- Tribal Cultural Resources
- Utilities and Service Systems

1.6.1 CEQA EIR

Under CEQA, as amended (Public Resources Code [PRC] Section 21080(a)), an environmental review document must be prepared, reviewed, and certified by the decision-making body before action is taken on a non-exempt discretionary project proposed to be carried out or approved by a state or local public agency in California. This EIR serves as the environmental review document that evaluates the potential environmental effects associated with implementation of the Proposed Project and has been prepared pursuant to CEQA (California PRC Section 21000 et seq.) and the CEQA Guidelines (California Code of Regulations (CCR), Title 14, Section 15000 et seq.). LADWP is the lead agency responsible for preparation of this EIR in compliance with CEQA.

CEQA requires preparation of an EIR when there is substantial evidence supporting a fair argument that a proposed project may have a significant effect on the environment. The purpose of an EIR is to provide decision makers, public agencies, and the general public with an objective and informational document that fully discloses the environmental effects of a proposed project. The EIR process is intended to facilitate the evaluation of potentially significant direct, indirect, and cumulative environmental impacts of a proposed project, and to identify feasible mitigation measures and alternatives that might reduce or avoid the project's significant effects. In addition, CEQA specifically requires that an EIR identify those adverse impacts determined to remain significant after the application of mitigation measures. LADWP's Board of Commissioners will consider the conclusions of the Draft and Final EIRs, in light of the entire administrative record, before certifying the Final EIR and taking action on the Project.

1.6.2 NEPA EA

NEPA requires the preparation of an Environmental Impact Statement (EIS) for all "major Federal actions significantly affecting the quality of the human environment" (42 U.S.C. §4332(2)(C)). Where, as here, an agency's regulations do not plainly require the preparation of an EIS for a particular type of project, the agency may first prepare an EA to determine whether the action will have a significant effect on the environment and whether an EIS must consequently be prepared (See 40 CFR Part 1501.4). If the

agency's analysis determines that the action, with or without mitigation measures, will not have a significant effect on the environment, then the agency may issue a Finding of No Significant Impact (FONSI) in lieu of preparing an EIS (40 CFR Parts 1501.4 and 1508.9). The FONSI must be accompanied by "'a convincing statement of reasons' to explain why a project's impacts are insignificant" (*Blue Mountains Biodiversity Project*, 161 F.3d 1208, 1212 [9th Cir. 1998], *cert den*., 1999 U.S. LEXIS 4045 [1999]).

Identifying a significant effect on the environment involves consideration of the context and intensity of the proposed project. Agencies consider context (whether it be "society as a whole (human, national), the affected region, the affected interests, [or] and the [affected] locality") because "[s]ignificance varies with the setting of the proposed action" (40 CFR Part 1508.27[a]). To evaluate intensity, agencies consider the factors listed in 40 CFR 1508.27(b)(1)-(10):

- Impacts that may be both beneficial or adverse;
- Public health and safety;
- Unique characteristics of the geographic area;
- Degree to which effects are likely to be highly controversial;
- Degree to which effects are highly uncertain or involve unique or unknown risks;
- Consideration of whether the action may establish a precedent for future actions with significant effects;
- Consideration of whether the action is related to other actions with cumulatively significant impacts;
- Scientific, cultural, or historical resources, including those listed in or eligible for listing in the National Register of Historic Places;
- Threatened or endangered species and their critical habitat; and
- Any effects that threaten a violation of federal, state, or local law or requirements imposed for the protection of the environment.

The realignment of the LAA, including the associated excavation for the LAA Realignment, and construction and improvements of roads for the Proposed Project would occur partially on BLM-managed lands and trigger the need for environmental review with BLM as the NEPA lead agency. In accordance with NEPA (42 U.S.C. §4321 et seq.); Council on Environmental Quality's (CEQ's) NEPA regulations (40 CFR Parts 1500-1508); the Department of the Interior's NEPA regulations, 43 CFR Part 46; the BLM NEPA Handbook, H-1790-1; FLPMA Sections 201, 202, and 206 (43 U.S.C. §§1711, 1712, 1716); 43 CFR Part 1600); and the BLM Land Use Planning Handbook, H-1601-1, this Draft EIR/EA (1) describes the affected environment and relevant potential impacts of the Proposed Project, build alternatives, and no project alternative; (2) evaluates the direct and indirect environmental impacts that are expected to result from construction, operation, and maintenance of the Proposed Project and its alternatives, and decommissioning of a small segment of the LAA in the existing BLM ROW (CA LA 014110); (3) evaluates the indirect impacts of a non-federal connected project (NHD2); and (4) identifies and characterizes cumulative impacts that could result from the Proposed Project (and its build alternatives) in relation to other ongoing or reasonably foreseeable activities within the surrounding area. Additionally, this Draft EIR/EA presents recommended mitigation measures that, if adopted, would avoid, minimize, or mitigate the direct and indirect environmental impacts identified, and evaluates the residual impacts after mitigation. The information contained in this Draft EIR/EA will be considered by BLM in its deliberations regarding issuance of the ROW grants for the LAA Realignment and access routes, and may also be considered by other federal agencies for use in decision-making to protect, preserve, and enhance the human environment and natural ecosystems.

The specific federal actions subject to BLM's review and approval for the Proposed Project would be approval of a ROW grant for the proposed LAA Realignment, associated use of materials from the LAA Excavation Area and of the staging area to the east of the LAA Realignment; and approval of a ROW grant for the proposed access routes. Table 1-3 and Figure 1-4 highlight the portions of the Proposed Project that would be approved through BLM permits.

TABLE 1-3
DESCRIPTION OF BLM ACTIONS

Permit	Description
Right-of-Way Grant	Approval for LADWP to construct and operate 1,440 linear feet of the LAA Realignment, including the diversion structure and bridge, on BLM-managed land
	Approval for LADWP to extract earth for use as fill materials from an approximately 13.7 acre site (LAA Excavation Area) surrounding the LAA Realignment
	Approval for LADWP to use the area to the east of the LAA Realignment for grading and staging during construction of the LAA Realignment
Right-of-Way Grant	Approval for LADWP to improve existing roads; construct new roads; use existing roads for construction, including haul routes; and for access during Proposed Project operation

The Proposed Project is not subject to the Surface Mining and Reclamation Act of 1975 (see Section 3.11 Land Use). As previously discussed, the Proposed Project falls under the DRECP LUPA, which considers impacts associated with newly disturbed areas on BLM-managed lands. Figure 1-5 depicts newly disturbed areas associated with the Proposed Project on BLM-managed lands, totaling approximately 11.5 acres. The newly disturbed areas are associated with construction of the LAA Realignment, LAA Excavation Area, and improvements to existing roadways, as discussed further in Chapter 2 Project Description. This acreage is subject to revegetation activities post-construction. As part of the Proposed Project, a Topsoil Salvage and Revegetation Plan would be implemented, in which native vegetated areas subject to temporary Proposed Project disturbance would be restored to pre-project grade and allowed to revegetate. A detailed Topsoil Salvage and Revegetation Plan will be prepared for the Proposed Project and would include top soil salvage, seeding with native locally adapted species, as needed, and minimizing the spread of invasive weeds. Additional information on the Topsoil Salvage and Revegetation Plan is included in Section 3.4 Biological Resources.

1.7 Organization of this Draft EIR/EA

This Draft EIR/EA is organized as follows:

Executive Summary – The Executive Summary provides an overview of the information provided in subsequent sections. It consists of an introduction; a brief description of the Proposed Project and its alternatives; a discussion of areas of controversy and issues to be resolved; and a table that summarizes the potential environmental impacts in each environmental resource category, the significance determination for those impacts, mitigation measures, and significance after mitigation.

Chapter 1. **Introduction –** This chapter describes the purpose and need, Project objectives, and the role of NEPA and CEQA. It identifies agencies expected to use the Draft EIR/EA, permits and other discretionary actions required for the Project, related review and consultation requirements, and organization of the document.

Chapter 2. **Project Description and Alternatives –** This chapter provides detailed descriptions of the Proposed Project and its Build Alternatives evaluated in this document. Construction details, operational aspects, and relevant background information are also included, as well as a discussion of those alternatives that were withdrawn from further analysis.

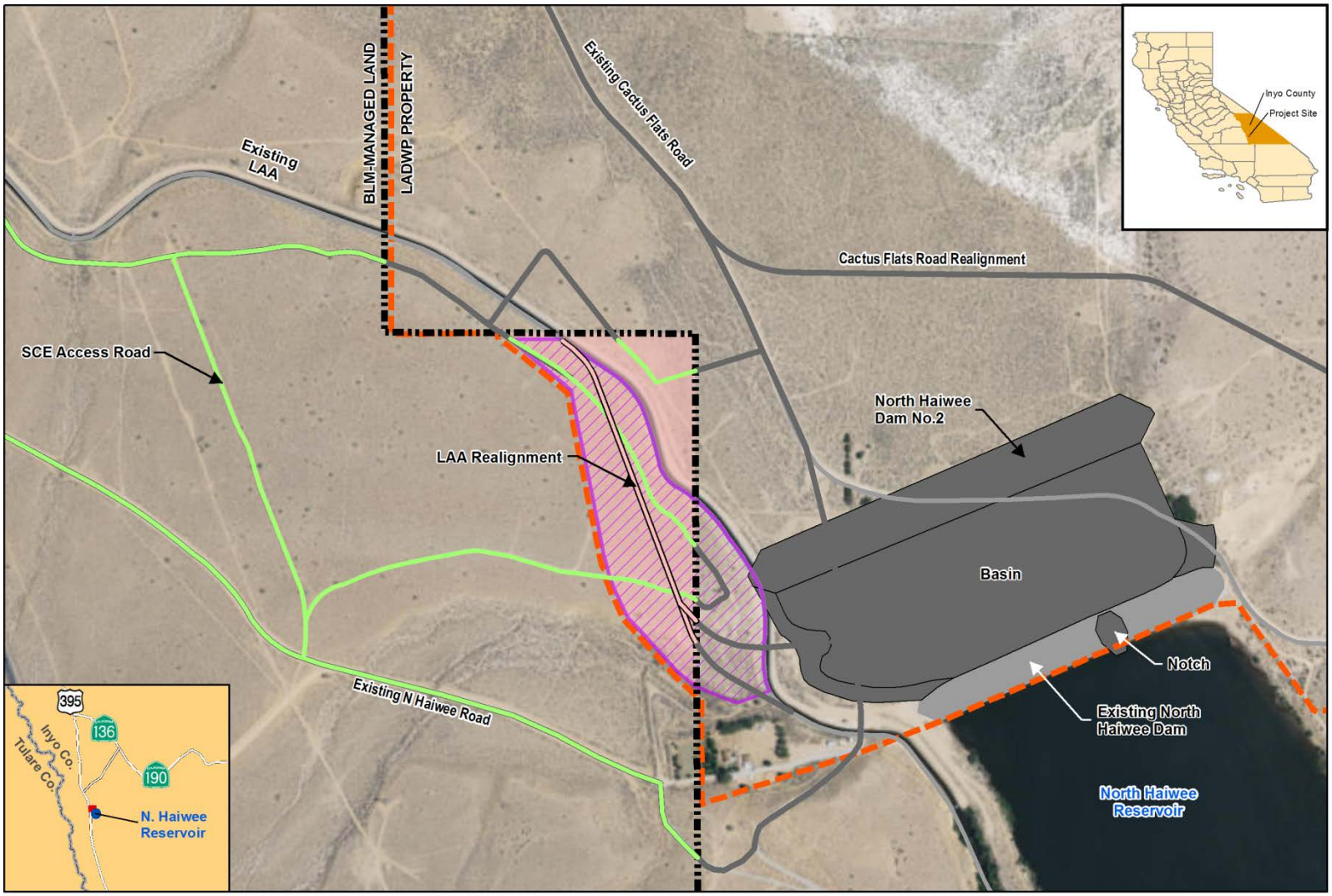


Figure 1-4
BLM Actions Within Project Area

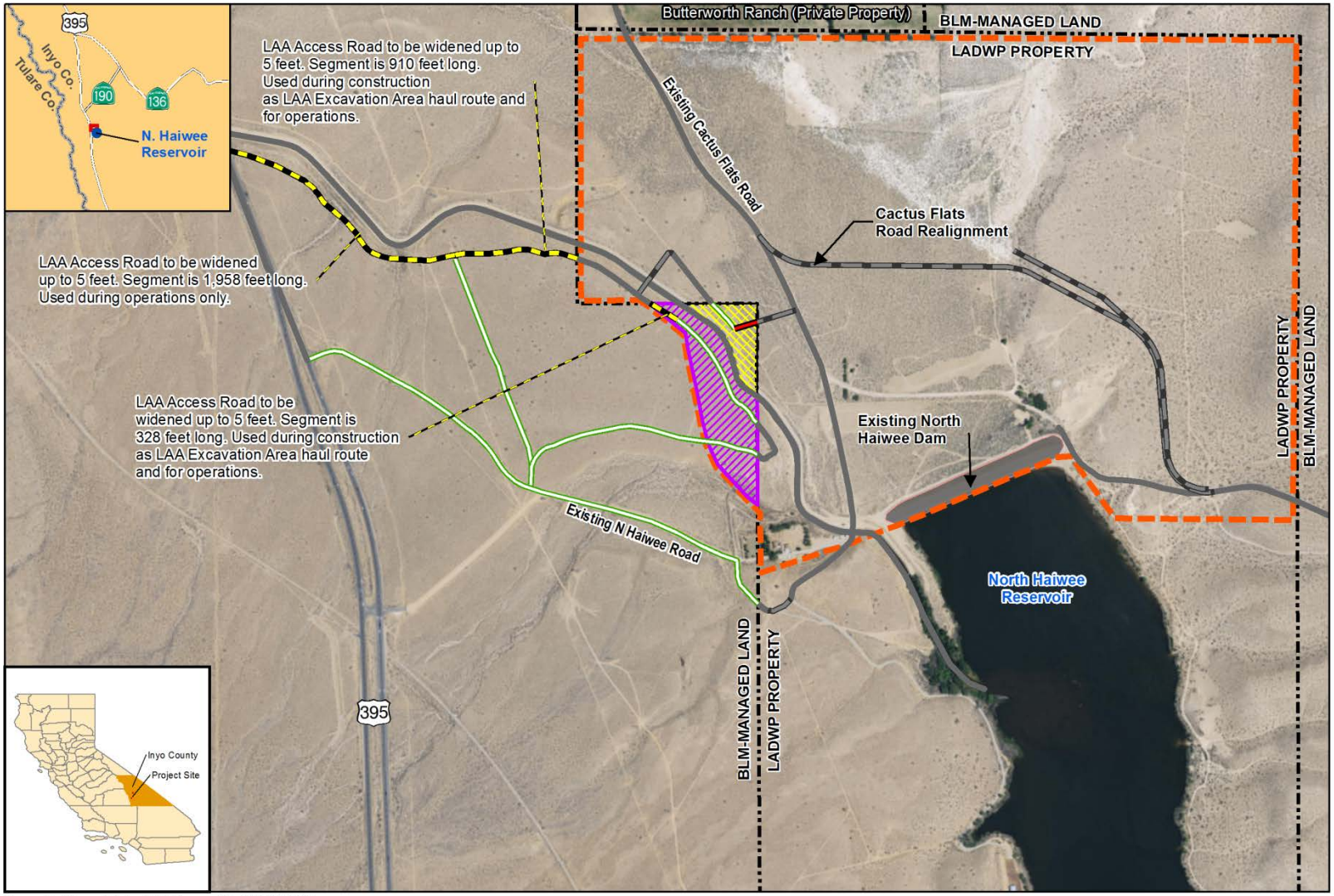


Figure 1-5
Disturbance on BLM-Managed Land

Chapter 3. Affected Environment and Environmental Consequences – For each environmental resource area, this chapter describes the environmental setting, including the baseline conditions, the regulatory setting, the criteria for judging whether an impact is significant, and the environmental consequences (direct and indirect impacts) associated with implementation of the Proposed Project and its Build Alternatives. For potentially significant impacts, applicable mitigation measures are provided that would eliminate or reduce the magnitude of significant impacts. Residual impacts (impact after mitigation) are also discussed.

Chapter 4. Other CEQA and NEPA Considerations – Analyses of significant irreversible environmental changes, growth-inducing impacts, and unavoidable significant environmental impacts (under CEQA) are provided. This section also addresses the potentially significant cumulative impacts that may result from the Proposed Project and its Build Alternatives when taking into account related or cumulative impacts resulting from other past, present, and reasonably foreseeable future projects.

Chapter 5. Coordination and Consultation – This chapter identifies persons involved with the preparation of the document and agencies/organizations consulted during the process.

Chapter 6. Acronyms, Abbreviations, and Glossary – This chapter lists, in alphabetical order, all acronyms and abbreviations used in the document.

Chapter 7. References – This chapter lists in alphabetical order the sources of information and data used in preparation of this document.

1.8 Initial Study and Scoping

In accordance with the CEQA Guidelines, a NOP of an EIR, including an Initial Study (IS) of potential environmental impacts, was prepared and distributed by LADWP on October 30, 2014, to federal, state, and local agencies, responsible and trustee agencies, local governments, private organizations, Native American tribes, and other interested parties. Copies of the NOP were provided to the Office of Planning and Research (State Clearinghouse) for issuance to state agencies. The purpose of the NOP was to provide notification that LADWP planned to prepare an EIR for the Proposed Project and to solicit input on the scope and content of the EIR. The NOP was distributed to approximately 81 agencies, organizations, and stakeholders. In addition, a mailer containing information about the public scoping meeting was sent to approximately 260 agencies, organizations, and stakeholders as well as property owners within two miles of the Project Site and within one mile of the nine proposed borrow sites included in the IS. The 45-day comment period for the IS/NOP began on October 30, 2014, and ended on December 15, 2014. The NOP was filed with the Inyo County Clerk's Office. The IS/NOP was made available at the following repositories:

- LADWP's Bishop Office (300 Mandich Street, Bishop, CA 93514)
- Lone Pine Library (corner of Washington and Bush Streets, Lone Pine, CA 93545)
- Independence Public Library (168 North Edwards Street, Independence, CA 93526)
- Big Pine Branch Library (500 South Main Street, Big Pine, California 93513)
- Bishop Branch Library (210 Academy Avenue, Bishop, California 93514)

Press releases were submitted on October 24, 2015 to the Inyo Register, The Sierra Wave, The Sierra Reader, and The Mammoth Times. In addition, the same press release was sent to KIBS/KBOV Radio and KMMT/KRHV Radio. During the public comment period, LADWP conducted a public scoping meeting on November 19, 2014, at Statham Hall (Lone Pine Senior Center) at 138 Jackson Street in Lone Pine. The purpose of the scoping meeting was to inform the public about the Proposed Project; describe

the purpose and need of the Proposed Project; provide information regarding the environmental review process; and gather public input regarding the scope and content of the Draft EIR/EA. A total of seven comments were received during the public comment period, six from agencies and organizations and one from a local resident.

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2.0 Project Description and Alternatives

2.1 Overview

This chapter examines a range of reasonable Build Alternatives that fulfill most of the basic Project objectives, while reducing the severity of potentially significant environmental impacts. The alternatives presented in this chapter derive from an engineering screening process conducted by LADWP from November 2010 through August 2016. The alternatives assessment began with consideration of potential alternatives that would meet the Project's purpose of providing sufficient seismic reliability for NHR, maintaining the function of an essential water conveyance infrastructure component for the Los Angeles region, and protecting local populations from a hazardous flooding event. As geotechnical investigations and engineering design have advanced, alternatives have been refined, modified, or eliminated. Specifically, the alternatives were analyzed in relation to the following Project objectives:

- Preventing an uncontrolled release of water from NHR when NHD is subjected to an MCE event, thereby ensuring public safety;
- Complying with DSOD mandates for action to improve the seismic reliability of NHR;
- Maintaining a reliable water supply to the City;
- Meeting the operational needs of NHR and the LAA; and
- Providing minimal disruption to reservoir operations during construction.

2.1.1 NEPA Requirements

In accordance with BLM's NEPA Handbook H-1790-1, an EA must briefly describe the alternatives to the proposed action considered, if any. The CEQ regulations (40 CFR Section [§] 1502.14) for implementing NEPA require that federal agencies:

- Rigorously explore and objectively evaluate all reasonable alternatives and, for alternatives that were eliminated from detailed study, briefly discuss the reasons for their elimination;
- Devote substantial treatment to each alternative considered in detail, including the Proposed Project, so that reviewers may evaluate the alternatives' comparative merits;
- Include reasonable alternatives within the jurisdiction of the lead agency; and
- Include the alternative of No Project.

2.1.2 CEQA Requirements

In accordance with CEQA Guidelines, alternatives to the Proposed Project have been considered to foster informed decision making and public participation. Section 15126.6 (a) of the CEQA Guidelines requires that "an EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives."

2.2 Alternatives Carried Forward for Analysis

2.2.1 Build Alternatives – Cement Deep Soil Mixing Alternative and Excavate and Recompact Alternative

This EIR/EA includes the evaluation of two Build Alternatives, the Cement Deep Soil Mixing (CDSM) Alternative and the Excavate and Recompact Alternative, and the No Project Alternative. The CDSM Alternative is the Preferred Alternative under CEQA. Both of the Build Alternatives consist of the following four components, as shown in Table 1-1, and Figures 2-1 and 2-2:

1. Construction of NHD2 components, including construction of NHD2 and east and west berms, grading the area between NHD and NHD2 for the basin, and purchase and hauling of materials from the existing mine in Keeler;
2. Realignment of Cactus Flats Road;
3. Realignment of the LAA, which includes excavation of various materials (gravel and sand) in the LAA Excavation Area for the construction of NHD2, and construction of the diversion structure and temporary bridge; and
4. Construction of the diversion channel and NHD modifications.

The ground beneath the proposed NHD2 footprint requires improvements in order to treat potentially liquefiable soils. The Build Alternatives provide two engineering approaches to creating a foundation meeting DSOD requirements, through the removal, mixing, and replacement of soil, followed by either the recompaction of soil (under the Excavate and Recompact Alternative) or cement deep soil mixing (under the CDSM Alternative) in order to strengthen the existing ground. These alternatives differ in terms of materials, equipment, truck trips, dewatering, and other construction efforts required, which are described in detail in Section 2.4. The element differentiating between the two Build Alternatives is the method of construction of the foundation of NHD2, which affects the timeline and construction efforts of the NHD2 components, LAA Excavation Area, and use of the existing mine in Keeler. Construction of the diversion channel and NHD modifications would be the same under both the Build Alternatives, except for the timelines.

Cactus Flats Road Realignment

Construction of NHD2 would intersect the existing Cactus Flats Road, as shown in Figure 2-1. Cactus Flats Road is not a primary roadway, but it is used mainly by mining vehicles traveling to and from local mining sites, as well as by LADWP personnel and other motorists. As shown in Figure 2-1, the existing Cactus Flats Road would need to be realigned to accommodate the new Dam; therefore, the realignment of Cactus Flats Road would be required in order to maintain access for this public road (Cactus Flats Road Realignment). The Cactus Flats Road Realignment would occur on LADWP-owned land only.

The Cactus Flats Road Realignment would have an approximate length of 4,413 feet and width of 28 feet, a grade of up to ten percent, and would incorporate compacted base material along the roadway and drainage system. The new road profile would range from several inches above ground level to a maximum height of 18 feet above ground level. Approximately 2,700 feet of the Cactus Flats Road Realignment where the road traverses a slope would be paved with asphalt. A 710-foot long portion of existing access road which travels north-south on the Project Site would also be realigned to intersect with the Cactus Flats Road Realignment (Figure 2-3). The realigned access road would remain a dirt road, as under existing conditions. For drainage purposes, a four-foot wide ditch, approximately 2,500 feet long, would be constructed just north of the Cactus Flats Road Realignment (Figure 2-3). In addition, two two-foot by four-foot concrete culverts would be constructed within the Cactus Flats Road Realignment embankment. The existing Cactus Flats Road would not be demolished, except where the new Dam and basin would be located. The remaining portions of the existing road would be retained by LADWP to provide access to the dam structures.

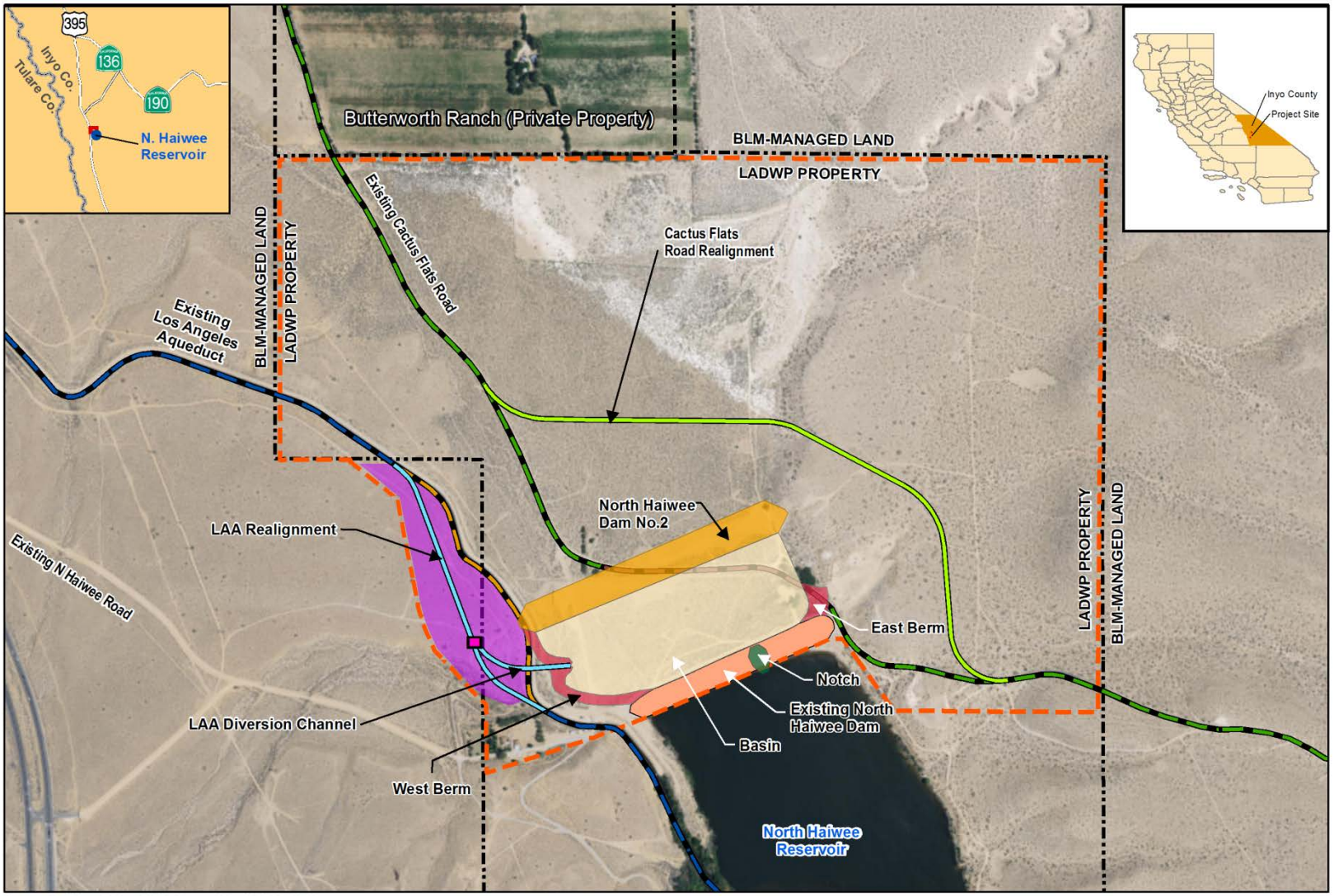


Figure 2-1

Proposed Project Components at Project Site

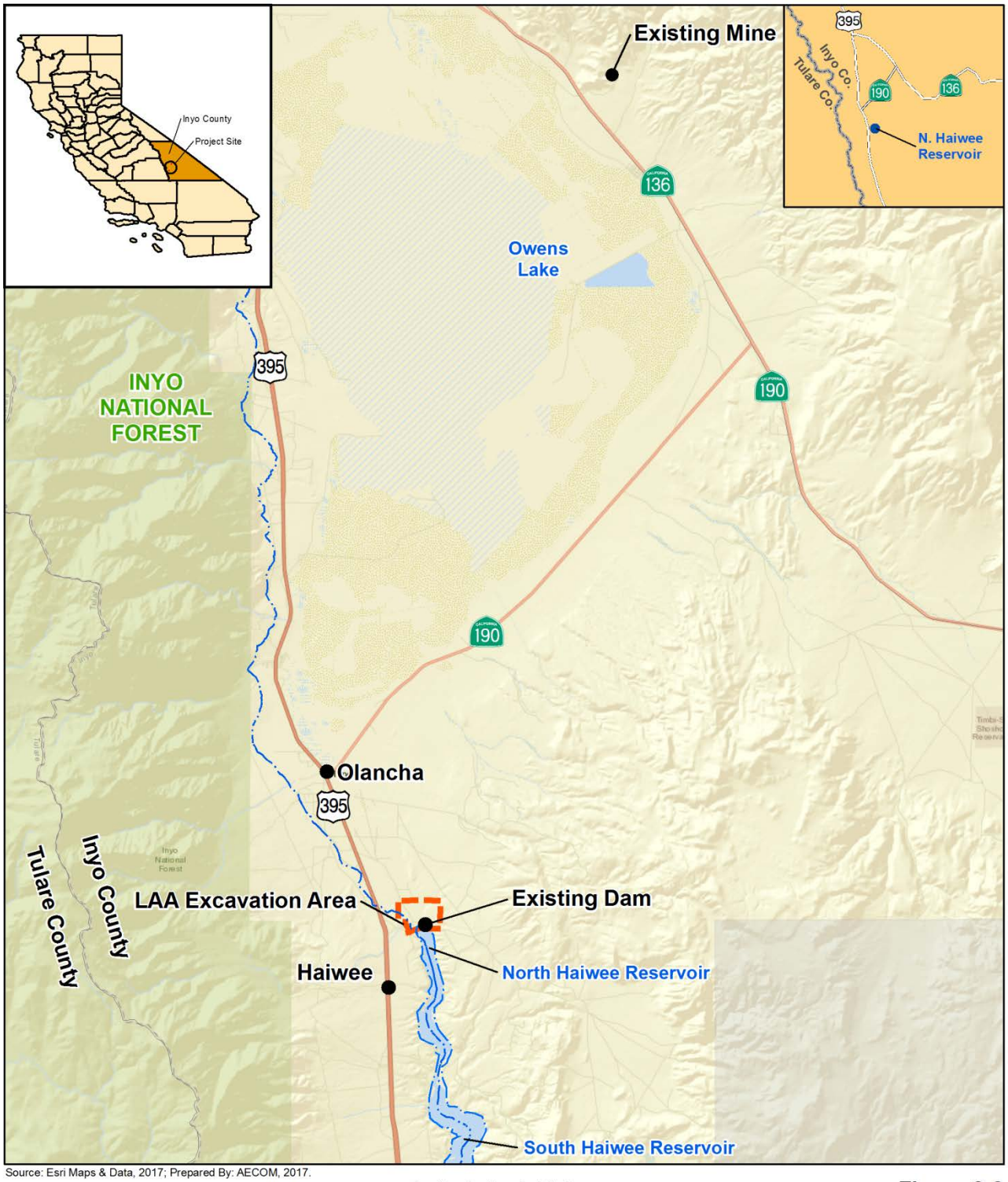


Figure 2-2

Proposed Sites for NHD2 Construction Materials

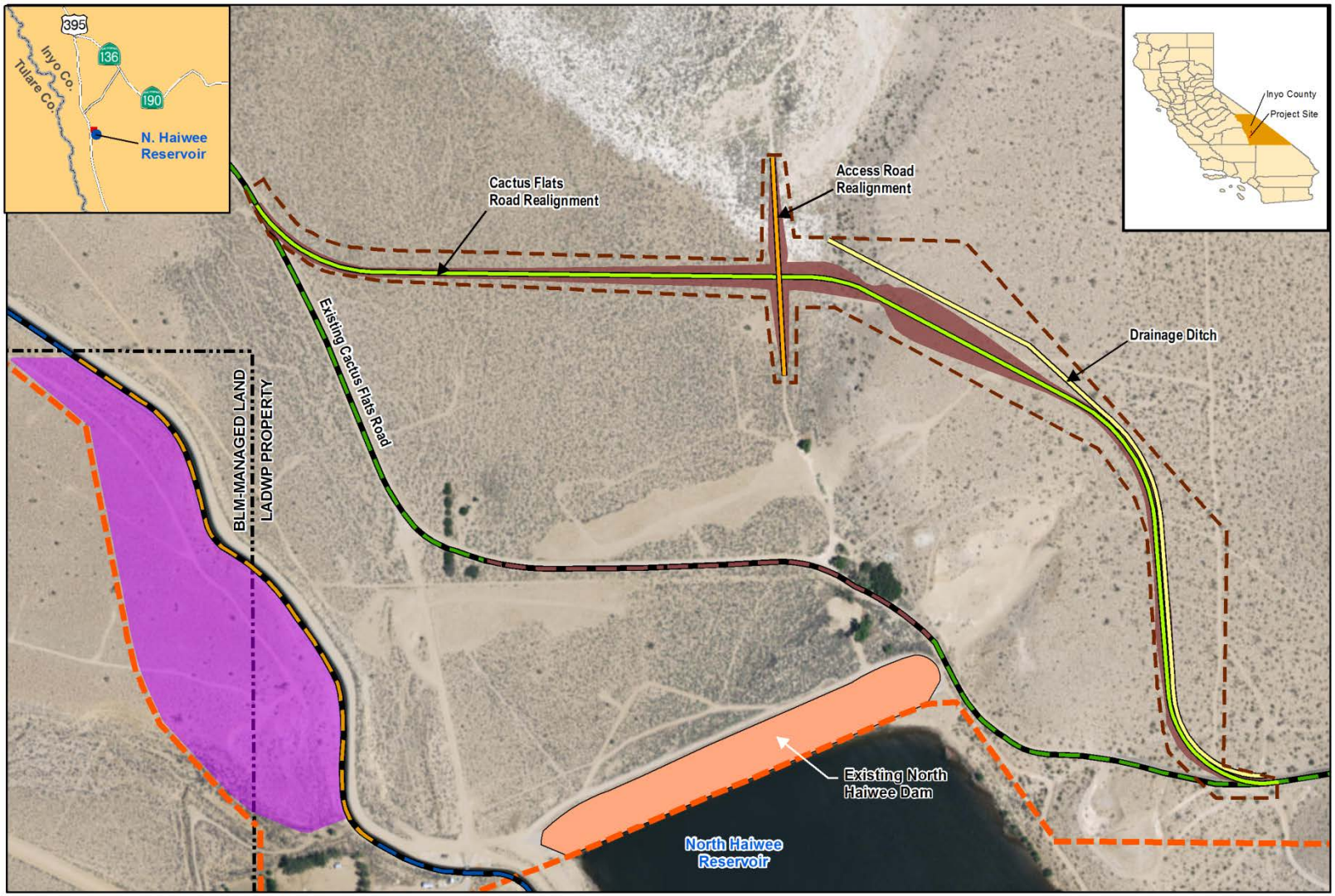


Figure 2-3

Cactus Flats Road Realignment Detail

The existing Cactus Flats Road would remain in place and would only be demolished where the new Dam and basin would be located. The remaining portions of the existing road would be retained by LADWP to provide access to the dam structures.

Cactus Flats Road is under the jurisdiction of Inyo County and would require an encroachment permit for the existing Cactus Flats Road and a grading permit for the Cactus Flats Road Realignment. Inyo County would relinquish a portion of the existing Cactus Flats Road to LADWP for the construction of NHD2; in turn, LADWP would grant a ROW permit to Inyo County for the Cactus Flats Road Realignment.

The location of the Cactus Flats Road Realignment is based on engineering restrictions and LADWP land ownership. Closing the road was not considered a viable option as it is the only east-west route in this area and is used by the general public. Therefore, there are no other build alternatives for the Cactus Flats Road Realignment presented for further analysis.

Los Angeles Aqueduct Realignment

The existing LAA is an open flow channel with continuous water flows. The westerly abutment of NHD2 would encroach upon a portion of the existing LAA. The realignment of the LAA is required for the construction of NHD2 since the footprint of the new Dam would be physically in the same location as a segment of the existing LAA. As shown in Figure 2-1, in order to construct NHD2 and maintain operations of the LAA system, the Proposed Project includes realignment of approximately 1,900 feet of the existing LAA (LAA Realignment). The area within and around the LAA Realignment would be excavated in order to construct the LAA Realignment. Materials excavated from this area (LAA Excavation Area) are proposed as a source of silty sand for materials for the construction of the new Dam (Figures 2-1 and 2-4). The quantity of materials required from the LAA Excavation Area and the associated number of haul trucks would vary by Build Alternative, as described in Sections 2.4.3 and 2.4.4. The existing LAA and LAA Realignment are located on LADWP property and BLM-managed land (Figure 2-1). A BLM ROW grant would be required for the LAA Realignment.

The cross section of the LAA Realignment would closely match the existing LAA's cross section, and would consist of a trapezoidal concrete channel, with an approximate width of 32 to 35 feet and approximate depth of 12 to 15 feet. The concrete liner would be approximately six to 10 inches thick with steel reinforcement. Along both sides of the LAA Realignment, 20-foot wide unpaved access roads would be constructed. These roads would be connected to the existing access road across BLM land which connects the LAA to US-395. This road would be widened by up to five feet, and would be extended by up to 200 feet to connect with the new LAA Realignment access roads. Where possible, side casting would be avoided for construction of these access roads. In total, the US-395 access road for the LAA Realignment would be approximately 3,800 feet long, including the existing roadway and proposed extension (Figure 2-4). A BLM ROW grant would be required for the construction and operation of access roads on BLM-managed lands.

Once the LAA Realignment is constructed, the flow of water through the existing LAA would be halted temporarily to connect the newly built segment to the existing LAA. Construction of the LAA Realignment would include installation of a diversion structure. A bridge would be constructed adjacent to the diversion structure, and would provide access across the diversion channel (discussed below). After the LAA is reconnected, the obsolete existing LAA segment would be demolished and backfilled. Soil from the LAA Realignment excavation would be used as building material for NHD2.

The exact location of the LAA Realignment is based on engineering restrictions related to water flow rates as the LAA is completely gravity-driven in this area, as well as the amount of soil needed to construct the new Dam. Therefore, there are no other alternatives for the LAA Realignment that is presented for further analysis.

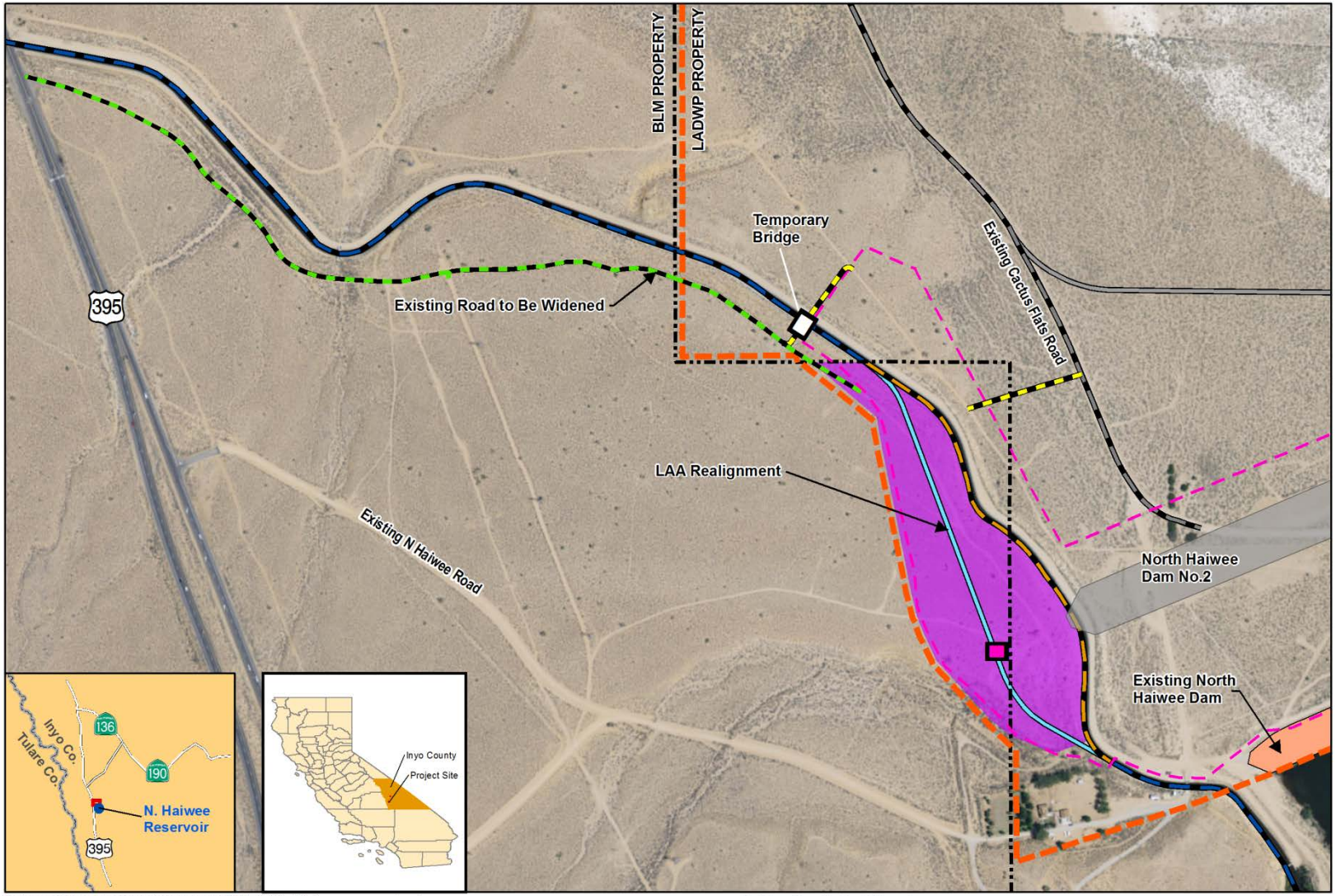


Figure 2-4
LAA Realignment and Excavation Detail

North Haiwee Dam No. 2

The two Build Alternatives (CDSM Alternative and Excavate and Recompact Alternative) would construct NHD2, but would use different methods to construct a seismically sound foundation for the new Dam. These construction methods are described in detail in Section 2.4.1. The following description of NHD2 is pertinent to both Build Alternatives.

NHD2 would be constructed on LADWP property north of NHD. NHD2's axis would be located approximately 800 feet north and roughly parallel to the existing Dam's axis. Figure 2-1 shows the new Dam's location relative to the location of the existing Dam. NHD2 would be a zoned earthen embankment dam (an embankment dam comprised of shell, core, filter, and drain materials) based on design specifications, and the type of fill materials available. Seepage control would be provided by the core, filter, and drain zones. The proposed location of NHD2 provides a basin and a new accessible length of aqueduct channel between NHD and NHD2, which may be utilized for water quality and sediment management purposes. NHD2 would be constructed to comply with DSOD's mandate and to meet the operational requirements of NHR, and it would be designed to retain water contained in NHR in the event of failure of NHD. The preliminary design parameters for NHD2 are listed in Table 2-1.

TABLE 2-1
EXISTING AND PROPOSED DAM DESIGN PARAMETERS

Design Component	NHD	NHD2
Crest Elevation (approximate)[a]	3,768 feet[b]	3,770 feet[b]
Crest Width	70 feet	30 feet
Average Crest Height	25 feet[c]	28 feet[c]
Maximum Crest Height	30 to 34 feet[c]	35 feet[c]
Dam Length	1,500 feet	1,900 feet
Base Width[d]	300 feet	288 feet
Embankment Upstream Slope	3 Horizontal:1 Vertical	3 Horizontal:1 Vertical
Embankment Downstream Slope	2.5 Horizontal:1 Vertical	3 Horizontal:1 Vertical
Unassisted Maximum Elevation	3,760[b] feet (10,927 AF)	3,760 feet[b]
Assisted Maximum Elevation	3,764 feet[b] (14,000 AF)	3,764 feet[b]
Depth of Foundation Excavation	14 feet[e]	15 feet to 30 feet[f]

Notes:
[a] Crest elevation – the elevation of the uppermost surface of a dam (NGVD29)
[b] Referenced to NGVD29
[c] Above existing ground surface
[d] Base width is measured at the base of the dam underground, not at ground level.
[e] Foundation of existing Dam is cutoff trench, which is only present under 800 feet of NHD's 1,500-foot length
[f] The CDSM Alternative would require excavation to 15 feet bgs, with CDSM columns extending 55 to 80 feet bgs. The Excavate and Recompact Alternative would require excavation to 30 feet bgs.

The bottom of the basin would be graded during earthwork for NHD2 to create a level bottom at an approximate elevation of 3,745 feet (25 feet below the crest of NHD2). The east and west berms would be constructed at the same time. The east and west berms would be constructed to contain water within the basin. The berms would ensure that water from NHR would be retained within the basin area once NHD2 is completed, as the berms would prevent water from flowing out of the basin to the west and east. In addition, once all construction and approvals are completed for all Proposed Project components (including the DSOD Certificate of Approval for filling the basin), the berms would contain water within the basin area during regular operations of the basin. The berms are necessary at these specific locations in order to prevent water from flooding areas outside the basin. The location of the basin and berms, along with NHD2, are depicted in Figure 2-5.

Figure 2-5
NHD2 Components Detail

The existing mine in Keeler would be utilized during the construction of NHD2. The existing mine is an active dolomite mine owned by F.W. Aggregate Inc, and is proposed as a source of riprap and gravel materials for the new Dam. As described above, Proposed Project activities would be limited to the purchase and hauling of riprap and gravel from the existing mine. The quantity of materials required from the existing mine and the associated number of haul trucks would be the same for both Build Alternatives, as described in Sections 2.4.3 and 2.4.4. As the existing mine is a commercial mining operation, it is not considered part of the environmental analysis in this EIR/EA. However, the truck haul routes associated with transporting construction materials to/from the existing mine are part of the environmental analysis, particularly air quality, noise, and traffic.

Diversion Channel and NHD Modifications

The diversion channel would convey water from the newly aligned LAA through the diversion structure into the basin. The diversion channel would be approximately 675 feet long. A notch would be cut into the existing NHD to connect the basin and NHR, allowing water to flow from the basin into NHR (Figure 2-6).

LADWP proposes to temporarily lower the water elevation in NHR to below 3,750 feet above sea level (asl) in order to construct the notch in NHD. The lowering of NHR would require the implementation of a temporary operations plan for NHR and South Haiwee Reservoir, as well as the LAA system, during construction. However, NHR and the LAA system would remain in service as flow rates in and out of NHR could be adjusted to maintain the lower water elevation. Should water need to be pumped out of NHR (rather than gravity-fed, due to lower water levels), the existing pump at Merritt Spillway could be utilized. The notch would be constructed through mechanical excavation and then reinforced with concrete.

Slope protection for NHD would be implemented, including the removal of one to two feet of soil on the downstream face of NHD followed by installation of measures to protect the slope. In addition, a geomembrane would be installed on the bottom of the basin to minimize erosion and water quality issues once the basin is filled.

Upon completion of NHD2, the diversion channel and notch would match the design parameters for the LAA Realignment, allowing the basin to handle the LAA system's maximum flow rate of 900 cubic feet per second. The basin would not be filled with water until all of the construction activities described above are completed. Upon completion of construction, water would be diverted into the basin in order to test the performance of NHD2, and upon completion of testing, the basin would operate as a permanent part of NHR.

2.2.2 No Project Alternative

The CEQA Guidelines Section 15126.6(e) requires that an EIR describe and analyze current environmental conditions as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans. The No Project Alternative is also required to be analyzed under NEPA (40 CFR 1502.14(d)).

Under the No Project Alternative, the Proposed Project would not be implemented in any manner. NHD2 would not be constructed. The existing Dam would remain as-is, and NHR would operate at the levels required by DSOD. No berms would be constructed and no grading would occur in the basin area, and the area north of NHD would remain dry as under existing conditions. No modifications would be made to the existing Dam. However, as it is known that there could be a catastrophic failure of the existing Dam during an MCE, it is possible that DSOD could place further restrictions on the use of NHR.

Under the No Project Alternative, the LAA would not need realignment and Cactus Flats Road would similarly remain as-is since NHD2 would not be constructed. Furthermore, no diversion structure or channel would be constructed. Operation of the LAA and Cactus Flats Road would continue as they do

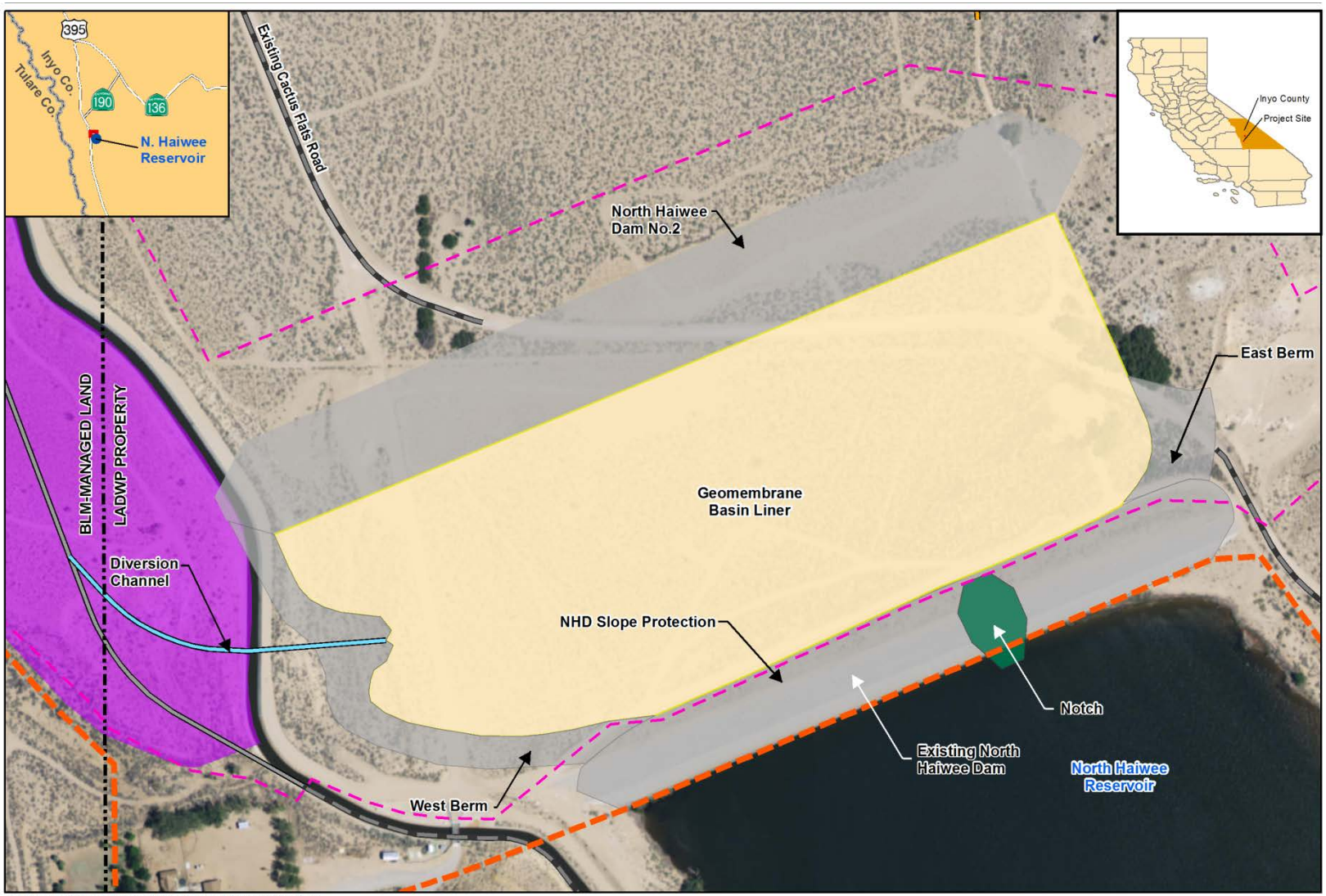


Figure 2-6
NHD Modifications and Diversion Channel Detail

today, along with minor repairs and typical maintenance that would progress regardless of Proposed Project implementation.

Under the No Project Alternative, NHD2 would not be constructed, so no materials from the LAA Excavation Area or existing mine in Keeler would be needed. The existing mine is an operational mine, and mining operations would continue as they do today under the No Project Alternative.

2.3 Alternatives Considered and Withdrawn from Further Analysis

2.3.1 North Haiwee Dam Alternatives

LADWP analyzed five alternatives for retrofitting, replacing, or otherwise providing seismic backup for NHD and only deemed one alternative feasible for more detailed evaluation: the Proposed Project, which includes the construction of a zoned earthen embankment dam, NHD2, to the north of the existing Dam to improve the seismic reliability of NHR in the event the existing Dam is damaged by an earthquake event. Based on the feasible alternative of construction of NHD2, LADWP has developed two Build Alternatives, which provide two methods for constructing a seismically stable, non-clay core NHD2. The two Build Alternatives carried forward for analysis in this EIR/EA are the CDSM Alternative and the Excavate and Recompact Alternative. Descriptions of the alternatives withdrawn from further consideration are discussed below.

Construct a Permanent Cofferdam and Retrofit the Existing Dam

This alternative would retrofit the existing Dam by constructing a new permanent cofferdam and an earthfill buttress to reinforce the existing Dam. The cofferdam would be constructed south of the existing Dam to retain water in a portion of the existing NHR. The earthfill buttress would be constructed on the north side of the existing Dam and stone columns would be constructed along the crest and toe of the south side of NHD to reinforce the existing embankment, thereby reducing the potential for liquefaction by allowing water to drain.

This alternative presented some limitations. During construction, sediment deposits in NHR would need to be dredged and treated before construction could begin. During operation, it would require continuous dewatering between the existing Dam and the cofferdam in order to keep the existing Dam dry, thereby requiring additional operation and maintenance.

During the alternatives screenings analysis, it was concluded that the retrofits to the existing Dam proposed under this alternative would not be sufficient to withstand an MCE scenario. While catastrophic failure resulting in the uncontrolled release of water would not occur, the cofferdam and south side of the existing Dam would sustain damages that would require major repairs, taking NHR out of service for approximately one year while repairs were underway. This would leave the City with no reliable water source during the one-year repair period. Therefore, this alternative would not fulfill the Project's fundamental purpose or objectives. It has been deemed infeasible and withdrawn from further consideration.

Construct a Curtain Wall and Retrofit the Existing Dam

This alternative would retrofit the existing Dam by constructing a curtain wall (a vertical wall inside NHD that would strengthen the foundation of the dam and that would lower the static water table below NHD) and an earthfill buttress to reinforce the existing Dam. The curtain wall would be constructed along the length of the existing Dam and would serve to lower the static water table beneath the existing Dam. The earthfill buttress would be constructed on the north side of the existing Dam to provide reinforcement to the existing Dam.

Similar to the cofferdam alternative, it was concluded that the retrofits to the existing Dam proposed under this alternative would not be sufficient to withstand an MCE scenario. While dam failure would not occur, the reinforced NHD would sustain damages that would require major repairs, taking NHR out of service for approximately one year while repairs were underway. This would leave the City with no reliable water source during the one-year repair period. Therefore, this alternative would not fulfill the Project's fundamental purpose or objectives. It has been deemed infeasible and withdrawn from further consideration.

Remove and Replace the Existing Dam

This alternative would involve removing the existing Dam and replacing it with a new earthfill dam at the same location. In order to take the existing Dam offline, a temporary cofferdam would be constructed to the south of the existing Dam to retain the existing water in a portion of NHR. Water would not be allowed to enter the reservoir after construction of the cofferdam. The existing Dam would be removed and reconstructed to meet updated seismic design standards and requirements. After completion of the new Dam, the cofferdam would be removed. Sediment deposits in NHR would need to be dredged and treated before construction could begin.

During the alternatives screenings analysis, it was concluded that this alternative would require NHR to be out of service for an extended period of time during construction of the new earthfill dam. This would leave the City with a significantly reduced water source during the multi-year construction period. Therefore, this alternative would not fulfill the Project's fundamental purpose or objectives. It has been deemed infeasible and withdrawn from further consideration.

Construction of a Clay Core Dam

This alternative would involve construction of NHD2, along with the realignments of the LAA and Cactus Flats Road, similar to the Proposed Project. However, NHD2 would be constructed with a clay core design, in order to prevent seepage and improve the permeability of the dam. Construction would require excavation of clay materials from a borrow site providing suitable materials. Further engineering evaluation of this process determined that construction of a clay core would be infeasible due to the extremely high costs of material excavation, processing, handling, and transportation. The Proposed Project's NHD2 design, a zoned embankment, silty sand core dam, provides all the same functions as a clay core dam without the material excavation complications, and is therefore a more feasible design alternative. The clay core dam alternative would meet the Proposed Project's fundamental purpose and objectives, but it would be infeasible from a fiscal perspective. Therefore, this alternative has been deemed infeasible and has been withdrawn from consideration.

2.3.2 Alternatives for NHD2 Construction Materials

During the preliminary planning and engineering process of the Proposed Project, 24 sites were identified as potentially having materials that could be used for construction of NHD2. Following the environmental review conducted as part of the alternatives screening analysis, 22 of the 24 proposed sites were no longer considered feasible candidates for providing construction materials based on factors such as poor material quality, access, and financial expense. Therefore, only two proposed sites are carried forward for additional analysis: the LAA Excavation Area and the existing mine in Keeler. The LAA Excavation Area is located within and around the area where excavation for and construction of the LAA Realignment would occur on both LADWP-owned land and BLM-managed land. As materials from the LAA Excavation Area may not achieve the necessary specifications or produce the required quantity of materials for construction of NHD2, materials from the existing mine in Keeler would be utilized. Activities related to the Proposed Project at the existing mine would be limited to hauling purchased materials from the active mine site.

2.4 Project Construction and Schedule

2.4.1 Construction Phasing

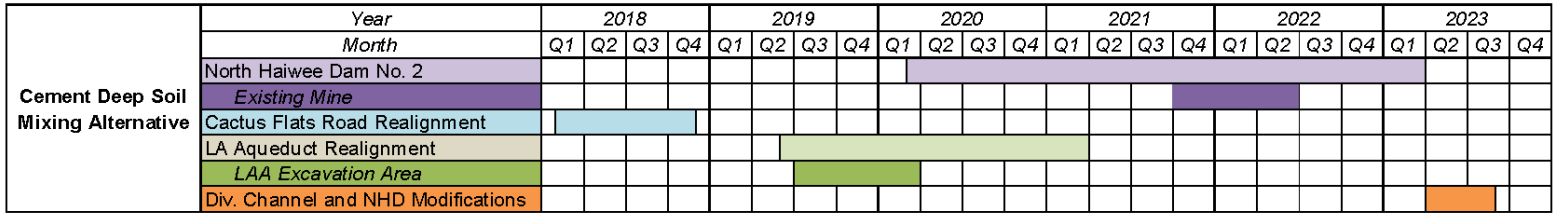
Construction of the Proposed Project would commence in February 2018. The CDSM Alternative is expected to last approximately five and a half years, ending in August 2023, and the Excavate and Recompact Alternative is expected to last approximately six and half years, ending in February 2024. Construction of the Proposed Project would occur in four phases. Typical hours for construction would be 6:30 a.m. to 4:30 p.m., and construction would occur Monday through Friday or Monday through Saturday, depending on the Proposed Project component. Under both Build Alternatives, construction would typically occur only during daytime hours but nighttime construction may occur as needed, and is discussed in Section 2.4.2, Nighttime Construction and Construction Lighting. For all grading and earth disturbing activities, the upper six to eight inches of topsoil would be salvaged for seed preservation and revegetation after Proposed Project construction is completed (additional discussion in Section 3.4, Biological Resources). Soil generated beyond this salvaged topsoil would be utilized, stored, and disposed of as described below. Figure 2-7 below shows the anticipated schedule for the construction of each component of the Proposed Project.

Preconstruction and Mobilization

Preconstruction and mobilization activities would be required prior to the main construction activities for NHD2, the LAA Realignment, the Cactus Flats Road Realignment, and the diversion channel and NHD modifications, and would include the transport of equipment to the Project Site, demarcating construction limits, and survey work. For the two Build Alternatives, the preconstruction and mobilization activities for NHD2 would require approximately 15 daily personnel and would occur prior to the initiation of construction of NHD2. Preconstruction and mobilization for the LAA Realignment and Cactus Flats Road Realignment would require approximately six and 11 daily personnel, respectively. Preconstruction and mobilization for the diversion channel and NHD modifications would require approximately seven daily personnel.

Phase 1 – Cactus Flats Road Realignment

Construction of the Cactus Flats Road Realignment would consist of several tasks. These tasks include site preparation, excavation, and grading. Initial site preparation would include selective clearing and grubbing to remove trees and plants along the path of the new road. The existing Cactus Flats Road would not be demolished, except where the new Dam and basin would be located. Demolition and closure of the existing Cactus Flats Road would not occur until the Cactus Flats Road Realignment is opened for use. The remaining portions of the existing road would be retained by LADWP to provide access to the dam structures. Debris generated as the result of the site preparation work would be temporarily stockpiled on-site and later hauled off-site for disposal. Excavation and grading would occur in a corridor ranging from 58 feet wide to 155 feet wide along the length of the Cactus Flats Road Realignment. The Cactus Flats Road Realignment would have a 28-foot ROW. The profile of the Cactus Flats Road Realignment would range from several inches above ground surface to a height of approximately 18 feet above ground surface. The Cactus Flats Road Realignment would be constructed of compacted base material for a portion of the alignment where the topography is relatively flat, and asphalt paving where the Cactus Flat Road Realignment climbs the bluff on the eastern side of the Project Site. This paved portion of the road would be approximately 2,700 feet long. Two two-foot by four-foot box culverts would be installed within the embankment of the realigned road. In addition, the 2,500-foot long four-foot wide ditch north of the Cactus Flats Road Realignment would be excavated and lined with concrete concurrent with road construction. An existing north-south access road on the Project Site, located just west of the bluffs in the



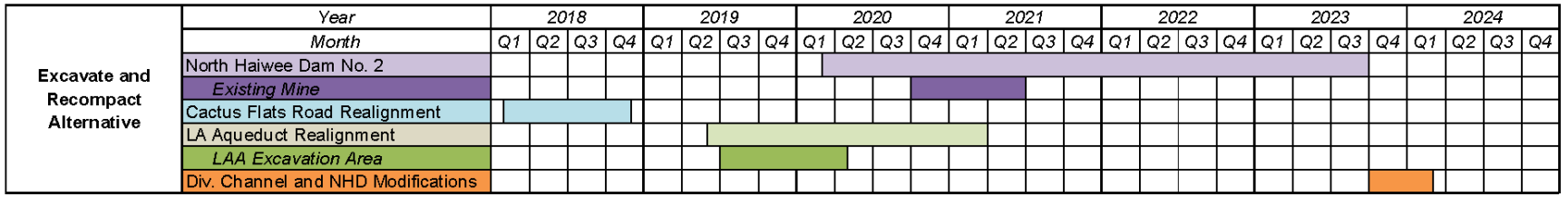


Figure 2-7 Construction Schedule by Alternative

eastern portion of the Project Site, would be realigned to intersect with the Cactus Flats Road Realignment, as shown in Figure 2-3. The proposed construction of the Cactus Flats Road Realignment is expected to occur Monday through Friday, 6:30 a.m. to 4:30 p.m. beginning in February 2018, and would last approximately ten months, ending in November 2018. Figure 2-3 above shows the details of the Cactus Flats Road Realignment.

Phase 2 – LAA Realignment

Site preparation for the LAA Realignment would require selective clearing and grubbing of the site prior to the start of excavation along the proposed alignment. Debris generated as a result of the site preparation would be temporarily stockpiled on-site and later hauled off the site for disposal.

In order to provide a haul route to bring materials to the stockpile area (described in Construction Staging and Access under Sections 2.4.3 and 2.4.4), a temporary bridge would be constructed over the existing LAA and would be removed after completion of construction. A backout would be excavated to reach the grade of the LAA Realignment, and the trapezoidal channel would then be excavated and graded along the proposed alignment for approximately 1,900 feet until reaching the northern and southern connection points with the existing LAA channel. On both sides of the LAA Realignment, 20-foot wide unpaved access roads would be constructed for maintenance. In addition, the existing access road which travels east from the US-395 to the existing LAA would be widened by up to five feet, and would be extended approximately 200 feet in order to connect with the access roads along LAA Realignment. The access roads are shown in Figure 2-4.

Under the CDSM Alternative, excavation for the LAA Excavation Area would occur over a nine month period, from July 2019 through March 2020, and would occur Monday through Saturday.

Under the Excavate and Recompact Alternative, excavation for the LAA Excavation Area would occur over a ten month period, from July 2019 through April 2020, and would occur Monday through Saturday.

Once the LAA Realignment channel is excavated, reinforcing steel and concrete forms would be placed along the channel and concrete would be poured. In addition, a diversion structure and an attached bridge would be constructed along the eastern side of the LAA Realignment, between the existing Dam and the proposed location of NHD2. The diversion structure would allow water to be diverted from the LAA Realignment to the area between NHD and NHD2, and would likely utilize a roller gate or other similarly functioning structure. Once the LAA Realignment is constructed, the flow of water through the existing LAA would be halted temporarily, in order to connect the LAA Realignment to the existing LAA, and the obsolete LAA segment would be demolished and backfilled. The construction of the LAA Realignment is expected to occur Monday through Saturday, beginning in June 2019, and would last approximately 22 months, ending in March 2021. Figure 2-4 above shows the details of the LAA Realignment.

Phase 3 – NHD2 Component Construction and Hauling of Materials from the Existing Mine in Keeler

NHD2 Construction

As described above, the Proposed Project includes two Build Alternatives which provide different methods for construction of NHD2. There are 11 existing wells in the NHD2 and basin footprints. These wells are used for monitoring and observation, and would be properly abandoned prior to construction of NHD2 and the basin components. Well abandonment would be permitted by Inyo County Environmental Health Services.

CDSM Alternative

The construction of NHD2 under the CDSM Alternative is expected to occur Monday through Saturday, beginning in March 2020, and would last approximately 37 months, ending in March 2023. The first 13 months of NHD2 construction would overlap with the completion of the LAA Realignment.

Construction of NHD2 would require several material types in order to construct the new Dam embankment. The foundation of NHD2 would be reinforced through the mixture of cement with the existing foundation soils. Material storage and the processing and blending of NHD2 fill material would occur on-site. Fill materials from the LAA Excavation Area and existing mine in Keeler would be stockpiled on-site. NHD2 would be constructed in several stages:

Excavation and Cement Deep Soil Mixing

CDSM involves the creation of soil-cement columns with large augers. As the auger drill digs, it injects cement grout and/or other admixtures into the soil to create strengthened columns in the ground. The contractor would excavate the foundation of NHD2 to 15 feet below ground surface (bgs), and would then install a grid of overlapping CDSM columns under the NHD2 footprint. Columns would be approximately three to six feet wide, and would be 55 to 80 feet bgs, depending on location. The columns would be constructed in a grid pattern under the proposed NHD2 footprint, as shown in Figure 2-8.

The CDSM Alternative would require a portable cement grout batch plant on-site to batch cement grout for the mixing rigs. Raw materials for grout would be trucked in from Bishop, CA, Mojave, CA and/or Ridgecrest, CA. CDSM activities would use 90,450 tons of cement, requiring 1,925 vehicle trips total. Deliveries would generally occur twice a week, with a maximum of ten vehicle trips per week. Cement would temporarily be stored on-site in five silos, which would be refilled during the duration of CDSM. These cement silos would be approximately 8.5 feet in diameter and 37 feet tall, and would be located in the Material Processing and Processed Material Storage Area, as described in the Section 2.4.3, CDSM Alternative Construction Details below.

Groundwater under the NHD2 foundation is approximately 25 to 30 feet bgs on the west side of the proposed NHD2 footprint and 10 to 15 feet bgs on the east side of the proposed NHD2 footprint. It is not anticipated that dewatering would be required for excavation to 15 feet bgs, but dewatering would occur if groundwater is encountered during excavation. Dewatering would consist of installing pumping wells on the south side of NHD2 foundation excavation limit, extracting approximately 700 million gallons of water total. The pumps would operate 24 hours per day, for approximately 18 months. Groundwater would be extracted, treated if necessary to meet water quality standards, and would be used for construction (i.e. dust mitigation) and/or would be discharged into the LAA or NHR. Treatment of groundwater would potentially involve a chemical precipitation process including coagulation, mixing, and filtration. Water would be treated through a portable treatment system, made up of water feed pumps, multiple dual filter systems, backwash pumps, chemical feed systems, and a central control panel. Discharge pumps would be used to transfer water to the LAA or NHR. The treatment systems would be powered by portable generators.

CDSM would also generate spoils (excess soils excavated during drilling) which would remain on-site after excavation. Spoils would constitute approximately 103,000 cubic yards (yd^3) of material, which would be used or stored within the Project Site. Spoil storage would occur within the eastern side of the existing Dam outside of the footprint of the historic borrow site for NHD and/or as a berm against the northern face of the new Dam. NHD2 would be constructed independent of this berm and would not require additional soil for stability and seismic reliability; however, the spoils material would provide a buttress for additional stability.

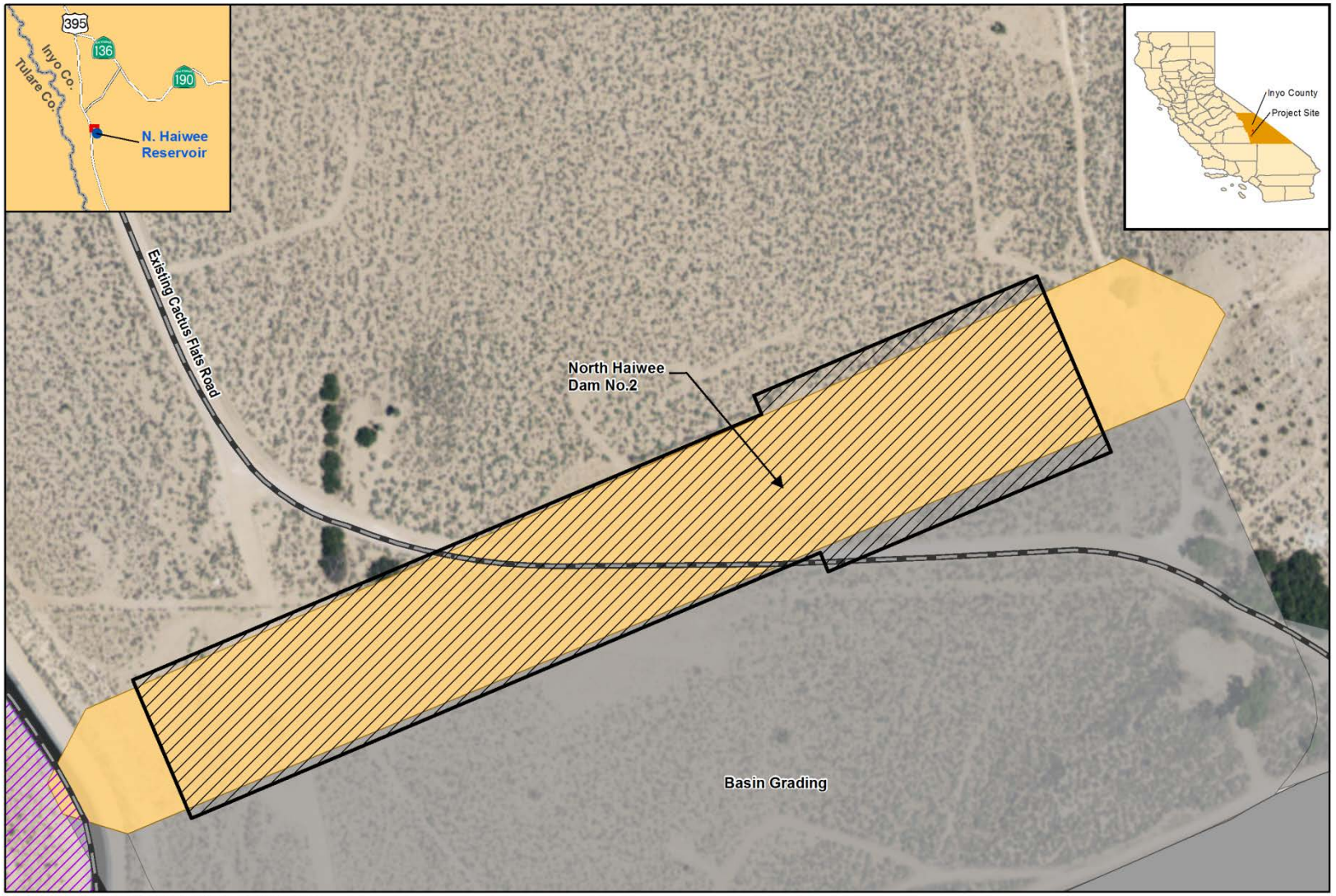


Figure 2-8
CDSM Ground Improvement Area

Embankment Construction and Grading

A combination of existing material removed from the foundation area and LAA Excavation Area, and new materials from the existing mine in Keeler, would be mixed and used to replace the 15-foot deep excavated area. This mixed material would be mechanically compacted to 95 percent relative compaction to form the base of the new Dam below the surface of the ground, creating a foundation that would not be susceptible to liquefaction and that would meet the seismic requirements of NHD2.

Once the base for NHD2 is constructed and compacted, the new Dam would be constructed on top of it. Fill material would be placed in loose level lifts across the base and subsequent layers and would be mechanically compacted to 95 percent compaction. This layering process would be continued until NHD2 is completed. After all required fill is placed and compacted, the new embankment would be graded to the finished dimensions.

Excavate and Recompact Alternative

The construction of NHD2 under the Excavate and Recompact Alternative is expected to occur Monday through Saturday, beginning in March 2020, and would last approximately 43 months, ending in September 2023. The first 13 months of NHD2 construction would overlap with the completion of the LAA Realignment. Construction of NHD2 would require several material types in order to construct the new Dam base and embankment. Material storage and the processing and blending of NHD2 fill material would occur on-site. Fill materials from the LAA Excavation Area and existing mine in Keeler would be stockpiled on-site. The new Dam would be constructed in several stages:

Earth Removal and Excavation

The earth within and adjacent to the footprint of the new Dam would be removed to a depth of approximately 30 feet in order to create a base for the new Dam. Excavated earth would remain on-site. As described under the CDSM Alternative, groundwater under the NHD2 foundation is approximately 25 to 30 feet bgs on the west side of the proposed NHD2 footprint and 10 to 15 feet bgs on the east side of the proposed NHD2 footprint. Excavation to 30 feet bgs for the Excavate and Recompact Alternative would therefore require dewatering. Dewatering wells would extract an estimated total of approximately 1.2 billion gallons of water over an 18 month period. Groundwater would be extracted, treated if necessary to meet water quality standards, and would be used for construction (i.e. dust mitigation) and/or would be discharged into the LAA or NHR. Treatment of groundwater would potentially involve a chemical precipitation process including coagulation, mixing, and filtration. Water would be treated through a portable treatment system, made up of water feed pumps, multiple dual filter systems, backwash pumps, chemical feed systems, and a central control panel. Discharge pumps would be used to transfer water to the LAA or NHR. The treatment systems would be powered by portable generators.

Embankment Construction and Grading

A combination of existing material removed from the foundation area and LAA Excavation Area, and new materials excavated from the existing mine in Keeler, would be mixed and used to replace the 30-foot deep excavated area. This mixed material would be mechanically compacted to 95 percent relative compaction to form the base of the new Dam below the surface of the ground, creating a foundation that would not be susceptible to liquefaction and that would meet the seismic requirements of NHD2. Concrete would be delivered and used during construction to create a cutoff wall within the foundation area. Once the base for NHD2 is constructed and compacted, the new Dam would be constructed on top of it. Fill material would be placed in loose level lifts across the base and subsequent layers and would be mechanically compacted to 95 percent compaction. This layering process would be continued until NHD2 is completed. After all required fill is placed and compacted, the new embankment would be graded to the finished dimensions.

Hauling of Materials from the Existing Mine in Keeler

Fill material would be hauled to the Project Site by dump trucks or trailers and stockpiled at the Project Site. Fill material may include riprap, gravel, and sand. The hauling of materials from the existing mine in Keeler would differ between the two Build Alternatives, as described below.

CDSM Alternative

No excavation is proposed at the existing mine in Keeler; however, purchase of materials at the existing mine would occur. Purchase and hauling of materials from the existing mine would occur over a nine month period, from October 2021 through June 2022, and would occur Monday through Friday.

Excavate and Recompact Alternative

No excavation is proposed at the existing mine in Keeler; however, purchase of materials at the existing mine would occur. Purchase and hauling of materials from the existing mine would occur over a nine month period, from October 2020 through June 2021, and would occur Monday through Friday.

Berm Construction and Basin Grading

The basin would be constructed during the excavation and fill periods for NHD2. The east and west berms would also be constructed, using materials generated by basin grading. Construction of these components would begin with grubbing and clearing of vegetation where construction would occur. In order to level the basin floor, earthmoving equipment would be used to grade the area between the existing NHD and NHD2 to an elevation of 3,745 feet asl. It is anticipated that soil required for fill activities would be supplied by cut activities within the basin. In addition, excess soil generated by grading activities would be utilized on-site for construction of NHD2 and the east and west berms.

The east berm would be constructed in the southeastern corner of the basin, adjacent to the downstream face of NHD, would be approximately 28 feet high, and would reach a height of approximately 3,768 to approximately 3,770 feet asl. The west berm would be constructed on the western edge of the basin, between NHD and NHD2, would be approximately 23 feet high, and would reach a height of approximately 3,768 to approximately 3,770 feet asl. The berms would be constructed using soil generated from the LAA Excavation Area and leveling of the basin. Construction of the basin and berms would occur during the same timeframe as construction of NHD2. Water would be applied to exposed surfaces to prevent generation of dust plumes.

Phase 4 – Diversion Channel and NHD Modifications

Construction of the diversion channel would be similar to the construction methods used to construct the LAA Realignment. The site would be prepared through selective clearing and grubbing. Vegetation debris would be temporarily stockpiled on-site and later hauled off the site for disposal. The haul route described above for the LAA Realignment would also be utilized for construction of the diversion channel. Grading and excavation would be conducted to create a 625 foot-long trapezoidal channel leading from the LAA Realignment to the basin. Reinforcing steel and concrete forms would be placed along the diversion channel alignment and then concrete for the diversion channel would be poured. During the construction of the diversion channel, a bridge would be constructed over the channel in order to maintain connectivity along the LAA Realignment's service road.

The diversion channel would be connected to the diversion structure. Once construction of the diversion channel and all other Proposed Project components are completed, the diversion structure would be opened to allow water to flow through the diversion channel into the basin. The construction of the diversion channel is expected to occur Monday through Saturday for a duration of approximately four months. Under the CDSM Alternative, construction would begin in April 2023 and end in July 2023. Under the Excavate and Recompact Alternative, construction would begin in October 2023 and end in January 2024, due to the different NHD2 construction schedules for each of the Build Alternatives.

Construction of the NHD modifications would occur once construction of NHD2 has been completed. Grading equipment would be used to scrape the top one to two feet of soil from the downstream face of NHD. A geomembrane and filter layer would then be installed on the basin floor and the downstream face of NHD. In order to construct the notch in NHD, LADWP would develop a water systems operations plan to ensure the LAA system provides sufficient water to the City during construction. The water systems operations plan would identify how LADWP would manage the flow and storage capacity of the LAA in order to keep the LAA System in service throughout construction. NHR would also remain in service as flow rates in and out of NHR could be adjusted to maintain the lower water elevation. Should water need to be pumped out of NHR (rather than gravity-fed, due to lower water levels), the existing pump at Merritt Spillway could be utilized. Once the operations plan is in place, NHR would be lowered to below 3,750 feet asl, which is the elevation of the lowest point of the notch.

The notch would be cut into the existing Dam by utilizing excavation equipment. To the extent feasible, construction would occur from the downstream (dry) side of NHD. However, it is anticipated that some construction would occur from the NHR (upstream) side of NHD. As the water level at NHR would be lowered for construction of the notch, the water level would be low enough to allow construction equipment to operate both of the faces of the existing Dam. Once the notch is excavated, it would be reinforced with six to eight inches of concrete, along with weld wire reinforcement to prevent erosion. Earthen materials generated during construction of the notch would be utilized on-site. The construction of these NHD modifications is expected to occur Monday through Saturday for a duration of approximately five months. Under the CDSM Alternative, construction would begin in April 2023, and end in August 2023. Under the Excavate and Recompact Alternative, construction would begin in October 2023 and end in February 2024, due to the different NHD2 construction schedules for each of the Build Alternatives.

Once these components are constructed, the basin would be constructed and would be ready for use. The diversion structure would be opened and water would flow through the diversion channel into the basin. LADWP would control the flow of water as NHD2 would be tested per regulatory requirements. Once the water level reaches 3,750 feet asl, water would begin to flow from the basin through the notch into NHR. With DSOD's Certificate of Approval, NHR would be operated at 3,760 feet asl, a return to the unassisted maximum elevation utilized prior to DSOD restrictions.

Figure 2-6 above shows the details of the diversion channel and NHD modifications.

2.4.2 Nighttime Construction and Construction Lighting

The majority of construction activities are anticipated to occur during daytime hours, generally from 6:30am to 4:30pm. Construction of the Cactus Flats Road Realignment and purchase of materials from the existing mine in Keeler would occur Monday through Friday. Construction of the LAA Realignment, including hauling of materials from the LAA Excavation Area to a stockpile site within the Project Site, NHD2 components, and diversion channel and NHD modifications would occur Monday through Saturday. While construction would typically occur during daytime hours, it is anticipated that nighttime construction may be required in order to maintain construction schedules. Should nighttime work be required, LADWP and/or their contractor would utilize construction lighting. For any nighttime construction lighting which would be visible from the US-395 corridor, LADWP would issue a public notice and inform law enforcement of construction plans. The effects of construction lighting on sensitive receptors, including residences, and on wildlife are discussed in Section 3.1, Aesthetics and Section 3.4, Biological Resources, respectively.

2.4.3 CDSM Alternative Construction Scenario

Construction activities for the CDSM Alternative would take approximately 61 months over a 67-month period.

Cactus Flats Road Realignment

The number of construction personnel on-site would vary from day to day, but no more than 30 personnel per day is estimated for the heaviest period of road construction (Table 2-2). On average, 22 personnel would be on-site during construction activities. The Cactus Flats Road Realignment would require the operation of heavy equipment, including bulldozers, excavators, cranes, forklifts, rollers, pavers, and various types of trucks. An average of 20 and a maximum of 26 pieces of heavy construction equipment would operate daily. Over the course of two months, the realignment of Cactus Flats Road would require an average of three daily and a maximum of 70 truck trips per month for delivery of concrete and asphalt.

TABLE 2-2
CACTUS FLATS ROAD REALIGNMENT CONSTRUCTION SUMMARY

Personnel	Average / Day	22
	Maximum / Day	30
Equipment	Average / Day	20
	Maximum / Day	26
Haul Truck Trips[a]	Average / Day	3
	Monthly Maximum	70
Peak-Hour Trips[b]	Average	11
	Maximum	17
Construction Duration	Months	10

Notes:
[a]: One truck trip is considered to be one round-trip journey to and from the Project Site. Truck trip average is calculated based on two months of haul trips, not the full construction period.
[b]: Peak-hour trips include haul truck trips and construction personnel trips. This calculation assumes 50 percent of personnel commute during the peak hour.

LAA Realignment

The number of construction personnel on-site would vary from day to day, but no more than 38 personnel per day is estimated for the heaviest period of construction for the LAA Realignment and 33 personnel per day for use of the LAA Excavation Area (Table 2-3). On average, 35 personnel would be on-site during construction activities for the LAA Realignment and 33 personnel for the LAA Excavation Area. The LAA Realignment and associated components would require the operation of heavy equipment, including bulldozers, excavators, scrapers, cranes, forklifts, rollers, compactors, and various types of trucks. An average of 47 and a maximum of 53 pieces of heavy construction equipment would operate daily for the LAA Realignment. Over the course of four months, the construction of the LAA Realignment and associated components would require an average of four daily truck trips for delivery of concrete. Excavation for materials from the LAA Excavation Area would begin one month after construction for the LAA Realignment begins, and would be hauled over a nine month period. Hauling materials from the LAA Excavation Area to the stockpile area within the Project Site would require 13,522 truck trips, which averages 58 daily truck trips.

TABLE 2-3
CDSM ALTERNATIVE: LAA REALIGNMENT CONSTRUCTION SUMMARY

	Unit	LAA Realignment	LAA Excavation Area
Personnel	Average / Day	35	33
	Maximum / Day	38	33
Equipment	Average / Day	47	20
	Maximum / Day	53	20
Haul Truck Trips[a]	Average / Day	4	58
	Monthly Maximum	105	1,502
	Total	--	13,522

TABLE 2-3
CDSM ALTERNATIVE: LAA REALIGNMENT CONSTRUCTION SUMMARY

	Unit	LAA Realignment	LAA Excavation Area
Peak-Hour Trips[b]	Average	18	53
	Maximum	21	53
Construction Duration	Months	22	9

Notes:
[a]: One truck trip is considered to be one round-trip journey to and from the Project Site. Truck trip average is calculated based on four months of haul trips, not the full construction period.
[b]: Peak-hour trips include haul truck trips and construction personnel trips. This calculation assumes 50 percent of personnel commute during the peak hour.

NHD2 Components

Mobilization for the CDSM Alternative would occur in March and April 2020, with construction beginning the following month (May 2020). The CDSM Alternative would require 418,000 yd^3 of material for construction of NHD2, 311,000 yd^3 of material from the LAA Excavation Area and 107,000 yd^3 of material from the existing mine in Keeler. As previously discussed, materials from the LAA Excavation Area would be stockpiled on-site. Materials from the existing mine in Keeler would require 8,917 truck trips over a nine month period. CDSM would also generate spoils (excess soils excavated during drilling) which would remain on-site after excavation. Spoils would constitute approximately 103,000 yd^3 of material, which would be transported within the Project Site via 8,583 truck trips over a period of two months. These spoils would potentially be used to fill in the historic borrow site for NHD on the eastern side of the Project Site, and/or would be stockpiled against the northern face of NHD2, creating a buttress. While this buttress is not required to construct an effective and seismically sound NHD2, it would provide additional stability. CDSM drilling would also require the use of 90,450 tons of cement, delivered via 1, 925 truck trips over 12 months, which would be mixed in the on-site batch plant to create cement grout.

The number of construction personnel on-site would vary from day to day, but no more than 73 personnel per day is estimated for the heaviest period of construction of the NHD2 components and eight personnel for hauling materials from the existing mine (Table 2-4). On average, 42 personnel would be on-site during construction activities. Construction of NHD2 and associated components would require the operation of heavy equipment, including bulldozers, excavators, scrapers, cranes, forklifts, and various types of trucks. An average of 88 and a maximum of 128 pieces of heavy construction equipment would operate daily for construction of the NHD2 components. The construction of CDSM columns would require an average of up to 10 truck trips per week for delivery of a total of 90,450 tons of cement.

TABLE 2-4
CDSM ALTERNATIVE: NHD2 CONSTRUCTION SUMMARY

	Unit	NHD2 Components	Existing Mine in Keeler
Personnel	Average / Day	42	8
	Maximum / Day	73	8
Equipment	Average / Day	88	8
	Maximum / Day	128	8
Haul Truck Trips[a]	Average / Day	31	45
	Monthly Maximum	4,322	991
	Total	--	8,917
Peak-Hour Trips[b]	Average	28	32
	Maximum	136[c]	32
Construction Duration	Months	37	9

Notes:
[a]: One truck trip is considered to be one round-trip journey to and from the Project Site. Truck trip average is calculated based on 13 months of haul trips, not the full construction period.
[b]: Peak-hour trips include haul truck trips and construction personnel trips. This calculation assumes 50 percent of personnel commute during the peak hour.
[C.] Peak-hour trips include cement delivery trips over a 13-month period and truck trips to remove CDSM spoils over a two-month period.

Diversion Channel and NHD Modifications

The number of construction personnel on-site would vary from day to day, but no more than 38 personnel per day is estimated for the heaviest period of construction (Table 2-5). On average, 35 personnel would be on-site during construction activities. Construction of the diversion channel and NHD modifications would require the operation of heavy equipment, including backhoe and front loaders, excavators, soil compactors, rollers, forklifts, and various types of trucks. An average of 29 and a maximum of 41 pieces of heavy construction equipment would operate daily. Over the course of five months, the construction of the diversion channel and NHD modifications would require an average of five truck trips per day for delivery of a total of 1,725 yd^3 of concrete.

TABLE 2-5
CDSM ALTERNATIVE: DIVERSION CHANNEL AND NHD MODIFICATIONS CONSTRUCTION SUMMARY

Personnel	Average / Day	35
	Maximum / Day	38
Equipment	Average / Day	29
	Maximum / Day	41
Haul Truck Trips[a]	Average / Day	5
	Monthly Maximum	190
Peak-Hour Trips[b]	Average	20
	Maximum	23
Construction Duration	Months	5

Notes:
[a]: One truck trip is considered to be one round-trip journey to and from the Project Site.
[b]: Peak-hour trips include haul truck trips and construction personnel trips. This calculation assumes 50 percent of personnel commute during the peak hour.

Construction Staging and Access

Construction staging would occur on the Project Site as shown in Figure 2-9. Materials excavated and hauled from the LAA Excavation Area and existing mine in Keeler, construction equipment, and haul trucks would be stored within the Project Site. In addition to staging and stockpiling, construction areas would include uses such as material processing, storage of processed material, parking, construction

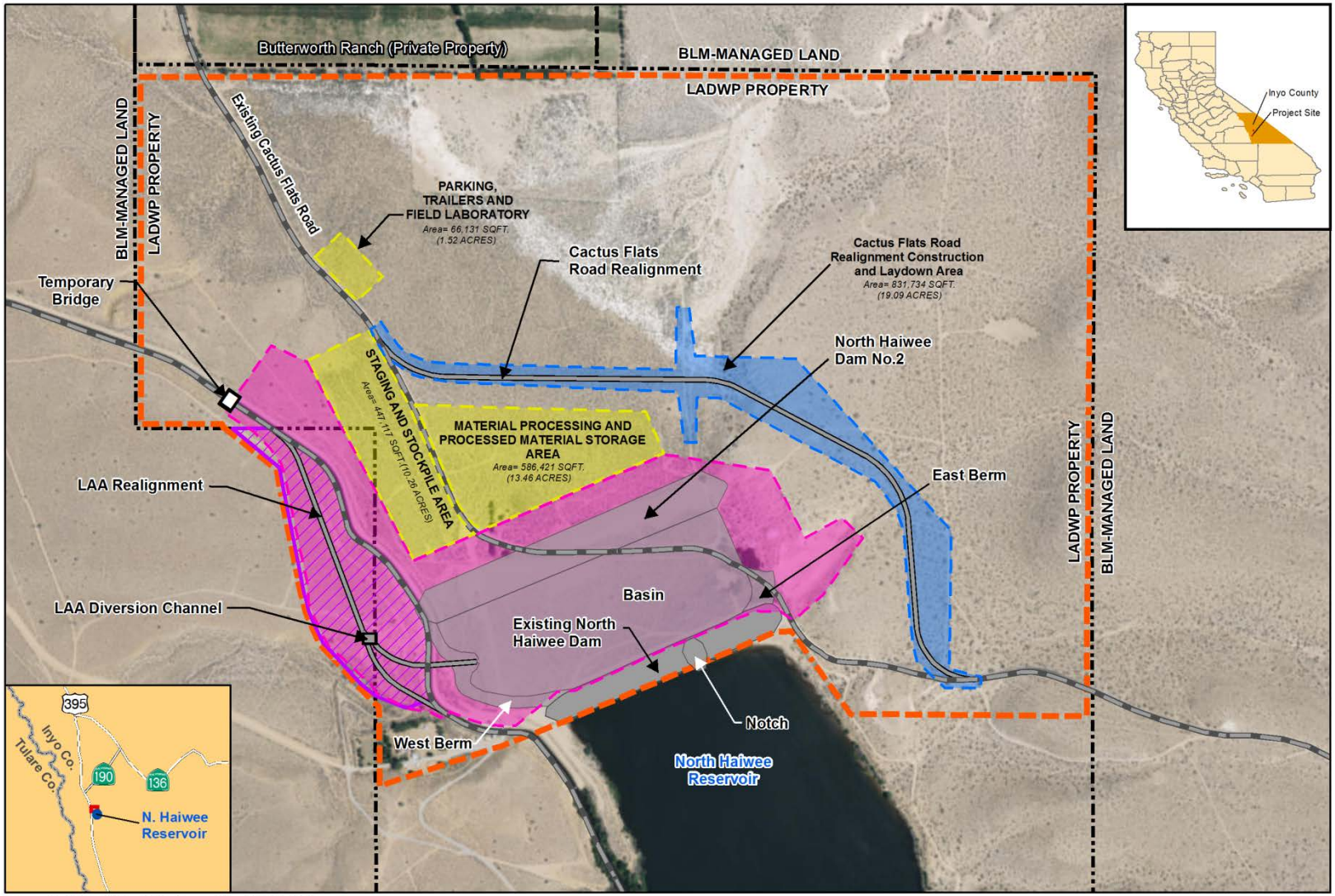


Figure 2-9
Construction Staging and Stockpile Area

trailers, and a field laboratory. In addition, construction areas have been identified where construction is expected to occur surrounding the Proposed Project components. This includes the Cactus Flats Road Realignment Construction and Laydown Area, which would not be a permanent part of the realigned road, but would be disturbed by construction activities. Similarly, it is anticipated that earthwork would be contained to the NHD2 and LAA Realignment footprints, but the NHD2 and LAA Construction and Earthwork Areas surrounding these Proposed Project components would potentially be affected by construction, or minor earthwork.

The Project Site would be accessed via North Haiwee Road or Cactus Flats Road from US-395. The construction staging areas adjacent to the new Dam construction area would be accessed via the existing Cactus Flats Road and other on-site dirt access roads. This portion of Cactus Flats Road would be permanently closed to the general public, but would not be demolished in order to provide access to the new and existing Dams. The Cactus Flats Road Realignment would be opened to the public prior to construction of NHD2 and closure of the existing Cactus Flats Road. As described above, in addition to haul route improvements, the Proposed Project would include other roadway improvements, including realignment of an access road intersecting the Cactus Flats Road Realignment and improvement of an access road from US-395 to the LAA Realignment. All roadway improvements related to the Proposed Project are depicted in Figure 2-10.

The LAA Excavation Area would be accessed via North Haiwee Road. The existing mine in Keeler is located approximately 20 miles northeast of the Project Site and would be accessed via a private road from State Route (SR-) 136.

Haul Routes

Off-site construction vehicle trips would be comprised of haul trucks hauling asphalt, cement, concrete, and other materials from various locations, and material from the existing mine in Keeler, to the Project Site, as shown in Figure 2-11. The Project Site would be primarily accessed via Cactus Flats Road and North Haiwee Road, as shown in Figure 2-13. Asphalt would be hauled from Bishop, CA. Concrete would be purchased and hauled to the Project Site from the Keeler Batch Plant at 111 Sulfur Road, Keeler, CA, 93530.

To the extent feasible, haul routes would be limited to existing roads, both paved and dirt. There are some locations where roads would need to be constructed or widened, as shown on Figures 2-10 and 2-12. Haul route improvements would widen existing dirt roadways to be approximately five to 11 feet wide. The haul routes would remain as dirt roads. The new dirt road segments to be constructed just north of the LAA Realignment would be approximately 430 and 470 feet long, and the new road segment to be constructed just south of the reservoir keeper's residence would be approximately 200 feet long.

Trucks would access the LAA Excavation Area via North Haiwee Road (Figure 2-10). The existing mine in Keeler is a mining operation from which materials would be purchased. This mine site is located off-site approximately 21 miles north of the Project Site. The haul route for the existing mine would travel southwest on a private road to SR-136 and travel south. The route would continue southwest onto SR-190 and merge onto US-395. The trucks would exit Cactus Flats Road and continue south to the Project Site (Figures 2-11 and 2-13). Each truck trip would be approximately 56 miles roundtrip.

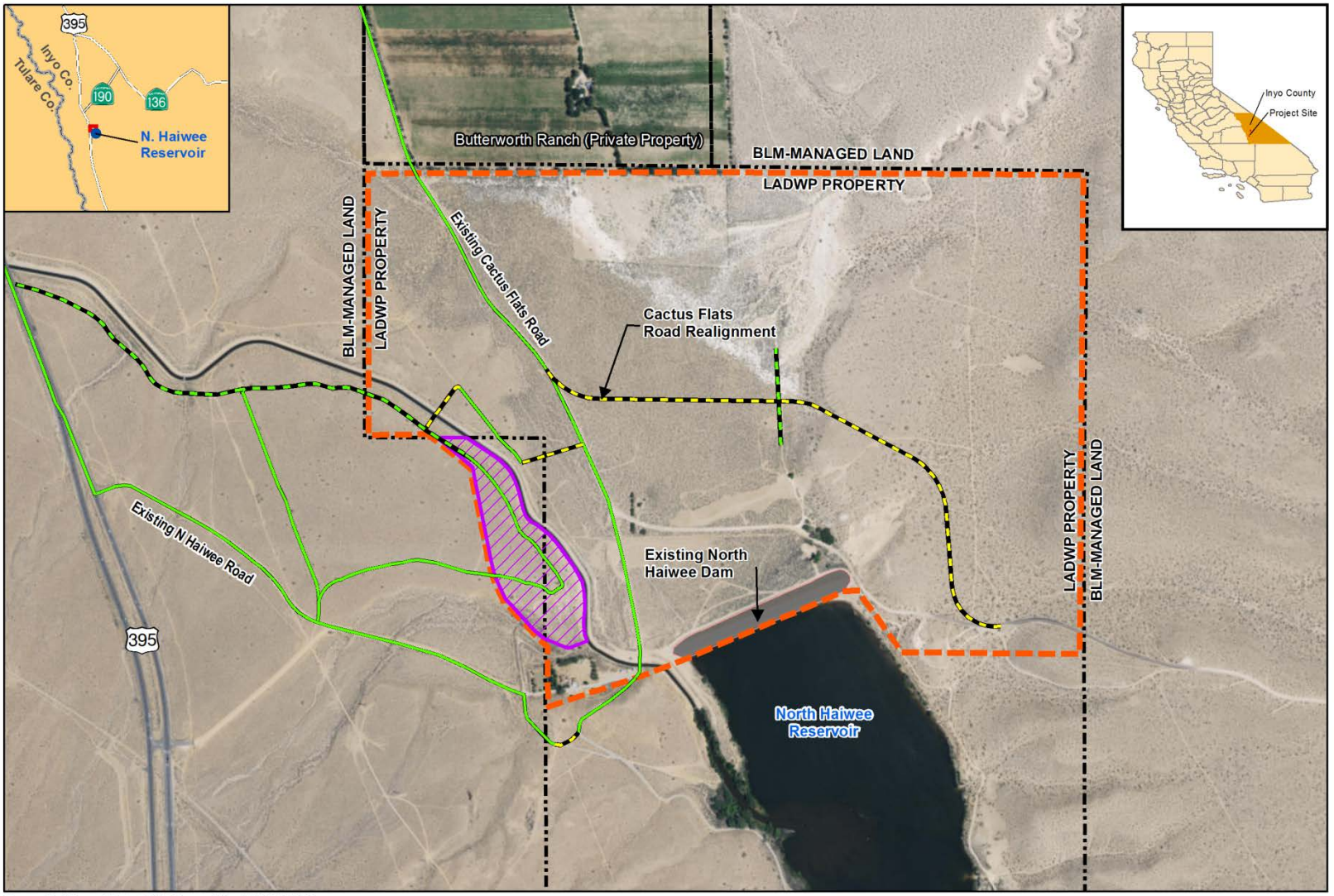


Figure 2-10
Roadway Improvements

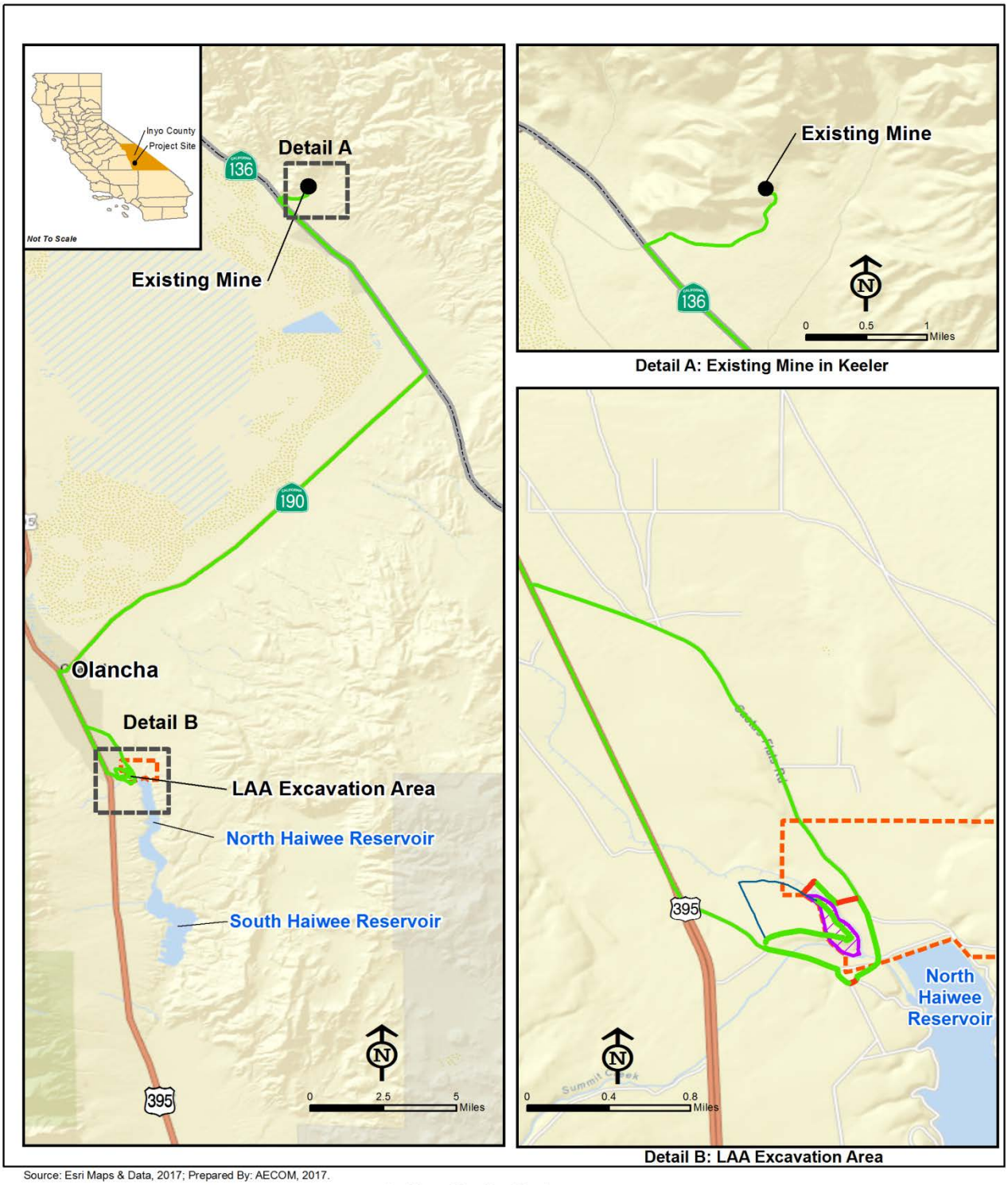


Figure 2-11
Haul Routes

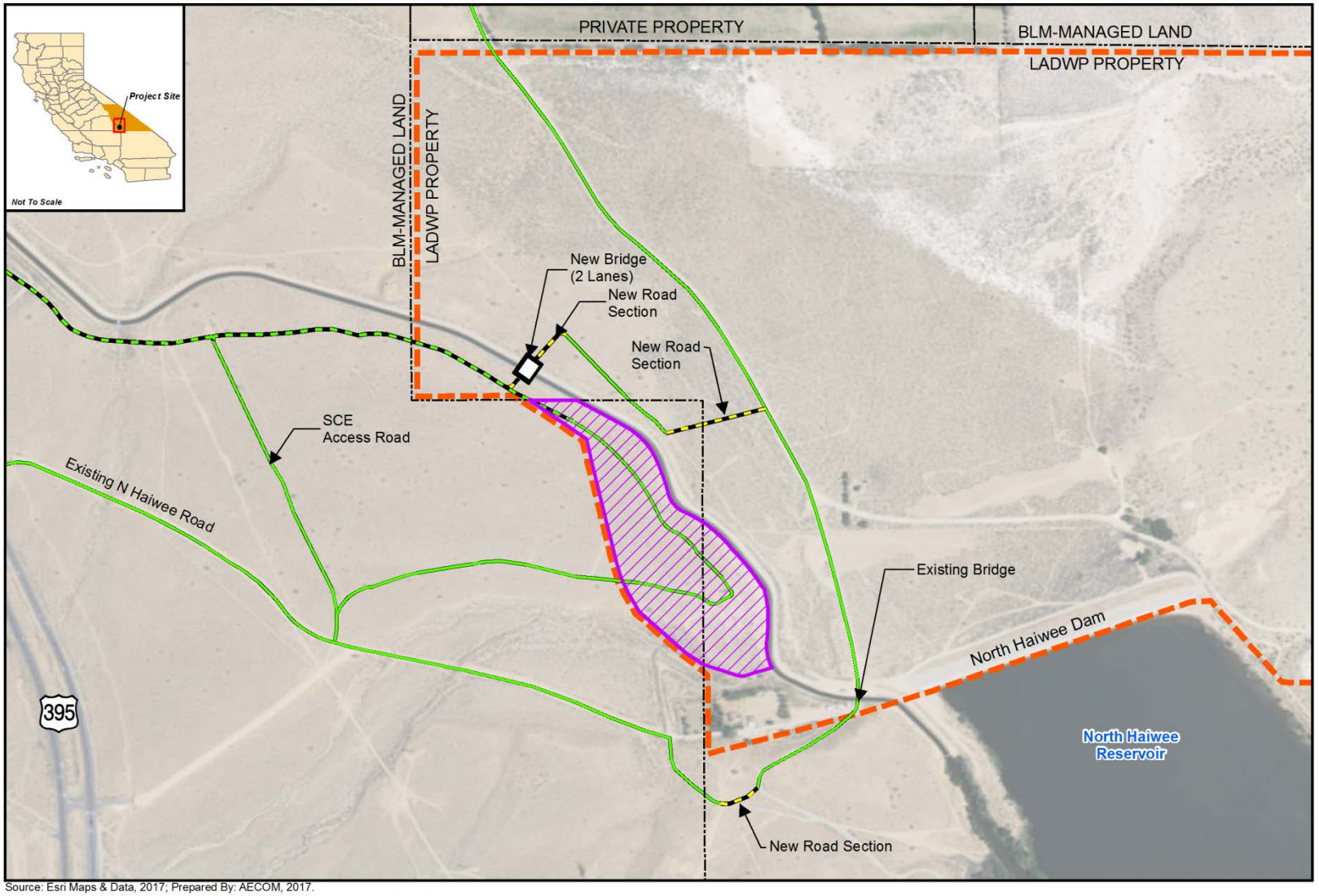


Figure 2-12
Haul Routes within Project Vicinity

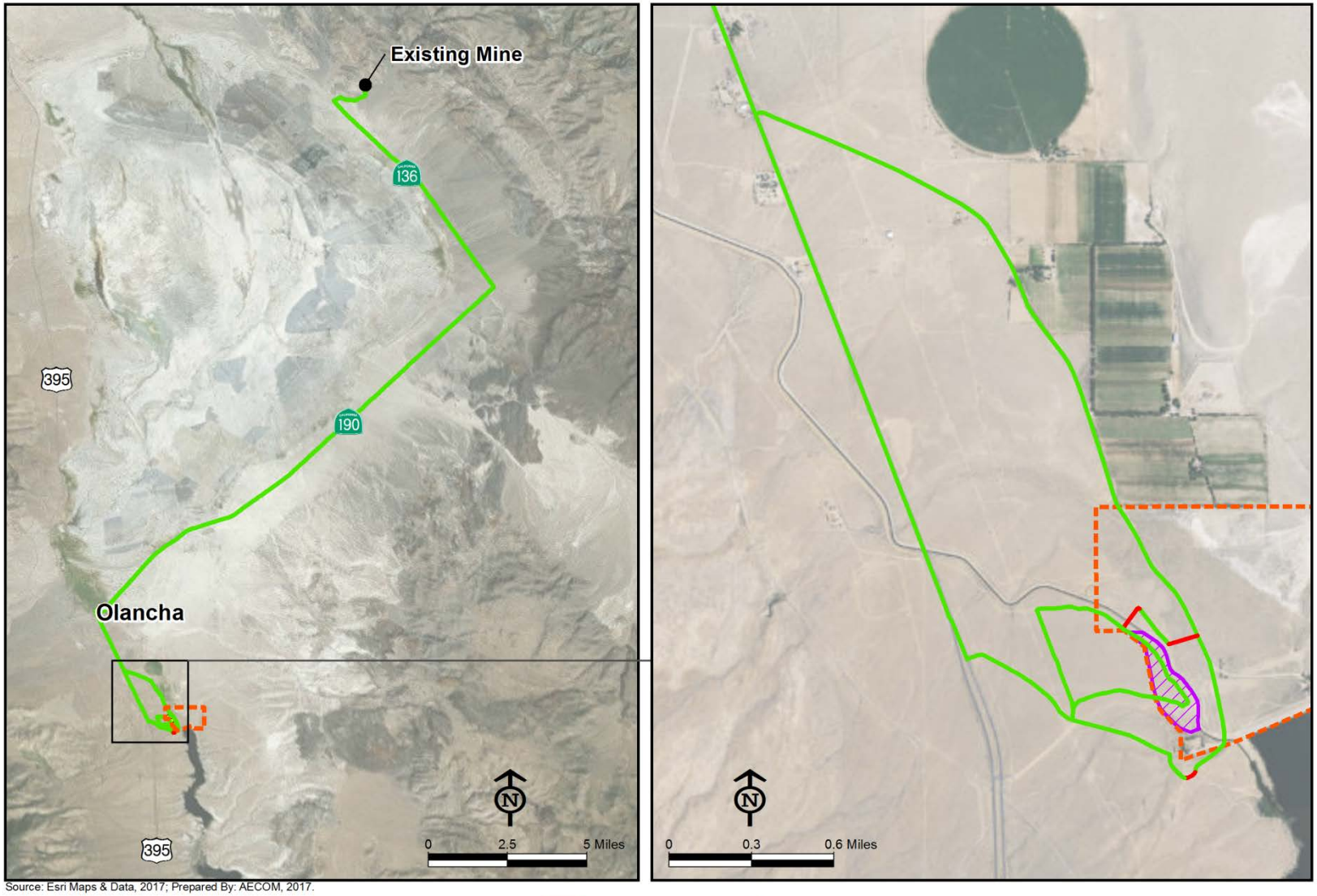


Figure 2-13

Haul Route to Existing Mine in Keeler

2.4.4 Excavate and Recompact Alternative Construction Scenario

Construction activities for the Excavate and Recompact Alternative would take approximately 67 months over a 73-month period.

Cactus Flats Road Realignment

The number of construction personnel, equipment, and truck trips would be the same as under the CDSM Alternative. Refer to Table 2-2.

LAA Realignment

The number of construction personnel on-site would vary from day to day, but no more than 38 personnel per day is estimated for the heaviest period of construction for the LAA Realignment and 33 personnel per day for use of the LAA Excavation Area (Table 2-6). On average, 35 personnel would be on-site during construction activities for the LAA Realignment and 33 personnel for the LAA Excavation Area. The LAA Realignment and associated components would require the operation of heavy equipment, including bulldozers, excavators, scrapers, cranes, forklifts, rollers, compactors, and various types of trucks. An average of 47 and a maximum of 53 pieces of heavy construction equipment would operate daily for the LAA Realignment. Over the course of four months, the construction of the LAA Realignment and associated components would require an average of four daily truck trips for delivery of concrete. Excavation for materials from the LAA Excavation Area would begin one month after construction for the LAA Realignment begins, and would be hauled over a ten month period. Hauling materials from the LAA Excavation Area to the stockpile area within the Project Site would require 14,913 truck trips, which averages 52 daily truck trips.

TABLE 2-6
EXCAVATE AND RECOMPACT ALTERNATIVE: LAA REALIGNMENT CONSTRUCTION SUMMARY

	Unit	LAA Realignment	LAA Excavation Area
Personnel	Average / Day	35	33
	Maximum / Day	38	33
Equipment	Average / Day	47	20
	Maximum / Day	53	20
Haul Truck Trips[a]	Average / Day	4	57
	Monthly Maximum	105	1,491
	Total	--	14,913
Peak-Hour Trips[b]	Average	18	52
	Maximum	21	52
Construction Duration	Months	22	10

Notes:
[a]: One truck trip is considered to be one round-trip journey to and from the Project Site. Truck trip average is calculated based on four months of haul trips, not the full construction period.
[b]: Peak-hour trips include haul truck trips and construction personnel trips. This calculation assumes 50 percent of personnel commute during the peak hour.

NHD2 Components

Mobilization for the Excavate and Recompact Alternative would occur in March and April 2020, with construction beginning the following month (May 2020). The Excavate and Recompact Alternative would require 450,000 yd^3 of earthen material for construction of NHD2, 343,000 yd^3 of material from the LAA Excavation Area and 107,000 yd^3 of material from the existing mine in Keeler. As previously discussed, materials from the LAA Excavation Area would be stockpiled on-site. Materials from the existing mine in Keeler would require 8,917 truck trips over a nine month period, starting in October 2020. The Excavate

and Recompact Alternative would also require 68,800 yd^3 of concrete. Concrete deliveries would begin in July 2020 and would require 5,733 truck trips over a 19 month period.

The number of construction personnel on-site would vary from day to day, but no more than 47 personnel per day is estimated for the heaviest period of construction of the NHD2 components and eight personnel for hauling materials from the existing mine (Table 2-7). On average, 37 personnel would be on-site during construction activities. Construction of NHD2 and associated components would require the operation of heavy equipment, including bulldozers, excavators, scrapers, cranes, forklifts, and various types of trucks. An average of 84 and a maximum of 124 pieces of heavy construction equipment would operate daily for construction of the NHD2 components. Over the course of 19 months, the construction of NHD2 and associated components would require an average of 12 truck trips per day for delivery of a total of 68,800 yd^3 of concrete.

TABLE 2-7
EXCAVATE AND RECOMPACT NHD2 CONSTRUCTION SUMMARY

	Unit	NHD2 Components	Existing Mine in Keeler
Personnel	Average / Day	37	8
	Maximum / Day	47	8
Equipment	Average / Day	84	8
	Maximum / Day	124	8
Haul Truck Trips[a]	Average / Day	12	45
	Monthly Maximum	302	991
	Total	--	8,917
Peak-Hour Trips[b]	Average	22	32
	Maximum	30	32
Construction Duration	Months	43	9

Notes:
[a]: One truck trip is considered to be one round-trip journey to and from the Project Site. Truck trip average is calculated based on 19 months of haul trips, not the full construction period.
[b]: Peak-hour trips include haul truck trips and construction personnel trips. This calculation assumes 50 percent of personnel commute during the peak hour.

Diversion Channel and NHD Modifications

Construction would occur later than under the CDSM Alternative, but the duration of construction and number of construction personnel, equipment, and truck trips would be the same as under the CDSM Alternative. Refer to Table 2-5.

Construction Staging and Access

Construction staging and access would be the same for the Excavate and Recompact Alternative as they would be for the CDSM Alternative. The Material Processing and Processed Material Storage Area would not contain a batch plant or silos under the Excavate and Recompact Alternative, but would otherwise be used in a similar way to the CDSM Alternative.

Haul Routes

Haul routes would be the same for the Excavate and Recompact Alternative as they would be for the CDSM Alternative.

2.4.5 Comparison of Build Alternative Construction Scenarios

Table 2-9 summarizes the construction scenarios for the Build Alternatives.

TABLE 2-8
CONSTRUCTION PERSONNEL, EQUIPMENT, AND TRIPS FOR THE BUILD ALTERNATIVES

Construction Details		CDSM Alternative	Excavate and Recompact Alternative
Personnel	Average / Day	50	47
	Maximum / Day	111	86
Equipment	Average / Day	80	79
	Maximum / Day	171	173
Haul Truck Trips[a]	Total	34,079	30,686
	Average / Day	36	36
Peak-Hour Trips[b]	Average	39	35
	Maximum	157	80
Construction Duration/ Overall Duration	Months	61/67	67/73

Notes:
[a]: One truck trip is considered to be one round-trip journey to and from the Project Site. Truck trip average is calculated based on number of months with haul trips, not the full construction period.
[b]: Peak-hour trips include haul truck trips and construction personnel trips. This calculation assumes 50 percent of personnel commute during the peak hour.

2.5 Operation and Maintenance

Once NHD2 is constructed, a Certificate of Approval would be obtained from DSOD for operation of NHR at an elevation of up to 3,760 feet. Historically, LADWP has not operated NHR over 3,759 feet, and LADWP does not propose to do so as part of the Proposed Project. The Certificate of Approval would permit operation of NHD2 and expansion of NHR to include the basin.

During operation, NHD2 would require similar maintenance as NHD currently requires. LADWP's NHR reservoir keeper, whose residence is adjacent to NHD, will remain on-site and will be the primary person responsible for monitoring the new Dam, LAA Realignment, and basin, along with the existing NHD, LAA, and NHR. The LAA Realignment and Cactus Flats Road Realignment would operate similarly to their existing counterparts, and would require similar infrequent maintenance. LADWP would continue to maintain and operate the LAA Realignment as part of its overall LAA system, and Inyo County would operate and maintain the Cactus Flats Road Realignment in the same manner as the existing road is operated and maintained.

At the unassisted operating level of up to 3,760 feet, the basin would contain approximately 600 acre-feet of water. Generally, operations of the basin would require minimal maintenance, and would be similar in scale to operation of NHR. Water that flows into the basin from the LAA would settle in the basin prior to flowing into NHR; as such, sediments may accumulate in the basin over time, and it is anticipated that dredging would be required every 10 to 15 years in order to remove these sediments. Sediments that may be dredged or removed as part of operation and maintenance would be handled and transported in compliance with all applicable regulations, and if disposal would be required, sediments would be hauled to a landfill permitted to accept such wastes.

2.6 Best Management Practices

A combination of monitoring and resource impact avoidance measures would be employed during construction of the Proposed Project. This includes the implementation of applicable Best Management Practices (BMPs) listed below.

The Proposed Project would implement Rule 401 and 431 as dust and particulate matter control measures required by the Great Basin Unified Air Pollution Control District (GBUAPCD), which would include the following:

1) Water shall be applied to exposed surfaces at least two times per day to prevent generation of dust plumes.

2) The construction contractor shall utilize at least one of the following measures at each vehicle egress from the Project Site to a paved public road:

   a) Install a pad consisting of washed gravel maintained in clean condition to a depth of at least six inches and extending at least 30 feet wide and at least 50 feet long;

   b) Pave the surface extending at least 100 feet long and at least 20 feet wide;

   c) Utilize a wheel shaker/ spreading device consisting of raised dividers at least 24 feet long and 10 feet wide to remove bulk material from tires and vehicle undercarriages; or

   d) Install a wheel washing system to remove bulk material from tires and vehicle undercarriages.

3) All haul trucks hauling soil, sand, and other loose materials shall be covered (e.g., with tarps or other enclosures that would reduce fugitive dust emissions) prior to exiting the site.

4) Grading activity on exposed or unpaved dirt surfaces shall be suspended when wind speed exceeds 25 miles per hour (mph).

5) Ground cover in disturbed areas shall be replaced in a timely fashion when work is completed in the area.

6) A community liaison shall be identified by LADWP to address any on-site construction activity concerns including resolution of issues related to the generation of particulate matter 10 microns or less in diameter. The liaison shall be an LADWP employee or LADWP's designee.

7) Traffic speeds on all unpaved roads shall be limited to 15 mph or less.

8) Streets shall be swept at the end of the day if visible soil is carried onto adjacent public paved roads. If feasible, water sweepers with reclaimed water shall be used.

The construction contractor shall develop and implement an erosion control plan and Storm Water Pollution Prevention Plan (SWPPP) for construction activities. Erosion control and grading plans may include, but would not be limited to, the following listed below:

- Minimizing the extent of disturbed areas and duration of exposure;
- Stabilizing and protecting disturbed areas;
- Keeping runoff velocities low; and
- Retaining sediment within the construction area.

The construction contractor shall follow the requirements of the SWPPP that has been prepared by a Qualified Storm Water Developer (QSD). The construction contractor's Qualified Stormwater Practitioner (QSP) will implement construction erosion control BMPs, which may include, but would not be limited to:

- Temporary desilting basins;
- Silt fences;
- Gravel bag barriers;
- Temporary soil stabilization with mattresses and mulching;
- Temporary drainage inlet protection; and
- Diversion dikes and interceptor swales.

The Proposed Project shall comply with all necessary Statewide Stormwater Discharges Associated with Construction and Land Disturbance Activities (Order No. 2010-0014-DWS) permit requirements, as well as the Lahontan RWQCB permit as applicable, such as the National Pollution Discharge Elimination System (NPDES) and Waste Discharge Requirements (WDR).

3.0 Affected Environment and Environmental Consequences

This chapter presents the affected environment and environmental consequences associated with the construction and operation of the Proposed Project. In the following sections, the environmental setting is described for the Project Site, as well as for the greater Project area, with a focus on the particular environmental impacts being discussed. As illustrated in Figure 2-1, the term "Project Site" refers to the construction area that includes NHD and NHD2, the existing Cactus Flats Road and Cactus Flats Road Realignment, the existing LAA and LAA Realignment, the LAA Excavation Area, diversion channel and basin area, and staging areas. The term "Project area" refers to the Project Site as well as the existing mine in Keeler and haul routes. As described in Chapter 1, Introduction, and Chapter 2, Project Description and Alternatives, the existing mine in Keeler is an operational mine and Proposed Project-related activities would be limited to the purchase and hauling of materials from this site. Therefore, the existing mine is excluded from analysis in Sections 3.1 through 3.19, except for haul truck activities.

This Draft EIR/EA is a joint state and federal document prepared to comply with the requirements of CEQA and NEPA. This chapter comprises Sections 3.1 through 3.19, which include an analysis, by resource area, of the Proposed Project's potential impacts on the environment. Cumulative impacts are addressed in Chapter 4, Other CEQA and NEPA Considerations, of this Draft EIR/EA. The environmental resource areas analyzed in Chapter 3 are as follows:

- 3.1 Aesthetics
- 3.2 Agricultural and Forestry Resources
- 3.3 Air Quality
- 3.4 Biological Resources
- 3.5 Cultural Resources
- 3.6 Environmental Justice
- 3.7 Geology and Soils
- 3.8 Greenhouse Gas Emissions
- 3.9 Hazards and Hazardous Materials
- 3.10 Hydrology, Water Quality, and Groundwater
- 3.11 Land Use and Planning
- 3.12 Mineral Resources
- 3.13 Noise and Vibration
- 3.14 Population and Housing
- 3.15 Public Services and Recreation
- 3.16 Safety and Security
- 3.17 Transportation and Traffic
- 3.18 Tribal Cultural Resources
- 3.19 Utilities and Service Systems

Each section is organized to include the following subsections:

Regulatory Setting. This subsection identifies applicable federal, state, regional, and/or local regulations.

Affected Environment. This subsection includes a description of the existing environmental conditions, or "baseline conditions," used for comparison to establish the type and extent of the potential environmental effects of the Proposed Project. The baseline conditions are tailored specifically for the resource area discussed in each section.

Methodology. This subsection identifies the sources or methods utilized in the preparation of the impact analysis for each resource topic. This subsection includes the criteria that help evaluate the degree of significance for each potential impact, including the *CEQA Significance Criteria* and *NEPA Requirements.* Applicable BMPs that would minimize impacts to the specific resource area are also discussed in this subsection.

Environmental Consequences. This subsection analyzes the potential impacts due to implementation of the Proposed Project relative to the established significance criteria under CEQA. Analyses for each resource area consider potential direct and indirect effects of the Proposed Project. The following categories for impact significance are used in this analysis:

- A designation of no impact is given when no adverse changes in the environment are expected
- A less than significant impact would be identified when there would be no substantial adverse change in the environment
- A significant (but mitigable) impact would have a substantial adverse impact on the environment, but could be avoided or feasibly mitigated or reduced to a less than significant level
- A significant unavoidable impact would cause a substantial adverse impact on the environment that cannot be feasibly avoided or mitigated to a less than significant level

Mitigation Measures. This subsection provides measures that can mitigate (e.g., minimize, reduce, or avoid) potentially significant adverse environmental impacts and are provided as conditions of approval. The mitigation measures provided in Chapter 3 are proposed by LADWP, unless otherwise noted.

Residual Impacts After Mitigation. This subsection refers to the level of impact under CEQA remaining after implementation of mitigation. In the case where a mitigation measure(s) would avoid or reduce a significant impact to a level that is less than significant, a determination would be made that the residual impact would be less than significant. In the case where a mitigation measure(s) would reduce a significant impact somewhat, but would not reduce it to a level that is less than significant, then a determination would be made that the residual impact would remain Significant and Unavoidable, per Section 15126.2(b) of the CEQA Guidelines.

NEPA Conclusions. This subsection provides quantitative and qualitative measures with which to review the context and intensity of the effects of construction and operation of the Proposed Project under NEPA. It evaluates the direct and indirect environmental effects of the Proposed Project and Build Alternatives.

3.1 Aesthetics

This section analyzes the potential impacts of the Proposed Project as it relates to aesthetics. The applicable laws, regulations, and methods used to determine the effects of the Proposed Project are described herein. The section describes the affected environment and analyzes the environmental consequences of the Proposed Project and, if applicable, provides mitigation measures. The analysis in the section is based on the Visual Impacts Assessment in Appendix C of this Draft EIR/EA.

3.1.1 Regulatory Setting

Federal

Federal Land Policy and Management Act of 1976

The Federal Land Policy Management Act (FLMPA) established BLM as the jurisdictional agency for expanses of land in the west to be managed as multi-use lands. Section 102(a)(8) requires that "public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values. Section 201(a) requires the maintaining of an inventory of scenic resources, and Section 505(a) requires terms and conditions to minimize damage to the scenic and esthetic values (BLM, 2001).

BLM Manual 8410

BLM manages land under its jurisdiction according to the goals and policies established in BLM Manual 8410, adopted in 1986, and used as the basis for methodology for this visual analysis.

California Desert Conservation Area Plan

The Proposed Project is within the Sierra subregion of the California Desert Conservation Area (CDCA). Chapter 3 of the CDCA Plan covers the Recreation Element and identifies a Visual Resources Management Program that requires visual resource management objectives in the multiple-use class guidelines and the evaluation of proposed actions to determine the extent of change to a landscape and specification of appropriate design or mitigation measures (BLM, 1981).

Desert Renewable Energy Conservation Plan Land Use Plan Amendment, 2016

The DRECP LUPA, approved by BLM in September 2016, is an amendment to the CDCA Plan. The key objectives of the DRECP are to streamline renewable energy development and to provide for long-term conservation and management of special-status species, vegetation, and other resources within the DRECP Plan area. The DRECP LUPA implements its objectives through specific CMAs, including implementing four Visual Resource Management (VRM) classes through which visual resources will be managed. Descriptions of the objectives of each VRM class are listed in Table 3.1-1. Some CMAs apply across the entirety of the DRECP Plan area, while others apply only to specific land uses. CMAs applicable to aesthetics include: LUPA-VRM-1, 2, 3. CMAs not applicable to aesthetics include: LUPA-CUL-7; LUPA-WC-4; NLCS-NSHT-1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15; ACEC-VRM-1; SRMA-VRM-1; DFA-VPL-VRM-1, 2, 3; DFA-VRM-1, 2; VPL-VRM-2; and GPL-VRM-1, 2, 3. The consistency of the Proposed Project with the DRECP CMAs is provided in Appendix B of this Draft EIR/EA.

TABLE 3.1-1
VISUAL RESOURCES MANAGEMENT GENERAL PUBLIC LANDS

VRM Class	Established Objectives
Class I	The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.
Class II	The objective to this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.
Class III	The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.
Class IV	The objective of this class is to provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

Source: U.S. Bureau of Land Management, Desert Renewable Energy Conservation Plan Land Use Plan Amendment

Local

Inyo County General Plan

The Conservation/Open Space Element of the Inyo County General Plan addresses visual resources. Policies relevant to the Proposed Project are included in Table 3.1-2. The Conservation/Open Space Element also includes several implementation policies such as the re-vegetation of slopes within 60 days of grading (Inyo County, 2001).

TABLE 3.1-2
INYO COUNTY GENERAL PLAN GOALS AND POLICIES

Goal	Policy
VIS-1: Preserve and protect resources throughout the County that contribute to a unique visual character for visitors and quality of life for County residents.	VIS-1.3. Grading Impacts: Man-made slopes should be treated to reflect natural hillside conditions in the surrounding area.
	VIS-1.4. Equipment Screening: Within communities, building equipment shall be screened from public view.

Source: Inyo County General Plan, website: http://inyoplanning.org/general_plan/goals/ch8.pdf, accessed December 21, 2015.

3.1.2 Affected Environment

The regional visual setting is framed by silhouettes of varying triangular ridgelines appearing distinctly against the sky and rolling topography of adjacent, scrub-covered transitional slopes. The visual texture of the Project vicinity is moderately coarse, with varying vegetation densities including smooth sandy patches formed by dirt roads and breaks in the vegetation. Vegetation communities within the Project site and surrounding area include Fourwing Saltbush Scrub, Allscale Scrub, Joshua Tree Woodland, and Tamarisk Thicket. An ephemeral wash intersects the northeastern portion of the Project Site and is dominated by the invasive prickly Russian thistle. Refer to Section 3.4, Biological Resources for a full description of biological resources. Colors in the landscape tend to be muted, with tans, grays, and less frequent greens dominating the landscape. Though generally covered by high desert vegetation, the undulating topography throughout the Project vicinity and the Owens Valley is occasionally interrupted

by existing access roads and disturbed soil. In addition to dirt access roads, several cultural modifications encroach the Project Site and its vicinity, most notably US-395 and multiple utility transmission lines.

Project Site

The Project Site is located approximately one mile southeast of the community of Olancha in Inyo County, California and is approximately 393 acres in size. It is located approximately 0.6 miles east of US-395, which has been designated as scenic highway (Eastern Sierra Scenic Byway) by Inyo County and is an eligible State Scenic Highway (not officially designated). The Project Site is located approximately 1.5 miles to the west of the Coso Range Wilderness Area, approximately 7.5 miles to the east of the Inyo National Forest, approximately 12 miles south of Owens Lake, approximately 17 miles to the east of Sequoia National Park, and 100 miles to the west of Death Valley National Park. The location of the Project Site is depicted on the U.S. Geological Survey (USGS) 7.5-minute series, Haiwee Reservoirs, topographic quadrangle. The topography of the Project Site consists of primarily younger alluviums with older outcroppings from the Coso Formation in the Tertiary period. Elevation ranges between approximately 3,725 feet above mean sea level (MSL) to approximately 3,825 feet above MSL. The Project Site is located on lands administered by BLM and LADWP. The Project Site is surrounded on the east and west by BLM-managed lands, on the south by LADWP lands, and on the north by BLM-managed and private lands. Beyond the BLM-managed lands to the west is the South Sierra Wilderness of Inyo National Forest located approximately eight miles southwest of the Project Site. Owens Lake is located approximately five miles to the north. China Lake Naval Weapons Center is located approximately 41 miles further to the east and southeast, and Rose Valley and the Sacatar Trail Wilderness are located 14 miles and 19 miles, respectively, to the south. US-395 runs approximately 0.5 miles west of the Project Site and SR-190 is located approximately four miles north of the Project Site.

The LAA Excavation Area is part of the Project Site and is located on the west side of the LAA, adjacent to NHD2. A portion of the LAA Excavation Area is located within the footprint of the LAA Realignment. The LAA Excavation Area is approximately 0.4 miles east of US-395. The soils at the LAA Excavation Area consist of primarily younger alluviums and are approximately 3,810 feet above MSL, approximately 50 feet above the proposed locations of the new Dam and Cactus Flats Road Realignment. The LAA Excavation Area is at approximately the same elevation as US-395 and, therefore, is visible to travelers along US-395. The landform surrounding the LAA Excavation Area is covered with desert chaparral, Joshua Trees, and occasional cacti. Cultural modifications include disturbed areas from dirt roads, which provide breaks in the visual lines of the landscape.

Key Observation Points

To better understand existing conditions and potential viewer response, six (6) Key Observation Points (KOPs) were selected based on a composite evaluation of the Proposed Project and surrounding landscape. All six (6) KOPs are presented in Figure 3.1-1 and assessed in Appendix C. Four (4) KOPs (KOPs 2, 3, 5, and 6) have been selected for discussion in this Draft EIR/EA section based on their representation of existing and future conditions. The scenic quality for KOPs was rated and the results showed that none qualified for an A rating, KOP 5 qualified for a B rating, and KOPs 2, 3, and 6 were assigned a C rating. KOP 5 has the highest scenic quality rating based on its greater panoramic views and variety in landform, color, and texture.

The following four KOPs were selected for visual simulations as they were most likely to be affected by the Proposed Project. Detailed descriptions of all six KOPs can be found in Appendix C.

KOP 2

KOP 2 is located at the northern end of the Project Site, on the north side of Cactus Flats Road. The directional view is southeast toward the existing Dam and NHD2 site. KOP 2 provides the closest view from the north where the existing Dam is discernible, approximately 0.2 miles away from the Project

components. There are existing residences on the adjacent Butterworth Ranch property further to the north but the existing Dam is not visible from those residences. Seen from KOP 2 are immediate foreground and foreground-middleground views of the existing Dam. The LAA and LAA Excavation Area are located on the elevated terrain to the west, as shown in Figure 3.1-2. Also visible in the foreground is an outcropping of trees which are just north of the eastern end of the existing Dam. The KOP 2 viewpoint is not located on BLM-managed land but the viewshed includes BLM-managed land rated as VRM Class II.

KOP 3

KOP 3 is located along North Haiwee Road, east of US-395, as shown in Figure 3.1-3. KOP 3 is located approximately 0.5 miles west of the Project Site. The directional view is east toward the Project Site, which is minimally visible due to topography. Seen from this position are immediate foreground and foreground-middleground views of areas immediately surrounding NHR and Coso Wilderness Area. The KOP 3 viewpoint is located on BLM-managed land rated as VRM Class II and the viewshed includes BLM-managed land rated as VRM Classes II and III.

KOP 5

KOP 5 is located along Cactus Flats Road, just east of NHR, as shown in Figure 3.1-4. KOP 5 is located at the southeastern boundary of the Project Site, approximately 0.7 miles from the Project components. The directional view is northwest toward the Project Site, existing Dam and NHD2 locations. Seen from this elevated position are unobstructed immediate foreground and foreground-middleground views of the existing Dam, NHR, and reservoir keeper's residence. The Sierra Nevada Range and trucks traveling along US-395 are visible in the distance. The KOP 5 viewpoint is not located on BLM-managed land but the viewshed includes BLM-managed land rated as VRM Classes II and III.

KOP 6

KOP 6 is located along Sage Flats Road, approximately 0.75 miles west of US-395, as shown in Figure 3.1-5. KOP 6 is located approximately 3.5 miles south and two miles west of the Project Site. The directional view is east toward the existing Dam and Project Site. Seen from this elevated position are unobstructed immediate foreground and foreground-middleground views of NHR and the Project Site. Cactus Flats Road is also visible beyond NHR as it snakes its way up the hillside. Visible in the foreground are utility lines on wood poles which run in an east-west direction along Sage Flats Road and utility lines on larger steel structures which run in a north-south direction. The utility lines are common visual elements in the surrounding landscape. The location and direction of KOP 6 offer a distant and uninterrupted view of the Coso Mountains that are part of the Coso Wilderness Area and the Death Valley National Park. The KOP 6 viewpoint is located on BLM-managed land rated as VRM Class III and the viewshed includes BLM-managed land rated as VRM Classes II and III.

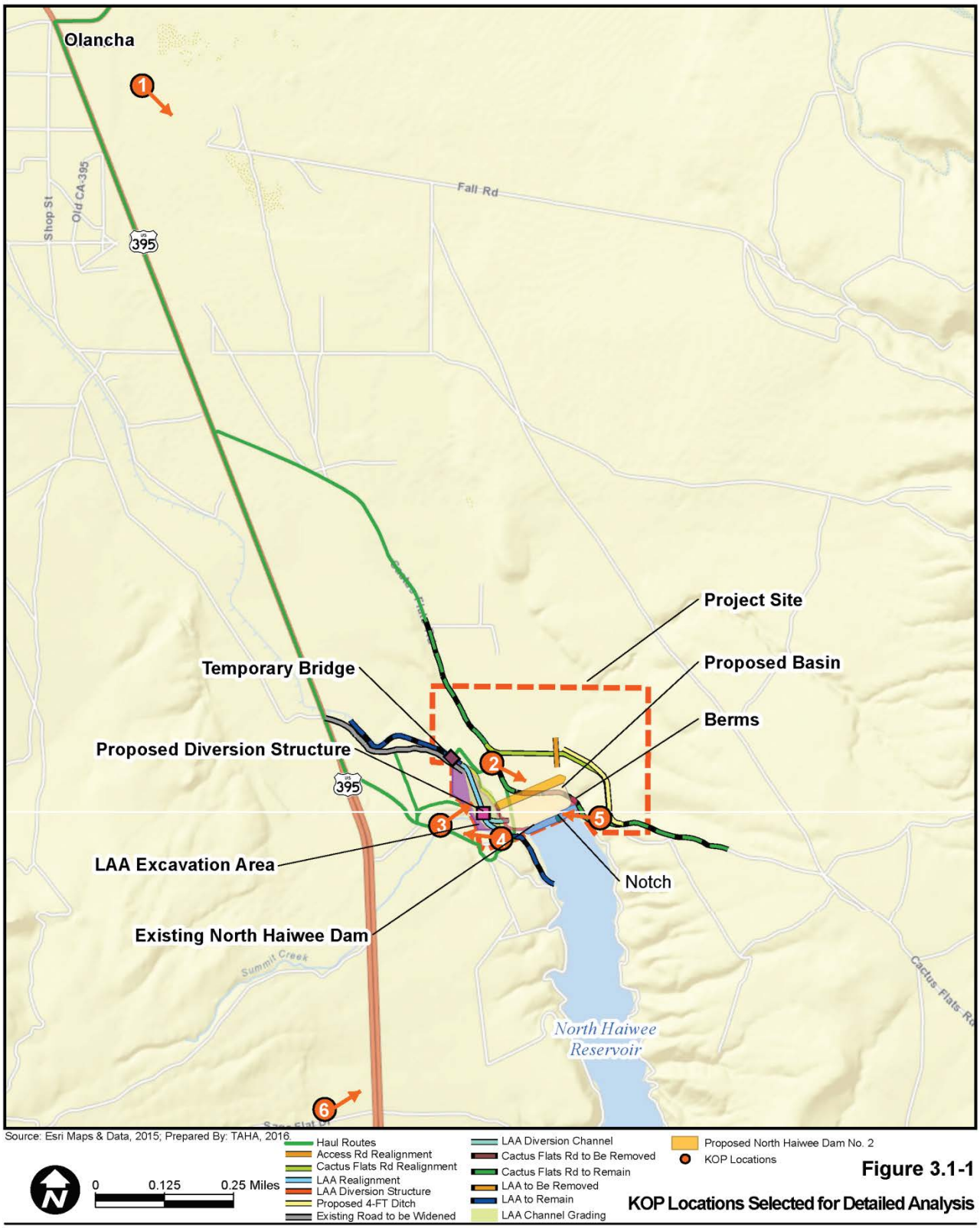
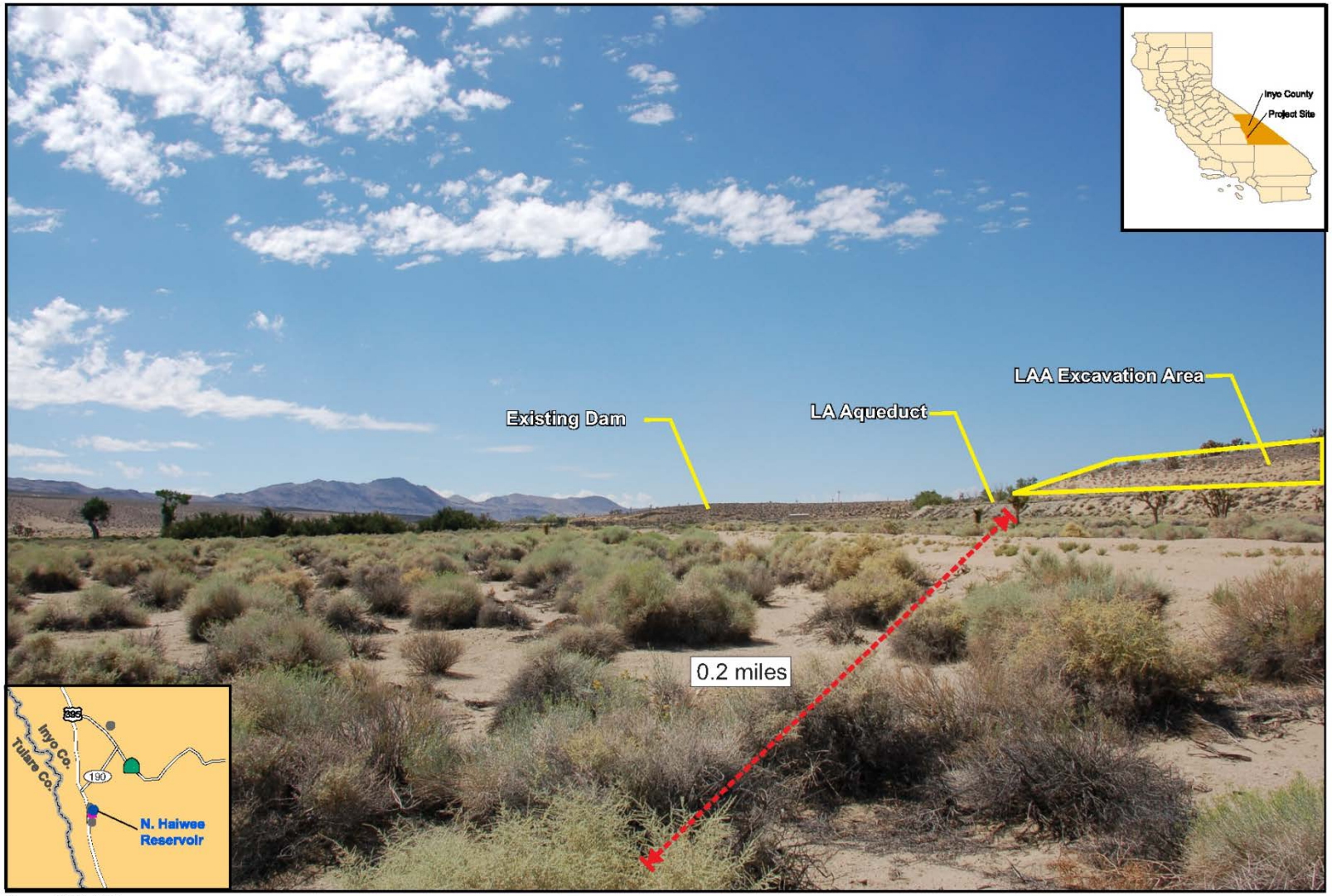


Figure 3.1-1
KOP Locations Selected for Detailed Analysis



Source: TAHA 2015.

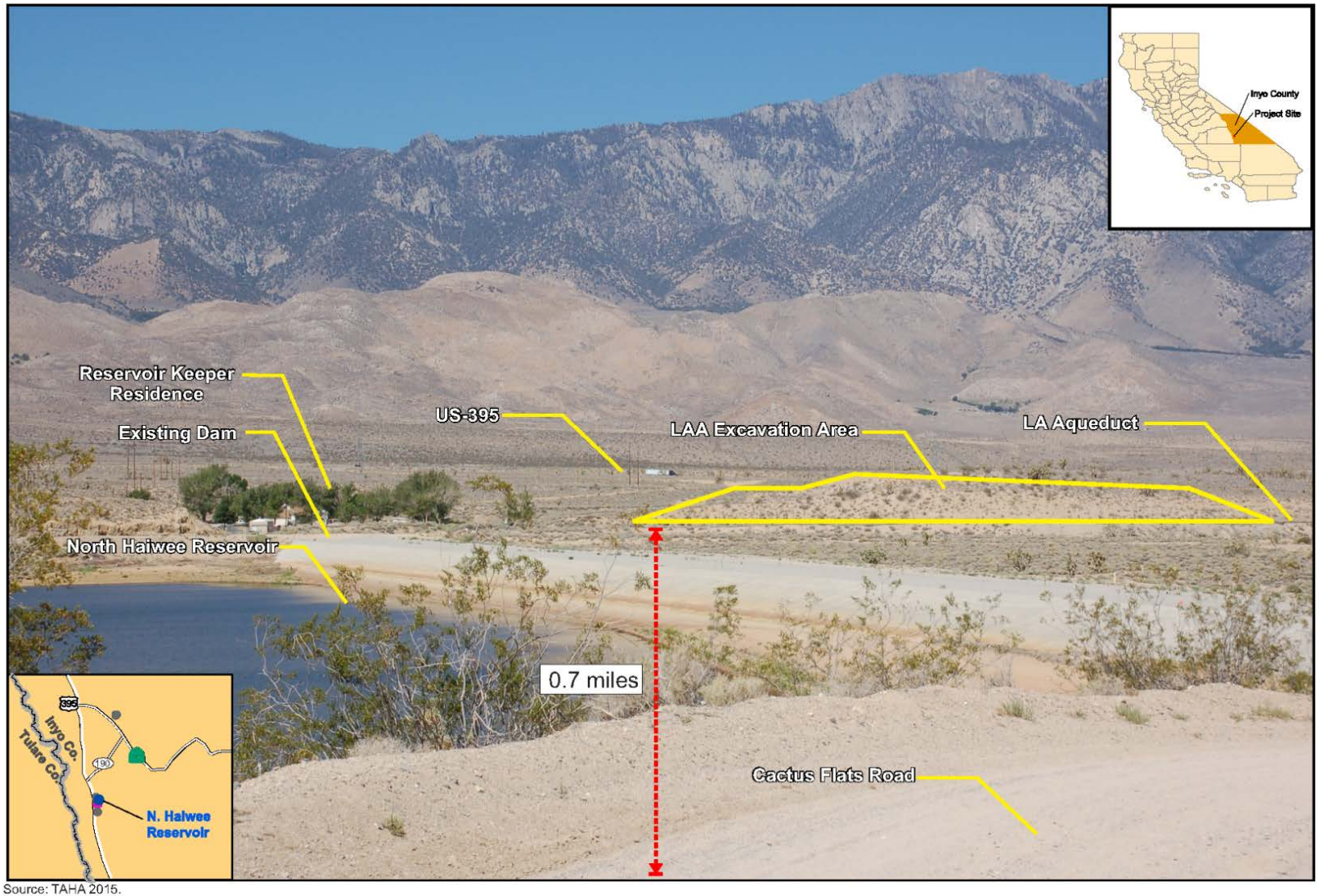
View looking south towards existing Dam from Cactus Flats Road (south of farm)

Figure 3.1-2
KOP 2

Source: TAHA 2015.

View looking southeast towards North Haiwee Reservoir from North Haiwee Road

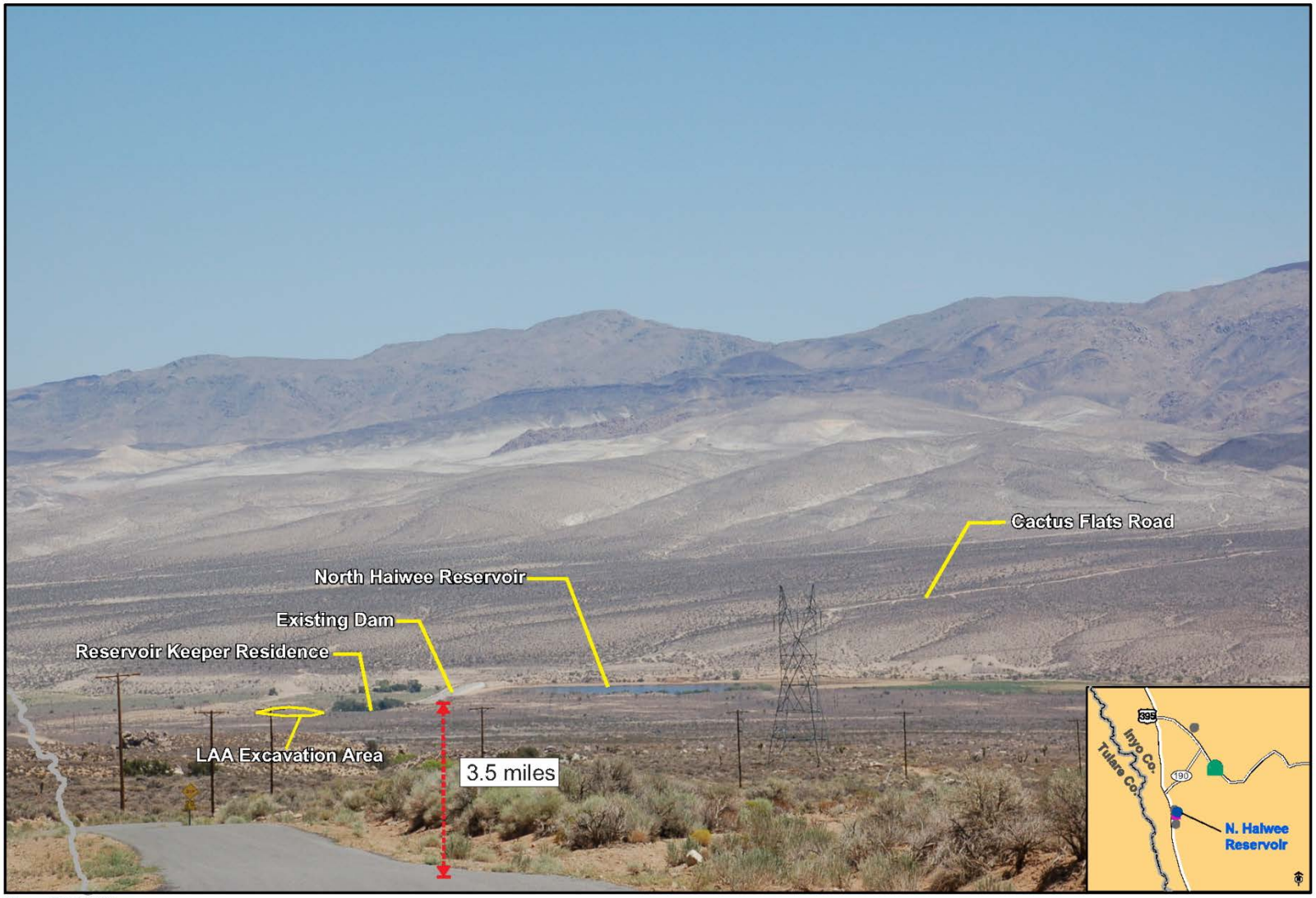
Figure 3.1-3
KOP 3



Source: TAHA 2015.

View looking west toward existing Dam from Cactus Flats Road

Figure 3.1-4
KOP 5



Source:TAHA 2015.

View looking east towards existing Dam and LAA Excavation Area from Sage Flats Road

Figure 3.1-5
KOP 6

Landscape Scenic Quality

Consistent with BLM methodology, lands are rated Class A, Class B, and Class C, for highest to lowest scenic quality, and are qualified by landform, vegetation, water, color, adjacent scenery, scarcity, and cultural modifications. Each of these components plays important roles in the assessment of change caused by the Proposed Project on landscape scenery.

Each of these factors is ranked on a comparative basis with similar features within the physiographic province, a geographic region with a characteristic geomorphology, and often specific subsurface rock type or structural elements. The physiographic province that includes the Project Site and its vicinity is the Basin and Range Province. The Basin and Range Province has a characteristic topography that includes steep climbs up elongated mountain ranges that alternate with long treks across flat, dry deserts in a repetitive pattern. The evaluation of scenic value also prioritizes areas with the most variety and most harmonious composition and is done in relationship to the natural landscape. Man-made features that complement the natural landscape may enhance the scenic value.

The Project Site is located within the lowest portion of the Owens Valley and has limited views due to the topography. The Desert Renewable Energy Conservation Plan (DRECP) Visual Resource Area identifies the Project Site as a Class C landscape. Areas surrounding the Project Site to the south, west, and east that are at higher elevations and have more panoramic views are identified as Class B and have VRM land classifications of II and III. The northern end of the project site and the surrounding area fall within the Olancha Greasewood Area of Critical Environmental Concern (ACEC), which is characterized by sand dunes and a greasewood (*sarcobatus vermiculatus*) plant community. The Class B Scenic Quality rating classifies the surrounding landscape as "above average areas in which features provide variety in form, line, color, and texture and, although the combinations are not rare in the surrounding region, they provide sufficient visual diversity to be considered moderately distinctive." This visual quality rating was verified during the visual field survey. The Class C Scenic Quality rating classifies the surrounding landscape as "common areas where characteristic features have little variation in form, line color, or texture in relation to the surrounding region" and would apply to the Project Site. Table 3.1-3 shows the scenic quality rating for each of the KOPs discussed above. The Scenic Quality ratings include one Class B and three Class C ratings.

TABLE 3.1-3
SCENIC QUALITY RATING

Location	Landform	Vegetation	Water	Color	Adjacent Scenery	Scarcity	Cultural Modification	Total Score	Scenic Quality Rating
KOP 2	2	2	0	1	0	1	0	6	C
KOP 3	2.5	2.5	0	1.5	1	1.5	-1	8	C
KOP 5	4	2.5	3	2	4	2	1	18.5	B
KOP 6	3.5	1	1	2	0	1	-3	5.5	C

Notes: The rating system of each of the seven categories is given on a scale of 0 to 5, where a 0 rating is the lowest (or least quality) and a 5 rating is the highest (The highest value for Cultural Modifications is 2 so the maximum score is 32. The scenic quality ratings are scored as A, B, and C, with A being the highest scenic value. Scores above 19 equate to an A rating, scores between 19 and 11 receive a B rating, and 11 points or fewer results in a C rating.
KOP = key observation point
Source: Terry A. Hayes Associates Inc., Visual Impacts Assessment Technical Report, 2015

Viewer Sensitivity

Analysis and mapping of sensitive viewers for the Proposed Project encompasses public and private viewers' concerns for landscape scenery. Sensitivity levels are defined by BLM as the measure of public concern for scenic quality. Public lands are assigned high, medium, or low sensitivity levels depending on how important the view is, the importance to the type of user who experiences the view, how many users experience the view, whether maintaining the view is in the public interest, and whether there are

particular land use objectives associated with the view. The Project Site is located within the lowest portion of the Owens Valley and has limited views due to the topography. The DRECP Visual Resource Area identifies the Project vicinity as having a high sensitivity due to its proximity to a scenic byway (US-395) and by the amount and type of users who travel along the scenic byway. The sensitivity along US-395 was verified by a field visit. However, viewer sensitivity within the Project Site would be considered low as there are a limited number of users, comprised primarily of workers at NHR and nearby residents. Similarly, KOP 5 has a limited number of viewers from Cactus Flats Road. The Transportation/Traffic Technical Report, included as Appendix M of this Draft EIR/EA, reports very low traffic volumes on Cactus Flats Road. From the north of the existing Dam, there are no views of the water in NHR or the US-395. The predominant foreground-middleground views within the Project area are of continuous rolling hills spreading out from the valley floor. Table 3.1-4 shows the sensitivity levels for the KOPs discussed above.

Distance Zones

Distance zones are typically delineated based on visibility and are not a uniformly applied buffer. Because the Project Site has limited visibility due to topography, it would qualify as a seldom seen zone as it is not visible from US-395 or the closest residences to the north. The distance zones for each of the KOPs are also shown in Table 3.1-4.

TABLE 3.1-4
SENSITIVITY LEVEL RATING AND DISTANCE ZONE

Location	Type of Users	Amount of Use	Public Interest	Adjacent Land Uses	Special Area Sensitivity	Other Factors	Overall Rating	Distance Zone
KOP 2	L	L	L	L	NP	NP	L	SS
KOP 3	L	L	L	L	NP	NP	L	B
KOP 5	M	L	L	L	NP	NP	L	FM
KOP 6	H	L	M	M	NP	NP	M	B

Notes:
KOP = key observation point; NP = Not Present; L = Low; M = Medium; H = High; SS = Seldom Seen; B = Background; FM = Foreground-middleground
Source: Terry A. Hayes Associates Inc., Visual Impacts Assessment Technical Report, 2015

3.1.3 Methodology for Analysis

The analysis of potential for aesthetic and visual quality impacts involves determining whether the potential visual impacts from proposed surface-disturbing activities or development would meet the management objectives established for the area, or whether design adjustments would be required. To evaluate potential visual effects, contrast ratings are assigned to each view by considering the following factors: distance, angle of observation, length of time the Proposed Project is in view, relativity to size or scale, season of use, light conditions, recovery time, spatial relationship, and atmospheric conditions. The degree of visual change is measured through a contrast rating established in the BLM *Visual Resource Management* (VRM) *Manual 8431* (BLM, 1986). The visual contrast rating (VCR) process is used for this analysis, which involves comparing the Proposed Project's features with the major features in the existing landscape using the basic design elements of form, line, color, and texture. The analysis is to be used as a guide for resolving visual impacts. The contrast rating system is a systematic process used by BLM to analyze potential visual impacts of projects and activities. For purposes of this analysis, the degree to which the Proposed Project impacts the visual quality of a landscape depends on the visual contrast created between the Proposed Project and the existing landscape. The contrast is measured by comparing the Proposed Project features with the major features in the existing landscape.

The following steps are used to implement the VCR process (BLM, 1986):

- Define project description and objectives

- Select Key Observation Points (KOP)
- Prepare Visual Simulations
- Determine Project Contrast

Determining the degree of contrast is the key factor in identifying whether the Proposed Project would result in a visual impact. The following general criteria are to be used when rating the degree of contrast:

- None - The element contrast is not visible or perceived.
- Weak - The element contrast can be seen but does not attract attention.
- Moderate - The element contrast begins to attract attention and begins to dominate the characteristic landscape.
- Strong - The element contrast demands attention, will not be overlooked, and is dominant in the landscape.

For the purposes of this analysis, when the degree of contrast is weak or not perceived, the impact of the Proposed Project would not be significant. When the degree of contrast is determined to be moderate or strong, the Proposed Project would result in a visual impact and mitigation measures would be required to reduce the impact. Visual contrast rating worksheets were proven during field reconnaissance and provided a measure of the degree of contrast that would potentially occur from the introduction of the Proposed Project components into the existing landscape. These sheets are included in Appendix C. The following factors should be considered when applying the criteria:

- Distance - The contrast created by a project usually is less as viewing distance increases.
- Angle of Observation - The apparent size of a project is directly related to the angle between the viewer's line-of-sight and the slope upon which the project is to take place. As this angle nears 90 degrees (vertical and horizontal), the maximum area is viewable.
- Length of Time the Project is in View - If the viewer has only a brief glimpse of the project, the contrast may not be of great concern. If, however, the project is subject to view for a long period, as from an overlook, the contrast may be very significant.
- Relative Size or Scale - The contrast created by the project is directly related to its size and scale as compared to the surroundings in which it is placed.
- Season of Use - Contrast ratings should consider the physical conditions that exist during the heaviest or most critical visitor use season, such as snow cover and tree defoliation in the winter, leaf color in the fall, and lush vegetation and flowering in the spring.
- Light Conditions - The amount of contrast can be substantially affected by the light conditions. The direction and angle of lighting can affect color intensity, reflection, shadow, form, texture, and many other visual aspects of the landscape. Light conditions during heavy use periods must be a consideration in contrast ratings.

For the purpose of ensuring compliance with the BLM's DRECP LUPA, the Proposed Project was assessed to ensure:

- The Proposed Project identifies CMAs; or
- If no management action is identified, the actions are consistent with the terms, conditions, and decisions of the Proposed Plan.

CEQA Significance Criteria

The thresholds of significance for the Proposed Project's potential to impact aesthetics are based on Appendix G of the State CEQA Guidelines. The following thresholds of significance were analyzed:

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

- Would the project substantially degrade the existing visual character or quality of the site and its surroundings?
- Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

The Appendix G significance criteria listed below were scoped out of the analysis for further consideration in the IS (Appendix A), and are discussed in Chapter 4, Other CEQA and NEPA Considerations, of this Draft EIR/EA.

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

NEPA Requirements

The term "significantly" as used in NEPA requires considerations of both context and intensity (40 CFR 1508.27). Therefore, thresholds serve as a benchmark for determining if a project action would result in a significant adverse environmental impact when evaluated against the baseline. The environmental effects analysis of the Proposed Project related to aesthetics includes an assessment of the context and intensity of the impacts as defined in the NEPA implementing regulations, 40 CFR 1508.27, and the BLM *NEPA Handbook H-1790-1* of 2008 and BLM *VRM Manual 8431*, as described above. The BLM *NEPA Handbook H-1790-1* requires that duration be considered and that both short- and long-term adverse and beneficial impacts be disclosed in the NEPA analysis. The effects analysis must demonstrate that BLM took a "hard look" at the impacts of the action. The level of detail must be sufficient to support reasoned conclusions by comparing the amount and the degree of change (impact) caused by the proposed action and alternatives (BLM *NEPA Handbook H-1790-1*, 2008, p. 55). Additionally, direct, indirect, residual, and cumulative impacts for the Proposed Project must be considered. BLM does not provide a determination on the level of significance in a NEPA document. Rather, BLM leaves that determination to the FONSI which will be completed prior to the signing of a Decision Record. Any characterization of significance in this Draft EIR/EA applies only to the CEQA determination.

Applicable Best Management Practices

An appropriate combination of monitoring and resource impact avoidance measures would be employed during construction of the Proposed Project to avoid and reduce impacts, including the implementation of the following BMP:

1) Should lighting be required for construction activities, lights would be shielded (e.g., downward facing light visors) and focused directionally on work areas to prevent light spillover onto sensitive receptors and to avoid creating a distraction for drivers along US-395.
2) Should nighttime construction lighting be visible from the US-395 corridor, LADWP would issue a public notice to local residences and newspapers (e.g., Inyo Register and Mammoth Times) and inform law enforcement of construction plans. Noticing would be similar to the process used for public hearings.

3.1.4 Environmental Consequences

AES-1: *Would the project have substantial adverse effect on a scenic vista?*

No Project Alternative

Under the No Project Alternative, the existing Dam, Cactus Flats Road, and LAA would remain on the Project Site as under existing conditions. Typical maintenance activities would occur as they do under existing conditions. No construction activities would occur and no earthen material would be required. As no construction would occur, no haul trucks would be present along state routes; therefore, no dust would be generated and views would not be obstructed. In addition, no construction equipment or fencing would

be used at the Project Site. Therefore, no impact to a scenic vista would occur under the No Project Alternative.

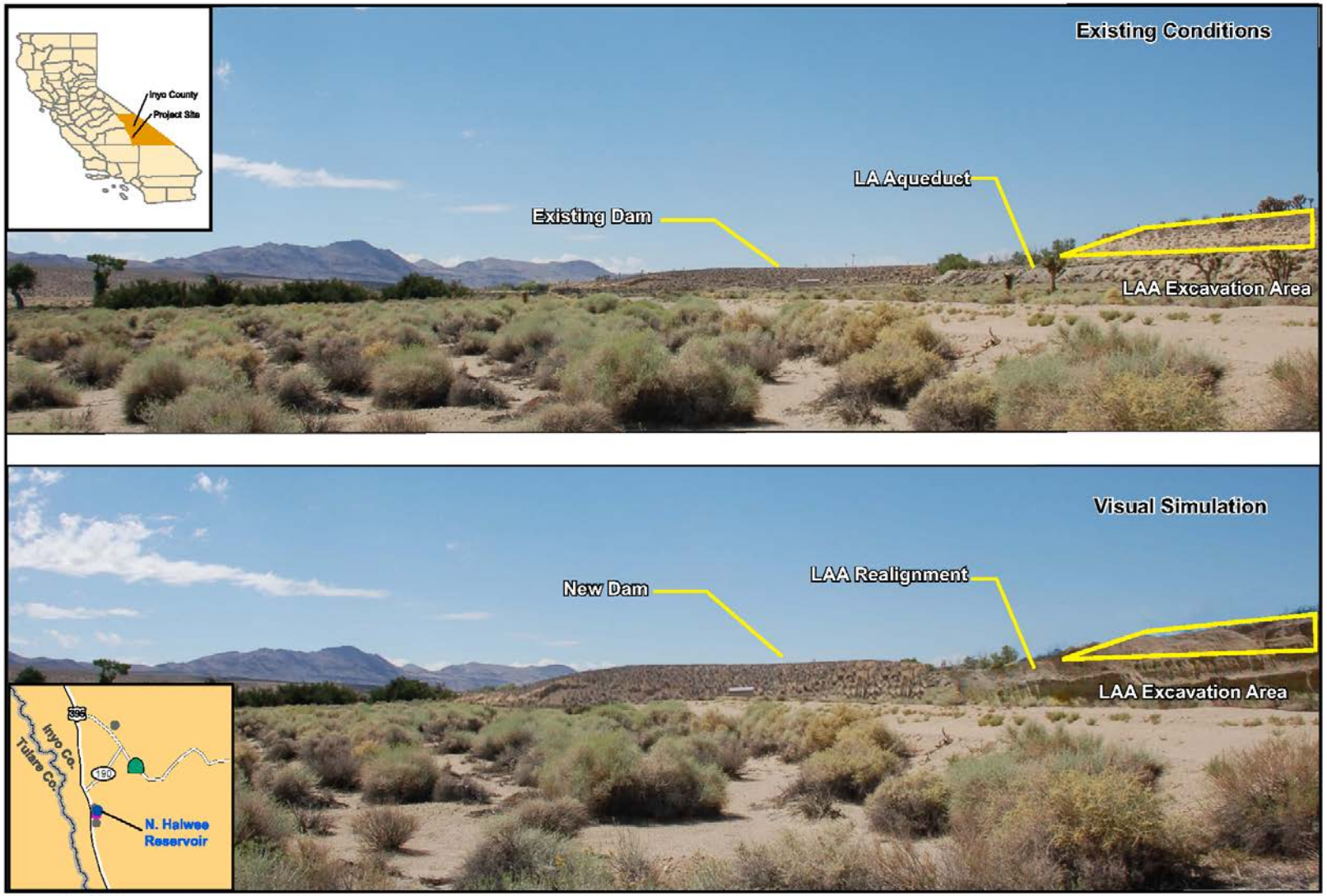
Build Alternatives - Construction

CDSM Alternative

Proposed Project activities in the visual landscape which may disturb views during construction include cleared right-of-ways, temporary buildings, fences, and debris storage, areas cleared for construction, material storage yards, and staging areas. Construction activities occurring in the immediate foreground of the viewer would be more visible than those appearing at a further distance, where construction would not likely be visible.

Given that the Project Site is located in at the lowest portion of the Owens Valley and given the low topography and lack of visibility of the Project Site, temporary visual construction effects on-site would be limited to the residences to the north of the Project Site, which are represented by KOP 2. As shown in Figure 3.1-6, NHD2 would not obstruct views of mountains to the south, and the lowering of topography for the LAA Realignment would increase views. Views of construction activity would be limited to primarily dust and large construction equipment, which may be visible at a distance of approximately 0.5-mile. Construction activities at the LAA Excavation Area would involve temporary excavation and stockpiling of materials, as well as usage of construction equipment. Excavation at the LAA Excavation Area would involve earthmoving activities, including temporary stockpiling onsite, but generally would lower the elevation of the site, thereby increasing views. Excavation of the LAA Excavation Area may alter existing drainage patterns as flows would likely need to be routed around the excavated pit. Implementation of the SWPPP, as discussed in Section 3.10, Hydrology and Water Quality, for the Proposed Project would identify necessary flow routing to prevent the pit from filling with water, thereby limiting the contrast in visual character

The primary visual effects during construction (where the greatest contrasts in visual character would occur) would be along the haul truck routes for NHD2 within the Project Site and to the existing mine in Keeler, which would be in proximity to a small number of residences (less than ten) north of the Project Site along Cactus Flats Road. Potential increases in dust are not anticipated to dominate the characteristic landscape. The Proposed Project would implement Rule 401 and 431 as dust and particulate matter control measures required by the Great Basin Unified Air Pollution Control District and the State Implementation Plan. These measures require frequent watering of dirt roads and disturbed land and would minimize effects of dust dispersion to the greatest extent feasible. Refer to Section 2.6, Best Management Practices in Chapter 2 and Section 3.3, Air Quality for a description of dust abatement measures. There are no established views or high viewer sensitivity along the haul routes, other than the state routes. The presence of haul trucks along portions of the state routes would not generate dust or obstruct views as they are paved and well-traveled roads. The haul truck routes for the LAA Excavation Area and the existing mine would create dust and would place trucks on dirt roads that usually have little or no vehicle activity. While the presence of truck activity along the haul routes would involve visual disruptions, there are no established views or high viewer sensitivity at the LAA Excavation Area, existing mine in Keeler, and along the haul truck routes which would result in scenic vistas being blocked. Dust from vehicles traveling on a dirt road is a component of the existing environment, and potential increases in dust are not anticipated to dominate views of the mountains. In addition, compliance with air quality regulations that require frequent watering of dirt roads and disturbed land would minimize effects to dust to the greatest extent feasible. Therefore, impacts related to a scenic vista would be less than significant for the Proposed Project.



Source: TAHA 2015.

View looking south towards existing and new Dams from Cactus Flats Road (south of farm)

Figure 3.1-6
Visual Simulation- KOP 2

Excavate and Recompact Alternative

Under the Excavate and Recompact Alternative, impacts related to scenic views during construction of the Proposed Project would be the same as under the CDSM Alternative. This alternative would excavate material for the construction of NHD2 at the LAA Excavation Area, and haul routes within the Project Site and o the existing mine in Keeler would be the same as under the CDSM Alternative. Therefore, similar to the CDSM Alternative, less than significant impacts would occur under the Excavate and Recompact Alternative.

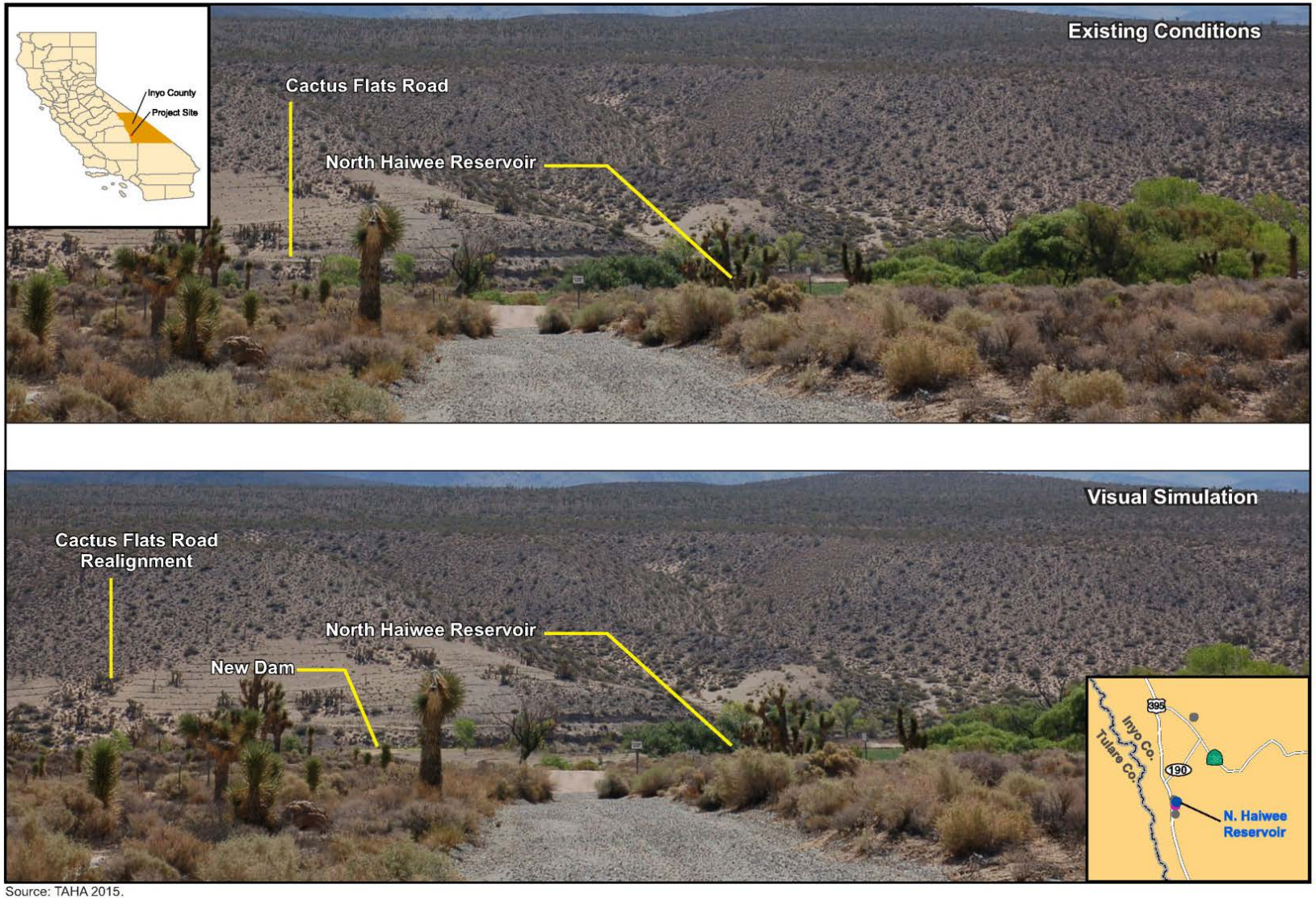
Build Alternatives - Operation

Visual resources could be impacted during the operation of the Proposed Project from an obstruction of a viewshed from the location of NHD2, resulting in a moderate or strong contrast. Indirect viewshed impacts could result from vehicles accessing the realigned portion of Cactus Flats Road due to its closer proximity to residences to the north. Figures 3.1-6 through 3.1-9 show visual simulations of KOPs 2, 3, 5, and 6, respectively, to facilitate the identification of contrast created by the Proposed Project.

As shown in Figure 3.1-6, the view from KOP 2 of NHD2 would be in closer proximity and replace the view of the existing Dam. The change in position of the LAA Realignment and Cactus Flats Road Realignment is anticipated to be slightly discernible to not discernible from this position. While NHD2 would be incrementally larger in size, none of the surrounding views would be substantially altered. As shown in Figure 3.1-7, the view from KOP 3 of NHD2 would be only slightly discernible from this position. None of the surrounding views would be substantially altered. As shown in Figure 3.1-8, the view from KOP 5 of NHD2 would be readily apparent from this elevated position. The segment of Cactus Flats Road, as shown in Figure 3.1-8, has low activity and the viewer sensitivity is low. None of the surrounding views would be substantially altered. As shown in Figure 3.1-9, the view from KOP 6 of NHD2 would be apparent from this elevated position. The segment of Sage Flats Road, as shown in Figure 3.1-9, has low activity; however, the established views are considered important and viewer sensitivity is considered medium. However, none of the surrounding views would be substantially altered such that a moderate or strong contrast would be created compared to the existing views.

Upon completion of the Proposed Project, there would be no excavation activities at the LAA Excavation Area. The residual effects at the LAA Excavation Area would result in disturbed land, which would generally be level with or lower than existing conditions. However, due to the low viewer sensitivity and existing topography, the views of the disturbed land would not be prominent, except in close proximity to the LAA Excavation Area and from Cactus Flats Road. This viewer population would generally be limited to people accessing the vacated excavation area or Haiwee Reservoirs, or from elevated distances to the west or east of the excavation area. Additionally, the LAA Excavation Area would be restored to its approximate natural state, as part of the Proposed Project's Topsoil Salvage and Revegetation Plan outlined in Mitigation Measure BIO-H (refer to Section 3.4, Biological Resources). Figures 3.1-6, 3.1-8, and 3.1-9 show views toward the LAA Excavation Area. The excavation at this site would potentially lower the landform and result in disturbed land. There is low viewer sensitivity in this area, which combined with the slope of topography and relative inaccessibility and view distance to this area, would not substantially affect scenic views or vistas. Therefore, operational impacts related to the LAA Excavation Area would be less than significant.

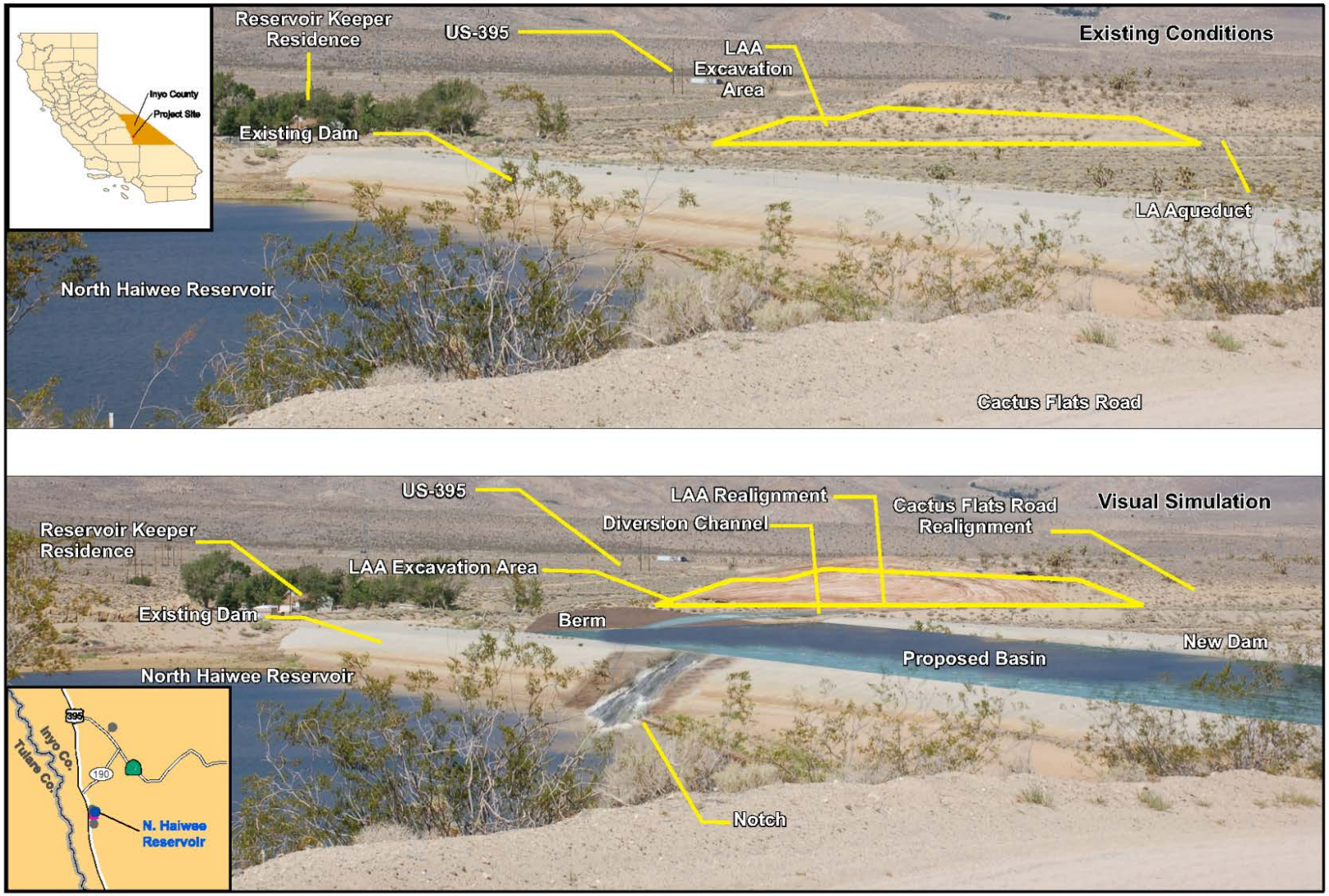
Due to the flat topography (average elevation of 3,750 feet with existing North Haiwee Dam crest elevation of 3,768 feet) of the Project Site and location of Proposed Project components, the existing viewsheds would not be obstructed. Therefore, impacts related to a scenic view or vista would be less than significant during operation of the Proposed Project.



Source: TAHA 2015.

View looking southeast toward new Dam
(from North Haiwee Road)

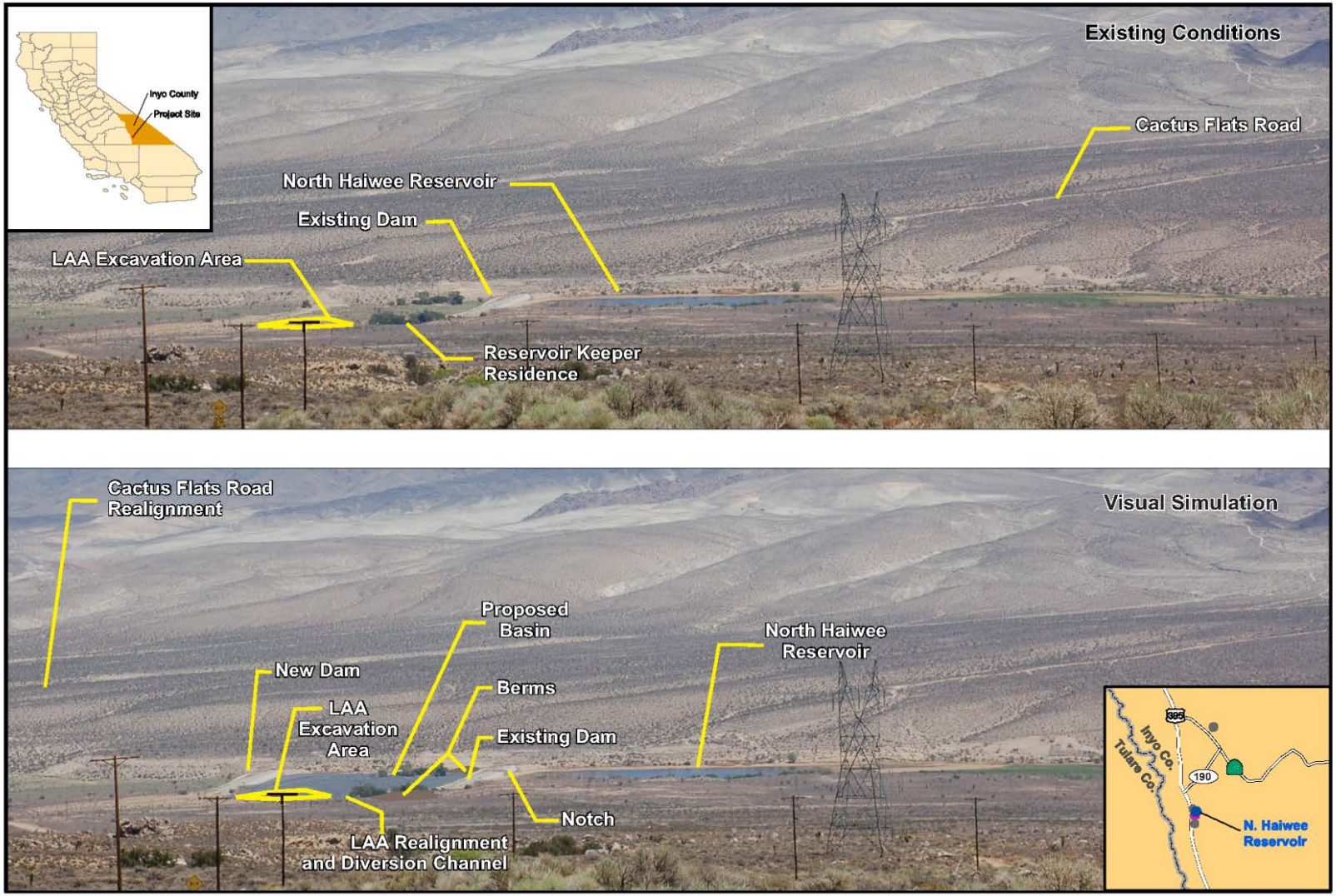
Figure 3.1-7
Visual Simulation - KOP 3



Source: TAHA 2015.

View looking west toward existing and new Dams from Cactus Flats Road

Figure 3.1-8
Visual Simulation - KOP 5



Source: TAHA 2015.

View looking east toward existing and new Dams and LAA Excavation Area from Sage Flats Road

Figure 3.1-9
Visual Simulation - KOP 6

AES-2: *Would the project substantially degrade the existing visual character or quality of the site and its surroundings?*

No Project Alternative

Under the No Project Alternative, the existing Dam, Cactus Flats Road, and LAA would remain on the Project Site as under existing conditions. Typical maintenance activities would occur as they do under existing conditions. No construction activities would occur and no earthen material would be required. As no construction would occur, temporary visual construction effects would occur such as dust and construction equipment. Therefore, no impact would occur under the No Project Alternative.

Build Alternatives – Construction

Construction activity is not anticipated to degrade the existing visual character or quality of the site and surroundings. The primary visual changes to sensitive receptors near the Project Site would result from the presence of haul trucks and construction vehicles accessing the site, as the Proposed Project components would not be discernible at these locations. The haul truck routes would create dust and would place trucks on a dirt road that usual have little or no vehicle activity. While the presence of truck activity along the haul routes would involve visual disruptions, there is not high viewer sensitivity at the LAA Excavation Area and along the haul truck routes for the Proposed Project.

CDSM Alternative

Given the topography and lack of visibility of the Project Site, temporary visual construction effects on-site would be limited. The residences to the north of the Project Site have minimal views of the Project Site, which are represented by KOP 2. Views of construction activity would be limited to primarily dust and large construction equipment, which may be visible at a distance of approximately 0.5-mile. The primary visual effects during construction (where the greatest contrasts in visual character would occur) would be along the haul truck routes for NHD2, which would be in proximity to a small number of residences (less than ten) north of the Project Site along Cactus Flats Road. The haul truck routes would create dust and would place trucks on a dirt road that usually have little or no vehicle activity. However, dust from vehicles traveling on a dirt road is a component of the existing visual character, such that, increasing the frequency of vehicles would not substantially contrast with or alter the visual character of the area. Potential increases in dust are not anticipated to dominate the characteristic landscape. In addition, compliance with air quality regulations that require frequent watering of dirt roads and disturbed land would minimize effects to dust to the greatest extent feasible. While truck activity along haul routes would involve temporary visual disruptions, there is not high viewer sensitivity along the haul routes, other than the state routes, which would provide a substantial contrast and result in an adverse effect. The presence of haul trucks along portions of the state routes, would also not contrast with the existing visual environment as they are well traveled roads. The addition of haul trucks along these state routes would not alter or substantially change the visual character of these locations with higher viewer sensitivity. Therefore, impacts related to existing visual character or quality of the site would be less than significant during construction of the Proposed Project under the CDSM Alternative.

Excavate and Recompact Alternative

Under the Excavate and Recompact Alternative, impacts related to existing visual character or quality of the site during construction for the Proposed Project would be the same as under the CDSM Alternative. This alternative would excavate material at the LAA Excavation Area, and haul routes within the Project Site and to the existing mine in Keeler would be the same as under the CDSM Alternative. Therefore, less than significant impacts would occur under the Excavate and Recompact Alternative.

Build Alternatives – Operation

Visual resources could be impacted during the operation of the Proposed Project from an obstruction of a viewshed from the location of the NHD2 components, resulting in a moderate or strong contrast. Indirect viewshed impacts could result from vehicles accessing the Cactus Flats Road Realignment due to its closer proximity to residences to the north. Figures 3.1-6 through 3.1-9 show visual simulations of KOPs 2, 3, 5, and 6, respectively, to facilitate the identification of contrast created by the Proposed Project.

As shown in Figure 3.1-6, the view of NHD2 from KOP 2 would replace the view of the existing dam and would be closer overall. The change in position of the LAA Realignment and the Cactus Flats Road Realignment is anticipated to be slightly discernible to not discernible from this position. Upon completion of the Proposed Project, there would be no excavation activities at the LAA Excavation Area. The construction activities at the LAA Excavation Area would result in disturbed land, which would result in some contrast with the surrounding visual environment. However, due to the low viewer sensitivity and low activity along Cactus Flats Road, the change in views from the disturbed land would be less than significant. While NHD2 would be incrementally larger in size, none of the surrounding views would be substantially altered such that a moderate or strong contrast would be created compared to the existing views. The resulting change in contrast would be weak. Therefore, operational impacts related to existing visual character or quality of the site from KOP 2 would be less than significant.

As shown in Figure 3.1-7, the view from KOP 3 of NHD2 would be only slightly discernible from this position. None of the surrounding views would be substantially altered such that a moderate or strong contrast would be created compared to the existing views. There would be no resulting change in contrast. Therefore, operational impacts related to the existing visual character or quality of the site from KOP 3 would be less than significant.

As shown in Figure 3.1-8, the view from KOP 5 of NHD2 would be readily apparent from this elevated position. The segment of Cactus Flats Road, as shown in Figure 3.1-8, has low activity and the viewer sensitivity is low. None of the surrounding views would be substantially altered such that a moderate or strong contrast would be created compared to the existing views. The resulting change in contrast would be weak. Therefore, operational impacts related to existing visual character or quality of the site from KOP 5 would be less than significant.

As shown in Figure 3.1-9, the view from KOP 6 of NHD2 would be apparent from this elevated position. The segment of Sage Flats Road, as shown in Figure 3.1-9, has low activity; however, the established views are considered important and viewer sensitivity is considered medium. From this distance, the proposed NHD2 does not substantially contrast with the existing visual environment as the proposed NHD2 is consistent with both the horizontal and vertical elements of the topographical transitions sloping to and from the valley and diagonal drainage lines that run toward the mountains in the background. None of the surrounding views would be substantially altered such that a moderate or strong contrast would be created compared to the existing views. The resulting change in contrast would be weak. Therefore, operational impacts related to existing visual character or quality of the site from KOP 6 would be less than significant.

Upon completion of the Proposed Project, there would be no excavation activities at the LAA Excavation Area. The residual effects at the LAA Excavation Area would result in disturbed land, which would result in some contrast with the surrounding visual environment. However, due to the low viewer sensitivity and existing topography, the views of the disturbed land would not be prominent, except in close proximity to the LAA Excavation Area. This viewer population would generally be limited to people accessing the vacated excavation area, or Haiwee Reservoirs, or from elevated distances to the west or east of the excavation area. Additionally, the LAA Excavation Area would be restored to its approximate natural state per the Topsoil Salvage and Revegetation Plan outlined in Mitigation Measure BIO-H (refer to Section 3.4, Biological Resources). Figures 3.1-6, 3.1-8, and 3.1-9 show views toward the LAA Excavation Area. The excavation at this site would potentially lower the landform and result in disturbed

land. Due to the low viewer sensitivity of this area, limited vegetation, slope of topography, and relative inaccessibility and view distance to this area, it is anticipated that the level of contrast created by disturbed soil and lowered landform would be weak. Therefore, operational impacts related to the LAA Excavation Area would be less than significant.

As described above, due to the low topography of the Project Site and location of Proposed Project components, the Proposed Project would not have a significant contrast with the existing visual setting. Therefore, operational impacts related to existing visual character or quality of the site would be less than significant.

AES-3: *Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?*

No Project Alternative

Under the No Project Alternative, the existing Dam, Cactus Flats Road, and LAA would remain on the Project Site as under existing conditions. Typical maintenance activities would occur as they do under existing conditions. No construction activities would occur and no earthen material would be required. As no construction would occur, no construction lighting would be necessary. Therefore, no light or glare impact would occur under the No Project Alternative.

Build Alternatives – Construction

The primary potential sources of light and glare to sensitive receptors near the Project Site would result from the presence of haul trucks and construction vehicles accessing the site. As previously discussed, the Project Site would not be discernible at these locations. Construction would generally utilize materials which do not create glare, such as concrete, aggregate, and earthen materials. Construction-related vehicles accessing the site would travel along existing roads and would not result in headlights being directed onto residences or disrupting views from US-395 or other elevated locations, such as along east Sage Flats Road, depicted in Figure 3.1-9. Any light or glare generated from construction-related vehicles would be brief and intermittent and would occur at distances such that views in the area would not be substantially affected.

Similarly, the LAA Excavation Area and existing mine in Keeler are located in areas with low visibility and viewer sensitivity. An exception is at KOP 6, which has views of the LAA Excavation Area experienced by more frequent or sensitive users, resulting in higher viewer sensitivity, as described in Table 3.1-3. The haul truck routes near the LAA Excavation Area would affect the same residences as discussed for the NHD2 components, the Cactus Flats Road Realignment, the LAA Realignment, and the diversion channel and NHD modifications (fewer than ten). Temporary glare and lighting on-site would be limited to nearby residences, and would be brief and intermittent. The primary sources of light and glare during construction would be haul trucks and construction equipment on haul routes traveling to and from the LAA Excavation Area and existing mine in Keeler, as well as onsite construction equipment at the LAA Excavation Area. Haul trucks would travel primarily during the daytime, and thus light and glare would be minimal. While construction would normally occur during daytime hours, it is anticipated that construction scheduling may require nighttime construction work for one or more of the Proposed Project components. In addition, some lighting may be required for security purposes. Should security lighting or other lighting be required for construction activities, LADWP would implement appropriate BMPs in which lights would be shielded to prevent light spillover onto sensitive receptors. Therefore, impacts related to light and glare would be less than significant during construction of the Proposed Project.

Build Alternatives – Operation

The NHD2 components, the Cactus Flats Road Realignment, the LAA Realignment, and the diversion channel and NHD modifications would have similar security lighting as the existing Dam, existing Cactus Flats Road, and existing LAA, and would not generate light during operation. Security personnel may

utilize light sources as needed, but these uses would be similar to existing conditions. In addition, maintenance activities would be similar to existing conditions and would not involve any substantial new sources of light.

The NHD2 components, the Cactus Flats Road Realignment, the LAA Realignment, and the diversion channel and NHD modifications would be constructed of materials similar to those utilized for the existing Dam, existing Cactus Flats Road, and existing LAA. These materials, which include concrete, aggregate and other materials, dirt, and asphalt, are not sources of considerable glare. The LAA Realignment and basin would contain water, which may be a source of glare; however, the LAA Realignment would replace the existing LAA, which also may create glare under existing conditions. The basin, which would be considered a source of glare, would be adjacent to the existing Dam. Thus, glare generated by the LAA Realignment and basin would be similar to existing conditions. Maintenance activities would be similar to existing conditions and would not involve any substantial new sources of glare.

Upon completion of the Proposed Project, there would be no excavation activities at the LAA Excavation Area. The LAA Excavation Area would be restored to a natural condition and would not include any sources of lighting or glare. The Topsoil Salvage and Revegetation Plan is included in Mitigation Measure BIO-H, as discussed in Section 3.4, Biological Resources. The LAA Excavation Area would not generate any vehicle trips during operation and therefore haul trucks and other vehicles would not cause any light or glare impacts. Operational impacts related light and glare would be less than significant.

3.1.5 Mitigation Measures

The Proposed Project would result in no significant impacts related to aesthetics. No mitigation measures are required.

3.1.6 Residual Impacts After Mitigation

The Proposed Project would result in no significant impacts related to aesthetics under CEQA.

3.1.7 NEPA Conclusions

No Project Alternative

The No Project Alternative would not change the existing conditions of the Project Site and would not utilize any earthen materials.

Build Alternatives

The NEPA analysis uses the BLM *VRM Manual 8431* methodology as well as the BLM DRECP LUPA as a basis of impact assessment. The visual contrast process used in assessing the CEQA thresholds also supports compliance with the DRECP LUPA. The Proposed Project is consistent with applicable CMAs of the DRECP LUPA, such as LUPA-VRM-1, which requires management of visual resources in accordance with the VRM classes, and with LUPA-VRM-2, which ensures activities within each VRM class meet the objectives of the VRM class through the visual contrast rating process. The Proposed Project is also consistent with LUPA-CUL-7, which requires coordination to ensure VRM classes for the Project Site consider cultural resources and tribal consultation to include landmarks of cultural significance to Native Americans. As described above, the Proposed Project, given its low viewer sensitivity, would not substantially contrast with the existing visual environment during construction or operation, or when taken as a cumulative consideration.

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3.2 Agricultural and Forestry Resources

This section analyzes the potential impacts of the Proposed Project as it relates to agricultural and forestry resources. The applicable laws, regulations, and methods used to determine the effects of the Proposed Project are described herein. The section describes the affected environment and analyzes the environmental consequences of the Proposed Project and, if applicable, provides mitigation measures.

3.2.1 Regulatory Setting

Federal

Federal Land Policy and Management Act of 1976

The FLPMA is an act of Congress intended "to establish public land policy; to establish guidelines for its administration; to provide for the management, protection, development, and enhancement of the public lands; and for other purposes." The FLPMA is the "organic act" which establishes BLM's multiple-use mandate to serve present and future generations. Title VI of the FLPMA provides Designated Management Areas, including the CDCA. Section 601 further establishes the need for preparation of a comprehensive plan addressing the region (BLM, 2001).

California Desert Conservation Area Plan

The CDCA Plan was created in 1980 under the direction of the FLPMA which required that BLM inventory CDCA resources and prepare a land-use management plan for the area. The purpose of the plan is to establish guidance for the management of the public lands of the California Desert by BLM. The CDCA Plan has subsequently been amended many times. The CDCA Plan implements the management principles of multiple use, sustained yield, and maintenance of environmental quality from the FLPMA. The Project Site is within the boundaries of the CDCA, and is within the DRECP LUPA area and West Mojave Plan Area.

Desert Renewable Energy Conservation Plan Land Use Plan Amendment of 2016

The DRECP LUPA, approved by BLM in September 2016, is an amendment to the CDCA Plan. The key objectives of the DRECP are to streamline renewable energy development and to provide for long-term conservation and management of special-status species, vegetation, and other resources within the DRECP Plan area. The DRECP identifies Development Focus Areas and Variance Process Lands where renewable energy development is more streamlined, as well as conservation areas, and several other land uses. The DRECP LUPA implements its objectives through specific CMAs. Some CMAs apply across the entirety of the DRECP Plan area, while others apply only to specific land uses. The DRECP LUPA contains several CMAs related to agricultural resources, particularly in regards to management of livestock grazing and grazing allocations; however, none of the CMAs are applicable to the Proposed Project. The DRECP LUPA also creates new land use designations which apply to the Project Site, including CDNCLs, ACECs, and SRMAs. CMAs not applicable to agricultural and forestry resources include: LUPA-LIVE-1, 2, 3, 4, 5, 6, 7, 8; CONS-BIO-IFS-7, 8; DFA-VPL-LIVE-1, 3; DFH-WHB-1, 2, 3; and GPL-LIVE-1, 3. The consistency of the Proposed Project with the DRECP CMAs is provided in Appendix B of this Draft EIR/EA.

State

California Land Conservation Act of 1965 (Williamson Act)

The California Land Conservation Act of 1965 – commonly referred to as the Williamson Act – enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive reduced property tax assessments because they are based upon actual land use (i.e., farming and open space uses) as opposed to full market value of the property (California Department of Conservation [DOC], 2015b).

According to the DOC, Division of Land Resource Protection, as of 2013, all counties within the state offer Williamson Act contracts except Del Norte, San Francisco, Inyo, and Yuba Counties (DOC, 2015c). Therefore, no Williamson Act lands occur within the Project Site.

California Farmland Mapping and Monitoring Program

The Farmland Mapping and Monitoring Program (FMMP) was established in 1982 and is maintained by the DOC with the goal of providing consistent and impartial data to decision makers for use in assessing present status, reviewing trends in land use, and planning for the future of California's agricultural land resources (DOC, 2015a). Important Farmland Maps prepared under the FMMP are utilized to determine the location of agricultural lands throughout California.

The FMMP specifies that land must meet both of the following criteria in order to be mapped as Prime Farmland and Farmland of Statewide Importance:

1. Land Use: The land has been used for irrigated agricultural production at some time during the four years prior to the Important Farmland Map date. Irrigated land use is determined by FMMP staff by analyzing current aerial photos, local comment letters, and related geographic information system data, supplemented with field verification.
2. Soil: The soil must meet the physical and chemical criteria for Prime Farmland or Farmland of Statewide Importance as determined by the United States Department of Agriculture Natural Resources Conservation Service, which compiles lists of soils in each survey area that meet the quality criteria. Factors considered in qualification of a soil include:
    - Water moisture regimes, available water capacity, and developed irrigation water supply
    - Soil temperature range
    - Acid-alkali balance
    - Water table
    - Soil sodium content
    - Flooding (uncontrolled runoff from natural precipitation)
    - Erodibility
    - Permeability rate
    - Rock fragment content
    - Soil rooting depth

Fire and Resource Assessment Program

The Fire and Resource Assessment Program is implemented by the California Department of Forestry and Fire Protection (CAL FIRE) pursuant to Public Resources Code Section 4789, and mandates periodic assessments of California's forest and rangeland resources (CAL FIRE, 2010). In 2008, the Federal Farm Bill added a provision to federal law that required states to do assessments of forest resources. The Fire and Resource Assessment Program provides a variety of products, including the Forest and Range Assessment, which is a detailed report on California's forests and rangelands. The most recent Forest and Range Assessment was published in June 2010 with the intention of meeting both the state and federal mandates, covering both forest and rangeland resources, on private as well as publically managed lands. As required by the 2008 Farm Bill, the 2010 assessment presents an analysis of trends, conditions, and the development of priority landscapes (CAL FIRE, 2010).[4]

[4] Priority landscapes are defined as spatial areas to be delineated in order to help focus investments and other programs to deal with associated issues.

Forest Legacy Program

The Forest Legacy Program is implemented by CAL FIRE to protect environmentally important forestland threatened with conversion to non-forest uses, such as subdivision for residential or commercial development. It comprises both the Federal Forest Legacy Program and the California Forest Legacy Program and is entirely voluntary. Landowners participating in the program may sell or transfer particular rights, such as the right to develop the property or to allow public access, while retaining ownership of the property and the right to use it consistent with the terms of the easement. The agency or organization holding the easement is responsible for managing the rights it acquires and for monitoring compliance by the landowner (CAL FIRE, 2012).

Local

Inyo County General Plan

The ICGP was adopted in December 2001 and provides goals and policies for planning throughout the County. These goals and policies include several topics, including agricultural resources. Chapter 8 of the ICGP, the Conservation and Open Space Element, discusses Agricultural Resources (under Section 8.3). The Conservation and Open Space Element defines important terms related to agricultural resources, describes the existing setting of agriculture in Inyo County including the County's culture, heritage, and economy, and presents agricultural resources issues. The ICGP also describes Inyo County's goal for agriculture: to provide and maintain a viable and a diverse agricultural industry in Inyo County (Inyo County, 2001a).

This goal is supported by several policies, which are shown in Table 3.2-1 below.

TABLE 3.2-1
INYO COUNTY GENERAL PLAN – AGRICULTURAL GOALS AND POLICIES

Policy	Details
Agricultural Resources	
AG-1.1 Identify Important Agricultural Lands	Support and encourage the identification of important agricultural lands within the County.
AG-1.2 Continue Agricultural Production	Support and encourage continued agricultural production activities in the County.
AG-1.3 Conversion of Agricultural Land	Discourage conversions of productive agricultural lands for urban development.
AG-1.4 Minimize Land Conflicts	Preserve and protect agricultural lands from encroachment by incompatible land uses.
AG-1.5 Education in Agronomics	Support education programs in agricultural sciences to insure a future of well-trained agronomists and informed citizens.
AG-1.6 Public Lands for Agriculture	Support the continued use and expansion of public lands for agricultural operations.
AG-1.7 LADWP Lands for Agriculture	Work with LADWP to expand the County's agricultural base of cropland on identified arable lands to benefit the agricultural economy.
AG-1.8 Sustainable Agriculture	Promote sustainable agricultural activities to lessen environmental impacts, such as: • Manage lands on a sustainable yield basis; • Encourage the use of reclaimed water for agricultural use where feasible, and/or be more efficient with irrigation water to conserve potable water; and • Rotate crop production to conserve soil characteristics.

Note: AG=Agricultural Resources
Source: Inyo County, 2001

Finally, the ICGP provides implementation measures for each of these policies.

Inyo County is in the process of updating their General Plan. A draft General Plan has been prepared and was released for public review in May 2013 (Inyo County, 2013a).

Inyo County Zoning Code

The Inyo County Zoning Code is Title 18 of the Inyo County Code. Chapter 18.12 of the Zoning Code provides the zoning regulations for the Open Space (OS) Zone, within which the Project Site is located. The OS Zone is intended to:

- "Provide a zone classification for those areas designated as open space by the county general plan so as to encourage the protection of mountainous, hilly upland, valley, agricultural, potential agricultural, fragile desert areas, and other mandated lands from fire, erosion, soil destruction, pollution and other detrimental effects of intensive land use activities.
- Establish standards for land uses that will protect and preserve the environmental resources, scenic, natural features, and open space character of the county, while also providing for agricultural development and protection of existing agricultural areas from urban development or residential subdivision.
- Preserve agricultural areas open space around the more intensive urban areas of the county, while providing for compatible multiple use of nonagricultural lands which are principally held by federal and other public agencies (Inyo County, 1998)."

Inyo County is in the process of updating their Zoning Code. A draft of the updated Zoning Code was released for public review in May 2013 (Inyo County, 2013b).

3.2.2 Affected Environment

Project Site

The Project Site is designated NR and SFL under the ICGP. The NR land use designates lands intended to remain open in character, with managed resource production permitted. Agriculture is not listed as a land use under the NR designation. The SFL designation applies to lands where state and federally owned properties have adopted plans. The properties surrounding the Project Site to the west, east, and northeast are also designated SFL. The nearest property designated as Agriculture land use under the ICGP is Butterworth Ranch, located directly north of the Project Site. Butterworth Ranch is an active agricultural use.

The Project Site is zoned OS for open space uses in the Inyo County Zoning Code. The OS zone permits various agricultural uses, including farms, ranches, and similar agricultural uses (Inyo County, 1998). In addition, the Draft 2013 Inyo County Zoning Ordinance identifies major utilities as a conditionally permitted use (Inyo County, 2013b). The area around the Project Site is also zoned OS (Inyo County, 1998). NHR, which is located south of the Project Site, is zoned NR (Inyo County, 2001b). Figure 3.2-1 shows the ICGP land use and zoning designations in the Project vicinity.

A portion of the Project Site is located within the Olancha Greasewood ACEC identified by the DRECP LUPA, which allows for use of existing grazing allotments, but does not permit the expansion of existing allotments or creation of new allotments. The Olancha Dunes SRMA designation for this portion of the Project Site, and the CDNCL designation which applies to all BLM-managed portions of the Project Site, do not identify agriculture as an "important value". The northeastern portion of the Project Site, including the northeastern portion of NHD2 and a portion of the Cactus Flats Road Realignment, is designated by BLM as part of the Lacey-Cactus-McCloud livestock grazing allotment (LCM allotment) which is a 165,140 acre grazing area, although only a portion of the LCM allotment is designated for grazing. The portion of the LCM allotment within the Project Site does not currently permit grazing; however, BLM may reconsider grazing in the future on ungrazed areas within the LCM allotment (BLM, 2013a and 2013b). Where the LCM allotment overlaps the Project Site, it is not within BLM-managed land, and therefore is not subject to the DRECP LUPA.

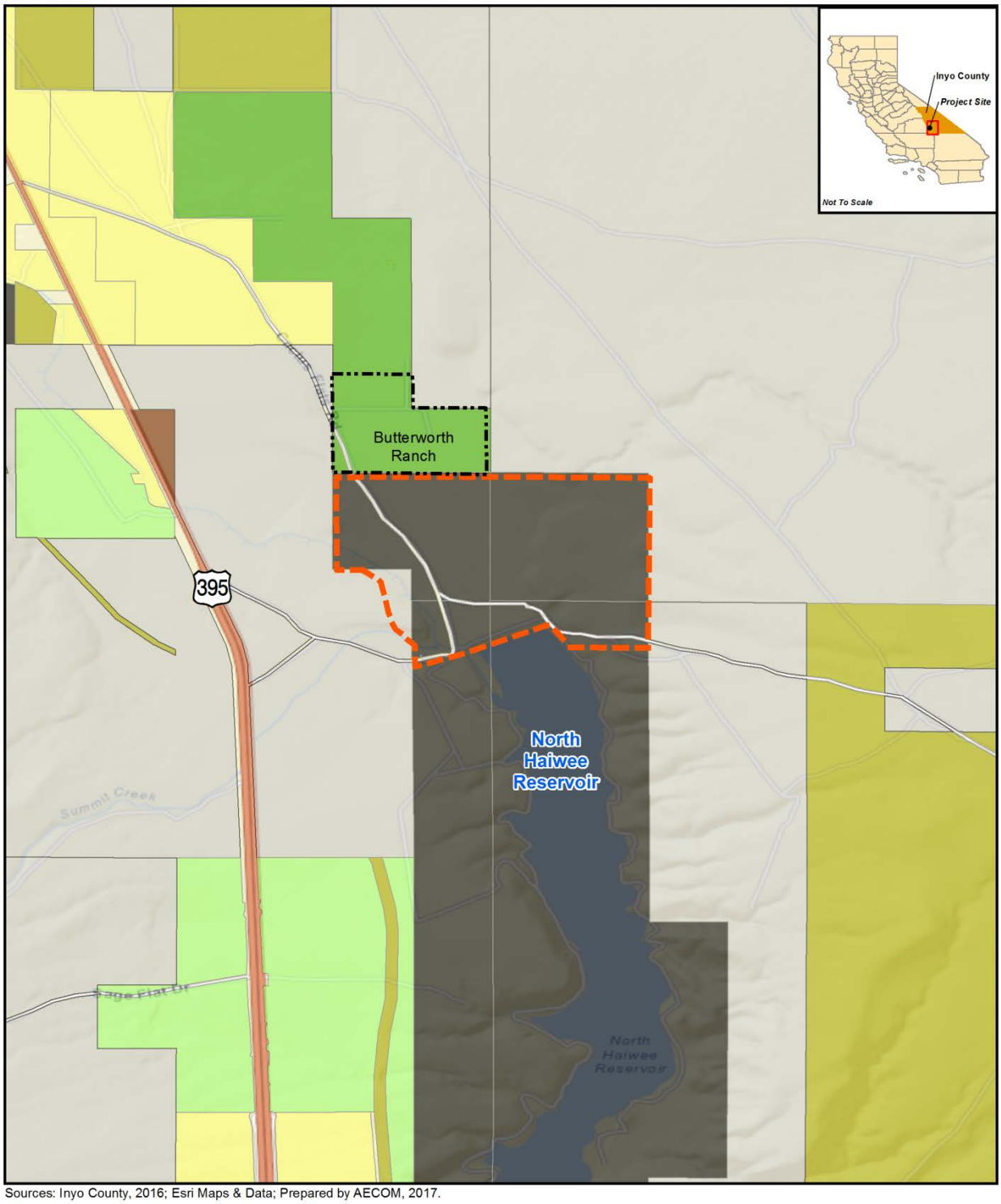

Figure 3.2-1

Inyo County General Plan Land Uses

The LAA Realignment and LAA Excavation Area, which are located on LADWP-owned and BLM-managed land, are not currently used for agricultural purposes. The LAA Realignment area is contained within the LAA Excavation Area which is generally undeveloped but has had some disturbance in the past due to construction of the existing LAA and extraction of fill materials for NHD. The LAA Excavation Area and its surrounding area are zoned OS (Inyo County, 1998).

The LAA Excavation Area is designated as NR in the eastern and northern portions of the sites and SFL in the western portions (Inyo County, 2001b), and are identified as unclassified/undesignated lands under the West Mojave Plan (BLM, 2004). The LAA Excavation Area is surrounded by the ICGP NR land use to the north and east and the SFL land use to the west and south (Inyo County, 2001b). The haul route for the LAA Excavation Area would generally utilize existing paved and dirt roads but three new segments of dirt road would be constructed to the north, northeast, and south of the excavation area, upon issuance of a BLM ROW grant. These roadway improvements would occur within the NR and SFL land use designation and OS zone.

3.2.3 Methodology for Analysis

The assessment of impacts of the Proposed Project on agricultural and forestry resources is based on a review of existing agricultural resources, and existing zoning and land uses which permit agricultural resources. Impact evaluations were based on the potential for the Proposed Project to affect or convert existing agricultural resources to non-agricultural uses, and on the potential to change land use and zoning designations such that properties on which agriculture is permitted would no longer permit these uses.

CEQA Significance Criteria

The thresholds of significance for the Proposed Project's potential to impact agricultural and forestry resources are based on Appendix G of the State CEQA Guidelines. The following threshold of significance was analyzed:

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

The Appendix G significance criteria listed below were scoped out of the analysis for further consideration in the IS (Appendix A), and are discussed in Chapter 4, Other CEQA and NEPA Considerations, of this Draft EIR/EA.

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

NEPA Requirements

The term "significantly" as used in NEPA requires considerations of both context and intensity (40 CFR 1508.27). Therefore, thresholds serve as a benchmark for determining if a project action would result in a significant adverse environmental impact when evaluated against the baseline. The environmental effects analysis of the Proposed Project on agricultural and forestry resources includes an assessment of the context and intensity of the impacts as defined in the NEPA implementing regulations,

40 CFR 1508.27, and the BLM *NEPA Handbook H-1790-1* of 2008. The BLM *NEPA Handbook H-1790-1* requires that duration be considered and that both short- and long-term adverse and beneficial impacts be disclosed in the NEPA analysis. The effects analysis must demonstrate that BLM took a "hard look" at the impacts of the action. The level of detail must be sufficient to support reasoned conclusions by comparing the amount and the degree of change (impact) caused by the proposed action and alternatives (BLM *NEPA Handbook H-1790-1*, 2008, p. 55). Additionally, direct, indirect, residual, and cumulative impacts for the Proposed Project must be considered. BLM does not provide a determination on the level of significance in a NEPA document. Rather, BLM leaves that determination to the FONSI which will be completed prior to the signing of a Decision Record. Any characterization of significance in this Draft EIR/EA applies only to the CEQA determination.

3.2.4 Environmental Consequences

AFR-1: *Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?*

No Project Alternative

Under the No Project Alternative, the existing Dam, Cactus Flats Road, and the LAA would remain on the Project Site as under existing conditions. The existing NHD would remain in place and NHR would function as it does today. Typical maintenance activities would occur as they do under existing conditions. No construction activities would occur and no earthen material would be required. The nearest agricultural use, Butterworth Ranch, would continue to function under the No Project Alternative as it does under existing conditions. In addition, all land use and zoning designations would remain the same as under existing conditions, and no conflicts with existing zoning would occur. Therefore, no impact to the agricultural and forestry resources would occur under the No Project Alternative.

Build Alternatives – Construction

Inyo County is not currently a participating county in the Williamson Act program and the Proposed Project would not conflict with any Williamson Act contract land. Therefore, construction of the Proposed Project under all Build Alternatives would not conflict with Williamson Act contracts. No impact would occur.

CDSM Alternative

The Proposed Project would be constructed on the Project Site, which is zoned OS. The OS zone permits many uses, including public buildings, uses of public service nature and mining and processing of natural resources, including borrow pits, as a conditional use. In addition, as described above, the Draft 2013 Inyo County Zoning permits major utilities as a conditional use under the draft Ordinance. The Proposed Project would therefore be consistent with OS zoning. The Project Site is designated as NR and SFL land use by Inyo County. The NR land use designation does not specifically identify agriculture as a land use. Construction activities for the Proposed Project would be confined to the Project Site. Each of these components is consistent with existing land uses on site, and would remain consistent with these uses throughout their construction. While the basin would place water in a currently dry area, it would remain consistent with the Project Site's utility and water use. Construction would also include staging of construction equipment and stockpiling of construction materials and debris. While these are not existing land uses, construction would be temporary, and staging and stockpiling areas would be used only during construction activities. Additionally, staging and stockpiling areas would occur within the boundaries of the Project Site and not on any agricultural lands. Construction activities for these components would be compatible with and would not change the existing Inyo County zoning or land use of the Project Site.

The LCM allotment for livestock grazing coincides with the northeastern portion of the Project Site. Although designated as part of the allotment, the portion of the LCM allotment on the Project Site does not currently permit livestock grazing on the Project Site (BLM, 2013a). The current designation was

made in 2013 and lasts for 10 years (BLM, 2013b). In addition, the portion of the Project Site on BLM-managed land within the Olancha Greasewood ACEC does not allow for new or expanded livestock grazing in accordance with the DRECP LUPA. Thus, construction of the Proposed Project would not interfere with any potential for grazing as this area would remain ungrazed throughout the construction of the NHD2 components and the Cactus Flats Road Realignment.

The Butterworth Ranch property located north of the Project Site is designated as Agricultural land use and is zoned OS. Construction of the Proposed Project would occur completely within the boundaries of the Project Site, and would not occur on or directly affect this agricultural property. Thus, the Proposed Project would not change the existing agricultural zoning or land use of the Butterworth Ranch property.

Excavate and Recompact Alternative

Impacts related to construction of the Proposed Project under the Excavate and Recompact Alternative would be the same as under the CDSM Alternative. Therefore, construction of the Proposed Project under the Excavate and Recompact Alternative would not conflict with existing zoning for agricultural use. No impact would occur.

Build Alternatives – Operation

As described above, Inyo County is not currently a participating county in the Williamson Act program and the Proposed Project would not conflict with any Williamson Act contract land. Therefore, operation of the Proposed Project under all Build Alternatives would not conflict with Williamson Act contracts. No impact would occur.

Zoning and land use designations of NHD2, the Cactus Flats Road Realignment, and the LAA Realignment would be the same during operation as during construction, as these components would replace existing components on the Project Site. Operation of the Proposed Project components would be similar to existing conditions, which include the existing Dam, existing Cactus Flats Road, and existing LAA. NHD2, the Cactus Flats Road Realignment, and the LAA Realignment would not require changes to agricultural land use or zoning in the area surrounding the Project Site, including at Butterworth Ranch. While the basin would introduce new components to the Project Site, it would be consistent with the existing water and utility use of the Project Site, and would not occupy lands designated for agriculture. No impact would occur.

The LCM allotment does not currently permit livestock grazing on the Project Site. In the future, should BLM reconsider the grazing areas within the LCM allotment, operation of the Proposed Project would be taken into consideration by BLM, and would result in a negligible reduction in undeveloped land available for livestock grazing (of the 165,140 acre LCM allotment). Furthermore, while the portion of the LCM allotment which falls within the basin would be covered by water and unavailable for grazing, it represents a negligible reduction in grazing area. As part of the BLM ROW grant process, LADWP will notify holders of the LCM allotment of the Proposed Project. Additionally, the Proposed Project would not change the grazing allotment designation. Impacts would be less than significant.

A portion of the LAA Excavation Area would be reclaimed and returned to a natural state prior to operation of the Project, and the eastern portion of the excavation area would function as the LAA Realignment. Therefore, the zoning and land use of the LAA Excavation Area would be the same as under existing conditions, and would not conflict with existing zoning for agricultural use. No impact would occur.

3.2.5 Mitigation Measures

The Proposed Project would result in less than significant impacts to agricultural resources and no impacts to forestry resources. No mitigation measures are required.

3.2.6 Residual Impacts After Mitigation

The Proposed Project would not require mitigation and would result in less than significant impacts to agricultural resources and no impacts to forestry resources under CEQA.

3.2.7 NEPA Conclusions

No Project Alternative

The No Project Alternative would not change the existing conditions of the Project Site and would not require excavation for earthen materials.

Build Alternatives

The Build Alternatives of the Proposed Project would not substantially affect agricultural resources. Existing agricultural uses would remain in the surrounding areas, and BLM-permitted rangelands would remain intact with the Proposed Project occurring on a small portion of the LCM allotment that does not currently permit livestock grazing. In addition, the Project Site is not located on or adjacent to forestry resources.

The DRECP LUPA contains several CMAs related to agricultural uses (LUPA-LIVE-1, LUPA-LIVE-2, LUPA-LIVE-3, LUPA-LIVE-4, LUPA-LIVE-5, LUPA-LIVE-6, LUPA-LIVE-7, LUPA-LIVE-8, LUPA-LIVE-9, CONS-BIO-IFS-7, and CONS-BIO-IFS-8); however, these CMAs are not applicable to the Proposed Project since they relate to grazing and livestock, and the Proposed Project does not establish, eliminate, or otherwise change grazing allocations, nor does the Proposed Project involve the use of livestock. The Conservation CMAs (required for CDNCL and/or ACEC lands) that are related to livestock (CONS-BIO-IFS-7 and CONS-BIO-IFS-8) also are not applicable to the Proposed Project because desert bighorn sheep are not present at the Project Site, nor would the Proposed Project change grazing allotments or increase risk of effects to desert bighorn sheep.

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3.3 Air Quality

This section analyzes the potential impacts of the Proposed Project as it relates to air quality. The applicable laws, regulations, and methods used to determine the effects of the Proposed Project are described herein. The section describes the affected environment and analyzes the environmental consequences of the Proposed Project and, if applicable, provides mitigation measures. The analysis in the section is based on the Air Quality Technical Report in Appendix D of this Draft EIR/EA.

3.3.1 Regulatory Setting

Federal

Federal and State Criteria Air Pollutants

Six air pollutants have been identified by the United State Environmental Protection Agency (USEPA) and the California Air Resources Board (CARB) as being of concern both on a nationwide and statewide level as air pollutants at certain concentrations may adversely affect human or animal health, reduce visibility, damage property, and reduce the productivity or vigor of crops and natural vegetation. These six air pollutants are commonly referred to as "criteria air pollutants" and consist of: ozone; carbon monoxide (CO); nitrogen dioxide (NO_2); sulfur dioxide (SO_2); lead; and Particulate Matter (PM), which is subdivided into two classes based on particle size: PM equal to or less than 10 micrometers in diameter (PM10), and PM equal to or less than 2.5 micrometers in diameter (PM2.5). California has also established standards for sulfates, visibility-reducing particles, hydrogen sulfide, and vinyl chloride. Table 3.3-1 presents the (National Ambient Air Quality Standards) NAAQS.

Ozone. Ozone is the principal component of smog and is formed in the atmosphere through a series of reactions involving reactive organic gases (ROG) and nitrogen oxides (NO_X) in the presence of sunlight. ROG and NO_X are called precursors of ozone. NO_X includes various combinations of nitrogen and oxygen, including nitric oxide (NO), NO_2, and others. Ozone is a principal cause of lung and eye irritation in the urban environment. Significant ozone concentrations are usually produced only in the summer, when atmospheric inversions are greatest and temperatures are high. ROG and NO_X emissions are both considered critical in ozone formation.

Carbon Monoxide. CO is a colorless and odorless gas that, in the urban environment, is associated primarily with the incomplete combustion of fossil fuels in motor vehicles. Relatively high concentrations are typically found near crowded intersections and along heavily used roadways carrying slow-moving traffic. Even under most severe meteorological and traffic conditions, high concentrations of CO are limited to locations within a relatively short distance (300 to 600 feet) of heavily traveled roadways. Vehicle traffic emissions can cause localized CO impacts, and severe vehicle congestion at major signalized intersections can generate elevated CO levels, called "hot spots," which can be hazardous to human receptors adjacent to the intersections.

Nitrogen Dioxide. NO_2 is a product of combustion and is generated in vehicles and in stationary sources, such as power plants and boilers. It is also formed when ozone reacts with NO in the atmosphere. As noted above, NO_2 is part of the NO_X family and is a principal contributor to ozone and smog generation.

Sulfur Dioxide. SO_2 is a combustion product, with the primary source being power plants and heavy industries that use coal or oil as fuel. SO_2 is also a product of diesel engine combustion. SO_2 in the atmosphere contributes to the formation of acid rain.

Lead. Lead is a highly toxic metal that may cause a range of human health effects. Previously, the lead used in gasoline anti-knock additives represented a major source of lead emissions to the atmosphere. USEPA began working to reduce lead emissions soon after its inception, issuing the first reduction standards in 1973. Lead emissions have significantly decreased due to the near elimination of leaded gasoline use.

TABLE 3.3-1
NATIONAL AND CALIFORNIA AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards[a]	National Standards[b]	
		Concentration[c]	Primary[c,d]	Secondary[c,e]
Ozone	1 hour	0.09 ppm (180 µg/m^3)	–	Same as primary standard
	8 hours	0.070 ppm (137 µg/m^3)	0.070 ppm (147 µg/m^3)	
Respirable particulate matter (PM10)[f]	24 hours	50 µg/m^3	150 µg/m^3	Same as primary standard
	Annual arithmetic mean	20 µg/m^3	–	
Fine particulate matter (PM2.5)[f]	24 hours	–	35 µg/m^3	Same as primary standard
	Annual arithmetic mean	12 µg/m^3	12 µg/m^3	15 µg/m
Carbon monoxide (CO)	8 hours	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	None
	1 hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	
	8 hours (Lake Tahoe)	6 ppm (7 mg/m^3)	–	–
Nitrogen dioxide (NO_2)[g]	Annual arithmetic mean	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as primary standard
	1 hour	0.18 ppm (339 µg/m^3)	100 ppb (188 µg/m^3)	None
Sulfur dioxide (SO_2)[h]	Annual Arithmetic Mean	–	0.030 ppm (for certain areas)[h]	–
	24 hours	0.04 ppm (105 µg/m^3)	0.14 ppm (for certain areas)[h]	–
	3 hours	—	–	0.5 ppm (1,300 µg/m^3)
	1 hour	0.25 ppm (655 µg/m^3)	75 ppb (196 µg/m^3)	–
Lead[i,j]	30-day average	1.5 µg/m^3	–	–
	Calendar quarter	–	1.5 µg/m^3 (for certain areas)[j]	Same as primary standard
	Rolling 3-month average	–	0.15 µg/m^3	
Visibility-reducing particles[k]	8 hours	See Footnote j	No national standards	
Sulfates	24 hours	25 µg/m^3		
Hydrogen sulfide	1 hour	0.03 ppm (42 µg/m^3)		
Vinyl chloride[l]	24 hours	0.01 ppm (26 µg/m^3)		

Notes: mg/m^3 = milligrams per cubic meter; ppb = parts per billion; ppm = parts per million; µg/m^3 = micrograms per cubic meter

[a] California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility-reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[b] National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard. For PM10, the 24-hour is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than 1. For PM2.5, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standards.

[c] Concentration expressed first in the units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25 degrees Celsius and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and reference pressure of 760 torr; (ppm) in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

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

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

[f] On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 µg/m3 to 12.0 µg/m3. The existing national 24-hour PM2.5 standards (primary and secondary) were retained at 35 µg/m3, as was the annual secondary standard of 15 µg/m3. The existing 24-hour PM10 standards (primary and secondary) of 150 µg/m3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

[g] To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. California standards are in units of ppm. To directly compare the national 1-hour standard to the California standards the units can be converted from 100 ppb to 0.100 ppm.

[h] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were

revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved. To directly compare the 1-hour national standard to the California standard, the units can be converted to ppm. In this case, the national standard of 75 ppb is identical of 0.075 ppm.

[i] ARB has identified lead and vinyl chloride as toxic air contaminants with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[j] The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standards are approved.

[k] In 1989, ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and the "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

Source: CARB 2015a

Particulate Matter. PM is a complex mixture of extremely small particles and liquid droplets. PM is made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. Natural sources of PM include windblown dust and ocean spray. The size of PM is directly linked to the potential for causing health problems. USEPA is concerned about particles that are 10 micrometers in diameter or smaller because these particles generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. Health studies have shown a significant association between exposure to PM and premature death. Other important effects include aggravation of respiratory and cardiovascular disease, lung disease, decreased lung function, asthma attacks, and certain cardiovascular problems, such as heart attacks and irregular heartbeat. Individuals particularly sensitive to fine particle exposure include older adults, people with heart and lung disease, and children. As previously discussed, USEPA groups PM into two categories, which are described below.

PM2.5. Fine particles, such as those found in smoke and haze, are PM2.5. Sources of fine particles include all types of combustion activities (motor vehicles, power plants, wood burning, etc.) and certain industrial processes. PM2.5 is also formed through reactions of gases, such as SO_2 and NO_X, in the atmosphere. PM2.5 is the major cause of reduced visibility (haze) in California.

PM10. PM10 includes both fine and coarse dust particles; the fine particles are PM2.5. Coarse particles, such as those found near roadways and dusty industries, are larger than 2.5 micrometers and smaller than 10 micrometers in diameter. Sources of coarse particles include crushing or grinding operations and dust from paved or unpaved roads. Control of PM10 is primarily achieved through the control of dust at construction and industrial sites, the cleaning of paved roads, and the wetting or paving of frequently used unpaved roads.

Federal Clean Air Act

The USEPA, under the provisions of the Clean Air Act (CAA), requires each state with regions that have not attained the NAAQS to prepare a State Implementation Plan (SIP), detailing how these standards are to be met in each local area.

The SIP is a legal agreement between each state and the federal government to commit resources to improving air quality. It serves as the template for conducting regional and project-level air quality analysis. The SIP is not a single document, but a compilation of new and previously submitted attainment plans, emissions reduction programs, district rules, state regulations, and federal controls.

General Conformity

General conformity requirements were adopted by Congress as part of the CAA Amendments and were implemented by USEPA regulations in the November 30, 1993 Federal Register (40 CFR Sections 6, 51,

and 93: "Determining Conformity of General Federal Actions to State or Federal Implementation Plans; Final Rule").

General conformity requires that all federal actions conform to the SIP as approved or promulgated by USEPA. The Proposed Project is therefore required to evaluate its construction emissions against the applicable General Conformity Rule thresholds of significance, which are called de minimis thresholds. The de minimis levels are based on the attainment/maintenance and nonattainment designations and classifications for the project area. If emissions would exceed the de minimis levels, a formal air quality conformity determination is required.

Desert Renewable Energy Conservation Plan Land Use Plan Amendment of 2016

The DRECP LUPA, approved by BLM in September 2016, is an amendment to the BLM CDCA Plan. The key objectives of the DRECP are to streamline renewable energy development and to provide for long-term conservation and management of special-status species, vegetation, and other resources within the DRECP Plan area. The DRECP identifies Development Focus Areas and Variance Process Lands where renewable energy development is more streamlined, as well as conservation areas, and several other land uses. The DRECP LUPA implements its objectives through specific CMAs. Some CMAs apply across the entirety of the DRECP Plan area, while others apply only to specific land uses. The DRECP LUPA contains several CMAs related to air quality. These include: LUPA-BIO-6, which requires the application of water for dust abatement in construction areas to meet safety and air quality standards and in a manner that prevents the formation of puddles; LUPA-AIR-1, which requires compliance with air quality regulations and application of BMPs; LUPA-AIR-2, which states that because project authorizations are a federal undertaking, air quality standards for fugitive dust may not exceed local standards and requirements; LUPA-AIR-4, which requires fugitive dust impacts in an EA; and LUPA-AIR-5, which requires a fugitive Dust Control Plan for all projects where the NEPA analysis shows an impact on air quality from fugitive dust. One CMA, LUPA-AIR-3, is not applicable to air quality. The consistency of the Proposed Project with the DRECP CMAs is provided in Appendix B of this Draft EIR/EA.

State

California Clean Air Act

The CARB is the agency responsible for coordination, oversight of state and local air pollution control programs in the state, developing the SIP in the state, and implementing the California CAA. Local air districts and other agencies prepare Air Quality Attainment Plans or Air Quality Management Plans (AQMPs), and submit them to CARB for review, approval, and incorporation into the applicable SIP. CARB also maintains air quality monitoring stations throughout the state in conjunction with local air districts. Data collected at these stations are used by the CARB to classify air basins as being in attainment or nonattainment with respect to each pollutant, and to monitor progress in attaining air quality standards.

CARB has established emission standards for vehicles sold in California and for various types of equipment. California gasoline specifications are governed by both state and federal agencies. During the past decade, federal and state agencies have imposed numerous requirements on the production and sale of gasoline in California. CARB has also adopted control measures for diesel PM and more stringent emissions standards for various on-road mobile sources of emissions, including transit buses and off-road diesel equipment (e.g., tractors, generators).

California Ambient Air Quality Standards

The California CAA requires that each area exceeding the California Ambient Air Quality Standards (CAAQS) must develop a plan aimed at achieving those standards. The California Health and Safety Code Section 40914, requires air districts to design a plan that achieves an annual reduction in

district-wide emissions of five percent or more, averaged every consecutive three-year period. To satisfy this requirement, the local air districts have to develop and implement air pollution reduction measures, which are described in their AQMPs, and outline strategies for achieving the CAAQS for any criteria pollutants for which the region is classified as nonattainment. California has also established standards for sulfates, visibility-reducing particles, hydrogen sulfide, and vinyl chloride. Table 3.3-1 presents the CAAQS.

Toxic Air Contaminants

Toxic Air Contaminants (TAC) in California are regulated primarily through the Tanner Air Toxics Act (Chapter 1047, Statutes of 1983) and the Air Toxics Hot Spots Information and Assessment Act (Chapter 1252, Statutes of 1987). Assembly Bill (AB) 1807 sets forth a formal procedure for CARB to designate substances as TACs. Research, public participation, and scientific peer review must occur before CARB can designate a substance as a TAC. The Air Toxics Hot Spots Information and Assessment Act requires that TAC emissions from stationary sources be quantified and compiled into an inventory according to criteria and guidelines developed by CARB, and if directed to do so by the local air district, a Health Risk Assessment (HRA) must be prepared to determine the potential health impacts of such emissions.

TACs may be emitted by stationary, area, or mobile sources. Common stationary sources of TAC emissions include gasoline stations, dry cleaners, and diesel backup generators, which are subject to local air district permit requirements. The other, often more significant, sources of TAC emissions are motor vehicles on freeways, high-volume roadways, or other areas with high numbers of diesel vehicles, such as distribution centers. Off-road mobile sources are also major contributors of TAC emissions and include construction equipment, ships, and trains.

Particulate exhaust emissions from diesel-fueled engines (diesel PM) were identified as a TAC by CARB in 1998. Federal and state efforts to reduce diesel PM emissions have focused on the use of improved fuels, adding particulate filters to engines, and requiring the production of new-technology engines that emit fewer exhaust particulates.

Regional and Local

Great Basin Unified Air Pollution Control District

In Inyo County, the GBUAPCD is the agency responsible for protecting public health and welfare through the administration of federal and state air quality laws and policies. Included in the GBUAPCD's tasks are monitoring of air pollution, preparation of the SIP for the Owens Valley PM10 Planning Area (OVPA), and promulgation of rules and regulations.

The GBUAPCD has adopted a series of SIPs that include strategies to attain the federal PM10 standard in the OVPA. The GBUAPCD prepared and adopted a SIP in 1998, which was approved by USEPA in 1999. Subsequent SIP revisions were prepared in 2003 to address PM10 control requirements to reduce windblown dust from Owens Lake, and in 2008 to incorporate dust control provisions of the 2006 Settlement Agreement between the City of Los Angeles and the GBUAPCD. According to the GBUAPCD, wind-blown dust from the dry bed of Owens Lake is the primary source of PM10 leading to the exceedance of the NAAQS for PM10 in the nonattainment area. Therefore, the focus of the SIP is on dust control measures for implementation on portions of the Owens Lake bed.

The GBUAPCD has developed the 2016 SIP in response to a finding by the USEPA that the OVPA did not attain the 24-hour NAAQS for PM10 as required by the Federal CAA. The 2016 SIP revision continues the commitment to attain the NAAQS by providing a control strategy to implement control measures on additional areas at Owens Lake, and to approve the use of new dust control measures to augment the existing Best Available Control Measures (BACM) that were available in the 2008 SIP. The 2016 SIP was adopted by the GBUAPCD on April 13, 2016.

The USEPA has established de minimis criteria of 5 micrograms per cubic meter ($\mu g/m^3$) for source categories contributing to PM10 emissions in the OVPA. If a source category contributes more than this level to measured ambient PM10 concentrations, then BACM or Best Available Control Technology (BACT) are required to be implemented for that source. At present, there are no PM10 sources in the OVPA that meet the federal definition of a PM10 major source. Additionally, the BACM/BACT requirement does not apply to mobile sources of emissions.

GBUAPCD rules relevant to the Proposed Project include:

- District Rule 209-A: Requires new stationary sources with PM10 emissions greater than 250 pounds per day of total suspended particulates, or facility modifications of greater than 15 tons per year of PM10 to apply BACT to control PM emissions.
- District Rule 400: Limits visible emissions from any from any single source of emissions whatsoever, any air contaminant for a period or periods aggregating more than three minutes in any hour which is as dark or darker in shade as that designated as No. 1 on the Ringelmann Chart.
- District Rule 401: Requires that reasonable precautions be taken to prevent visible particulate emissions from crossing the property boundary.
- District Rule 402: Prohibits sources of air pollution from causing a nuisance to the public or endangering public health and safety.

The construction contractor would also meet all applicable CARB and/or GBUAPCD off-road equipment registration, on-road diesel truck rules, and permitting requirements. The Proposed Project is required to comply with these rules, and conformance will be incorporated into Project specifications and procedures.

Inyo County General Plan

The Public Safety Element of the ICGP (Inyo County, 2001) contains policies relevant to air quality. The Public Safety Element also contains implementation measures for some policies. The air quality policies and implementation measures applicable to the Proposed Project are listed in Table 3.3-2.

TABLE 3.3-2
INYO COUNTY GENERAL PLAN GOALS AND POLICIES

Goal	Policy
Public Safety	
AQ-1. Provide good air quality for Inyo County to reduce impacts to human health and the economy.	AQ-1.1. Regulations to Reduce PM10: Support the implementation of the State Implementation Plan and the agreement between GBUAPCD and the LADWP to reduce PM10.
	AQ-1.3. Dust Suppression During Construction: Require dust-suppression measures for grading activities.
Implementation Measures	
1.0. Work with the LADWP and the GBUAPCD to reduce wind-raised dust from Owens Lake.	
4.0. The County shall require contractors to implement dust suppression measures during excavation, grading, and site preparation activities. Techniques may include, but are not limited to the following: • site watering or application of dust suppressants, • phasing or extension of grading operations, • covering of stockpiles, suspension of grading activities during high wind periods (typically winds greater than 25 miles per hour), and • revegetation of graded site.	

Note: AQ=Air Quality
Source: Inyo County General Plan, Website: http://inyoplanning.org/general_plan/goals/ch8.pdf, http://inyoplanning.org/general_plan/goals/ch9.pdf, accessed February 4, 2016.

3.3.2 Affected Environment

Great Basin Valleys Air Basin

Ambient air pollutant concentrations in the Great Basin Valleys Air Basin (GBVAB) are measured at air quality monitoring stations operated by CARB and the GBUAPCD. The closest and most representative GBUAPCD air quality monitoring station to the Project Site is the Olancha monitoring station, approximately 0.5 mile north of the Project Site. However, that monitoring station only has PM10 concentration data available. Therefore, the Keeler-Cerro Gordo Road monitoring station, which is closest to the existing mine in Keeler and has data available, was used for PM2.5 concentrations. No monitoring stations in the OVPA have data available for ozone, CO, NO_2, or SO_2. Table 3.3-3 presents the most recent PM10 and PM2.5 data over the past three years from the Olancha and Keeler-Cerro Gordo monitoring stations as a summary of the exceedances of standards and the highest pollutant levels recorded. These concentrations represent the existing, or baseline conditions, for the Proposed Project.

As shown in Table 3.3-3, ambient air concentrations of PM10 and PM2.5 have exceeded NAAQS and CAAQS on three or more days each year for the past three years. Monitoring data for other criteria air pollutants is not available from these or any other monitoring stations in the vicinity of the Proposed Project.

TABLE 3.3-3
AMBIENT AIR QUALITY SUMMARY – KEELER-CERRO GORDO ROAD MONITORING STATION

Pollutant Standards	2013	2014	2015
Particulate Matter (PM10)			
National maximum 24-hour concentration ($\mu g/m^3$)	276.0	309.0	384.6
State maximum 24-hour concentration ($\mu g/m^3$)	*	*	*
State annual average concentration ($\mu g/m^3$)	*	*	*
Measured Number of Days Standard Exceeded			
NAAQS 24-hour (>150 $\mu g/m^3$)	6	3	3
CAAQS 24-hour (>50 $\mu g/m^3$)	*	*	*
Particulate Matter (PM2.5)			
National maximum 24-hour concentration ($\mu g/m^3$)	93.6	161.0	130.2
State maximum 24-hour concentration ($\mu g/m^3$)	127.8	161.0	130.2
National annual average concentration ($\mu g/m^3$)	7.8	7.8	6.7
State annual average concentration ($\mu g/m^3$)	*	7.9	*
Measured Number of Days Standard Exceeded			
NAAQS 24-hour (>35 $\mu g/m^3$)	8	7	3

Notes: *Insufficient data to determine the value.
$\mu g/m^3$ = micrograms per cubic meter; NAAQS = National Ambient Air Quality Standards; CAAQS = California Ambient Air Quality Standards
Source: CARB 2015b.

Attainment Status

Both USEPA and CARB use ambient air quality monitoring data to designate areas according to their attainment status for criteria air pollutants. The purpose of these designations is to identify the areas with air quality problems and initiate planning efforts for improvement. The three basic designation categories are nonattainment, attainment, and unclassified. An "attainment" designation for an area signifies that pollutant concentrations did not exceed the established standard. In most cases, areas designated or redesignated as attainment must develop and implement maintenance plans, which are designed to ensure continued compliance with the standard.

In contrast to attainment, a "nonattainment" designation indicates that a pollutant concentration has exceeded the established standard. Nonattainment may differ in severity. To identify the severity of the problem and the extent of planning and actions required to meet the standard, nonattainment areas are assigned a classification that is commensurate with the severity of their air quality problem

(e.g., moderate, serious, severe, extreme). Finally, an unclassified designation indicates that insufficient data exist to determine attainment or nonattainment. In addition, the California designations include a subcategory of nonattainment-transitional, which is given to nonattainment areas that are progressing and nearing attainment.

High levels of PM10 are recognized as an air quality challenge within the GBVAB. Due to recurring exceedances of the NAAQS and CAAQS for PM10, the air basin has been divided into distinct planning areas, including the Mono Basin, Mammoth Lakes, Owens Lake, and Coso Junction. The Proposed Project is within the OVPA of the GBVAB. As shown in Table 3.3-4, the GBVAB and OVPA are designated as Unclassified/Attainment for all criteria air pollutants for the NAAQS except PM10, for which it is nonattainment. The GBVAB meets the CAAQS for all criteria air pollutants except ozone and PM10. The GBVAB is currently classified as a state nonattainment area for ozone and PM10.

TABLE 3.3-4
GREAT BASIN VALLEYS AIR BASIN ATTAINMENT DESIGNATIONS

Pollutant	State	Federal
Ozone*	Nonattainment	Unclassified/Attainment
Carbon Monoxide	Unclassified/Attainment	Unclassified/Attainment
Nitrogen Dioxide	Attainment	Unclassified/Attainment
Sulfur Dioxide	Attainment	N/D
PM10	Nonattainment	Nonattainment (Owens Valley/Mono Basin) Unclassified/Attainment
PM2.5	Attainment	Unclassified/Attainment
Sulfates	Attainment	N/A
Hydrogen Sulfide	Unclassified/Attainment	N/A
Visibility Reducing Particles	Unclassified	N/A
Lead	Attainment	Unclassified/Attainment

Notes: N/A = not applicable; no standard; N/D = No Designation; PM = Particulate Matter
*The portion of GBVAB in Alpine County is Unclassified for ozone CAAQS.
Source: CARB 2015c.

General Conformity

The de minimis thresholds for the Proposed Project are presented below in Table 3.3-5. The GBVAB is attainment for ozone (NO_X and volatile organic compounds [VOC]), CO and PM2.5; therefore, there are no de minimis thresholds for these pollutants. The OVPA, including the Project Site, is a serious nonattainment area for PM10. The GBVAB is attainment for ozone (NO_X and VOC), CO and PM2.5; therefore, there are no de minimis thresholds for these pollutants. The OVPA, including the Project Site, is a serious nonattainment area for PM10.

TABLE 3.3-5
GENERAL CONFORMITY *DE MINIMIS* THRESHOLDS FOR PROJECTS IN THE GREAT BASIN VALLEYS AIR BASIN

Pollutant	Emission Threshold (tons per year)
CO	N/A[1]
NO_X	N/A[1]
VOC	N/A[1]
PM10	70[2]
PM2.5	N/A[1]

Notes:
CO = carbon monoxide; NO_X = oxides of nitrogen; PM2.5 = fine particulate matter; PM10 = respirable particulate matter; VOC = volatile organic compound

[1] The Great Basin Valleys Air Basin is attainment for ozone (NO_X and VOC), CO and PM2.5. Therefore, there are no de minimis thresholds for these pollutants.

[2] The Owens Valley Planning Area, including the Project Site, is a serious nonattainment area for PM10.

Source: 40 Code of Federal Regulations 93 Section 153

Sensitive Receptors

Some members of the population are especially sensitive to air pollutant emissions and should be given special consideration when evaluating air quality impacts from projects. These include children, the elderly, people with preexisting respiratory or cardiovascular illness, and athletes and others who engage in frequent exercise. Air quality regulators typically define sensitive receptors as schools, hospitals, resident care facilities, day-care centers, or other facilities that may house individuals with health conditions that would be adversely impacted by changes in air quality.

Residential areas are also considered sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to pollutants present. Recreational land uses are considered moderately sensitive to air pollution. Exercise places a high demand on respiratory functions, which can be impaired by air pollution even though exposure periods during exercise are generally short. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial and commercial areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent as the majority of the workers tend to stay indoors most of the time.

The nearest off-site sensitive receptor is the single-family residence located approximately 600 feet north of the Project Site, on the Butterworth Ranch land that is adjacent to the Project Site. There are no sensitive receptors within close proximity to the existing mine in Keeler. Although recreationists such as hikers and campers do access the Inyo National Forest west of the Project Site, the nearest trail heads are within the borders of the United States Forest Service land, more than three miles west of the Project Site. However, the Project Site contains an existing residential property owned by LADWP within which the reservoir keeper and family reside. This property serves as a long-term home for the family, and they spend a majority of their time on the property. Therefore, the existing on-site residents represent the nearest sensitive receptors with the potential to be impacted as a result of construction of the Proposed Project. Figure 3.3-1 shows the locations of the receptors used in this analysis.

Odor

Odors are considered an air quality issue both at the local level (e.g., odor from wastewater treatment) and at the regional level (e.g., smoke from wildfires). Odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

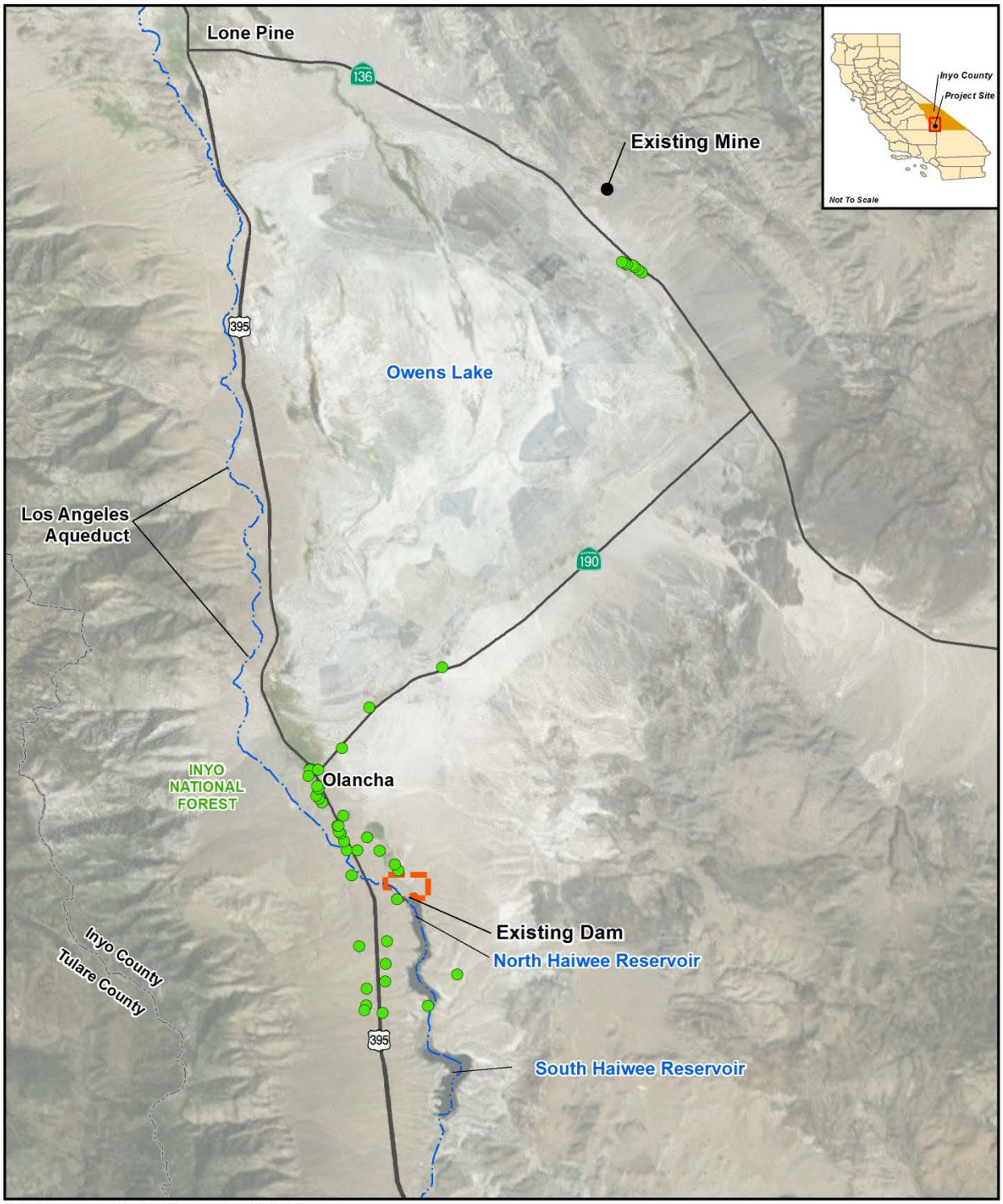


Figure 3.3-1
Receptors for Dispersion Modeling LSTs and HRA

The ability to detect odors varies considerably among the population and is subjective. Some individuals have the ability to smell minute quantities of specific substances while others may not have the same sensitivity, but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; an odor that is offensive to one person (e.g., from a fast-food restaurant or bakery) may be perfectly acceptable to another. Unfamiliar odors may be more easily detected and likely to cause complaints than familiar ones. Several examples of common land use types that generate substantial odors include wastewater treatment plants, landfills, composting/green waste facilities, recycling facilities, petroleum refineries, chemical manufacturing plants, painting/coating operations, rendering plants, and food packaging plants.

Offensive odors can potentially affect human health in several ways. First, odorant compounds can irritate the eye, nose, and throat, which can reduce respiratory volume. Second, the organic gases that cause odors can stimulate sensory nerves to cause neurochemical changes that might influence health, for instance, by compromising the immune system. Finally, unpleasant odors can trigger memories or attitudes linked to unpleasant odors, causing cognitive and emotional effects such as stress.

3.3.3 Methodology for Analysis

Construction-related exhaust emissions for the Proposed Project were estimated for construction worker commutes, haul trucks, and the use of off-road equipment. Construction-related emissions for the Proposed Project were estimated using emission factors from the CARB's OFFROAD and EMFAC 2014 inventory models. Construction emissions from the operation of diesel-fueled off-road equipment were estimated by multiplying daily usage (i.e., hours per day) and total days of construction by OFFROAD equipment-specific emission factors. Emissions from on-road motor vehicles were estimated using vehicle trips, vehicle miles traveled, and EMFAC2014 mobile source emission factors. The emission factors represent the fleet-wide average emission factors within Inyo County. Grading, material loading, and travel on paved and unpaved roads would generate fugitive dust (PM10) emissions. The CDSM Alternative would also require a portable cement grout batch plant onsite to batch cement grout for the mixing rigs and would be an additional source of fugitive dust emissions. Fugitive dust emissions were estimated using the USEPA's Compilation of Air Pollutant Factors and based on vehicle miles traveled, material loading, and hours of operation.

Since the GBUAPCD has not developed quantitative significance thresholds for projects under CEQA, guidance from the South Coast Air Quality Management District (SCAQMD) was used to assess regional and localized emissions. Localized emissions of air pollutants were assessed in accordance with the SCAQMD's local significance thresholds (LST) guidance (SCAQMD, 2008). SCAQMD recommends that lead agencies perform project-specific air quality modeling for projects larger than five acres. Since the Project Site is larger than five acres, peak daily localized emissions were estimated using dispersion modeling in general accordance with the SCAQMD guidance. Air dispersion modeling was conducted to examine maximum short-term impacts at the reservoir keeper's residence adjacent to NHD.

USEPA recommends the use of the American Meteorological Society/USEPA Regulatory Model (AERMOD) modeling system for use in modeling multi-source emissions which was used for this analysis (USEPA, 2004). AERMOD can account for plume downwash, stack tip downwash, and point, area, and volume sources. AERMOD also has the ability to simulate impacts at both flat and complex terrain receptors. AERMOD was used for this analysis and is a refined dispersion model for simple and complex terrain for receptors within 50 kilometers of a modeled source. The AERMOD modeling system consists of two preprocessors and the dispersion model. AERMET is the meteorological preprocessor component and AERMAP is the terrain pre-processor component that characterizes the terrain and generates receptor elevations along with critical hill heights for those receptors (USEPA, 2011). AERMOD was run with default model options in the CONTROL pathway. The version numbers of the AERMOD model and pre-processors include AERMAP Version 11103 and AERMOD Version 15181.

A HRA was performed to evaluate the emissions of TACs during construction activities and their effects on nearby receptors, including the reservoir keeper's residence. The HRA was performed in accordance with the new Air Toxics Hot Spots Program Guidance Manual for the Preparation of Risk Assessments developed by the Office of Environmental Health Hazard Assessment for conducting HRAs in California under the Air Toxics "Hot Spots" Program, as well as methodologies from the Health Risk Assessments for Proposed Land Use Projects.

The construction-related HRA was performed using the USEPA regulatory model AERMOD (Version 15181), which estimates both short-term and long-term average ambient concentrations at receptor locations to produce exposure estimates, and the files imported into the Hotspots Analysis and Reporting Program (HARP2) modeling system (CARB, 2015d). Excess lifetime cancer risks and chronic noncancer hazard index (HI) were estimated for a maximally exposed individual at an existing residential receptor (MEIR) and maximally exposed individual at an existing occupational worker receptor (MEIW).

Operation of the Proposed Project would be generally similar to existing conditions. As such, the Proposed Project would not substantially increase the generation or use of on-road motor vehicles or off-road equipment relative to existing conditions. Thus, operational impacts of the Proposed Project are evaluated qualitatively, and no operational emissions were estimated.

CEQA Significance Criteria

The thresholds of significance for the Proposed Project's potential to impact air quality are based on Appendix G of the State CEQA Guidelines. The following thresholds of significance were analyzed:

- Would the project conflict with or obstruct implementation of the applicable air quality plan?
- Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?
- Would the project result in cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?
- Would the project expose sensitive receptors to substantial pollutant concentrations?
- Would the project create objectionable odors affecting a substantial number of people?

As stated in Appendix G of the CEQA Guidelines, the significance criteria established by the applicable air quality management board or air pollution control district may be relied on to make the impact determinations for specific program elements. GBUAPCD has not developed quantitative significance thresholds for CEQA projects. However, the SCAQMD has established recommended screening level thresholds of significance for regional pollutant emissions. The thresholds recommended by SCAQMD are considered conservative for use in making determinations of potential air quality impacts. Therefore, the SCAQMD screening thresholds of significance for regional pollutant emissions were used to analyze the impacts of the Proposed Project. The screening level thresholds are shown in Table 3.3-6.

TABLE 3.3-6
REGIONAL POLLUTANT EMISSION SCREENING LEVEL THRESHOLDS OF SIGNIFICANCE

	Mass Daily Thresholds[a]	
Pollutant	**Construction**	**Operation**
NO_X	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM10	150 lbs/day	150 lbs/day
PM2.5	55 lbs/day	55 lbs/day
CO	550 lbs/day	550 lbs/day

TABLE 3.3-6
REGIONAL POLLUTANT EMISSION SCREENING LEVEL THRESHOLDS OF SIGNIFICANCE

Toxic Air Contaminants (TACs) and Odor Thresholds	
TACs (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Hazard Index ≥ 1.0 (project increment)
Ambient Air Quality for Criteria Pollutants	
NO_2 1-hour average annual average	Project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.18 ppm (state) 0.03 ppm (state) & 0.053 ppm (federal)
PM10 24-hour average annual arithmetic average	 10.4 μg/m^3 (construction)[c] & 2.5 μg/m^3 (operation) 1.0 μg/m^3
PM2.5 24-hour average	 10.4 μg/m^3 (construction)[c] & 2.5 μg/m^3 (operation)
CO 1-hour average 8-hour average	Project is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (state) 9.0 ppm (state/federal)

Note: lbs/day = pounds per day; ppm = parts per million; μg/m^3 = microgram per cubic meter; ≥ = greater than or equal to
Source: [a] SCAQMD, 2015.

NEPA Requirements

General conformity de minimis thresholds are appropriate thresholds to be used for determining NEPA significance. A NEPA air quality significance analysis differs from the General Conformity analysis in that all project criteria pollutant emissions are considered: emissions for pollutants where the area has attained the NAAQS as well as emissions for pollutants where the region is currently designated as a nonattainment or maintenance area. Therefore, in the GBVAB, project attainment emissions of VOC, NO_X, CO, and PM2.5, would be considered under NEPA for air quality in addition to PM10 considered under General Conformity.

BLM does not provide a determination on the level of significance in a NEPA document. Rather, BLM leaves that determination to the FONSI which will be completed prior to the signing of a Decision Record. Any characterization of significance in this Draft EIR/EA applies only to the CEQA determination.

3.3.4 Environmental Consequences

AQ-1: *Would the project conflict with or obstruct implementation of the applicable air quality plan?*

No Project Alternative

Under the No Project Alternative, the existing Dam, Cactus Flats Road, and LAA would remain on the Project Site as under existing conditions. Typical maintenance activities would occur as they do under existing conditions. No construction activities would occur and no excavation for or purchase of earthen material would be required. No construction or operational emissions would be emitted under the No Project Alternative. Therefore, no impacts related to the applicable air quality plan would occur under the No Project Alternative.

Build Alternatives – Construction

Air quality plans describe air pollution control strategies to be implemented by a city, county, or regional air district. The primary purpose of an air quality plan is to bring an area that does not attain federal and state air quality standards into compliance with those standards pursuant to the requirements of the Federal CAA and California CAA. Projects that are consistent with the assumptions and control measures

used in development of the applicable air quality plan are considered to not conflict with or obstruct the attainment of the air quality levels identified in the plan.

As previously discussed, the 2016 SIP was adopted by GBUAPCD on April 13, 2016. Both the 2008 and the 2016 SIP focus on dust control measures for implementation on portions of the Owens Lake bed. While not significant sources of PM10 in the nonattainment area, other sources such as construction, mining, hauling, and general transportation are also addressed. Where construction-related fugitive PM10 emissions are a contributor to the non-attainment problem, the regional PM10 emissions analysis must consider construction-related fugitive PM10 emissions.

Consistency with the SIP is based on whether the Proposed Project would exceed the estimated air basin emissions used as the basis of the SIP. Construction of the Proposed Project would involve the use of off-road equipment, haul trucks, and worker commute trips. Assumptions for off-road equipment emissions in SIP were developed based on hours of activity and equipment population reported to CARB for rule compliance. The Proposed Project would not increase the assumptions for off-road equipment use in the SIP. The design features of the Proposed Project also include fugitive dust control measures consistent with GBUAPCD Rule 401 and the SIP. Therefore, while the Proposed Project would generate criteria pollutant emissions, the approach to exhaust and fugitive dust emission control measures would be consistent with the air quality plan.

The Proposed Project does not involve any uses that would increase population beyond that considered in the ICGP or the SIP. The Proposed Project does not include the construction of new residential or commercial buildings; therefore, it would not directly increase population or regional employment.

As the Build Alternatives of the Proposed Project would be consistent with the assumptions regarding equipment activity and emissions in the SIP and existing planning documents, it is expected that the intensity of construction and operational emissions associated with the Proposed Project would have been accounted for in the SIP. The Proposed Project would comply with all construction-related GBUAPCD rules and regulations, and would not construct a land use that would result in a net increase in long-term operational emissions. Therefore, impacts would be less than significant for both Build Alternatives.

Build Alternatives – Operation

The Proposed Project is not anticipated to generate new vehicle trips during operation. The required maintenance of NHD2 and associated facilities would be similar to existing maintenance activities. The reservoir keeper, whose residence is adjacent to NHD, would remain on site and would be the primary person responsible for monitoring the new Dam, LAA Realignment, and basin, along with the existing NHD, LAA, and NHR. Therefore, operational impacts to the applicable air quality plan would be less than significant under both Build Alternatives.

AQ-2: *Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?*

No Project Alternative

Under the No Project Alternative, the existing Dam, Cactus Flats Road, and LAA would remain on the Project Site and would continue to operate as under existing conditions. Typical maintenance activities would occur as they do under existing conditions with no increase in air pollutant emissions. No construction activities would occur, and no excavation for or purchase of earthen material would be required. Therefore, the No Project Alternative would not violate air quality standards or contribute to an air quality violation. No impact would occur under the No Project Alternative.

Build Alternatives – Construction

CDSM Alternative

Construction emissions are described as "short-term" or temporary in duration; however, they have the potential to represent a significant impact with respect to air quality. Construction of the Proposed Project would result in the temporary generation of VOC, NO_X, CO, PM10, and PM2.5 emissions. VOC, NO_X, and CO emissions are primarily associated with mobile equipment exhaust, including off-road construction equipment and on-road motor vehicles. Fugitive PM dust emissions are primarily associated with site preparation, and vary as a function of parameters such as soil silt content, soil moisture, wind speed, acreage of disturbance area, and vehicle miles traveled by construction vehicles on- and off-site. Earthmoving and material handling operations are the primary sources of fugitive PM dust emissions from the Proposed Project's construction activities.

Construction of the Proposed Project under the CDSM Alternative is anticipated to commence in 2018 and is expected to last approximately five years. Construction of the Proposed Project would occur in overlapping phases, including the Cactus Flats Road Realignment, the LAA Realignment, including the LAA Excavation Area, construction of the NHD2 components utilizing the existing mine in Keeler, and diversion channel and NHD modifications.

As shown in Table 3.3-7, construction emissions for the Proposed Project would result in maximum daily emissions of approximately 126 pounds of VOC, 1,049 pounds of NO_X, 671 pounds of CO, 286 pounds of PM10, and 97 pounds of PM2.5. The emission estimates include fugitive dust control requirements consistent with GBUAPCD rules and regulations, which are not considered mitigation for the purposes of this analysis. Additional modeling assumptions and details are provided in Appendix D.

TABLE 3.3-7
UNMITIGATED ESTIMATED MAXIMUM DAILY CONSTRUCTION EMISSIONS FOR THE CDSM ALTERNATIVE

	VOC	NO_X	CO	PM10 [1,2]	PM2.5 [1]
2018	10.75	109.36	60.96	16.01	10.38
2019	26.79	266.62	158.58	118.64	30.78
2020	125.83	1,048.81	670.91	285.73	97.31
2021	125.58	1,042.10	668.17	225.90	90.21
2022	100.27	822.03	517.87	225.90	72.59
2023	99.04	782.19	512.32	167.09	66.53
Maximum Daily Construction Emissions (lbs/day)	125.83	1,048.81	670.91	285.73	97.31
Threshold of Significance (lbs/day)	75	100	550	150	55
Significant Impact?	**YES**	**YES**	**YES**	**YES**	**YES**

Notes: [1] PM10 emissions shown include the sum of PM with aerodynamic diameter 0 to 2.5 microns and PM with aerodynamic diameter 2.5 to 10 microns.
[2] Fugitive dust emissions were reduced based on watering two times per day.
[3] Additional details on the emissions for each calendar year are included in Appendix D.
VOC = volatile organic compounds; NO_X = oxides of nitrogen; CO = carbon monoxide; PM10 = suspended PM; PM2.5 = fine PM
Source: Appendix D, Air Quality Technical Report

As shown in Table 3.3-7, construction-related emissions of VOC, NO_X, CO, PM10, and PM2.5 would exceed the thresholds of significance. Therefore, construction emissions would violate an ambient air quality standard or contribute substantially to an existing violation. Incorporation of Mitigation Measures AQ-A through AQ-D would reduce VOC emissions to a less than significant level. Incorporation of Mitigation Measures AQ-A through AQ-D would reduce NO_X, CO, and PM10, and PM2.5 emissions to the greatest extent feasible, but would result in a significant and unavoidable impact.

Excavate and Recompact Alternative

Construction of the Proposed Project under the Excavate and Recompact Alternative is anticipated to commence in 2018 and is expected to last approximately six years. The construction schedule and heavy-duty off-road equipment use for the Cactus Road Realignment and LAA Realignment were assumed to be consistent with the CDSM Alternative. The NHD2 components and diversion channel and NHD modifications phases would be constructed as they would under the CDSM Alternative; however, the off-road equipment, haul truck trips, and/or schedule for those construction phases would vary from the CDSM Alternative.

As shown in Table 3.3-8, construction emissions for the Proposed Project would result in maximum daily emissions of approximately 127 pounds of VOC, 1,062 pounds of NO_X, 677 pounds of CO, 238 pounds of PM10, and 95 pounds of PM2.5. The emission estimates include fugitive dust control requirements consistent with GBUAPCD rules and regulations, and are not considered mitigation for the purposes of this analysis. Additional modeling assumptions and details are provided in Appendix D.

As shown in Table 3.3-8, construction-related emissions of VOC, NO_X, CO, PM10, and PM2.5 would exceed the thresholds of significance. Therefore, construction emissions would violate an ambient air quality standard or contribute substantially to an existing violation. Incorporation of Mitigation Measures AQ-A through AQ-D would reduce VOC and PM2.5 emissions to a less than significant level. Incorporation of Mitigation Measures AQ-A through AQ-D would reduce NO_X, CO, and PM10 emissions to the greatest extent feasible, but would result in a significant and unavoidable impact.

TABLE 3.3-8
UNMITIGATED ESTIMATED MAXIMUM DAILY CONSTRUCTION EMISSIONS FOR THE EXCAVATE AND RECOMPACT ALTERNATIVE

	VOC	NO_X	CO	PM10 [1,2]	PM2.5 [1]
2018	10.75	109.36	60.96	16.01	10.38
2019	26.54	259.91	155.84	35.58	23.69
2020	127.29	1,061.58	676.68	237.79	94.73
2021	127.29	1,061.58	676.68	237.79	94.73
2022	98.28	720.41	511.33	82.48	58.80
2023	98.28	720.41	511.33	82.48	58.80
2024	14.91	152.98	84.15	18.26	12.03
Maximum Daily Construction Emissions (lbs/day)	127.29	1,061.58	676.68	237.79	94.73
Threshold of Significance (lbs/day)	75	100	550	150	55
Significant Impact?	**YES**	**YES**	**YES**	**YES**	**YES**

Notes: [1] PM10 emissions shown include the sum of PM with aerodynamic diameter 0 to 2.5 microns and PM with aerodynamic diameter 2.5 to 10 microns.
[2] Fugitive dust emissions were reduced based on watering two times per day.
[3] Additional details on the emissions for each calendar year are included in Appendix D.
VOC = volatile organic compounds; NO_X = oxides of nitrogen; CO = carbon monoxide; PM10 = suspended PM; PM2.5 = fine PM
Source: Appendix D, Air Quality Technical Report

Build Alternatives – Operation

Operation of the Proposed Project would be generally similar to existing conditions. As such, the Proposed Project would not substantially increase emissions from the use of on-road motor vehicles or off-road equipment relative to existing conditions. Therefore, operational emissions would not violate an ambient air quality standard or contribute substantially to an existing violation. The impact would be less than significant under both Build Alternatives.

AQ-3: *Would the project result in cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?*

No Project Alternative

Under the No Project Alternative, the existing Dam, Cactus Flats Road, and LAA would remain on the Project Site and would continue to operate as under existing conditions. Typical maintenance activities would occur as they do under existing conditions with no increase in criteria pollutant emissions. No construction activities would occur, and no excavation for or purchase of earthen material would be required. Therefore, no cumulatively considerable regional air quality impacts would occur under the No Project Alternative.

Build Alternatives – Construction

The cumulative analysis focuses on whether a specific project would result in cumulatively considerable contribution of emissions to the region. Per CEQA Guidelines Section 15064(h)(4), the existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the Proposed Project's incremental effects are cumulatively considerable.

The GBVAB is considered a nonattainment area for ozone (CAAQS) and PM (CAAQS and NAAQS). As discussed under impact analysis AQ-2, the Proposed Project would result in the generation of VOC, NO_X, CO, PM10, and PM2.5 emissions at levels that exceed the recommended emissions thresholds for construction activities under each of the Build Alternatives. These thresholds are designed to identify those projects that would result in significant levels of air pollution, and that would assist the region in attaining the applicable state and federal ambient air quality standards. When a project exceeds these significance thresholds, it is considered to impede attainment and maintenance of ambient air quality standards.

Because the Build Alternatives of the Proposed Project would exceed the project-level air quality significance thresholds for criteria pollutant emissions, the Proposed Project's construction emissions would have a cumulatively considerable contribution to the region's air quality. Thus, implementation of Mitigation Measures AQ-A through AQ-D would be required. As discussed previously, incorporation of Mitigation Measures AQ-A through AQ-D would reduce VOC emissions to a less than significant level for both Build Alternatives, and PM2.5 emissions for the Excavate and Recompact Alternative. Incorporation of Mitigation Measures AQ-A through AQ-D would reduce NO_X, CO, PM10, and PM2.5 emissions for the CDSM Alternative, and NO_X, CO, and PM10 for the Excavate and Recompact Alternative to the greatest extent feasible, but the impacts would remain significant and unavoidable impact under both Build Alternatives.

Build Alternatives – Operation

Operation of the Proposed Project would be generally similar to existing conditions. As such, the Proposed Project would not substantially increase emissions from the use of on-road motor vehicles or off-road equipment relative to existing conditions. Therefore, operational emissions would not have a cumulatively considerable contribution to the region's air quality, and the impact would be less than significant under both Build Alternatives.

AQ-4: *Would the project expose sensitive receptors to substantial pollutant concentrations?*

No Project Alternative

Under the No Project Alternative, the existing Dam, Cactus Flats Road, and LAA would remain on the Project Site and would continue to operate as under existing conditions. Typical maintenance activities would occur as they do under existing conditions with no increase in pollutant concentrations. No

construction activities would occur, and no excavation for or purchase of earthen material would be required. Therefore, no impacts to sensitive receptors would occur under the No Project Alternative.

Build Alternatives – Construction

For a detailed description of the methodology used in this analysis, including meteorological assumptions and an analysis of emissions sources, refer to the Air Quality Technical Report (Appendix D).

CDSM Alternative

As previously discussed, localized emissions of criteria air pollutants and precursors were assessed in accordance with SCAQMD's LST guidance. The nearest off-site sensitive receptor is the single-family residence located approximately 600 feet north of the Project Site, on the Butterworth Ranch land that is adjacent to the Project Site. The Project Site also contains an existing residential property owned by LADWP within which the reservoir keeper and family reside.

For the purposes of dispersion modeling to estimate maximum daily emission concentrations, the Proposed Project has been divided into six phases based on the construction schedule and overlapping activities:

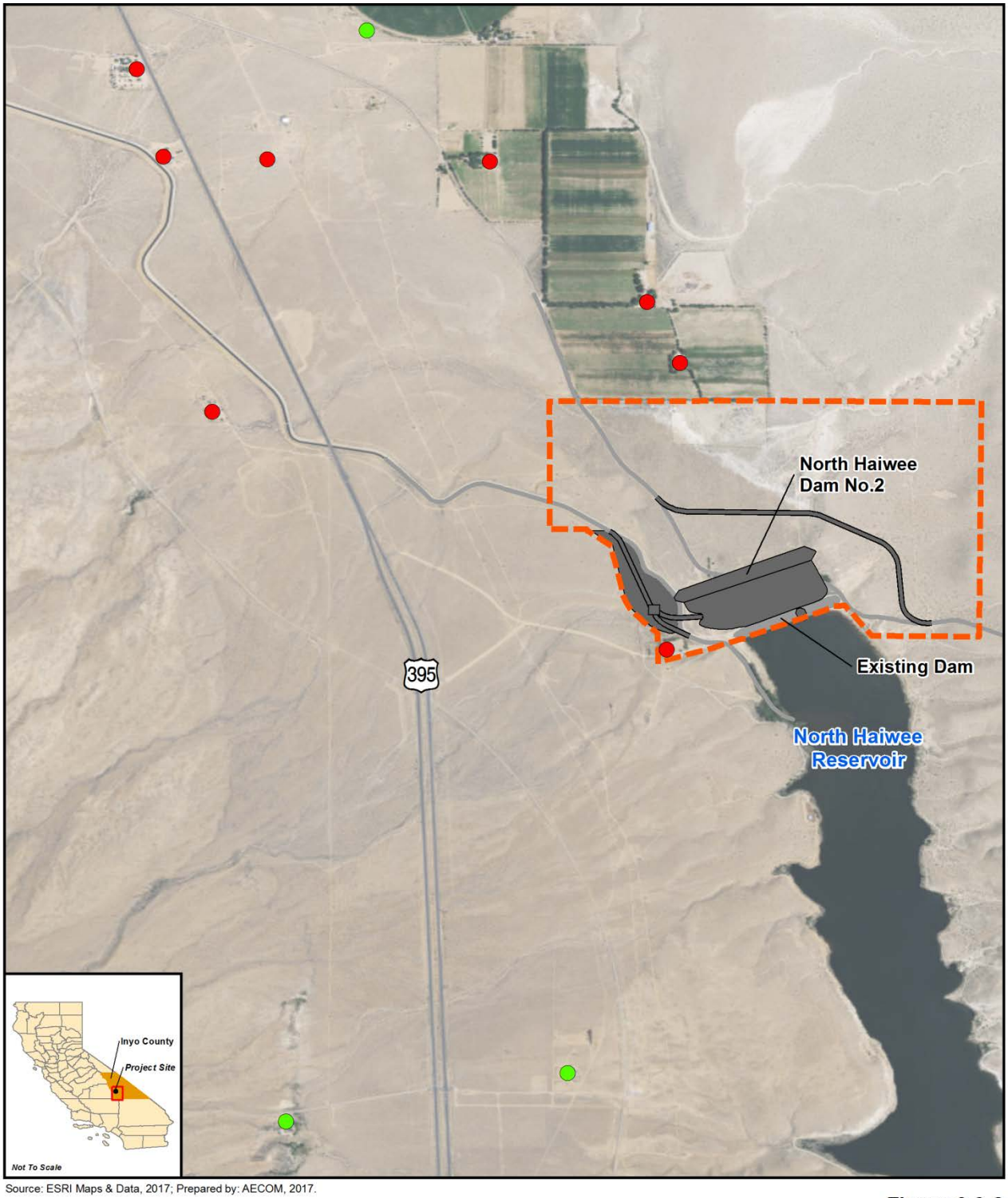
- Construction activities for the Cactus Flats Road Realignment (Scenario 1);
- Concurrent construction activities for the LAA Realignment and LAA Excavation Area (Scenario 2);
- Concurrent construction activities for the LAA Realignment, Material Processing and Processed Material Storage Area, NHD2, and LAA Excavation Area (Scenario 3);
- Concurrent construction activities for the LAA Realignment, NHD2 components, and Material Processing and Processed Material Storage (Scenario 4);
- Concurrent construction activities for the NHD2 components, Material Processing and Processed Material Storage Area, and existing mine (Scenario 5); and
- Concurrent construction activities for the basin (slope protection) and the diversion channel (Scenario 6).

These scenarios were used to model maximum daily concentrations of NO_X, CO, PM10, and PM2.5. There are no applicable localized thresholds for VOC emissions. In addition to the daily thresholds, NO_X and PM10 have average annual thresholds that must be estimates for construction activities. As discussed, construction activities would occur over six calendar years from 2018 through 2023. Refer to Appendix D for the emissions sources over those years.

As shown in Figure 3.3-2, receptors were placed over areas immediately adjacent to the Project Site and haul routes, including residences, commercial, and industrial buildings

Table 3.3-9 presents the maximum unmitigated localized modeled concentrations during a single day of construction that may potentially impact the reservoir keeper's residence and nearby receptors. Table 3.3-10 presents the maximum unmitigated localized annual concentrations.

As shown in Tables 3.3-9 and 3.3-10, modeled daily concentrations during construction scenarios 2 through 6 would exceed the LST for NO_X, and scenarios 2 through 5 would exceed the LSTs for PM10 and PM2.5 emissions at the reservoir keeper's residence. As shown in Figure 3.3-2 below, there are seven additional locations that exceed the 1-hour, NO_2, PM10, or PM2.5 daily threshold. Therefore, construction emissions would expose sensitive receptors to substantial pollutant concentrations. Thus, implementation of Mitigation Measures AQ-A through AQ-D would be required.



Source: ESRI Maps & Data, 2017; Prepared by: AECOM, 2017.

Receptor Locations

Receptor Locations Exceeding the Local Significance Thresholds

Project Site

0 1,200 2,400 Feet

Figure 3.3-2
Receptors Exceeding for CDSM Alternative (Unmitigated)

Health Risk Assessment

The greatest potential for TAC emissions would be related to diesel PM emissions associated with heavy-duty construction equipment operations and metals associated with the concrete batch plant. Heavy-duty construction equipment would operate during the five-year construction period and would cease following buildout of the Proposed Project. The HRA was performed to evaluate the emissions of TACs during construction activities and their effects on nearby receptors, including the reservoir keeper's residence and receptors along the haul routes and the LAA Excavation Area.

The HRA was performed using the USEPA regulatory model AERMOD (Version 15181) and the concentration files imported into the HARP2 modeling system (HARP2 Version 16217). Excess lifetime cancer risks, chronic noncancer HI, and acute HI were estimated as part of the HRA. The estimated excess lifetime cancer risks, chronic noncancer HI, and acute HI were compared to the thresholds for significance for TACs for a maximally exposed individual at the MEIR and the MEIW.

The estimated cancer risk was based on the annual average diesel PM and metals concentration, inhalation potency factor, and default estimates of breathing rate, body weight, and exposure period calculated by HARP2. In addition to the potential cancer risk, diesel PM and metals may result in chronic non-cancer health impacts. There is no acute risk threshold for diesel PM, but there are acute thresholds for several of the metal compounds. The exposure level is the concentration below which no adverse non-cancer health effects are anticipated.

TABLE 3.3-9
MAXIMUM DAILY LOCALIZED CONSTRUCTION MODELED CONCENTRATIONS FOR THE CDSM ALTERNATIVE

	CO		NO_2[1]	PM10	PM2.5
	Averaging Time				
	1-Hour	8-Hour	1-Hour	24-Hour	
Scenario 1					
Maximum Modeled Concentration (µg/m^3)	---	---	---	1.31	0.88
Maximum Modeled Concentration (ppmv)	0.060	0.010	0.063	---	---
LST Threshold	20 ppm	9 ppm	0.18 ppm	10.4 µg/m^3	10.4 µg/m^3
Significant Impact?	**No**	**No**	**No**	**No**	**No**
Scenario 2					
Maximum Modeled Concentration (µg/m^3)	---	---	---	27.94	12.04
Maximum Modeled Concentration (ppmv)	0.525	0.137	0.464	---	---
LST Threshold	20 ppm	9 ppm	0.18 ppm	10.4 µg/m^3	10.4 µg/m^3
Significant Impact?	**No**	**No**	**YES**	**YES**	**YES**
Scenario 3					
Maximum Modeled Concentration (µg/m^3)	---	---	---	38.20	16.96
Maximum Modeled Concentration (ppmv)	1.308	0.252	0.933	---	---
LST Threshold	20 ppm	9 ppm	0.18 ppm	10.4 µg/m^3	10.4 µg/m^3
Significant Impact?	**No**	**No**	**YES**	**YES**	**YES**
Scenario 4					
Maximum Modeled Concentration (µg/m^3)	---	---	---	22.27	16.56
Maximum Modeled Concentration (ppmv)	1.303	0.228	0.928	---	---
LST Threshold	20 ppm	9 ppm	0.18 ppm	10.4 µg/m^3	10.4 µg/m^3
Significant Impact?	**No**	**No**	**YES**	**YES**	**YES**
Scenario 5					
Maximum Modeled Concentration (µg/m^3)	---	---	---	22.17	15.04
Maximum Modeled Concentration (ppmv)	1.284	0.217	0.911	---	---
LST Threshold	20 ppm	9 ppm	0.18 ppm	10.4 µg/m^3	10.4 µg/m^3
Significant Impact?	**No**	**No**	**YES**	**YES**	**YES**

TABLE 3.3-9
MAXIMUM DAILY LOCALIZED CONSTRUCTION MODELED CONCENTRATIONS FOR THE CDSM ALTERNATIVE

	CO		NO_2[1]	PM10	PM2.5
	Averaging Time				
	1-Hour	8-Hour	1-Hour	24-Hour	
Scenario 6					
Maximum Modeled Concentration (µg/m^3)	---	---	---	4.40	3.91
Maximum Modeled Concentration (ppmv)	0.384	0.077	0.377	---	---
LST Threshold	20 ppm	9 ppm	0.18 ppm	10.4 µg/m^3	10.4 µg/m^3
Significant Impact?	**No**	**No**	**YES**	**No**	**No**

Note: [1] EPA default NO_X to NO_2 conversion rates of 0.8 (1-hour NO_2) applied to modeled NO_X concentrations.
Source: Appendix D, Air Quality Technical Report

TABLE 3.3-10
MAXIMUM ANNUAL LOCALIZED CONSTRUCTION MODELED CONCENTRATIONS FOR THE CDSM ALTERNATIVE

	NO_2[1] (ppmv)	PM10 (µg/m^3)
2018	4.27E-05	0.01
2019	2.51E-04	0.12
2020	1.88E-04	0.19
2021	9.32E-05	0.15
2022	3.01E-05	0.15
2023	4.64E-05	0.12
Maximum Modeled Concentration (µg/m^3)	--	0.19
Maximum Modeled Concentration (ppmv)	2.51E-04	--
LST Threshold	0.03	1.0 µg/m^3
Significant Impact?	**No**	**No**

Notes: EPA default NO_X to NO_2 conversion rates of 0.8 (1-hour NO_2) applied to modeled NO_X concentrations.
Source: Appendix D, Air Quality Technical Report

Table 3.3-11 shows the maximum cancer risk, chronic HI, and acute HI for construction of the Proposed Project. The maximum cancer risk due to unmitigated construction emissions was determined to be 98.0 in 1 million for the reservoir keeper's residence, and 1.4 in 1 million for the Worker. The maximum chronic HI was determined to be 0.049 for the MEIW and 0.049 for the MEIR. The maximum acute HI was determined to be 0.011.

TABLE 3.3-11
MAXIMUM CONSTRUCTION HEALTH IMPACTS FOR OFF-SITE RECEPTORS FOR THE CDSM ALTERNATIVE

Receptor Type	Maximum Cancer Risk (per million)	Maximum Chronic HI	Maximum Acute HI
MEIR	98.0	0.049	0.011
MEIW	1.4	0.049	
Threshold of Significance	10	1.0	1.0
Significant Impact?	**YES**	**No**	**No**

Notes: HI= Hazard Index; MEIR = Maximally Exposed Individual Resident; MEIW = Maximally Exposed Individual Worker
Source: Appendix D, Air Quality Technical Report

As shown in Table 3.3-11, the maximum health risk for one residential receptor (the reservoir keeper's residence) would exceed 10 in 1 million. Therefore, construction of the Proposed Project could expose sensitive receptors to substantial pollutant concentrations that would result in a health risk. Therefore, implementation of Mitigation Measures AQ-A through AQ-D would be required. With implementation of Mitigation Measures AQ-A through AQ-D, impacts would be reduced to less than significant.

Excavate and Recompact Alternative

Similar to the CDSM Alternative, emission concentrations and health risks for the Excavate and Recompact Alternative were estimated using the same meteorological data, receptor locations and source assumptions. For the purposes of dispersion modeling to estimate maximum daily emission concentrations, the Excavate and Recompact Alternative has been divided into six phases based on the construction schedule and overlapping activities:

- Construction activities for the Cactus Flats Road Realignment (Scenario 1);
- Concurrent construction activities for the LAA Realignment, including the LAA Excavation Area(Scenario 2);
- Concurrent construction activities for the LAA Realignment, including the LAA Excavation Area, and NHD2 (Scenario 3);
- Concurrent construction activities for the LAA Realignment, NHD2, and existing mine (Scenario 4)
- Construction activities for NHD2 (Scenario 5); and
- Concurrent construction activities for the basin (slope protection and notch) and the diversion channel (Scenario 6).

These scenarios were used to model maximum daily concentrations of NO_X, CO, PM10, and PM2.5. In addition to the daily thresholds, NO_X and PM10 have average annual thresholds that must be estimates for construction activities. Construction activities would occur over seven calendar years from 2018 through 2024. The emissions sources over those years are illustrated in Appendix D.

Table 3.3-12 presents the maximum unmitigated localized modeled concentrations during a single day of construction that may potentially impact the reservoir keeper's residence and nearby receptors. Table 3.3-13 presents the maximum unmitigated localized annual concentrations.

TABLE 3.3-12
MAXIMUM DAILY LOCALIZED CONSTRUCTION MODELED CONCENTRATIONS FOR THE EXCAVATE AND RECOMPACT ALTERNATIVE

	CO		NO_2[1]	PM10	PM2.5
	Averaging Time				
	1-Hour	8-Hour	1-Hour	24-Hour	
Scenario 1					
Maximum Modeled Concentration (µg/m^3)	---	---	---	1.31	0.88
Maximum Modeled Concentration (ppmv)	0.060	0.010	0.063	---	---
LST Threshold	20 ppm	9 ppm	0.18 ppm	10.4 µg/m^3	10.4 µg/m^3
Significant Impact?	**No**	**No**	**No**	**No**	**No**
Scenario 2					
Maximum Modeled Concentration (µg/m^3)	---	---	---	24.64	11.76
Maximum Modeled Concentration (ppmv)	0.525	0.137	0.463	---	---
LST Threshold	20 ppm	9 ppm	0.18 ppm	10.4 µg/m^3	10.4 µg/m^3
Significant Impact?	**No**	**No**	**YES**	**YES**	**YES**
Scenario 3					
Maximum Modeled Concentration (µg/m^3)	---	---	---	31.63	16.95
Maximum Modeled Concentration (ppmv)	1.308	0.251	0.932	---	---
LST Threshold	20 ppm	9 ppm	0.18 ppm	10.4 µg/m^3	10.4 µg/m^3
Significant Impact?	**No**	**No**	**YES**	**YES**	**YES**
Scenario 4					
Maximum Modeled Concentration (µg/m^3)	---	---	---	27.49	18.76
Maximum Modeled Concentration (ppmv)	1.336	0.225	0.962	---	---
LST Threshold	20 ppm	9 ppm	0.18 ppm	10.4 µg/m^3	10.4 µg/m^3
Significant Impact?	**No**	**No**	**YES**	**YES**	**YES**

TABLE 3.3-12
MAXIMUM DAILY LOCALIZED CONSTRUCTION MODELED CONCENTRATIONS FOR THE EXCAVATE AND RECOMPACT ALTERNATIVE

	CO		NO_2[(1)]	PM10	PM2.5
	Averaging Time				
	1-Hour	8-Hour	1-Hour	24-Hour	
Scenario 5					
Maximum Modeled Concentration (µg/m^3)	---	---	---	19.79	14.94
Maximum Modeled Concentration (ppmv)	1.284	0.216	0.910	---	---
LST Threshold	20 ppm	9 ppm	0.18 ppm	10.4 µg/m^3	10.4 µg/m^3
Significant Impact?	**No**	**No**	**YES**	**YES**	**YES**
Scenario 6					
Maximum Modeled Concentration (µg/m^3)	---	---	---	4.40	3.91
Maximum Modeled Concentration (ppmv)	0.384	0.077	0.377	---	---
LST Threshold	20 ppm	9 ppm	0.18 ppm	10.4 µg/m^3	10.4 µg/m^3
Significant Impact?	**No**	**No**	**YES**	**No**	**No**

Note: [1] EPA default NO_X to NO_2 conversion rates of 0.8 (1-hour NO_2) applied to modeled NO_X concentrations.
Source: Appendix D, Air Quality Technical Report

As shown in Tables 3.3-12 and 13, modeled daily concentrations during construction scenarios 2 through 5 would exceed the LST for NO_X, and scenarios 2 through 5 would exceed the LSTs for PM10 and PM2.5 emissions at the reservoir keeper's residence. As shown in Figure 3.3-3, there are eight additional locations that exceed the 1-hour NO_2, PM10, or PM2.5 daily threshold. Therefore, construction emissions could expose sensitive receptors to substantial pollutant concentrations. Implementation of Mitigation Measures AQ-A through AQ-D would be required.

TABLE 3.3-13
MAXIMUM ANNUAL LOCALIZED CONSTRUCTION MODELED CONCENTRATIONS FOR THE EXCAVATE AND RECOMPACT ALTERNATIVE

	NO_2[(1)] (ppmv)	PM10 (µg/m^3)
2018	4.27E-05	0.01
2019	2.28E-04	0.10
2020	6.20E-04	0.27
2021	5.95E-04	0.26
2022	5.25E-04	0.14
2023	4.19E-04	0.12
2024	1.65E-05	0.01
Maximum Modeled Concentration (µg/m^3)	--	0.27
Maximum Modeled Concentration (ppmv)	6.20E-04	--
LST Threshold	0.03	1.0 µg/m^3
Significant Impact?	**No**	**No**

Notes: EPA default NO_X to NO_2 conversion rates of 0.8 (1-hour NO_2) applied to modeled NO_X concentrations.
Source: Appendix D, Air Quality Technical Report

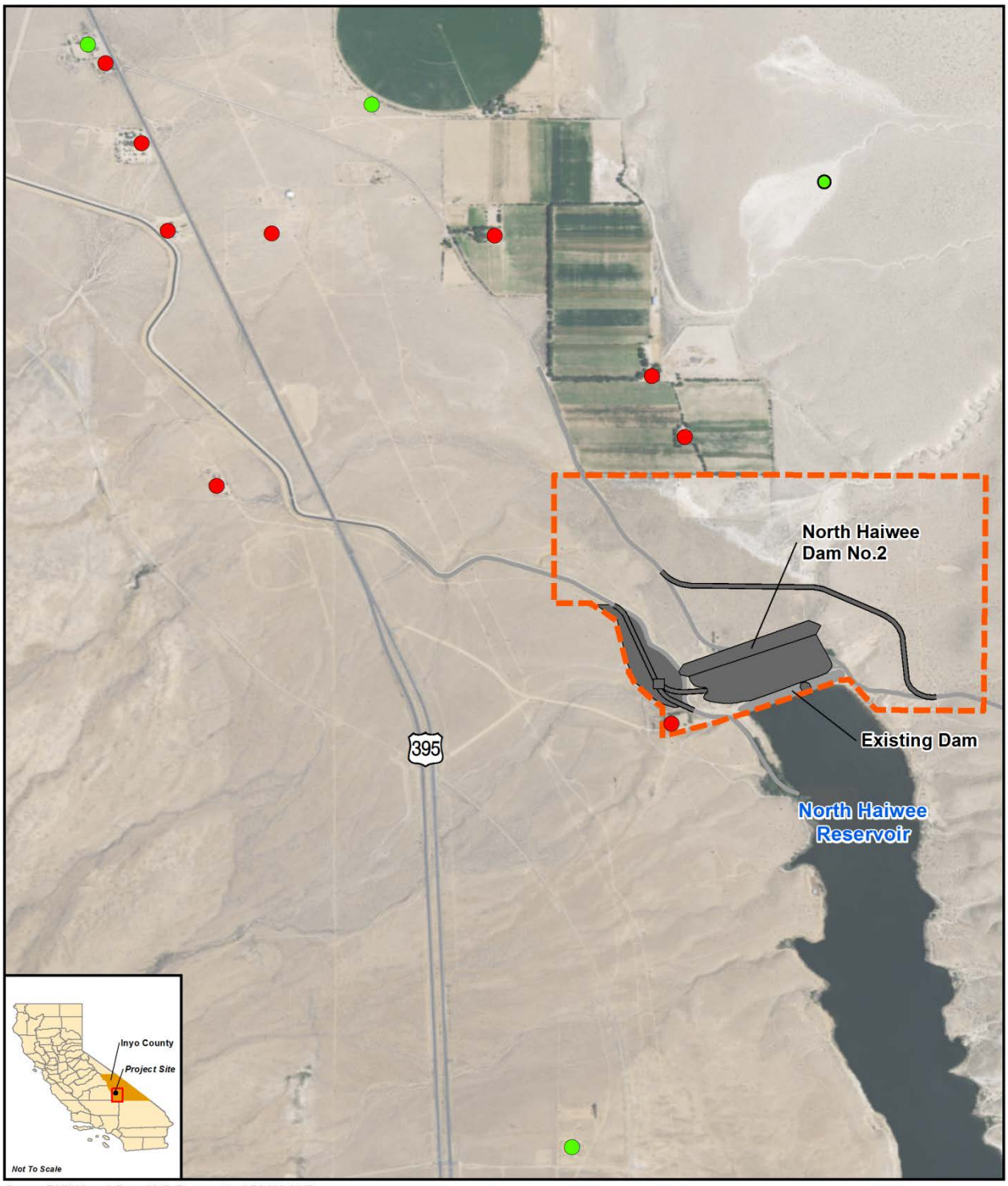


Figure 3.3-3
Receptors Exceeding for Excavate and Recompact Alternative (Unmitigated)

Health Risk Assessment

Similar to the CDSM Alternative, the estimated cancer risk for the Excavate and Recompact Alternative was based on the annual average diesel PM concentration, inhalation potency factor, and default estimates of breathing rate, body weight, and exposure period calculated by HARP2. In addition to the potential cancer risk, diesel PM may result in chronic noncancer health impacts. The exposure level is the concentration below which no adverse noncancer health effects are anticipated.

Table 3.3-14 shows the maximum cancer risk and chronic HI for construction of the Excavate and Recompact Alternative. The maximum cancer risk due to unmitigated construction emissions was determined to be 255.2 in 1 million for the reservoir keeper residence's, and 3.7 in 1 million for the Worker. The maximum chronic HI was determined to be 0.123 for the MEIW and 0.123 for the MEIR. There would be no acute HI for the Excavate and Recompact Alternative.

TABLE 3.3-14
MAXIMUM CONSTRUCTION HEALTH IMPACTS FOR OFF-SITE RECEPTORS FOR THE EXCAVATE AND RECOMPACT ALTERNATIVE

Receptor Type	Maximum Cancer Risk (per million)	Maximum Chronic HI	Maximum Acute HI
MEIR	255.2	0.123	0
MEIW	3.7	0.123	
Threshold of Significance	10	1.0	1.0
Significant Impact?	**YES**	**No**	**No**

Notes: HI= Hazard Index; MEIR = Maximally Exposed Individual Resident; MEIW = Maximally Exposed Individual Worker
Source: Appendix D, Air Quality Technical Report

As shown in Table 3.3-14, the maximum health risk for the residential receptor (reservoir keeper's residence) would exceed 10 in 1 million, as would two additional residential receptors to the northwest of the Project Site. Therefore, the construction of the Excavate and Recompact Alternative could expose sensitive receptors to substantial pollutant concentrations that would result in a health risk. Therefore, implementation of Mitigation Measures AQ-A through AQ-D would be required. With implementation of Mitigation Measures AQ-A through AQ-D, impacts would be reduced to less than significant.

Build Alternatives – Operation

Operation of the Proposed Project would be generally similar to existing conditions. As such, the Proposed Project would not substantially increase emissions from the use of on-road motor vehicles or off-road equipment relative to existing conditions. Therefore, the Proposed Project would not expose sensitive receptors to substantial pollutant concentrations that would result in a health risk. This impact would be less than significant.

AQ-5: *Would the project create objectionable odors affecting a substantial number of people?*

No Project Alternative

Under the No Project Alternative, the existing Dam, Cactus Flats Road, and LAA would remain on the Project Site and would continue to operate as under existing conditions. Typical maintenance activities would occur as they do under existing conditions with no increase in objectionable odors. No construction activities would occur, and no excavation for or purchase of earthen material would be required. Therefore, no impacts related to odors would occur under the No Project Alternative.

Build Alternatives – Construction

Sources that may emit odors during construction activities include exhaust from diesel construction equipment and heavy-duty trucks, which could be considered offensive to some individuals. Odors from

these sources would be localized and generally confined to the immediate area surrounding the Project Site. The Build Alternatives of the Proposed Project would use typical construction techniques, and the odors would be typical of most construction sites and temporary in nature. After construction of the Proposed Project, all construction-related odors would cease. Therefore, impacts would be less than significant under each Build Alternative.

Build Alternatives – Operation

Operation of the Proposed Project would be generally similar to existing conditions. As such, the Proposed Project would not create objectionable odors affecting a substantial number of people, and no impact would occur.

3.3.5 Mitigation Measures

AQ-A Construction Equipment. The construction contractor shall use off-road construction diesel engines that meet, at a minimum, the Tier 4 California Emissions Standards, unless such an engine is not available for a particular item of equipment. Tier 3 engines will be allowed on a case-by-case basis when the contractor has documented that no Tier 4 equipment, or emissions equivalent retrofit equipment is available for a particular equipment type that must be used to complete construction. Documentation shall consist of signed written statements from at least two construction equipment rental firms.

AQ-B The construction contractor shall implement activity management (e.g. rescheduling activities to avoid overlap of construction phase).

AQ-C The construction contractor shall minimize idling time by shutting equipment off when not in use or reducing the time of idling to no more than five minutes (5-minute limit is required by the State Airborne Toxics Control Measure [Title 13, Sections 2449 and 2485 of the CCR]), and provide clear signage that posts this requirement for workers at the entrances to the Project Site.

AQ-D The construction contractor shall maintain construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determined to be running in proper condition before it is operated.

AQ-E LADWP or their construction contractor shall prepare a fugitive Dust Control Plan that meets the requirements of the DRECP's CMA LUPA-AIR-5. The Dust Control Plan shall describe project consistency with the SIP and AQMD standards described above.

3.3.6 Residual Impacts After Mitigation

CDSM Alternative

Implementation of Mitigation Measures AQ-A through AQ-D would ensure construction activities associated with the construction of the Proposed Project would minimize criteria pollutant emissions. Mitigation Measure AQ-A requires engines in diesel-fueled construction equipment above 50 horsepower to meet Tier 4 emission standards. Emission standards for diesel off-road equipment are based on the engine model year. Implementation of these standards, referred to as Tier 1 emission standards, became effective in 1996. The more stringent Tier 2 and Tier 3 emission standards became effective between 2001 and 2008, with the effective date dependent on engine horsepower. Tier 4 interim standard became effective between 2008 and 2012, and Tier 4 final standards became effective in 2014 and 2015.

The OFFROAD model used in the analysis contains ranges of tier engines and uses average fleet data to develop emission factors for a given calendar year. Because the earliest year for construction of the Proposed Project would be 2018, and the requirements for production of Tier 3 and earlier engines have

been in effect for over 10 years, it is reasonable to assume that most, if not all, off-road construction equipment would meet Tier 3 emission standards without the application of Mitigation Measure AQ-A. Based on the improvements in emissions standards required by CARB, the analysis assumes that using off-road construction equipment with Tier 4 engines would result in an additional 20 percent reduction in VOC emissions, 91 percent reduction in NO_X emissions, and 95 percent reduction in PM10 emissions from the use of Tier 3 equipment. Table 3.3-15 shows the mitigated emissions for construction activities in 2018 through 2023 for the CDSM Alternative.

TABLE 3.3-15
MITIGATED DAILY CONSTRUCTION EMISSIONS FOR THE CDSM ALTERNATIVE

	VOC	NO_X	CO	PM10 [1,2]	PM2.5[1]
2018	2.19	20.46	79.57	11.10	5.88
2019	4.63	49.87	167.61	106.99	20.00
2020	21.79	351.25	707.01	241.70	55.50
2021	21.54	344.55	704.27	193.52	48.40
2022	18.40	341.22	544.95	193.52	41.56
2023	17.17	301.38	539.40	134.71	35.50
Maximum Daily Construction Emissions (lbs/day)	21.79	351.25	707.01	241.70	55.50
Threshold of Significance (lbs/day)	75	100	550	150	55
Significant Impact?	**No**	**YES**	**YES**	**YES**	**YES**

Notes: [1] PM10 emissions shown include the sum of PM with aerodynamic diameter 0 to 2.5 microns and PM with aerodynamic diameter 2.5 to 10 microns.
[2] Fugitive dust emissions were reduced based on watering two times per day.
[3] Additional details on the emissions for each calendar year are included in Appendix D.
VOC = volatile organic compounds; NO_X = oxides of nitrogen; CO = carbon monoxide; PM10 = suspended PM; PM2.5 = fine PM
Source: Appendix D, Air Quality Technical Report

As shown in Table 3.3-15, implementation of Mitigation Measures AQ-A through AQ-D would reduce significant impacts of VOC to a less than significant level. However, mitigated NO_X, CO, and PM10, and PM2.5 emissions would continue to exceed the recommended thresholds of significance. Under CEQA, the impact would be considered significant and unavoidable under the CDSM Alternative despite the implementation of mitigation measures.

As discussed previously, the Proposed Project would also result in significant localized emissions of NO_2, PM10, and PM2.5. Table 3.3-16 presents the mitigated localized modeled concentrations during a single day of construction that may potentially impact nearby receptors. Table 3.3-17 presents the mitigated localized modeled concentrations during a single year of construction that may potentially impact nearby receptors under the CDSM Alternative.

TABLE 3.3-16
MITIGATED DAILY LOCALIZED CONSTRUCTION MODELED CONCENTRATIONS FOR THE CDSM ALTERNATIVE

	CO		NO_2[(1)]	PM10	PM2.5
	Averaging Time				
	1-Hour	8-Hour	1-Hour	24-Hour	
Scenario 1					
Maximum Modeled Concentration (µg/m^3)	---	---	---	0.92	0.52
Maximum Modeled Concentration (ppmv)	0.076	0.013	0.008	---	---
LST Threshold	20 ppm	9 ppm	0.18 ppm	10.4 µg/m^3	10.4 µg/m^3
Significant Impact?	**No**	**No**	**No**	**No**	**No**
Scenario 2					
Maximum Modeled Concentration (µg/m^3)	---	---	---	22.72	7.21
Maximum Modeled Concentration (ppmv)	0.513	0.134	0.065	---	---
LST Threshold	20 ppm	9 ppm	0.18 ppm	10.4 µg/m^3	10.4 µg/m^3
Significant Impact?	**No**	**No**	**No**	**YES**	**No**

TABLE 3.3-16
MITIGATED DAILY LOCALIZED CONSTRUCTION MODELED CONCENTRATIONS FOR THE CDSM ALTERNATIVE

	CO		NO_2[1]	PM10	PM2.5
	Averaging Time				
	1-Hour	8-Hour	1-Hour	24-Hour	
Scenario 3					
Maximum Modeled Concentration (µg/m^3)	---	---	---	29.31	8.56
Maximum Modeled Concentration (ppmv)	1.302	0.250	0.248	---	---
LST Threshold	20 ppm	9 ppm	0.18 ppm	10.4 µg/m^3	10.4 µg/m^3
Significant Impact?	**No**	**No**	**YES**	**YES**	**No**
Scenario 4					
Maximum Modeled Concentration (µg/m^3)	---	---	---	24.50	8.14
Maximum Modeled Concentration (ppmv)	1.297	0.226	0.247	---	---
LST Threshold	20 ppm	9 ppm	0.18 ppm	10.4 µg/m^3	10.4 µg/m^3
Significant Impact?	**No**	**No**	**YES**	**YES**	**No**
Scenario 5					
Maximum Modeled Concentration (µg/m^3)	---	---	---	17.52	5.87
Maximum Modeled Concentration (ppmv)	1.279	0.216	0.245	---	---
LST Threshold	20 ppm	9 ppm	0.18 ppm	10.4 µg/m^3	10.4 µg/m^3
Significant Impact?	**No**	**No**	**YES**	**YES**	**No**
Scenario 6					
Maximum Modeled Concentration (µg/m^3)	---	---	---	2.83	1.58
Maximum Modeled Concentration (ppmv)	0.396	0.079	0.034	---	---
LST Threshold	20 ppm	9 ppm	0.18 ppm	10.4 µg/m^3	10.4 µg/m^3
Significant Impact?	**No**	**No**	**No**	**No**	**No**

Notes:
[1] USEPA default NO_X to NO_2 conversion rates of 0.8 (1-hour NO_2) applied to modeled NO_X concentrations.
Source: Appendix D, Air Quality Technical Report

As shown in Tables 3.3-16 and 3.3-17, modeled daily concentrations during construction scenarios 2 through 5 at the reservoir keeper's residence, scenarios 3, 4, and 5 at residential receptor 1438 Cactus Flats Road, and scenarios 3 and 4 on the LAA would continue to exceed the LST for PM10 emissions. The modeled daily concentrations during construction scenarios 3 through 5 would continue to exceed the LST for NO_X. Figure 3.3-4 shows the receptors exceeding levels of significance after implementing Mitigation Measures AQ-A through AQ-D. Under CEQA, the impact would be considered significant and unavoidable under the CDSM Alternative despite the implementation of mitigation measures.

TABLE 3.3-17
MITIGATED ANNUAL LOCALIZED CONSTRUCTION MODELED CONCENTRATIONS FOR THE CDSM ALTERNATIVE

	NO_2[1] (ppmv)	PM10 (µg/m^3)
2018	5.76E-06	0.01
2019	3.39E-05	0.09
2020	2.50E-05	0.17
2021	1.54E-05	0.14
2022	3.10E-04	0.15
2023	4.64E-05	0.12
Maximum Modeled Concentration (µg/m^3)	--	0.17
Maximum Modeled Concentration (ppmv)	3.10E-04	--
LST Threshold	0.03	1.0 µg/m^3
Significant Impact?	**No**	**No**

Notes: [1] USEPA default NO_X to NO_2 conversion rates of 0.8 (1-hour NO_2) applied to modeled NO_x concentrations.
Source: Appendix D, Air Quality Technical Report

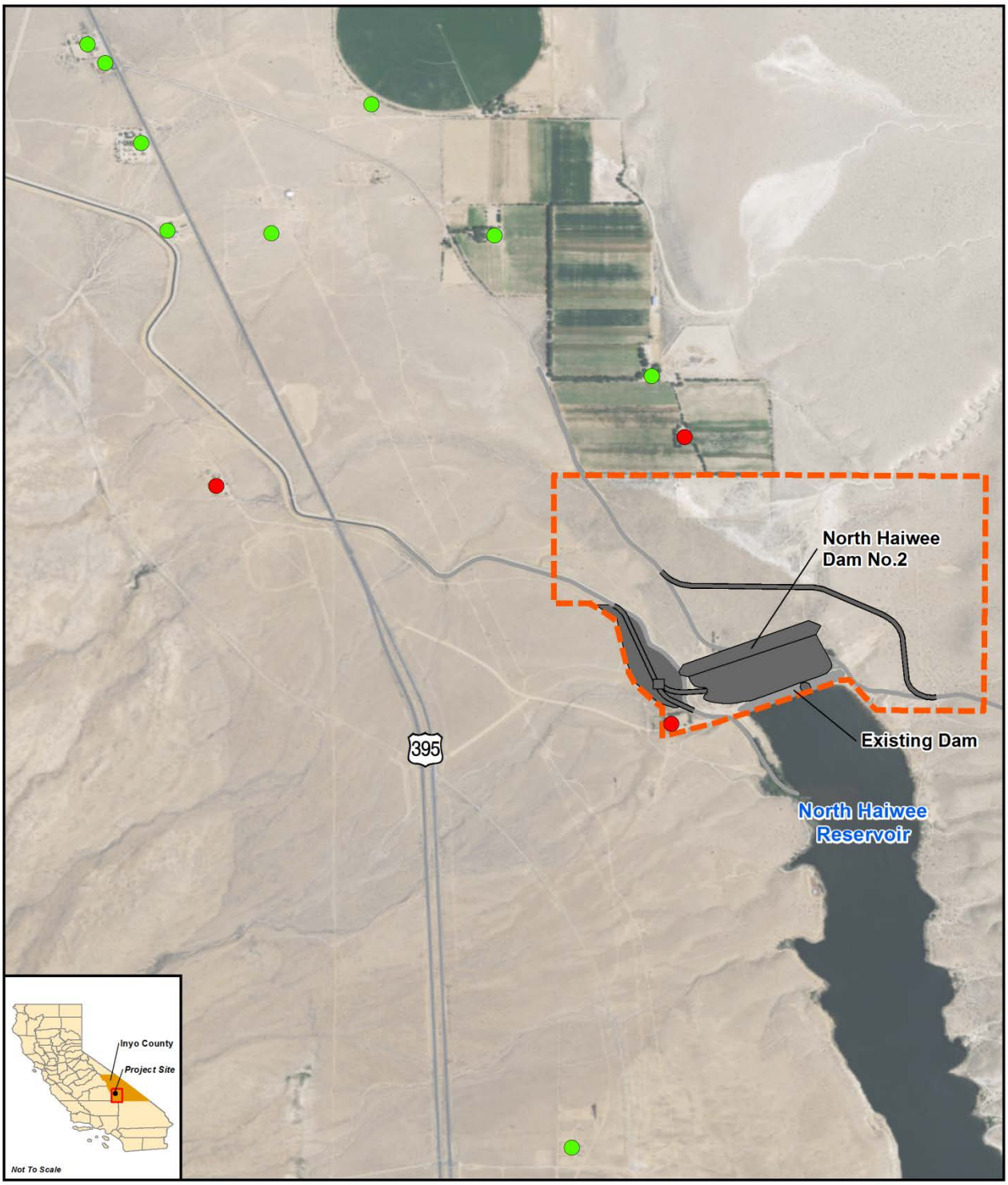


Figure 3.3-4
Receptors Exceeding for CDSM Alternative (Mitigated)

Table 3.3-18 shows the maximum cancer risk, acute HI, and chronic HI for construction of the Proposed Project under the CDSM Alternative. The mitigated cancer risk was determined to be 5.0 in 1 million for the MEIR and 0.07 in 1 million for the MEIW. The maximum chronic HI was determined to be 0.003 for the MEIR and 0.003 for the MEIW. The maximum acute HI was determined to be 0.011 for the maximum receptor.

TABLE 3.3-18
MITIGATED HEALTH IMPACTS FOR THE CDSM ALTERNATIVE

Receptor Type	Maximum Cancer Risk (per million)	Maximum Chronic HI	Maximum Acute HI
MEIR	5.0	0.003	0.011
MEIW	0.07	0.003	
Threshold of Significance	10	1.0	1.0
Significant Impact?	**No**	**No**	**No**

Notes: HI= Hazard Index; MEIR = Maximally Exposed Individual Resident; MEIW = Maximally Exposed Individual Worker
Source: Appendix D, Air Quality Technical Report

As shown in Table 3.3-18, the mitigated health risk for the MEIR and MEIW would not exceed 10 in 1 million. Therefore, mitigated emissions for the Proposed Project would not expose sensitive receptors to substantial pollutant concentrations that would result in a health risk. With implementation of Mitigation Measures AQ-A through AQ-D, impacts would be reduced to less than significant under CEQA for the CDSM Alternative.

Excavate and Recompact Alternative

Table 3.3-19 shows the mitigated emissions for the Excavate and Recompact Alternative construction activities in 2018 through 2024.

TABLE 3.3-19
MITIGATED DAILY CONSTRUCTION EMISSIONS FOR THE EXCAVATE AND RECOMPACT ALTERNATIVE

	VOC	NO_X	CO	PM10 [1,2]	PM2.5[1]
2018	2.19	20.46	79.57	11.10	5.88
2019	4.59	48.13	168.29	83.55	19.99
2020	21.26	345.64	686.53	191.98	51.34
2021	21.26	345.64	686.53	191.98	51.34
2022	14.41	221.21	512.16	48.32	26.19
2023	14.41	221.21	512.16	48.32	26.19
2024	2.83	25.68	100.17	11.83	6.13
Maximum Daily Construction Emissions (lbs/day)	21.26	2.19	20.46	79.57	11.10
Threshold of Significance (lbs/day)	75	100	550	150	55
Significant Impact?	**No**	**YES**	**YES**	**YES**	**No**

Notes: [1] PM10 emissions shown include the sum of PM with aerodynamic diameter 0 to 2.5 microns and PM with aerodynamic diameter 2.5 to 10 microns.
[2] Fugitive dust emissions were reduced based on watering two times per day.
[3] Additional details on the emissions for each calendar year are included in Appendix D.
VOC = volatile organic compounds; NO_X = oxides of nitrogen; CO = carbon monoxide; PM10 = suspended PM; PM2.5 = fine PM
Source: Appendix D, Air Quality Technical Report

As shown in Table 3.3-19, implementation of Mitigation Measures AQ-A through AQ-D would reduce significant impacts of VOC and PM2.5 to a less than significant level. However, mitigated NO_X, CO, and PM10 emissions would continue to exceed the recommended thresholds of significance. Under CEQA, the impact would be considered significant and unavoidable under the Excavate and Recompact Alternative despite the implementation of mitigation measures.

As discussed earlier, the Excavate and Recompact Alternative would also result in significant localized emissions of NO_2, PM10, and PM2.5. Table 3.3-20 presents the mitigated localized modeled concentrations during a single day of construction that may potentially impact nearby receptors. Table 3.3-21 presents the mitigated localized modeled concentrations during a single year of construction that may potentially impact nearby receptors under the Excavate and Recompact Alternative.

TABLE 3.3-20
MITIGATED DAILY LOCALIZED CONSTRUCTION MODELED CONCENTRATIONS FOR THE EXCAVATE AND RECOMPACT ALTERNATIVE

	CO		NO_2[1]	PM10	PM2.5
	Averaging Time				
	1-Hour	8-Hour	1-Hour	24-Hour	
Scenario 1					
Maximum Modeled Concentration (µg/m^3)	---	---	---	0.92	0.52
Maximum Modeled Concentration (ppmv)	0.076	0.013	0.008	---	---
LST Threshold	20 ppm	9 ppm	0.18 ppm	10.4 µg/m^3	10.4 µg/m^3
Significant Impact?	**No**	**No**	**No**	**No**	**No**
Scenario 2					
Maximum Modeled Concentration (µg/m^3)	---	---	---	19.36	6.93
Maximum Modeled Concentration (ppmv)	0.513	0.134	0.064	---	---
LST Threshold	20 ppm	9 ppm	0.18 ppm	10.4 µg/m^3	10.4 µg/m^3
Significant Impact?	**No**	**No**	**No**	**YES**	**No**
Scenario 3					
Maximum Modeled Concentration (µg/m^3)	---	---	---	23.11	7.48
Maximum Modeled Concentration (ppmv)	1.258	0.242	0.248	---	---
LST Threshold	20 ppm	9 ppm	0.18 ppm	10.4 µg/m^3	10.4 µg/m^3
Significant Impact?	**No**	**No**	**YES**	**YES**	**No**
Scenario 4					
Maximum Modeled Concentration (µg/m^3)	---	---	---	16.73	8.51
Maximum Modeled Concentration (ppmv)	1.253	0.211	0.252	---	---
LST Threshold	20 ppm	9 ppm	0.18 ppm	10.4 µg/m^3	10.4 µg/m^3
Significant Impact?	**No**	**No**	**YES**	**YES**	**No**
Scenario 5					
Maximum Modeled Concentration (µg/m^3)	---	---	---	10.23	5.79
Maximum Modeled Concentration (ppmv)	1.279	0.216	0.245	---	---
LST Threshold	20 ppm	9 ppm	0.18 ppm	10.4 µg/m^3	10.4 µg/m^3
Significant Impact?	**No**	**No**	**YES**	**No**	**No**
Scenario 6					
Maximum Modeled Concentration (µg/m^3)	---	---	---	2.83	1.58
Maximum Modeled Concentration (ppmv)	0.396	0.079	0.034	---	---
LST Threshold	20 ppm	9 ppm	0.18 ppm	10.4 µg/m^3	10.4 µg/m^3
Significant Impact?	**No**	**No**	**No**	**No**	**No**

Notes:
[1] USEPA default NO_X to NO_2 conversion rates of 0.8 (1-hour NO_2) applied to modeled NO_X concentrations.
Source: Appendix D, Air Quality Technical Report

TABLE 3.3-21
MITIGATED ANNUAL LOCALIZED CONSTRUCTION MODELED CONCENTRATIONS FOR THE EXCAVATE AND RECOMPACT ALTERNATIVE

	NO_2[(1)] (ppmv)	PM10 ($\mu g/m^3$)
2018	5.74E-06	0.01
2019	3.15E-05	0.07
2020	1.43E-04	0.19
2021	1.62E-04	0.24
2022	1.39E-04	0.08
2023	1.07E-04	0.06
2024	5.21E-06	0.003
Maximum Modeled Concentration ($\mu g/m^3$)	--	0.24
Maximum Modeled Concentration (ppmv)	1.39E-04	--
LST Threshold	0.03	1.0 $\mu g/m^3$
Significant Impact?	**No**	**No**

Notes: [1] USEPA default NO_X to NO_2 conversion rates of 0.8 (1-hour NO_2) applied to modeled NO_x concentrations.
Source: Appendix D, Air Quality Technical Report

As shown in Tables 3.3-20 and 21, modeled daily concentrations during construction scenarios 2 through 5 would continue to exceed the LSTs for PM10 emissions; scenarios 3 through 5 for NO_X emissions at the reservoir keeper's residence; and for PM10 for scenario 4 at the receptor located at 2045 US-395 even with implementation of Mitigation Measures AQ-A through AQ-D. Figure 3.3-5 shows the receptors exceeding levels of significance after implementing Mitigation Measures AQ-A through AQ-D. The impact would be significant and unavoidable under CEQA for the Excavate and Recompact Alternative.

Table 3.3-22 shows the maximum cancer risk and chronic HI for construction of the Excavate and Recompact Alternative. The mitigated cancer risk was determined to be 9.7 in 1 million for the MEIR and 0.14 in 1 million for the MEIW. The maximum chronic HI was determined to be 0.004 for the MEIR and 0.004 for the MEIW.

TABLE 3.3-22
MITIGATED HEALTH IMPACTS FOR THE EXCAVATE AND RECOMPACT ALTERNATIVE

Receptor Type	Maximum Cancer Risk (per million)	Maximum Chronic HI	Maximum Acute HI
MEIR	9.7	0.004	0
MEIW	0.14	0.004	
Threshold of Significance	10	1.0	1.0
Significant Impact?	**No**	**No**	**No**

Notes: HI= Hazard Index; MEIR = Maximally Exposed Individual Resident; MEIW = Maximally Exposed Individual Worker
Source: Appendix D, Air Quality Technical Report

As shown in Table 3.3-22, the mitigated health risk for the MEIR and MEIW would not exceed 10 in 1 million. Therefore, mitigated emissions for the Excavate and Recompact Alternative would not expose sensitive receptors to substantial pollutant concentrations that would result in a health risk. The impact would less than significant with mitigation under CEQA.

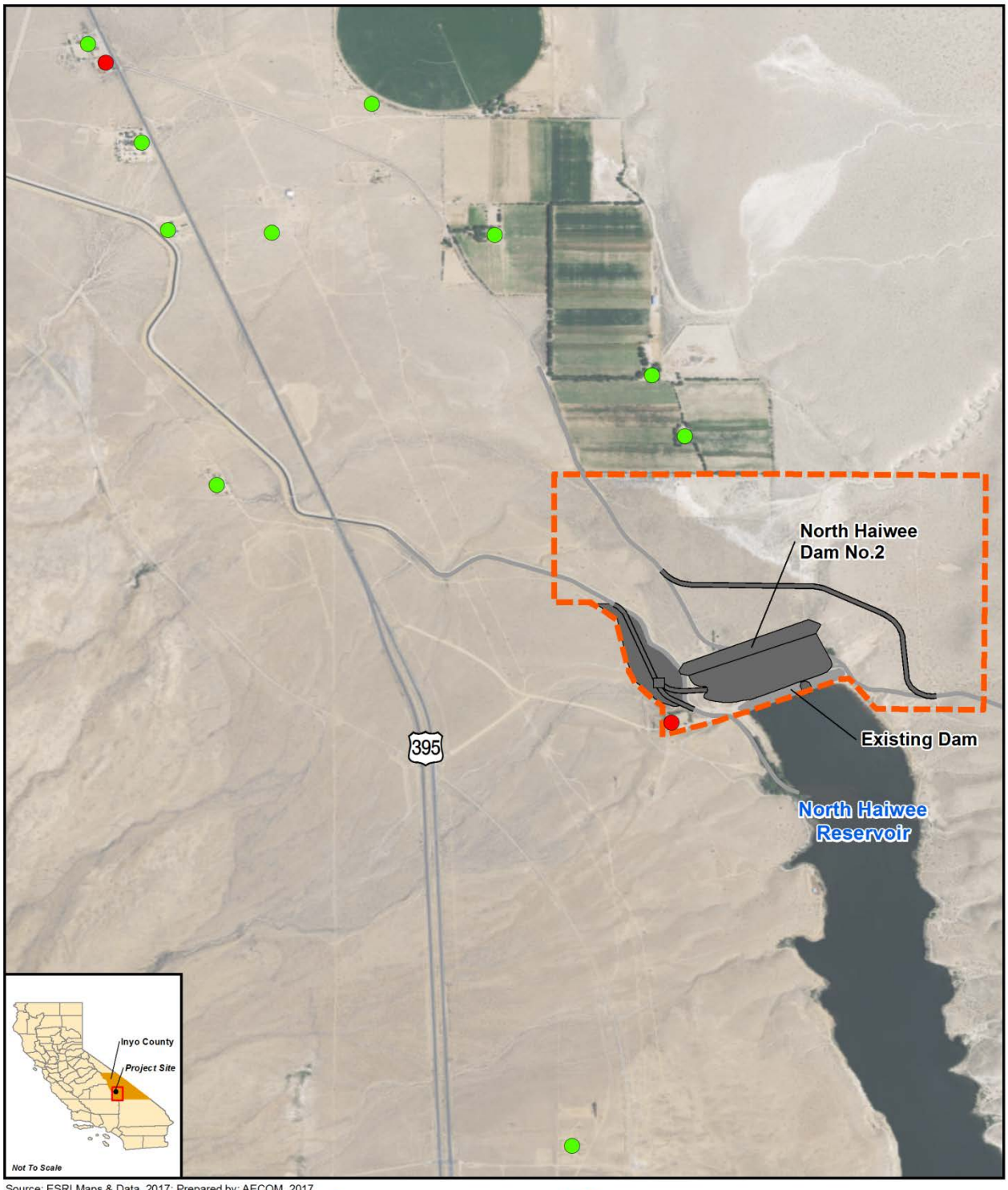


Figure 3.3-5
Receptors Exceeding for Excavate and Recompact Alternative (Mitigated)

3.3.7 NEPA Conclusions

No Project Alternative

Under the No Project Alternative, the existing Dam, Cactus Flats Road, and LAA would remain on the Project Site and would continue to operate as under existing conditions. Typical maintenance activities would occur as they do under existing conditions with no increase in emissions. No construction activities would occur, and no excavation for or purchase of earthen material would be required. Therefore, the No Project Alternative would not conflict with or obstruct implementation of an applicable air quality plan, violate any air quality standard, result in a cumulatively considerable net increase of any criteria pollutant, expose sensitive receptors to pollutant concentrations, or create odors.

Build Alternatives

CDSM Alternative

The General Conformity applicability and NEPA analyses are based on estimates of the total direct and indirect net emissions from construction of the Proposed Project. Table 3.3-23 summarizes the projected annual emissions associated with construction of the CDSM Alternative.

TABLE 3.3-23
GENERAL CONFORMITY – ESTIMATED ANNUAL CONSTRUCTION EMISSIONS FOR THE CDSM ALTERNATIVE

	VOC	NO_X	CO	PM10 [1]	PM2.5[1]
2018	1.29	13.12	7.31	1.92	1.25
2019	2.25	22.32	13.29	8.97	2.50
2020	15.42	121.71	82.95	27.97	11.54
2021	14.91	111.64	78.31	27.23	10.52
2022	13.99	103.72	72.90	28.07	9.89
2023	4.28	33.43	22.66	7.55	3.32
Maximum Annual Construction Emissions (tons/year)	15.42	121.71	82.95	28.07	11.54
Threshold of Significance (tons//year)	N/A	N/A	N/A	70	N/A
Significant Impact?	**No**	**No**	**No**	**No**	**No**

Notes: [1] PM10 emissions shown include the sum of PM with aerodynamic diameter 0 to 2.5 microns and PM with aerodynamic diameter 2.5 to 10 microns.
VOC = volatile organic compounds; NO_X = oxides of nitrogen; CO = carbon monoxide; SO_2 = sulfur dioxide; PM10 = suspended PM; PM2.5 = fine PM
Source: Appendix D, Air Quality Technical Report

The annual emissions estimates shown in Table 3.3-23 include emission reductions associated with the mitigation measures discussed in Section 3.3.5. The federal agency can take measures to reduce emissions, and the changes must be state or federally enforceable to guarantee that emissions would be below de minimis levels. Based on CEQA provisions in 14 California Code of Regulations Section 15091(a)(1), mitigation measures must be incorporated into the Proposed Project. For the purposes of the NEPA and General Conformity applicability analysis, mitigation measures required by CEQA are considered design features of the Proposed Project. This is not considered "mitigation" under the General Conformity Rule. The Proposed Project assumes that mitigation measures would be implemented to meet CEQA requirements. As shown in Table 3.3-23, the annual emissions would not exceed any de minimis levels. Therefore, temporary emissions associated with the Proposed Project would conform to the SIP, and a formal conformity analysis would not be required.

Excavate and Recompact Alternative

Similar to the CDSM Alternative, the General Conformity applicability and NEPA analyses for the Excavate and Recompact Alternative are based on estimates of the total direct and indirect net emissions

from construction activities. Table 3.3-24 summarizes the projected annual emissions associated with construction of the Proposed Project.

TABLE 3.3-24
GENERAL CONFORMITY – ESTIMATED ANNUAL CONSTRUCTION EMISSIONS FOR THE EXCAVATE AND RECOMPACT ALTERNATIVE

	VOC	NO_X	CO	PM10 [1]	PM2.5[1]
2018	1.29	13.12	7.31	1.92	1.25
2019	2.23	21.83	13.09	2.99	1.99
2020	15.71	127.04	84.31	22.19	11.16
2021	15.29	118.95	79.93	21.78	10.20
2022	14.15	103.74	73.63	11.88	8.47
2023	11.09	82.74	57.95	9.87	6.92
2024	0.32	3.29	1.81	0.64	0.38
Maximum Annual Construction Emissions (tons/year)	15.71	127.04	84.31	22.19	11.16
Threshold of Significance (tons//year)	N/A	N/A	N/A	70	N/A
Significant Impact?	**No**	**No**	**No**	**No**	**No**

Notes: [1] PM10 emissions shown include the sum of particulate matter (PM) with aerodynamic diameter 0 to 2.5 microns and PM with aerodynamic diameter 2.5 to 10 microns.
VOC = volatile organic compounds; NO_X = oxides of nitrogen; CO = carbon monoxide; SO_2 = sulfur dioxide; PM10 = suspended PM; PM2.5 = fine PM
Source: Appendix D, Air Quality Technical Report

As shown in Table 3.3-24, the estimated emissions associated with the Excavate and Recompact Alternative would be less than the General Conformity de minimis thresholds. Therefore, temporary emissions associated with the Excavate and Recompact Alternative would conform to the SIP, and a formal conformity analysis would not be required.

As demonstrated throughout this section and in detail in Appendix D, Air Quality Technical Report, the Proposed Project is consistent with the CMAs related to air quality under the DRECP LUPA. The Proposed Project is consistent with LUPA-AIR-1, because the Proposed Project is evaluated per the applicable standards identified in the CMA, including application of BMPs. In relation to CMA LUPA-AIR-2, while the Proposed Project would generate criteria pollutant emissions related to fugitive dust emissions and exceed local thresholds, it would include fugitive dust control measures consistent with GBUAPCD Rule 401 and the SIP, as described in AQ-1 under Section 3.3.4, Environmental Consequences. The Proposed Project is consistent with the methodology and mitigation required by LUPA-AIR-4, as demonstrated in Section 3.3.3, Methodology for Analysis and in Section 3.3.5, Mitigation Measures. The Proposed Project is also consistent with LUPA-AIR-5, which requires a fugitive Dust Control Plan, through implementation of Mitigation Measure AQ-E.

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3.4 Biological Resources

This section analyzes the potential impacts of the Proposed Project as it relates to biological resources. The applicable laws, regulations, and methods used to determine the effects of the Proposed Project are described herein. The section describes the affected environment and analyzes the environmental consequences of the Proposed Project and, if applicable, provides mitigation measures. The analysis in the section is based on the Biological Resources Assessment (BRA) in Appendix E of this Draft EIR/EA. More recent biological surveys and trappings have occurred in 2017; therefore, an addendum to the BRA is being prepared.

BLM and LADWP are coordinating with USFWS and CDFW regarding biological resources associated with the Proposed Project. Consultation regarding permit requirements as well as final mitigation measures and other plans related to biological resources is ongoing. Permit issuance by USFWS and CDFW, if required, will occur after signature of the Decision Record for the Final EA and FONSI by BLM, and certification of the Final EIR by LADWP.

3.4.1 Regulatory Setting

Federal

Executive Orders

Migratory Bird Treaty Act

EO 13186 (2001), issued on January 10, 2001, promotes the conservation of migratory birds and their habitats and directs federal agencies to implement the Migratory Bird Treaty Act (MBTA).

Invasive Species

EO 13112 (1999), issued on February 3, 1999, promotes the prevention and introduction of invasive species and provides for their control, and minimizes the economic, ecological, and human health impacts that invasive species cause through the creation of the Invasive Species Council and Invasive Species Management Plan.

Protection of Wetland

EO 11990 (1977), issued on May 24, 1977, helps avoid the long-term and short-term adverse impacts associated with destroying or modifying wetlands, and avoiding direct or indirect support of new construction in wetlands when there is a practicable alternative.

Protection and Enhancement of Environmental Quality

EO 11514 (1970a), issued on March 5, 1970, supports the purpose and policies of NEPA and directs federal agencies to take measures to meet national environmental goals.

Federal Land Policy and Management Act of 1976

The FLPMA, as amended (43 U.S.C. 1701-1782), designated a 25 million-acre area in southern California as the CDCA, of which 10 million acres are managed by BLM. The CDCA is managed under the principles outlined in the CDCA Plan of 1980 and is divided into four use categories that include controlled (Class C), limited (Class L), moderate (Class M), and intensive (Class I) land use. Four million acres of the CDCA are covered as Class C and are intended to be kept in a natural state by restricting access and limiting disturbance to only foot and horse traffic. Class L lands comprise another 4 million acres of the CDCA and aim to protect sensitive, natural, scenic, ecological, and cultural resources. Lower-intensity, carefully controlled multiple uses that do not significantly diminish the resources named above are allowed within this land use class. Approximately 1.5 million acres are designated as Class M and provide for mixed use that balances with ecosystem preservation. This class allows for human disturbance such as mining, livestock grazing, recreation, energy, and utility development to occur, but

any potential effects must be mitigated. Finally, Class I lands comprise approximately 500,000 acres and allow for concentrated human disturbance. Mitigation for any human disturbance should be conducted within this land use class when possible.

The CDCA contains wilderness areas and Areas of Critical Environmental Concern (ACEC). ACEC's are designated areas with special management plans that ensure maintenance and protection of the unique resources within them. These management plans identify, protect, and monitor significant natural and cultural resources within the area while also providing for other compatible uses.

Desert Renewable Energy Conservation Plan Land Use Plan Amendment of 2016

BLM has prepared a LUPA to the CDCA Plan and Bishop and Bakersfield Resource Management Plans as part of the DRECP. The DRECP was developed as an interagency plan by the BLM, USFWS, the California Energy Commission, and CDFW, collectively known as the Renewable Energy Action Team (REAT Agencies), to (1) advance federal and state natural resource conservation goals and other federal land management goals; (2) meet the requirements of the federal Endangered Species Act, California Endangered Species Act, Natural Community Conservation Planning Act, and Federal Land Policy and Management Act; and (3) facilitate the timely and streamlined permitting of renewable energy projects in 22,585,00 acres, encompassing the Mojave Desert and the Colorado/Sonoran Desert ecoregion subareas in California.

A number of federal and state laws and policies led REAT Agencies to recognize the need for a landscape approach to renewable energy and conservation planning in the California desert. This led REAT Agencies to develop interagency objectives for the DRECP. To reflect the BLM's specific legislative, regulatory, and policy needs, the BLM developed a Purpose and Need for the LUPA. This Purpose and Need is intended to support a streamlined process for the development of utility-scale renewable energy generation and transmission consistent with federal and state renewable energy targets and policies, while simultaneously providing for the long-term conservation and management of Special-Status Species and vegetation types as well as other physical, cultural, scenic and social resources within the DRECP Plan Area through the use of durable regulatory mechanisms. The Proposed Project falls within the boundary covered by the DRECP.

There are a substantial number of CMAs from the DRECP LUPA which are applicable to the Proposed Project. Applicable CMAs are related to: general biological resources, resource setback standards, seasonal restrictions, worker education, subsidized predators standards, restoration of areas disturbed by construction activities but not converted long-term, general closure and decommissioning standards, water and wetland dependent species resources, standard practices for weed management, nuisance animals and invasive species, noise, general siting and design, general standards for biology, activity-specific bird and bat CMAs, BLM special status riparian bird species, bat species, focus and BLM special status plants, special vegetation features, general vegetation management, desert tortoise, burrowing owl, Swainson's hawk, Mohave ground squirrel and compensation. Compensation CMA LUPA-COMP-1 also applies to the Proposed Project, and is related to compensation for third party actions. Applicable Conservation CMAs which apply to the Proposed Project include CMAs related to plants and BLM special status species and Mohave ground squirrel.

CMAs applicable to biological resources include: LUPA-BIO-1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16; LUPA-BIO-RIPWET-3; LUPA-BIO-BAT-1, 2; LUPA-BIO-PLANT-1, 3; LUPA-BIO-VEG-1, 2, 3, 5, 6; LUPA-BIO-IFS-7, 8, 12, 13, 14, 32, 35, 36, 37, 38, 39, 41, 42; LUPA-BIO-COMP-1; CONS-BIO-PLANT-1; CONS-BIO-IFS-9; LUPA-CUL-9; and LUPA-SW-4. CMAs not applicable to biological resources include: LUPA-BIO-17; LUPA-BIO-RIPWET-1, 2, 4, 5, 6, 7; LUPA-BIO-DUNE-1, 2, 4, 5; LUPA-BIO-PLANT-2; LUPA-BIO-SVF-1, 2, 3, 4, 5, 6, 7; LUPA-BIO-VEG-4; LUPA-BIO-IFS-1, 2, 3, 4, 5, 6, 9, 10, 11, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 33, 34, 40; LUPA-BIO-COMP-2, 3, 4; LUPA-LIVE-1; LUPA-CUL-10, 11; LUPA-TRANS-BIO-1, 2, 3, 4; CONS-BIO-DUNE-1, 2; CONS-BIO-IFS-1, 2, 3, 4, 5, 6, 7, 8, 10; NCLS-LANDS-5;

WILD-LANDS-3; SRMA-VEG-1; DFA-VPL-BIO-DUNE-1, 2; DFA-VPL-BIO-IFS-1, 2; DFA-VPL-BIO-BAT-1; DFA-VPL-BIO-COMP-1, 2; DFA-VPL-LIVE-2, 3; DFA-BIO-IFS-1, 2, 3, 4, 5; DFA-BIO-PLANT-1; LUVPL-BIO-RE-1; VPL-BIO-RE-2; GPL-1; and GPL-LIVE-2. The consistency of the Proposed Project with the DRECP CMAs is provided in Appendix B of this Draft EIR/EA.

California Desert Protection Act of 1994

The California Desert Protection Act of 1994 was an Act of Congress which established 69 wilderness areas, including the creation of the Mojave National Preserve and expansion of Joshua Tree and Death Valley National Monuments, and redefined them as National Parks. Lands transferred to the National Park Service (NPS) were formerly administered by BLM and included significant portions of grazing allotments, wild horse and burro Herd Management Areas, and Herd Areas. The Proposed Project does not occur in a Wilderness Area.

Federal Endangered Species Act

The Federal Endangered Species Act (FESA) of 1973, as amended, protects plants and wildlife that are listed by USFWS and the National Marine Fisheries Service as endangered or threatened. Section 9 of the FESA prohibits the taking of endangered wildlife, where take is defined as any effort to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (50 CFR 17.3). Under Section 7 of the FESA, federal agencies are required to consult with USFWS if their actions, including permit approvals or funding, could adversely affect an endangered species or its critical habitat. Through consultation and the issuance of a Biological Opinion, USFWS may issue an incidental take statement allowing take of the species that is incidental to an otherwise legal activity, provided the action will not jeopardize the continued existence of the species. The FESA specifies that USFWS designate habitat for a species at the time of its listing in which are found the physical or biological features "essential to the conservation of the species," or which may require "special management consideration or protection…" (16 U.S.C. § 1533(a)(3).2; 16 U.S.C. § 1532(a)). This designated critical habitat is then afforded the same protection under the FESA as individuals of the species itself, requiring issuance of a Biological Opinion prior to any activity that results in "the destruction or adverse modification of habitat…determined…to be critical" (16 U.S.C. § 1536(a)(2)). Designated critical habitat does not coincide with the Proposed Project, and take of a species protected under FESA during implementation of the Proposed Project is not anticipated.

Migratory Bird Treaty Act of 1918

The MBTA of 1918 implements international treaties between the United States and other nations created to protect migratory birds, any of their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. As authorized by the MBTA, USFWS issues permits to qualified applicants for the following types of activities: falconry, raptor propagation, scientific collecting, special purposes (rehabilitation, education, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal. The regulations governing migratory bird permits can be found in 50 CFR Part 13, General Permit Procedures and 50 CFR Part 21, Migratory Bird Permits. The State of California has incorporated the protection of birds of prey in Sections 3800, 3513, and 3503.5 of the California Fish and Game Code (CFGC). Permit issuance criteria have not yet been developed.

Bald and Golden Eagle Protection Act of 1940

The Bald and Golden Eagle Protection Act (BGPA) of 1940 provides for the protection of the bald eagle and the golden eagle by prohibiting, except under certain specified conditions, the take, possession, and commerce of such birds. The 1972 amendments increased penalties for violating provisions of the BGPA, or regulations issued pursuant thereto and strengthened other enforcement measures. Rewards are provided for information leading to arrest and conviction for violation of the BGPA. A final rule, issued in September 2009, provided for a regulatory mechanism under the BGPA to permit take of bald or

golden eagles comparable to incidental take permits under the FESA. This rule added a new section at 50 CFR 22.26 to authorize the issuance of permits to take bald eagles and golden eagles on a limited basis.

USFWS is the primary federal authority charged with the management of migratory birds in the United States, including golden eagles. USFWS guidance on the applicability of current BGPA statutes and mitigation is currently under review. On November 10, 2009 USFWS implemented new rules (74 FR 46835) governing the "take" of golden and bald eagles. The new rules were released under the existing Bald and Golden Eagle Act. All activities that may disturb or incidentally take an eagle or its nest as a result of an otherwise legal activity must be permitted by USFWS under this act. Take of bald or golden eagle is not anticipated as a result of the Proposed Project.

Clean Water Act of 1977

The purpose of the Clean Water Act (CWA) of 1977 is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." Section 404 of the CWA prohibits the discharge of dredged or fill material into "waters of the United States" without a permit from the United Stated Army Corps of Engineers (USACE). The definition of waters of the United States includes rivers, streams, estuaries, the territorial seas, ponds, lakes, and wetlands. Wetlands are defined as those areas "that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3 7b). USEPA also has authority over wetlands and may override a USACE permit. Substantial impacts to wetlands may require an individual permit. Proposed projects that only minimally affect wetlands may meet the conditions of one of the existing Nationwide Permits. A Water Quality Certification or waiver pursuant to Section 401 of the CWA is required for Section 404 permit actions; this certification or waiver is issued by the RWQCB.

BLM 6840 Manual for Management of Special-Status Species

The BLM 6840 Manual supports BLM's broad conservation authorities and duties pertaining to fish, wildlife, and plant conservation pursuant to multiple statutes including the FLPMA, the Sikes Act, and the FESA. BLM's special-status species policies set forth the procedures by which these species will be managed to ensure their recovery or promote their conservation so that protections afforded under the FESA or BLM policy are no longer warranted. Take of a BLM special-status species is not anticipated as a result of the Proposed Project.

BLM 5000-1 Manual for Forestry Management

The BLM 5000-1 Manual describes BLM's policy authorized under 43 CFR 5400 for the maintenance, restoration, improvement, harvest, and replacement of forest vegetation and desired plant communities on public lands. Those lands include timberlands, woodlands, and other lands containing salable vegetation classified as "other vegetation material." Standard Operation Procedures have been developed by BLM (2011) to address the salvage, transplant, and/or sale of desert vegetation from public lands, including certain species of cacti and yucca that would be permanently impacted by a project. The policy sets forth procedures to survey and evaluate these species' occurrence on the Project Site and subsequent efforts to salvage and temporarily store and replant, or transport these species to another location for replanting.

Desert Tortoise Recovery Plan

The Desert Tortoise (Mojave Population) Recovery Plan established recovery goals and objectives for six "recovery units" and recommended that Desert Wildlife Management Areas be established within each recovery unit. The Desert Tortoise Recovery Plan is advisory; federal agencies are not required to adopt its suggestions. The principle agency mechanism for implementing recovery plan tasks is through amendments to existing resource management plans or through the development of broader bioregional

plans in collaboration with local governments. A Revised Recovery Plan was published in 2011. Take of desert tortoise is not anticipated as a result of the Proposed Project.

State

California Endangered Species Act of 1984

The California Endangered Species Act (CESA) of 1984 generally parallels the main provisions of the FESA, but, unlike its federal counterpart, CESA applies the take prohibitions to species proposed for listing (called "candidates" by the State) and has a much narrower definition of "take." Section 2080 of the CFGC prohibits the taking, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit or in the regulations. "Take" is defined in Section 86 of the CFGC as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA allows for take incidental to otherwise lawful development projects. State lead agencies are required to consult with CDFW to ensure that any action they undertake is not likely to jeopardize the continued existence of any endangered or threatened species.

California Native Plant Protection Act of 1977

The California Native Plant Protection Act (NPPA) of 1977 (CFGC Sections 1900-1913) was created with the intent to "preserve, protect, and enhance rare and endangered plants in this State." The NPPA is administered by CDFW. The Fish and Game Commission has the authority to designate native plants as "endangered" or "rare," and to protect endangered and rare plants from take. CESA (CFGC 2050-2116) provided further protection for rare and endangered plant species, but the NPPA remains part of the CFGC.

California Desert Native Plants Act of 1981

The California Desert Native Plants Act (CDNPA) of 1981 protects non-listed California desert native plants from unlawful harvesting on both public- and privately-owned lands. Harvest, transport, sale, or possession of specific native desert plants is prohibited unless a person has a valid permit. The provisions of this act are applicable within the boundaries of the counties of Imperial, Inyo, Kern, Los Angeles, Mono, Riverside, San Bernardino, and San Diego and enforced by CDFW under CFGC Section 1925-1926.

Water Quality Certification and Report of Waste Discharge

The RWQCB regulates dredge and fill to waters of the United States under the Section 401 Water Quality Certification program, which is required if the Waters are determined to be jurisdictional under the federal CWA Section 404. In the absence of CWA Section 404 jurisdiction over special aquatic resource areas, jurisdiction over waters of the State is extended through the Porter-Cologne Water Quality Control Act (Porter-Cologne). Porter-Cologne provides a comprehensive framework to protect water quality in California. It requires that any entity who plans to discharge waste where it might adversely affect waters of the state must first notify the RWQCB, which may impose requirements to protect water quality (California Water Code [CWC] § 13000 et seq.).

The Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers decision created "gaps" relating to isolated waters that were no longer subject to the CWA. In response, the SWRCB issued a 2004 Memorandum (SWRCB, 2004), stating that RWQCBs should consider setting a higher regulatory priority on discharges to "isolated waters" than to similar discharges to federally-protected waters of similar value. The 2004 Memorandum further stated that dredging, filling, or excavation of "isolated" waters constitutes a discharge of waste to waters of the State, and prospective dischargers are required to submit a Report of Waste Discharge to the RWQCB and comply with other requirements of Porter-Cologne. Among the procedures recommended in the 2004 Memorandum was that the RWQCB refer to the same regulatory considerations generally applied to the issuance of Section 401 permits when issuing Waste Discharge Requirements (WDR) (SWRCB, 2004).

Under the CWA Section 401, every applicant for a federal permit or license for any activity that may result in a discharge to a water body must obtain a Water Quality Certification that the proposed activity would comply with water quality standards. These certifications are issued in connection with USACE CWA Section 404 permits. With regards to the WDR, any activity that results in a discharge to a State water body, non jurisdictional, requires the issuance of a WDR with state water quality standards. At all times, any discharge regardless if to a State or Federal water body, must comply with the local area Basin Plan. Most permits/certifications issued by the RQQCB will contain Federal, State, and local requirements.

California Fish and Game Code

Sections 1600 through 1606 of the CFGC require that a Notification of Lake or Streambed Alteration be submitted to CDFW for "any activity that may substantially divert, obstruct, or change the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake." CDFW reviews the proposed actions detailed in the notification to determine if the activity may substantially adversely affect an existing fish and wildlife resource, and, if necessary, submits to the applicant a proposal for measures to protect fish and wildlife resources that may be impacted. The final proposal, which is mutually agreed upon by CDFW and the applicant, is the Lake and Streambed Alteration Agreement (LSAA). Often, proposed projects that require a LSAA also require a permit from USACE under Section 404 of the CWA; however due to the isolated nature of these ephemeral washes, USACE does not exert jurisdiction over these features.

Furthermore, Section 3500 (et seq.) of the CFGC prohibits destruction of the nests or eggs of most native resident and migratory bird species. Section 3503.5 of the CFGC specifically prohibits the taking of raptors or destruction of their nests or eggs. Additionally, the State of California first began to designate species as "Fully Protected" prior to the creation of the CESA and FESA. Lists of fully protected species were initially developed to provide protection to those animals that were rare or faced possible extinction, and included fish, amphibians, reptiles, birds, and mammals. Most fully-protected species have since been listed as threatened or endangered under CESA and/or FESA. The regulations that implement the Fully Protected Species Statute (CFGC Section 4700) provide that fully protected species may not be taken or possessed at any time. Furthermore, CDFW prohibits any state agency from issuing incidental take permits for fully protected species, except for necessary scientific research.

California Food and Agriculture Code

Sections 7270–7224

The California Commissioner of Agriculture is granted the authority to investigate and control nonnative invasive weeds.

Section 403

The California Department of Food and Agriculture is designated to prevent the introduction and spread of injurious insect or animal pests, plant diseases, and noxious weeds.

California Code of Regulations

Title 3, Section 4500

Title 3, Section 4500 designates plant species that are considered noxious weeds.

Title 14, Sections 670.2 and 670.5

Title 14, Sections 670.2 and 370.5 lists the plants and animals of California that are declared rare, threatened, or endangered.

Local

Inyo County General Plan

The specific policies outlined in the ICGP related to biological resources are contained within the Conservation Element and the Open Space Element; these policies are listed in Table 3.4-1.

TABLE 3.4-1
INYO COUNTY GENERAL PLAN GOALS AND POLICIES

Goal	Policy
Conservation Element	
BIO-1. Maintain and enhance biological diversity and healthy ecosystems throughout the County.	Policy BIO-1.1. Regulatory Compliance: The County shall review development proposals to determine impacts to sensitive natural communities, of both local and regional concern, and special-status species. Appropriate mitigation measures will be incorporated into each project, as necessary.
	Policy BIO-1.2. Preservation of Riparian Habitat and Wetlands. Important riparian areas and wetlands, as identified by the County, shall be preserved and protected for biological resource value.
	Policy BIO-1.3. Restoration of Biodiversity. Encourage the restoration of degraded biological communities.
	Policy BIO-1.4. Limitations for ERA's. The County shall discourage development in Environmental Resource Areas (ERA's).
	Policy BIO-1.5. Develop Outside of Habitat Areas. Work with regulatory agencies and private developers to direct development into less significant habitat areas. Discourage urban development in areas containing sensitive natural communities or known to contain special-status species.
	Policy BIO-1.6. Wildlife Corridors. The County shall work to preserve and protect existing wildlife corridors where appropriate.
	Policy BIO-1.7. Noxious Weeds. Avoid activities that will promote the spread of noxious weeds in the County.
	Policy BIO-1.8. Owens River Restoration. The County will work with LADWP and regulatory agencies to complete the restoration of habitat values along the historic Owens River channel as mitigation for degradation done with water export activities. This policy shall apply to the portion of the Owens River identified as the Lower Owens River Project.
Open Space Element	
BIO-2. Provide a balanced approach to resource protection and recreational use of the natural environment.	Policy BIO-2.1. Coordination on Management of Adjacent Lands. Work with other government land management agencies to preserve and protect biological resources while maintaining the ability to utilize and enjoy the natural resources in the County.
	Policy BIO-2.2. Appropriate Access for Recreation. Encourage appropriate access to resource-managed lands.
	Policy BIO-2.3. Hunting and Fishing. Promote hunting and fishing activities within the County pursuant to appropriate regulations of the CFGC.
	Policy BIO-2.4. Nature as Education. Provide and support passive recreational opportunities and interpretive education in the natural environment.

Source: 2001 Inyo County General Plan, Goals and Policies Report, Chapter 8 Conservation/Open Space Element website: http://inyoplanning.org/general_plan/goals/ch8.pdf, accessed November 4, 2015.

3.4.2 Affected Environment

This section summarizes the existing biological resources within the Project area, which includes environmental setting, biological communities, special-status species, and habitats of concern (special-status natural communities, jurisdictional waters, and critical habitat). This section is based primarily on the Biological Resources Assessment in Appendix E of this Draft EIR/EA. More recent biological surveys and trappings have occurred in 2017; therefore, an addendum to the BRA is being prepared. For the purposes of this assessment, "Proposed Project area" or "study area" refers to the general survey area that was analyzed by biologists, and which includes the construction area of the Project Site and associated haul routes.

Environmental Setting

The Project Site is centered at NHD, east of US-395, in an unincorporated part of the southern Owens Valley. Owens Valley is a long, narrow valley located on the eastern flank of the Sierra Nevada Mountains. The southern portion of this valley is located in the northern arid region of the Mojave Desert in Inyo County. The ground surface of the valley floor slopes gently to the south at a rate of 30 to 35 feet per mile. Owens Valley is topographically separated from the Rose Valley (south of Owens Valley) by Dunmovin Hill, a topographic high that is composed of a massive landslide or series of debris flow deposits that originated from the Sierra Nevada range to the west.

The average annual precipitation in southern Owens Valley ranges from five to seven inches per year, while the area's open potential water evaporation rate has been estimated to be up to 65 to 80 inches per year. Evapotranspiration rates for soil and plants in the area are likely lower, based on investigations conducted in Owens Valley. Surface water bodies in the southern Owens Valley area consist of perennial springs sustained by groundwater flow, ephemeral streams and washes that mainly flow in the winter, and manmade lakes and reservoirs.

The Project Site lies in the northwestern portion of the Mojave Desert, a subdivision of the Mojave Desert Biome that has a distinct flora and fauna. The western Mojave Desert is generally flat and sparsely vegetated with creosote bush and saltbush plant communities dominating the landscape. Most of the western portion of the Mojave Desert lies between 2,500 and 4,000 feet and is considered high desert. Temperatures are often above 100°F in the summer and can drop below 32°F in the winter, bringing snow and frost. Annual precipitation is low and quite variable annually.

Vegetation communities identified in the Proposed Project area were defined at the vegetation alliance level using keys and descriptions provided in *A Manual of California Vegetation, Second Edition*. Six vegetation communities were identified within the Project area. The common name and alliance level of the natural vegetation communities include: Fourwing Saltbush Scrub (*Atriplex canescens* Shrubland), Allscale Scrub (*Atriplex polycarpa* Shrubland), Joshua Tree Woodland (*Yucca brevifolia* Woodland), Cresotebush-burrobush scrubland (*Larrea tridentate-Ambrosia dumosa* Shrubland), Tamarisk Thicket (*Tamarisk* spp. Shrubland Semi Natural), and Black Willow Thicket (*Salix goodingii* Woodland). All but Black Willow Thicket were mapped in the Project Site. In addition, six non- or sparsely-vegetated land cover types were mapped, all in the Project Site, including: Abandoned Agriculture, Aqueduct, Dam, Disturbed, Reservoir, and Road (Figure 3.4-1).

A summary of existing conditions in the Project Site is provided below. Detailed descriptions of natural communities and common plant and wildlife species observed are provided in the appended BRA.

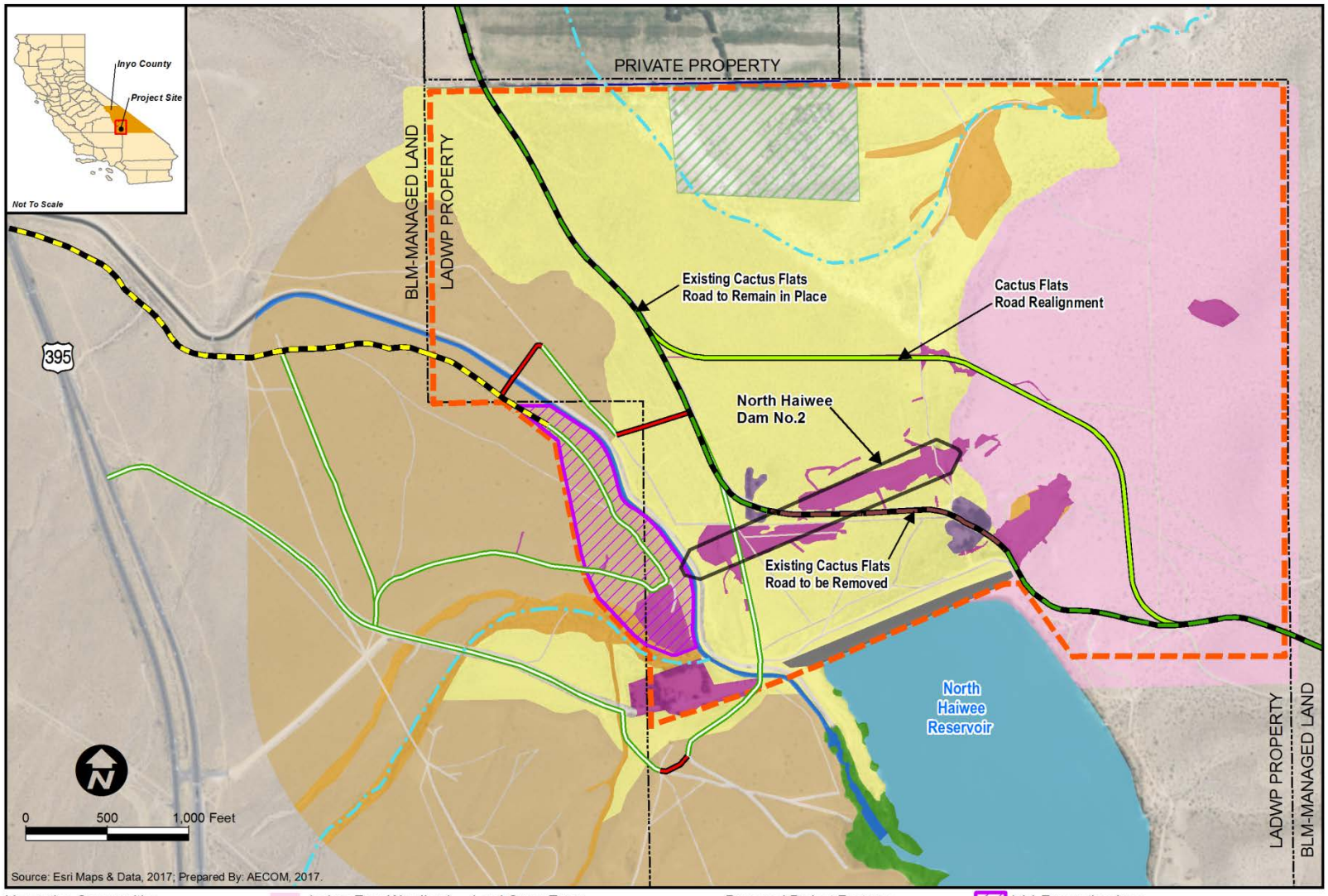


Figure 3.4-1

Vegetation Communities and Land Cover Types in the Project Area

Project Site

The Project Site, including the proposed locations of the NHD2 components, Cactus Flats Road Realignment, LAA Realignment, diversion channel and NHD modifications, and LAA Excavation Area, is composed of old and new alluvium land types with dry sandy soils. Vegetation communities within the Project Site include Fourwing Saltbush Scrub, Allscale Scrub, Joshua Tree Woodland, and Tamarisk Thicket. Disturbed habitat is also prominent, coinciding with the site of the proposed NHD2 (Table 3.4-2). An ephemeral wash intersects the northeastern portion of the Project Site and is dominated by the invasive prickly Russian thistle (*Salsola tragus*).

The LAA Excavation Area occurs within the southwest portion of the Project Site, and is also composed of old and new alluvium land types with dry sandy soils. Vegetation communities within the LAA Excavation Area include Fourwing Saltbush Scrub, Allscale Scrub, and Cresotebush-burrobush scrubland. Disturbed habitat is also present within the LAA Excavation Area (Table 3.4-2). A wash intersects the southern boundary of the LAA Excavation Area and is composed of prickly Russian thistle and rubber rabbitbrush (*Ericameria nauseosa*).

Approximately 13.7 acres of the Project Site occur on BLM-managed land. Of this, 2.2 acres have been previously disturbed. The acreages of vegetation communities and land cover types occurring on BLM-managed land is also presented in Table 3.4-2.

TABLE 3.4-2
VEGETATION COMMUNITIES AND LAND COVER TYPES
MAPPED IN THE PROJECT SITE AND BLM-MANAGED LAND

	LADWP Property	BLM-Managed Land	PROJECT SITE TOTAL (Acres)
Vegetation Communities (Acres)			
Allscale Shrub	164.4	2.0	**166.4**
Fourwing Saltbush	9.4	0.5	**9.9**
Joshua Tree Woodland	130.6	--	**130.6**
Cresotebush-Burrobush Scrubland	31.3	9.0	**40.3**
Tamarisk Thicket	1.9	--	**1.9**
Total Vegetation Communities	*337.6*	*11.5*	***349.1***
Previously Disturbed Land Cover Types (Acres)			
Abandoned Agriculture	18.5	--	**18.5**
Aqueduct	2.3	0.7	**3.0**
Dam	2.8	--	**2.8**
Disturbed	16.9	0.2	**16.9**
Reservoir	0.1	--	**0.1**
Road	14.5	1.3	**15.8**
Total Land Cover Types	*55.1*	*2.2*	***57.1***
TOTAL	**392.7**	**13.7**	**406.4**

Special-Status Species

Special-Status Plant Species

Rare and Special-Status Plants are defined as:

- Federally listed endangered, threatened, or proposed species
- California listed endangered, threatened, and rare species
- BLM sensitive species, including species with California Rare Plant Rank of 1B

A review was conducted of the most recent California Native Plant Society (CNPS) Inventory of Rare and Endangered Vascular Plants of California records within a nine-quad search area of and around the Project Site. Other rare plants ranked by CNPS were included in vegetation surveys and are discussed in this document as rare plants. These rare plants are not considered special-status and are not protected under state or federal law. However, in accordance with the CDNPA, LADWP will coordinate with BLM and CDFW to implement Joshua tree salvage measures.

Table 3.4-3 shows the federal and state regulatory status, preferred habitat, and probability of occurrence for each special-status plant species known to occur in the nine quad maps surrounding the Project Site footprint. The "Potential for Occurrence" category provided in Table 3.4-3 is defined as follows:

- Unlikely: The study area and/or immediate vicinity do not support suitable habitat for a particular species.
- Low Potential: The study area and/or immediate vicinity only provide limited habitat for a particular species. In addition, the known range for a particular species may be outside of the immediate study area.
- Medium Potential: The study area and/or immediate vicinity provide suitable habitat for a particular species, and project implementation may impact this species.
- High Potential: The study area and/or immediate vicinity provide ideal habitat conditions for a particular species and/or known populations occur in the immediate area.

TABLE 3.4-3
SPECIAL-STATUS PLANT SPECIES WITH POTENTIAL TO OCCUR WITHIN THE PROJECT AREA

Scientific Name	Common Name	Status	Probability of Occurrence	Habitat
Allium atrorubens var. *atrorubens*	Great Basin onion	2B.3	High	Rocky or sandy • Great Basin scrub • Pinyon and juniper woodland
Astragalus atratus var. *mensanus*	Darwin Mesa milk-vetch	1B.1; BLM:S	High	Volcanic clay, gravelly • Great Basin scrub • Joshua tree woodland • Pinyon and juniper woodland
Astragalus cimae var. *sufflatus*	inflated Cima milk-vetch	1B.3; USFS:S	High	Carbonate, rocky • Great Basin scrub • Pinyon and juniper woodland
Astragalus ertterae	Walker Pass milk-vetch	1B.3; BLM:S	Unlikely	Pinyon and juniper woodland (sandy, granitic)
Astragalus mohavensis var. *hemigyrus*	curved-pod milk-vetch	1B.1; BLM:S	High	Carbonate • Joshua tree woodland • Mojavean desert scrub
Astragalus serenoi var. *shockleyi*	Shockley's milk-vetch	2B.2	Low	Alkaline, granitic alluvium • Chenopod scrub • Great Basin scrub • Pinyon and juniper woodland
Astragalus tidestromii	Tidestrom's milk-vetch	2B.2; USFS:S	High	Carbonate, sandy or gravelly • Mojavean desert scrub
Blepharidachne kingii	King's eyelash grass	2B.3	Low	Great Basin scrub (usually carbonate)
Boechera dispar	pinyon rockcress	2B.3	Medium	Granitic, gravelly • Joshua tree woodland • Mojavean desert scrub • Pinyon and juniper woodland
Boechera lincolnensis	Lincoln rockcress	2B.3; BLM:S	High	Carbonate • Chenopod scrub • Mojavean desert scrub
Boechera tularensis	Tulare rockcress	1B.3	Unlikely	Rocky slopes • Subalpine coniferous forest • Upper montane coniferous forest
Botrychium ascendens	upswept moonwort	2B.3	Low	Mesic • Lower montane coniferous forest • Meadows and seeps
Botrychium lunaria	common moonwort	2B.3	Unlikely	• Meadows and seeps • Subalpine coniferous forest • Upper montane coniferous forest

TABLE 3.4-3
SPECIAL-STATUS PLANT SPECIES WITH POTENTIAL TO OCCUR WITHIN THE PROJECT AREA

Scientific Name	Common Name	Status	Probability of Occurrence	Habitat
Botrychium minganense	Mingan moonwort	2B.2	Low	Mesic • Bogs and fens • Lower montane coniferous forest • Upper montane coniferous forest
Bouteloua trifida	three-awned grama	2B.3	Unlikely	• Mojavean desert scrub (carbonate, rocky)
Calochortus excavatus	Inyo County star-tulip	1B.1; BLM:S; USFS:S	Low	Alkaline, mesic • Chenopod scrub • Meadows and seeps
Calochortus palmeri var. *palmeri*	Palmer's mariposa lily	1B.2; BLM:S	Unlikely	Mesic • Chaparral • Lower montane coniferous forest • Meadows and seeps
Calochortus striatus	alkali mariposa lily	1B.2; BLM:S	Unlikely	Alkaline, mesic • Chaparral • Chenopod scrub • Mojavean desert scrub • Meadows and seeps
Calyptridium pygmaeum	pygmy pussypaws	1B.2	Unlikely	Sandy or gravelly • Subalpine coniferous forest • Upper montane coniferous forest
Carlquistia muirii	Muir's raillardella	1B.3; BLM:S	Unlikely	Granitic • Chaparral (montane) • Lower montane coniferous forest • Upper montane coniferous forest
Clarkia xantiana ssp. *parviflora*	Kern Canyon clarkia	4.2; SB	Unlikely	Often sandy, sometimes rocky, slopes, sometimes roadsides • Chaparral • Cismontane woodland • Great Basin scrub • Valley and foothill grassland. CNDDB shows some occurrences south of Walker Creek at higher elevation. Probably does not exist at Project Site.
Cordylanthus eremicus ssp. *kernensis*	Kern Plateau bird's-beak	1B.3	Unlikely	• Great Basin scrub • Joshua tree woodland • Pinyon and juniper woodland • Upper montane coniferous forest

TABLE 3.4-3
SPECIAL-STATUS PLANT SPECIES WITH POTENTIAL TO OCCUR WITHIN THE PROJECT AREA

Scientific Name	Common Name	Status	Probability of Occurrence	Habitat
Cryptantha circumscissa var. *rosulata*	rosette cushion cryptantha	1B.2; BLM:S	Unlikely	Gravelly (coarse), granitic • Alpine boulder and rock field • Subalpine coniferous forest
Cryptantha clokeyi	Clokey's cryptantha	1B.2; BLM:S	Low	• Mojavean desert scrub
Cryptantha roosiorum	bristlecone cryptantha	1B.2; BLM:S	Unlikely	• Subalpine coniferous forest (carbonate, rocky)
Cymopterus deserticola	desert cymopterus	1B.2; BLM:S	Medium	Sandy • Joshua tree woodland • Mojavean desert scrub
Cymopterus ripleyi var. *saniculoides*	sanicle cymopterus	1B.2;BLM:S	High	Gravelly, sandy, carbonate • Joshua tree woodland • Mojavean desert scrub
Dedeckera eurekensis	July gold	1B.3; BLM:S	Low	• Mojavean desert scrub (carbonate)
Deinandra arida	Red Rock tarplant	1B.2; BLM:S	Low	• Mojavean desert scrub (clay, volcanic tuff)
Deinandra mohavensis	Mojave tarplant	1B.3; BLM:S; USFS:S	Unlikely	Mesic • Chaparral • Coastal scrub • Riparian scrub
Dudleya saxosa subsp. saxosa	Panamint dudleya	1B.3; BLM:S	Unlikely	Granitic or carbonate, rocky • Mojavean desert scrub • Pinyon and juniper woodland
Enceliopsis covillei	Panamint daisy	1B.2; BLM:S	Unlikely	• Mojavean desert scrub (subalkaline)
Eremothera boothii ssp. *boothii*	Booth's evening-primrose	2B.3	Medium	• Joshua tree woodland • Pinyon and juniper woodland
Ericameria gilmanii	Gilman's goldenbush	1B.3; BLM:S	Unlikely	Carbonate or granitic, rocky • Subalpine coniferous forest • Upper montane coniferous forest
Erigeron aequifolius	Hall's daisy	1B.3; BLM:S	Unlikely	Rocky, granitic • Broadleafed upland forest • Lower montane coniferous forest • Pinyon and juniper woodland • Upper montane coniferous forest
Erigeron calvus	bald daisy	1B.1; BLM:S	Low	• Great Basin scrub
Eriogonum contiguum	Reveal's buckwheat	2B.3; BLM:S	Low	• Mojavean desert scrub (sandy)

TABLE 3.4-3
SPECIAL-STATUS PLANT SPECIES WITH POTENTIAL TO OCCUR WITHIN THE PROJECT AREA

Scientific Name	Common Name	Status	Probability of Occurrence	Habitat
Eriogonum eremicola	Wildrose Canyon buckwheat	1B.3; BLM:S	Unlikely	Sandy or gravelly • Pinyon and juniper woodland • Upper montane coniferous forest
Eriogonum hoffmannii var. *hoffmannii*	Hoffmann's buckwheat	1B.3; BLM:S	Low	Rocky • Mojavean desert scrub • Pinyon and juniper woodland
Eriogonum kennedyi var. *pinicola*	Kern buckwheat	1B.1; BLM:S	Unlikely	Clay • Chaparral • Pinyon and juniper woodland
Eriogonum mensicola	Pinyon Mesa buckwheat	1B.3; BLM:S	Unlikely	rocky or gravelly • Great Basin scrub • Pinyon and juniper woodland • Upper montane coniferous forest
Eriogonum microthecum var. *panamintense*	Panamint Mountains buckwheat	1B.3; BLM:S	Unlikely	Rocky • Pinyon and juniper woodland • Subalpine coniferous forest
Eriogonum wrightii var. *olanchense*	Olancha Peak buckwheat	1B.3: BLM:S	Unlikely	• Alpine boulder and rock field • Subalpine coniferous forest (gravelly or rocky)
Eriophyllum mohavense	Barstow woolly-sunflower	1B.2; BLM:S	Low	• Chenopod scrub • Mojavean desert scrub • Playas
Erythranthe calcicola	limestone monkeyflower	1B.3; BLM:S	Low	Usually carbonate, usually talus slopes • Joshua tree woodland • Mojavean desert scrub • Pinyon and juniper woodland
Erythranthe rhodopetra	Red Rock Canyon monkeyflower	1B.1; BLM:S	Low	Sandy, canyon washes • Mojavean desert scrub
Eschscholzia minutiflora subsp. twisselmannii	Red Rock poppy	1B.1; BLM:S	Low	• Mojavean desert scrub (volcanic tuff)
Hackelia sharsmithii	Sharsmith's stickseed	2B.3: BLM:S	Unlikely	Granitic, rocky • Alpine boulder and rock field • Subalpine coniferous forest
Hesperidanthus jaegeri	Jaeger's hesperidanthus	1B.2; BLM:S	Unlikely	Carbonate, rocky • Great Basin scrub • Pinyon and juniper woodland • Subalpine coniferous forest
Hulsea vestita ssp. *inyoensis*	Inyo hulsea	2B.2	Unlikely	Rocky • Chenopod scrub • Great Basin scrub • Pinyon and juniper woodland

TABLE 3.4-3
SPECIAL-STATUS PLANT SPECIES WITH POTENTIAL TO OCCUR WITHIN THE PROJECT AREA

Scientific Name	Common Name	Status	Probability of Occurrence	Habitat
Ivesia campestris	field ivesia	1B.2	Unlikely	• Meadows and seeps (edges) • Subalpine coniferous forest • Upper montane coniferous forest
Lomatium shevockii	Owens Peak lomatium	1B.3; BLM:S	Unlikely	Rocky • Lower montane coniferous forest • Upper montane coniferous forest
Lupinus magnificus var. *magnificus*	Panamint Mountains lupine	1B.2; BLM:S	Low	• Great Basin scrub • Mojavean desert scrub • Pinyon and juniper woodland • Upper montane coniferous forest
Lupinus padre-crowleyi	Father Crowley's lupine	1B.2: BLM:S	Unlikely	Decomposed granitic • Great Basin scrub • Riparian forest • Riparian scrub • Upper montane coniferous forest
Lupinus pusillus var. *intermontanus*	intermontane lupine	2B.3	High	• Great Basin scrub (sandy)
Mentzelia tridentata	creamy blazing star	1B.3; BLM:S	High	Rocky, gravelly, sandy • Mojavean desert scrub
Mimulus shevockii	Kelso Creek monkeyflower	1B.2; BLM:S	Medium	Granitic or metamorphic, sandy or gravelly • Joshua tree woodland • Pinyon and juniper woodland
Monardella beneolens	sweet-smelling monardella	1B.3; BLM:S	Unlikely	Granitic • Alpine boulder and rock field • Subalpine coniferous forest • Upper montane coniferous forest
Monardella linoides subsp. oblonga	Tehachapi monardella	1B.3; BLM:S	Unlikely	• Lower montane coniferous forest • Pinyon and juniper woodland • Upper montane coniferous forest
Opuntia basilaris var. *treleasei*	Bakersfield cactus	1B.1; BLM:S; **FE;** **SE**	Unlikely	Sandy or gravelly • Chenopod scrub • Cismontane woodland • Valley and foothill grassland
Oryctes nevadensis	Nevada oryctes	2B.1	Low	Sandy • Chenopod scrub • Mojavean desert scrub
Oxytheca watsonii	Watson's oxytheca	2B.2	Medium	Sandy • Joshua tree woodland • Mojavean desert scrub
Penstemon fruticiformis var. *amargosae*	Amargosa beardtongue	1B.3; BLM:S	High	• Mojavean desert scrub

TABLE 3.4-3
SPECIAL-STATUS PLANT SPECIES WITH POTENTIAL TO OCCUR WITHIN THE PROJECT AREA

Scientific Name	Common Name	Status	Probability of Occurrence	Habitat
Perityle inyoensis	Inyo rock daisy	1B.2; BLM:S	Unlikely	Rocky, carbonate • Great Basin scrub • Pinyon and juniper woodland
Perityle villosa	Hanaupah rock daisy	1B.3; BLM:S	Unlikely	Rocky, carbonate • Great Basin scrub • Pinyon and juniper woodland
Petalonyx thurberi ssp. *gilmanii*	Death Valley sandpaper-plant	1B.3; BLM:S	Medium	• Desert dunes • Mojavean desert scrub
Phacelia inyoensis	Inyo phacelia	1B.2; BLM:S; USFS:S	Unlikely	• Meadows and seeps (alkaline)
Phacelia mustelina	Death Valley round-leaved phacelia	1B.3; BLM:S	Medium	Carbonate or volcanic, gravelly or rocky • Mojavean desert scrub • Pinyon and juniper woodland
Phacelia nashiana	Charlotte's phacelia	1B.2; BLM:S; SB	Medium	Usually granitic, sandy • Joshua tree woodland • Mojavean desert scrub • Pinyon and juniper woodland
Phacelia novenmillensis	Nine Mile Canyon phacelia	1B.2; BLM:S	Unlikely	Sandy or gravelly • Broadleafed upland forest • Cismontane woodland • Pinyon and juniper woodland • Upper montane coniferous forest
Plagiobothrys parishii	Parish's popcornflower	1B.1; USFS:S	Low	Alkaline, mesic • Great Basin scrub • Joshua tree woodland
Saltugilia latimeri	Latimer's woodland-gilia	1B.2; BLM:S	Unlikely	Rocky or sandy, often granitic, sometimes washes • Chaparral • Mojavean desert scrub • Pinyon and juniper woodland
Sarcobatus baileyi	Bailey's greasewood	2B.3	Medium	Alkaline, dry lakes, washes, roadsides • Chenopod scrub
Sidalcea covillei	Owens Valley checkerbloom	1B.1; BLM:S	Unlikely	Alkaline, mesic • Chenopod scrub • Meadows and seeps
Sidalcea multifida	cut-leaf checkerbloom	2B.3	Unlikely	• Great Basin scrub • Lower montane coniferous forest • Meadows and seeps • Pinyon and juniper woodland

TABLE 3.4-3
SPECIAL-STATUS PLANT SPECIES WITH POTENTIAL TO OCCUR WITHIN THE PROJECT AREA

Scientific Name	Common Name	Status	Probability of Occurrence	Habitat
Stipa arida	Mormon needle grass	2B.3	High	Carbonate • Joshua tree woodland • Pinyon and juniper woodland
Streptanthus cordatus var. *piutensis*	Piute Mountains jewel-flower	1B.2; BLM:S	Unlikely	Clay or metamorphic • Broadleafed upland forest • Closed-cone coniferous forest • Pinyon and juniper woodland
Symphyotrichum defoliatum	San Bernardino aster	1B.2; BLM:S	Unlikely	Near ditches, streams, springs • Cismontane woodland • Coastal scrub • Lower montane coniferous forest • Meadows and seeps • Marshes and swamps • Valley and foothill grassland (vernally mesic)
Trifolium dedeckerae	DeDecker's clover	1B.3	Unlikely	Granitic, rocky • Lower montane coniferous forest • Pinyon and juniper woodland • Subalpine coniferous forest • Upper montane coniferous forest
Trifolium kingii subsp. dedeckerae	DeDecker's clover	1B.3; BLM:S	Unlikely	Granitic, rocky • Lower montane coniferous forest • Pinyon and juniper woodland • Subalpine coniferous forest • Upper montane coniferous forest
Viola pinetorum var. *grisea*	grey-leaved violet	1B.3	Unlikely	• Meadows and seeps • Subalpine coniferous forest • Upper montane coniferous forest

TABLE 3.4-3
SPECIAL-STATUS PLANT SPECIES WITH POTENTIAL TO OCCUR WITHIN THE PROJECT AREA

Scientific Name	Common Name	Status	Probability of Occurrence	Habitat

Notes:
CNDDB = California Natural Diversity Database
Definitions
1. Federal status:
FE = Listed as endangered under the federal Endangered Species Act (ESA)FESA
USFS:S= = United States Forest Service Sensitive
BLM:S = Bureau of Land Management Sensitive
2. CNPS Rare and Endangered
1B.1= = Plants rare, threatened, or endangered in California and elsewhere; seriously threatened in CA (over 80% of occurrences threatened/high degree and immediacy of threat)
1B.2 = Plants rare, threatened, or endangered in CA and elsewhere; fairly threatened in CA (20-80% occurrences threatened/moderate degree and immediacy of threat)
1B.3= = Plants rare, threatened, or endangered in CA and elsewhere; not very threatened in CA (<20% of occurrences threatened/low degree and immediacy of threat or no current threats known)
2B.1 = Plants rare, threatened, or endangered in CA, but more common elsewhere; seriously threatened in CA (over 80% of occurrences threatened/high degree and immediacy of threat)
2B.2= = Plants rare, threatened, or endangered in CA, but more common elsewhere; fairly threatened in CA (20-80% of occurrences threatened/moderate degree and immediacy of threat)
2B.3 = Plants rare, threatened, or endangered in CA, but more common elsewhere; not very threatened in CA (<20% of occurrences threatened/low degree and immediacy of threat or no current threats known)
Source: CNDDB, 2015

Special-Status Plant Species Field Survey Results

Approximately 131 vascular plant species were identified on the basis of the results of three transect botanical surveys conducted in spring 2015. A complete list of vascular plant species identified in the study area can be found in the appended BRA (Appendix E). A review of the CNPS nine-quad database search indicated that 81 special-status plant species have previously been recorded in the Proposed Project area. Of these 81 species, one was observed during surveys:

- Sanicle cymopterus (*Cymopterus ripleyi* var. *saniculoide*s)

In addition, field surveys and aerial photograph interpretation identified areas of natural vegetation for which 19 special-status plant species have a Medium or High potential to occur within the Project area:

- Great Basin onion (*Allium atrorubens* var. *atrorubens*)
- Darwin Mesa milk-vetch (*Astragalus atratus* var. *mensanus*)
- Inflated Cima milk-vetch (*Astragalus cimae* var. *sufflatus*)
- Curved-pod milk-vetch (*Astragalus mohavensis* var. *hemigyrus*)
- Tidestrom's milk-vetch (*Astragalus tidestromii*)
- Pinyon rockcress (*Boechera dispar*)
- Lincoln rockcress (*Boechera lincolnensis*)
- Desert cymopterus (*Cymopterus deserticola*)
- Booth's evening-primrose (*Eremothera boothii* ssp. *boothii*)
- Intermontane lupine (*Lupinus pusillus* var. *intermontanus*)
- Creamy blazing star (*Mentzelia tridentata*)
- Kelso Creek monkeyflower (*Mimulus shevockii*)
- Watson's oxytheca (*Oxytheca watsonii*)
- Amargosa beardtongue (*Penstemon fruticiformis* var. *amargosae*)
- Death Valley sandpaper-plant (*Petalonyx thurberi* ssp. *gilmanii*)
- Death Valley round-leaved phacelia (*Phacelia mustelina*)
- Charlotte's phacelia (*Phacelia nashiana*)
- Bailey's greasewood (*Sarcobatus baileyi*)
- Mormon needle grass (*Stipa arida*)

The remaining 61 special-status plant species were determined to have an Unlikely or Low potential for occurrence and are not discussed further in this report. No federal, state, or CNPS-listed threatened, endangered, or candidate plant species were identified within the study area during the botanical field surveys or any other surveys conducted.

Special-Status Wildlife Species

Special-status wildlife are defined as those animals that, because of their recognized rarity or vulnerability to various causes of habitat loss or population decline, are recognized by federal, state, or other agencies as under threat from human-associated developments. Some of these species receive specific protection that is defined by federal or state endangered species legislation. Others have been designated as special-status on the basis of adopted policies and expertise of state resource agencies or organizations with acknowledged expertise, or policies adopted by local governmental agencies such as counties, cities, and special districts to meet local conservation objectives.

Special-status wildlife includes:

- Wildlife listed or proposed for listing as threatened or endangered, or are candidates for possible future listing as threatened or endangered, under the FESA or the CESA;
- Wildlife that meet the definitions of rare or endangered under CEQA Guidelines Section 15380;
- Wildlife covered under an adopted Natural Community Conservation Plan (NCCP) or Habitat Conservation Plan (HCP);
- Wildlife designated by CDFW as species of special concern;
- Wildlife "fully protected" in California (CFGC Sections 3511, 4700, and 5050); and
- Wildlife protected by the MBTA.

A review was conducted of the most recent California Natural Diversity Database (CNDDB) records within a nine-quad search area around the Project Site. The CDFW January 2015 “Special Animals List,” which identifies “species at risk” or “special-status species” that are considered by CDFW, Western Bat Working Group (WBWG), BLM, U.S. Forest Service (USFS), USFWS, and other agencies to be the taxa of species with the greatest conservation need were also reviewed (Table 3.4-4). The CNDDB data includes each observance of a particular species, recorded by time and location as an “occurrence” of that species.

The potential for special-status wildlife species to occur within the Proposed Project area is based on its proximity to previously recorded occurrences, on-site vegetation and habitat quality, topography, elevation, soils, surrounding land uses, habitat preferences, and geographic ranges. It is important to note that the waterbird species listed in Table 3.4-4 have potential to occur in the lacustrine and riparian areas located outside of the Proposed Project area along the western shoreline of NHR. While they are within the CNDDB nine-quad search, they would not be within the footprint of the Project Site or associated haul routes. It is also important to note that the likelihood of occurrence for all birds listed in Table 3.4-4 represents bird species that have the potential to breed within or in the vicinity of the Proposed Project area, particularly within the riparian habitats around NHR. The remaining reptile, bird, and mammal species have the potential to occur within upland habitats such as the Project Site.

Table 3.4-4 below shows the federal and state regulatory status, preferred habitat, and observation record or probability of occurrence for each special-status wildlife species known to occur in the nine quads surrounding the Proposed Project area. The “Potential for Occurrence” category provided in Table 3.4-4 is defined as follows:

- Unlikely: The study site and/or immediate vicinity do not support suitable habitat for a particular species.
- Low Potential: The study site and/or immediate vicinity only provide limited habitat for a particular species. In addition, the known range for a particular species may be outside of the immediate Proposed Project area.
- Medium Potential: The study site and/or immediate vicinity provide suitable habitat for a particular species, and proposed development may impact this species.
- High Potential: The study site and/or immediate vicinity provide ideal habitat conditions for a particular species and/or known populations occur in the immediate area.

TABLE 3.4-4
SPECIAL-STATUS WILDLIFE SPECIES OBSERVED DURING FIELD SURVEYS OR WITH POTENTIAL TO OCCUR WITHIN THE PROJECT AREA

Scientific Name	Common Name	Status	Probability of Occurrence	Preferred Habitat
Insects & Fish				
Plebulina emigdionis	San Emigdio blue butterfly	USFS:S	Medium	Inhabits lower Sonoran zone desert canyons and riverbeds. Prefers dry rivercourses and intermittent streamsides as well as adjacent flats. Host plants are shrub species *Atriplex canescens*.
Pyrgulopsis wongi	Wong's springsnail	USFS:S	Unlikely	No suitable habitat present. Inhabits seeps and small to medium spring-fed streams. Common in watercress and on small pieces of travertine and stone.
Oncorhynchus mykiss aguabonita	Volcano Creek golden trout	USFS:S; SSC	Unlikely	No suitable habitat present. Found present at elevations from 6,890 feet to 10,000 feet above sea level, in California's southern Sierra Nevada mountains.
Siphateles bicolor snyderi	Owens tui chub	**FE; SE**	Unlikely	No suitable habitat present. Prefers water with low velocities such as portions of the Owens River, associated tributaries, springs, sloughs, drainage ditches, and irrigation canals with dense aquatic vegetation.
Cyprinodon radiosus	Owens pupfish	**FE; SE**; FP	Unlikely	No suitable habitat present. Prefers spring pools, sloughs, irrigation ditches, swamps, and flooded pastures in the Owens Valley from Fish Slough in Mono County to Lone Pine in Inyo County.
Amphibians				
Batrachoseps altasierrae	Greenhorn Mountains slender salamander	SSC	Unlikely	No suitable habitat present. Occurs only in the Greenhorn Mountains north to the Tule River and Kern River highland drainages in Kern County.
Batrachoseps campi	Inyo Mountains slender salamander	BLM:S, USFS:S; SSC	Unlikely	No suitable habitat present. Inhabits very dry mountain ranges typically in the immediate vicinity of springs, seeps, and their associated riparian growth in rocky terrain at elevations of 4,700 to 8,000 feet in the Inyo Mountains
Batrachoseps robustus	Kern Plateau salamander	USFS:S	Unlikely	No suitable habitat present. Range occurs in Kern Plateau in southeastern Sierra Nevada mountains. Prefers moist habitats of pine and fir forests, as well as pinyon pine, sagebrush, and oaks in drier habitats.
Hydromantes platycephalus	Mount Lyell salamander	SSC	Unlikely	No suitable habitat present. Range occurs at higher elevations of the Sierra Nevada mountains. Prefers areas with associated water seepage in caves, granite boulders, rock fissures, rocky stream edges, and seepages from springs and melting snow.
Rana sierrae	Sierra Nevada yellow-legged frog	**FE; ST**; USFS:S	Unlikely	No suitable habitat present. Inhabits lakes, ponds, meadow streams, isolated pools, and sunny riverbanks in the southern Sierra Nevada mountains.

TABLE 3.4-4
SPECIAL-STATUS WILDLIFE SPECIES OBSERVED DURING FIELD SURVEYS OR WITH POTENTIAL TO OCCUR WITHIN THE PROJECT AREA

Scientific Name	Common Name	Status	Probability of Occurrence	Preferred Habitat
Rana muscosa	southern mountain yellow-legged frog	**FE; SE**; USFS:S; BLM:S	Unlikely	No suitable habitat present. Prefers sloping banks with rocks or vegetation to the water's edge of ponds, lakes and streams in the southern Sierra Nevada mountains.
Reptiles				
Gopherus agassizii	desert tortoise	**FT; ST**	High	Prefers alluvial fans, washes and canyons within Mojave desert scrub where suitable friable soils for den construction are present. Soils must be strong enough to allow for burrowing but must be soft enough for digging a burrow. Alternatively, rock formations are sometimes used as shelter.
Sceloporus graciosus graciosus	northern sagebrush lizard	BLM:S	Medium	Prefers open areas with scattered low bushes and lots of sun. Inhabits sagebrush and other types of shrublands.
Elgaria panamintina	Panamint alligator lizard	BLM:S, USFS:S; SSC	Low	Prefers rocky canyon bottoms near streams and springs, grown with creosote bush, sagebrush, and at the lower edge of the piñon-juniper zone. Found in dense vegetation near damp soil, and also in rocky talus outside of riparian areas.
Birds				
Aythya americana	redhead	SSC	Detected during surveys conducted in 2014 and 2015	Prefers open lakes and bays and often lives on salt water in winter.
Branta bernicla	brant	SSC	Unlikely	Prefers tundra and coastal islands in the Arctic and migrates to salt marshes and estuaries in winter.
Gavia immer	common loon	SSC	Detected during surveys conducted in 2014 and 2015	Prefer lakes with coves and islands as well as large reservoirs and slow-moving rivers.
Pelecanus erythrorhynchos	American white pelican	SSC	Detected during surveys conducted in 2014 and 2015	Observed on NHR in 2014. Prefer shallow water on inland marshes, lake or river edges, and wetlands. Forage on deeper lakes in late summer.
Ixobrychus exilis	least bittern	SSC	Low	Prefer freshwater or brackish marshes with tall emergent vegetation.
Haliaeetus leucocephalus	bald eagle	FD; BLM:S; **SE**; EA	Detected during Spring and Summer 2015 surveys	Frequent winter resident; prefers rivers, large lakes, marshes or other large bodies of open water with an abundance of fish. Require mature stands of hard wood trees for perching, roosting and nesting.
Circus cyaneus	northern harrier	SSC	Detected during Spring and Summer 2015 surveys	Prefers freshwater and brackish marshes, lightly grazed meadows, old fields, dry upland prairies, drained marshlands, high-desert shrubsteppe, and riverside woodlands.

TABLE 3.4-4
SPECIAL-STATUS WILDLIFE SPECIES OBSERVED DURING FIELD SURVEYS OR WITH POTENTIAL TO OCCUR WITHIN THE PROJECT AREA

Scientific Name	Common Name	Status	Probability of Occurrence	Preferred Habitat
Buteo swainsoni	Swainson's hawk	USFS:S; USFWS:BCC; **ST**	Detected during Spring and Summer 2015 surveys	Locally, nests in small to medium-sized trees in the vicinity of alfalfa or other agricultural fields; nests have been found at ranch adjacent to Project Site.
Buteo regalis	Ferruginous hawk	USFWS:BCC	Detected during Spring and Summer 2015 surveys	Prefers prairies, brushy scrub open country, and badlands.
Aquila chrysaetos	golden eagle	BLM:S; USFWS:BCC; FP; EA	Detected during Spring and Summer 2015 surveys	Nest present approximately 7.5 miles south of the Project Site. It was detected in a potential site for NHD2 construction materials, which is no longer a part of the Proposed Project. Prefers mountains up to 12,000 feet, canyonlands, rimrock terrain, and riverside cliffs and bluffs. Nest on cliffs and steep escarpments in grassland, chaparral, shrubland, forest, and other vegetated areas.
Falco peregrinus anatum	American peregrine falcon	USFWS: BCC; FP	Medium	Primarily occurs near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures.
Falco mexicanus	prairie falcon	USFWS:BCC	Detected during Spring and Summer 2015 surveys	Prefers grasslands, shrubsteppe, desert scrubland and lakeshores.
Charadrius nivosus	snowy plover	USFWS:BCC; SSC	Unlikely	Prefers barren to sparsely vegetated flats and along shores of alkaline and saline lakes, ponds, reservoirs, braided river channels, and salt evaporation ponds.
Charadrius montanus	mountain plover	BLM:S; USFWS:BCC; SSC	Unlikely	Prefers arid plains, sandy deserts, short-grass prairies, and fields.
Numenius americanus	Long-billed Curlew	USFWS:BCC	Low	Breed in open, sparse grassland habitat; during migration prefers lake and river shores, mudflats, salt marshes, and sandy beaches.
Childonias niger	black tern	SSC	Unlikely	Freshwater marshes and marshy lakes in summer; sandy coasts on migration and in winter.
Hydroprogne caspia	Caspian tern	USFWS:BCC	Detected during surveys conducted in 2014 and 2015	Prefers sandy or pebbly shores of lakes and large rivers.

TABLE 3.4-4
SPECIAL-STATUS WILDLIFE SPECIES OBSERVED DURING FIELD SURVEYS OR WITH POTENTIAL TO OCCUR WITHIN THE PROJECT AREA

Scientific Name	Common Name	Status	Probability of Occurrence	Preferred Habitat
Coccyzus americanus	yellow-billed cuckoo	FT; BLM:S; USFS:S; **SE**	Detected during surveys conducted in 2014 and 2015	Prefer wooded habitat with dense cover and water nearby, including woodlands with low, scrubby, vegetation, overgrown orchards, abandoned farmland, and dense thickets along streams and marshes.
Athene cunicularia	burrowing owl	BLM:S; SSC	Low	Prefers open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation.
Asio otus	long-eared owl	SSC	Medium	Nests and roosts in dense vegetation adjacent to open grasslands or shrublands used for foraging.
Cypseloides niger	black swift	USFWS:BCC; SSC	Unlikely	No suitable habitat present. Prefers forested areas near rivers. Nests are often located behind waterfalls or on damp cliffs, where the environment is dark, wet, and steep.
Picoides nuttallii	Nuttall's woodpecker	USFWS:BCC	Low	Prefers canyon scrub oaks, oak woodlands, and riparian woodlands.
Empidonax traillii extimus	southwestern willow flycatcher	**FE; SE**	Low	Prefers dense vegetation throughout all vegetation layers present in riparian areas.
Lanius ludovicianus	loggerhead shrike	USFWS:BCC; SSC	Detected during surveys conducted in 2014 and 2015	Prefers grasslands and open areas with scattered trees; open grassy woodlands; and desert scrublands, particularly those with spines or thorns.
Vireo bellii pusillus	least Bell's vireo	**FE; SE**	Low	Prefers dense, low, shrubby vegetation, generally within early successional stages in dominance of willows.
Riparia riparia	bank swallow	BLM:S; ST	Medium	Nest sites occur in friable soil in vertical cliffs, banks, and bluffs along rivers, creeks, lakes and reservoirs. Forage over a variety of habitats including wetlands, open water, and grassland.
Toxostoma lecontei macmilanorum	Le Conte's thrasher (San Joaquin Valley subspecies)	USFWS:BCC	Detected during surveys conducted in 2014 and 2015	Prefers deserts with scant vegetation (mostly cholla and creosote bush); in the Owens Valley is often found in association with dense stands of saltbush (Atriplex spp).
Oreothlypis virginiae	Virginia's warbler	USFWS: BCC	Unlikely	Prefers scrub oak and other chaparral, pinyon-juniper brushland, pine and oak woodlands.
Dendroica petechia brewsteri	yellow warbler	USFWS:BCC; SSC	Detected during surveys conducted in 2014 and 2015	Prefers moist thickets, especially along streams and in swampy areas; gardens.
Icteria virens	yellow-breasted chat	SSC	Low	Prefers dense thickets and brush, often with thorns and streamside tangles.
Spizella breweri	Brewer's sparrow	USFWS:BCC	Detected during surveys conducted in 2014 and 2015	Preferred habitats include sagebrush and alpine meadows.

TABLE 3.4-4
SPECIAL-STATUS WILDLIFE SPECIES OBSERVED DURING FIELD SURVEYS OR WITH POTENTIAL TO OCCUR WITHIN THE PROJECT AREA

Scientific Name	Common Name	Status	Probability of Occurrence	Preferred Habitat
Xanthocephalus xanthocephalus	yellow-headed blackbird	SSC	Medium	Prefers wetlands in prairies, mountain meadows, quaking aspen parklands, and shallow areas of marshes, ponds, and rivers.
		Bats		
Antrozous pallidus	pallid bat	BLM:S; USF:S; SSC; WBWG:H	Detected during Spring/Summer 2015 surveys	Prefer arid regions with rocky outcroppings, to open, sparsely vegetated grasslands. Water must be available close by.
Corynorhinus townsendii	Townsend's big-eared bat	BLM:S; USF:S; Candidate **ST**; WBWG:H; SSC	Detected during Spring/Summer 2015 surveys	Prefer arid western desert scrub and pine forest. Hibernate and roost in caves and abandoned mines. Maternity colonies are usually located within two miles of a water source.
Euderma maculatum	spotted bat	BLM:S; WBWG:H; SSC	High	Prefer open arid habitats dominated by juniper and sagebrush. Roosts high in cliff crevices and rocky outcrops.
Lasionycteris noctivagans	silver-haired bat	WBWG:M	Detected during Spring/Summer 2015 surveys	Prefers forested areas and hibernates in small tree hollows, beneath sections of tree bark, in buildings, rock crevices, in wood piles and on cliff faces.
Lasiurus blossevillii	western red bat	USFS:S; WBWG:H; SSC	Detected during Spring/Summer 2015 surveys	Roosts only in tree foliage. Prefer riparian areas dominated by walnuts, oaks, willows, cottonwoods, and sycamores where they roost in these broad-leafed trees.
Lasiurus cinereus	hoary bat	WBWG:M	Detected during Spring/Summer 2015 surveys	Prefers to roost in foliage of coniferous and deciduous trees at the edge of clearings; will sometimes roost in caves and under rock ledges.
Myotis ciliolabrum	western small-footed myotis	BLM:S; WBWG:M	Detected during Spring/Summer 2015 surveys	Prefers cliff-face crevices, erosion cavities, and beneath rocks on the ground.
Myotis evotis	long-eared myotis	BLM:S; WBWG:M	Low	Prefer to roost in tree cavities and beneath exfoliating bark in both living trees and dead snags. Pregnant females often roost at ground level in rock crevices, fallen logs, and even in the crevices of sawed-off stumps.
Myotis thysanodes	fringed myotis	BLM:S; WBWG:H	Medium	Prefer woodlands at moderate elevation (5 to 8000 feet) in the mountains. Night and day roosts include caves, and abandoned mines, and buildings.
Myotis volans	long-legged myotis	WBWG:H	Medium	Prefers woodland and forest habitats above 1200 meters (4000 feet). Also forages in chaparral, coastal scrub, Great Basin shrub habitats, and in early successional stages of woodlands and forests. Roosts in trees, rock crevices, fissures in stream banks, and buildings.

TABLE 3.4-4
SPECIAL-STATUS WILDLIFE SPECIES OBSERVED DURING FIELD SURVEYS OR WITH POTENTIAL TO OCCUR WITHIN THE PROJECT AREA

Scientific Name	Common Name	Status	Probability of Occurrence	Preferred Habitat
Myotis yumanensis	Yuma myotis	BLM:S	Detected during Spring/Summer 2015 surveys	Occasionally roost in mines or caves, but most often prefer buildings or bridges. Tree cavities are probably the original sites for most nursery roosts.
Eumops perotis californicus	western mastiff	BLM:S; WBWG:H; SSC	Low	Prefers open, semi-arid to arid habitats including conifer and deciduous woodlands, coastal scrub, chaparral. Roosts in crevices in cliff faces, high buildings, trees and tunnels.
Mammals (excluding bats)				
Dipodomys panamintinus argusensis	Argus Mountains kangaroo rat	S1S3	Unlikely	Prefer creosote scrub, saltbush scrub, Joshua tree woodland and juniper woodland habitats. However, this subspecies only occupies a limited range in the Argus Mountains of Inyo County.
Dipodomys panamintinus panamintinus	Panamint kangaroo rat	S3	Unlikely	Prefer creosote scrub, saltbush scrub, Joshua tree woodland and juniper woodland habitats. However, this subspecies only occupies a limited range in the Panamint mountains of Inyo County.
Martes caurina sierrae	Sierra martin	USFS:S	Unlikely	No suitable habitat present. Prefers areas of high cover and structural complexity in large tracts of mature and old-growth forests.
Pekania pennanti	Fisher-West Coast Distinct population Segment	BLM:S; USFS:S; SSC	Unlikely	No suitable habitat present. Prefers dense coniferous or mixed forests, including early successional forest with dense overhead cover.
Xerospermophilus mohavensis	Mohave ground squirrel	**ST**	High	Inhabits open desert scrub, alkali scrub, and Joshua tree woodland with sandy or gravelly friable soils and an abundance of annual herbaceous vegetation. Avoids rocky areas.
Microtus californicus vallicola	Owens Valley vole	BLM:S; SSC	Low	Inhabits wetlands and lush grass-dominated sites, as well as alkali shrub-meadow habitats.
Taxidea taxus	American badger	SSC	High	Burrows present in Project area. Prefers drier, open stages of most shrub, forest, and herbaceous habitats with friable soils. Requires open, uncultivated ground.
Vulpes macrotis	desert kit fox	CDFW: CA fur-bearing mammal	High	Occurs in multiple habitats including desert scrub, saltbush, chaparral, and grassland.
Ovis canadensis nelsoni	Nelson's bighorn sheep	BLM:S; USFS:S	Unlikely	Prefers open, steep, rocky, mountainous terrain above the desert floor

TABLE 3.4-4
SPECIAL-STATUS WILDLIFE SPECIES OBSERVED DURING FIELD SURVEYS OR WITH POTENTIAL TO OCCUR WITHIN THE PROJECT AREA

Scientific Name	Common Name	Status	Probability of Occurrence	Preferred Habitat

Definitions

1. Federal status: USFWS Listing, other non-CA specific listing
FE = Listed as endangered under the FESA
FT = Listed as threatened under FESA
FC = Candidate for listing under FESA
FD = Delisted in accordance with the FESA
EA = Bald and Golden Eagle Protection Act
BLM:S = Bureau of Land Management Sensitive
USFS:S = US Forest Service Sensitive
USFWS:BCC = US Fish and Wildlife Birds of Conservation Concern
USFWS:BCC = US Fish and Wildlife Birds of Conservation Concern

2. State status: CDFG Listing
SE = Listed as endangered under the CESA
ST = Listed as threatened under the CESA
SC = Candidate for listing (threatened or endangered) under CESA
SD = Delisted in accordance with the CESA
SSC = Species of Special Concern as identified by the CDFW
FP = Listed as fully protected under CDFW code

3. State Ranking
S-rank refers to the imperilment status only within California's state boundaries
S1 = Critically Imperiled
S2 = Imperiled
S3 = Vulnerable
S4 = Apparently Secure
S5 = Secure
*Expressing the rank as a range of values (e.g. S1S3), means the rank is somewhere between S1 and S3

4. Other status:
WBWG = Listing by the Western Bat Working Group; L=Low Priority; M=Medium Priority; H=High Priority

Source: Appendix E, Biological Resources Assessment

Special-Status Wildlife Species Field Survey Results

Approximately 157 wildlife species were identified during field surveys conducted in 2014 and 2015. The majority of the wildlife species were commonly-occurring species. A complete list of wildlife species identified in the Proposed Project area can be found in the appended BRA.

A review of the CNDDB nine-quad database search indicated that 67 special-status wildlife species have previously been recorded from the Proposed Project area. Three additional special-status species were observed during surveys. Field surveys and aerial photograph interpretation identified areas of natural vegetation for which special-status wildlife species have a potential to occur.

Twenty-five special-status wildlife species were detected during surveys in the Proposed Project area:

- Redhead (*Aythya americana*)
- Common loon (*Gavia immer*)
- American white pelican (*Pelecanus erythrorhynchos*)
- Bald eagle (*Haliaeetus leucocephalu*s)
- Northern harrier (*Circus cyaneus*)
- Swainson's hawk (*Buteo swainsoni*)
- Ferruginous hawk (*Buteo regalis*)
- Golden eagle (*Aquila chrysaetos*)
- Prairie falcon (*Falco mexicanus*)
- Caspian tern (*Hydroprogne caspia*)
- Yellow-billed cuckoo (*Coccyzus americanus*)
- Le Conte's thrasher (San Joaquin Valley subspecies) (*Toxostoma lecontei macmilanorum*)
- Yellow warbler (*Dendroica petechia brewsteri*)
- Brewer's sparrow (*Spizella breweri*)
- Rufous hummingbird (*Selasphorus rufus*)
- Olive-sided flycatcher (*Contopus cooperi*)
- Willow flycatcher (*Empidonax traillii*)
- Loggerhead shrike (*Lanius ludovicianus*)
- Yuma myotis (*Myotis yumanensis*)
- Townsend's big-eared bat (*Corynorhinus townsendii*)
- Western small-footed myotis (*Myotis ciliolabrum*)
- Pallid bat (*Antrozous pallidus*)
- Western red bat (*Lasiurus blossevillii*)
- Hoary bat (*Lasiurus cinereus*)
- Silver-haired bat (*Lasionycteris noctivagans*)

Based on CNDDB data, an additional thirteen special-status wildlife species were determined to have a Medium or High potential to occur with the Proposed Project area:

- San Emigdio blue butterfly (*Plebulina emigdionis*)
- Desert tortoise (*Gopherus agassizii*)
- Northern sagebrush lizard (*Sceloporus graciosus graciosus*)
- American peregrine falcon (*Falco peregrinus anatum*)

- Long-eared owl (*Asio otus*)
- Bank swallow (*Riparia riparia*)
- Yellow-headed blackbird (*Xanthocephalus xanthocephalus*)
- Spotted bat (*Euderma maculatum*)
- Fringed myotis (*Myotis thysanodes*)
- Long-legged myotis (*Myotis volans*)
- Mohave ground squirrel (*Xerospermophilus mohavensis*)
- American badger (*Taxidea taxus*)
- Desert kit fox (*Vulpes macrotis*)

Thirty-two species were determined to have an Unlikely or Low potential for occurrence. One candidate for federal-listing as threatened, the yellow-billed cuckoo, was observed within the Project area during focused wildlife surveys. Additionally, four state-listed wildlife species were observed within the Proposed Project area during focused wildlife surveys, including: the endangered bald eagle, the threatened Swainson's hawk, the endangered yellow-billed cuckoo, and a candidate for state listing as threatened Townsend's big-eared bat.

Some of the waterbird species were observed at NHR during migration; however, the Project Site is outside of their breeding range. As such, they are unlikely to breed in or around the Proposed Project area. These species include redhead, common loon, American white pelican, and Caspian tern.

Habitats of Concern

Special-Status Natural Communities

Special-status natural communities are communities that are of limited distribution statewide or within a county or region and are often vulnerable to environmental effects of projects. These communities may or may not contain special-status species or their habitat. The CDFW *List of California Terrestrial Natural Communities* (CDFG, 2010) indicates which natural communities are of special-status given the current state of the California classification.

No special-status natural communities tracked by CDFW in the CNDDB were documented within the Proposed Project area. However, Active Desert Dunes and Big Tree Forest were identified in the nine-quad search around the Project Site. These communities are classified with a State Rank of 2 (imperiled) and 3 (vulnerable), respectively, by the CNDDB. There is one CNDDB occurrence of Active Desert Dunes on the southeastern end of Owens Dry Lake, approximately 2.5 miles north of the Proposed Project Area. The closest CNDDB occurrence of Big Tree Forest is approximately 31 miles west of the Proposed Project area in the Sierra Nevada mountains.

The DRECP lists Joshua tree woodland as a Special Vegetation Feature (SVF) and includes a CMA specific to this habitat. However, Joshua trees found in the Project Site on BLM-managed land are not characterized as "Joshua tree woodland," as defined by the DRECP.

Riparian Habitats

Two riparian habitats, Tamarisk Thicket and Black Willow Thicket, occur within the Proposed Project area. Approximately 0.8 acres of Tamarisk Thicket occurs roughly 400 feet to the northeast of NHR within the Project area. It is composed of three Fremont cottonwood (*Populus fremontii*), eight Gooding's black willow (*Salix gooddingii*), and eight saltcedars (*Tamarix ramosissima*) with an understory of Torrey's saltbush (*Atriplex torreyi*). Additionally, there are ten saltcedars and two small Fremont cottonwoods in another tamarisk thicket occurring in the Project Site, approximately 1,100 feet west of the first (see Figure 3.4-1). Although these thickets are composed of tree species typical of riparian areas, they do not occur along a jurisdictional water feature.

Black Willow Thicket occurs south of the Project Site in the survey buffer, along the west bank of NHR (see Figure 3.4-1).

Jurisdictional Waters

The National Wetlands Inventory (NWI) has mapped areas of freshwater forested/shrub wetland on the shoreline of NHR; however; these communities occur outside of the Proposed Project footprint. With the exception of Haiwee Reservoirs, there are no other water features in the Proposed Project area, including wetlands, streams, seeps, or springs.

The Tamarisk Thicket vegetation alliance located approximately 400 feet to the northeast of NHR is not designated as a wetland or riparian area under the NWI. Additionally, a wetland delineation was conducted for this area using the USACE's Arid West Region Supplemental Manual. The Munsell Soil Colorbook was used to determine the soil profile from two soil pits dug on the site and the 2013 Pocket Guide to Hydric Soil Field Indicators was used to key out the soil. Although the dominance test passed indicating the presence of hydrophytic vegetation (i.e., cottonwoods and willows), no primary or secondary indicators were present for hydric soils or wetland hydrology. Because only one of three indicators was identified, the area is not a designated wetland.

There are two ephemeral washes within the Proposed Project area, located at the northeastern section of the Project Site and at the southern boundary of the LAA Excavation Area. The washes are composed of prickly Russian thistle and rubber rabbitbrush. These washes have considerable riverine erosion and deposition from past flash flood events, which explains low species diversity and high propagation by invasive non-native Russian thistle. Loco Creek, an ephemeral wash at the southern boundary of the BLM disturbance area, terminates in the LAA and the ephemeral wash in the Project Site fans out and terminates in the site (see Figure 3.4-1).

Critical Habitat

There is no USFWS-designated critical habitat within the Proposed Project area.

Wildlife Movement Corridors

The extent, distribution, and accessibility of suitable habitat affect the long-term viability of native resident and migratory wildlife populations. Fragmentation and isolation of natural habitat ultimately results in the loss of native species within those areas. Accessibility between habitat areas, (i.e., connectivity), is important to long-term genetic diversity and demography of wildlife populations. In the short term, connectivity may also be important to individual animals' ability to occupy their home ranges and utilize nursery sites, if their ranges extend across a potential movement barrier. These considerations apply to all plants and animals. Plant populations "move" over the course of generations via pollen and seed dispersal; most birds and insects travel and disperse via flight; terrestrial species, such as small mammals and reptiles, disperse across land. Therefore, landscape barriers and impediments are more important considerations for movement of these terrestrial species.

In areas where native habitats exist as partially isolated patches surrounded by other land uses, planning for wildlife movement generally focuses on "wildlife corridors" to provide animals with access routes among habitat patches. In largely undeveloped areas, including southern Owens Valley, wildlife habitat is available in extensive open space areas throughout much of the region, but specific barriers may impede or prevent movement. Opportunity for wildlife movement throughout Owens Valley is impeded by US-395, the LAA, and scattered abandoned agricultural lands. Particular impediments to wildlife movement within the vicinity of the Proposed Project include residential land uses and the Pumice Mine quarry to the east of the Proposed Project area, Haiwee Reservoirs to the south and east of the Proposed Project area, and active agriculture land at Butterworth Ranch north of the Proposed Project area. In these landscapes, wildlife movement focuses on specific sites where animals can cross linear barriers (e.g., culverts underneath US-395 or overheads and bridges across the LAA). A few existing linear

features, including a network of unpaved roads and transmission line access roads parallel to US-395, provide opportunity and dispersal for wildlife movement. Movement opportunity varies for each species, depending on motility and behavioral constraints, as well as landscape impediments. Some species, such as coyote (*Canis latrans*), may learn to cross the highway safely. However, for most terrestrial species US-395 presents an impassable or high-risk barrier to east-west movement. Some lizard and mice species may utilize the overheads to cross the LAA, but most other terrestrial species will not navigate through these structures. Within the Project Site, there are a few scattered ephemeral drainages that terrestrial wildlife may utilize. If these drainages are altered by construction activities, terrestrial wildlife may have to navigate to other nearby drainages for dispersal and utilization of nursery sites. They may also use thick saltbush scrub as cover outside of these drainages for dispersal pathways.

3.4.3 Methodology for Analysis

Background Review

Database queries were conducted to identify recorded and potential occurrences of special-status plant and wildlife species, as well as natural communities, within the Project Site, the original eight potential sites for NHD2 construction materials, and the surrounding vicinity. Four potential sites were removed from consideration while biological field studies were conducted in 2015 and an additional three have been removed from consideration during refinement of the Proposed Project. Queries and reviews included: a geographic information system review of the CNDDB Rarefind 5 (nine-quad search around the Project Site and all of the previously-proposed sites for NHD2 construction materials); the CDFW CNDDB 2015 Special Animals List; and the CNPS Inventory of Rare and Endangered Vascular Plants of California. In addition, background information, including scientific papers and agency documents on plant and wildlife species, was reviewed in order to identify species with the potential to occur in the Proposed Project area and to obtain information about these species. These documents included, but were not limited to: biology reports and species habitat models; scientific reports and articles on species distribution and habitat; and species survey protocols. Biologists also consulted with CDFW, BLM, and USFWS regarding survey methods and requirements for special-status species prior to implementing surveys for the Proposed Project.

Field Surveys

General Habitat Assessment

The Project Site and associated assemblage of eight initial proposed sites for NHD2 construction materials were visited in March 2014 to conduct reconnaissance level surveys for wildlife, plants, and habitat associations that are expected to occur within the Proposed Project area. A complete compendium of wildlife and plant species was collected for the Proposed Project through additional protocol-level biological surveys during the spring and summer of 2015. To depict vegetation communities and determine impacts within the Proposed Project area, a 1,500 foot (500 meter) buffer was established around the proposed sites for NHD2 construction materials and a 750 foot (250 meter buffer) was established along the haul routes. Special-status plant and wildlife surveys were conducted in October 2014, and again in March through July 2015. These surveys focused on 100 percent coverage via transects within the footprint of the Project Site, the proposed sites for NHD2 construction materials, haul routes, and an additional 50 foot buffer. For the purposes of this assessment, "Proposed Project area" refers to the general survey area that was analyzed by biologists, which includes the construction area of the Project Site and associated haul routes.

Botanical Surveys

Focused rare and special-status plant surveys were conducted by botanists during floristic blooming periods in the spring and summer of 2015 (March, April, May) in the Project Site and haul routes. These surveys were conducted for all plant species with the potential to occur within the Proposed Project area

in accordance with guidelines issued by the USFWS (1996), BLM (2009), CDFW (2009), and CNPS (2001), with guidance from the Ridgecrest BLM Field Office and CDFW.

Nearby reference populations were visited prior to initiating focused rare and special-status plant surveys. Reference populations were visited to observe germination rates and phenological states of the various rare and special-status species with the potential to occur in the Proposed Project area. The focused surveys were conducted by botanists walking parallel transects spaced at approximately 30 feet (9 meters) throughout the Project Site. Each rare or special-status plant observed was documented with a sub-meter accuracy Trimble Geo XT global positioning system (GPS), and CNDDB data sheets were filled out to document each special-status plant population. Plant nomenclature followed the Jepson Manual 2nd Edition (Baldwin, 2012). Rare and special-status plant surveys included documentation of all plants observed in the survey area, including exotic species. The locations of exotic species during surveys were not mapped, although general locations and abundance of weed species were noted.

Focused Wildlife Surveys

Focused USFWS and CDFW protocol-level surveys were conducted for special-status wildlife generated from the nine-quad CNDDB search and state and federal special animal lists. These surveys were conducted for the species identified as having potentially suitable habitat within the Project Site and associated haul routes. State and federal protocol-level surveys were conducted for desert tortoise, Mohave ground squirrel, and burrowing owl. In addition, San Emigdio blue butterfly, northern sagebrush lizard, Panamint alligator lizard, Owens Valley vole, American badger, desert kit fox, raptor and general encounter bird surveys, and visual and acoustical bat surveys were conducted. Detailed descriptions of survey methodologies are provided in the appended BRA (Appendix E).

CEQA Significance Criteria

The thresholds of significance for the Proposed Project's potential to impact biological resources are based on Appendix G of the State CEQA Guidelines. The following thresholds of significance were analyzed:

- Would the project have a substantial adverse effect, either directly or indirectly or through habitat modification, on any species identified as endangered or threatened in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?
- 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 California Department of Fish and Game or U.S. Fish and Wildlife Service?
- Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulation or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?
- Would the project have a substantial adverse effect on federally protected wetlands, as defined by Clean Water Act Section 404 (including but not limited to marsh, vernal pool, and coastal wetlands) through direct removal, filling, hydrological interruption, or other means?
- 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 substantially impede the use of native wildlife nursery sites?
- Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?
- Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state conservation plans?

General indicators of significance, based on guidelines or criteria in NEPA, CEQA, CWA, CESA, FESA, and CFGC, include:

- Potential modification or destruction of habitat, movement/migration corridors, or breeding areas for endangered, threatened, rare, or other special-status species.
- Potential measurable degradation of protected habitats, sensitive natural vegetation communities, wetlands, or other habitat areas plans, policies, or regulations.
- Potential loss of a substantial number of any species that could affect the abundance or diversity of that species beyond the level of normal variability.

NEPA Requirements

The term "significantly" as used in NEPA requires considerations of both context and intensity (40 CFR 1508.27). Therefore, thresholds serve as a benchmark for determining if a project action would result in a significant adverse environmental impact when evaluated against the baseline. The environmental effects analysis of the Proposed Project related to biological resources includes an assessment of the context and intensity of the impacts as defined in the NEPA implementing regulations, 40 CFR 1508.27, and the BLM *NEPA Handbook H-1790-1* of 2008. The BLM *NEPA Handbook H-1790-1* requires that duration be considered and that both short- and long-term adverse and beneficial impacts be disclosed in the NEPA analysis. The effects analysis must demonstrate that BLM took a "hard look" at the impacts of the action. The level of detail must be sufficient to support reasoned conclusions by comparing the amount and the degree of change (impact) caused by the proposed action and alternatives (BLM *NEPA Handbook H-1790-1*, 2008, p. 55). Additionally, direct, indirect, residual, and cumulative impacts for the Proposed Project must be considered.

Potential impacts on sensitive biological communities, special-status plant and wildlife species (including critical habitat), wildlife movement/migration corridors, and special aquatic resources were analyzed using various qualitative and quantitative methods, and are summarized as follows:

- Each resource was evaluated for its presence or absence, and for the presence of habitat that could support the resource or provide habitat for the resource. Suitable habitat was determined based on background review and identification of species-specific life-history requirements.
- The habitats present in the Proposed Project footprint and vicinity were determined through a combination of background review, habitat mapping during field surveys, and aerial photograph interpretation.
- Since permission to enter all Proposed Project areas was granted, impacts on sensitive natural communities, special-status plant and wildlife species, and special aquatic resources were based on actual observation (i.e., presence) and mapping of the resource during field surveys.
- Potential impacts on wildlife movement/migration corridors were based on a combination of background review, field survey mapping, and aerial photograph interpretation.
- Conflicts with the provision of adopted conservation plans (e.g., USFWS Recovery Plans, HCPs) were evaluated qualitatively based on activities and locations of the Proposed Project components (e.g., location of Proposed Project footprint relative to target conservation or core areas).

Where impacts could be quantified, impact acreages were calculated using ArcGIS software. Calculations were based on one of the following: counts or locations of observations of sensitive resources, acreages of sensitive resources (e.g., special aquatic resources), or acreages of suitable habitat for resources (e.g., special-status wildlife species).

For the impact analysis, resources were considered to be significantly affected if the development envisioned under the Proposed Project Alternatives would affect the resources themselves or their suitable

habitats (i.e., sensitive biological communities, special-status wildlife species [in the entire Proposed Project footprint], and special-status plant species). Impacts were considered in context with the various regulatory requirements and permitting needs under each of the natural resources regulatory agencies.

Impacts are presented per CEQA threshold of significance for each Proposed Project Alternative (Section 3.4.4). Mitigation measures, if necessary, were then designed to avoid or reduce the impacts on these resources to below the threshold of significance (Section 3.4.5). The significance of the impact and the mitigation proposed are based on the CEQA standards of significance outlined in the subsection above. BLM does not provide a determination on the level of significance in a NEPA document. Rather, BLM leaves that determination to the FONSI which will be completed prior to the signing of a Decision Record. Any characterization of significance in this Draft EIR/EA applies only to the CEQA determination.

In determining the potential construction and operation impacts on biological resources and wetlands, a number of assumptions and limitations were identified:

- Construction and operation impacts are considered temporary if they can be fully restored to predisturbance conditions following construction. Temporary impacts would include construction staging areas, construction laydown, the LAA Excavation Area, and other work spaces that would not be occupied by NHD2 facilities during operation of the Proposed Project.
- Impacts are considered permanent when they have lasting effects beyond the Proposed Project construction period, or cannot be fully restored following construction. Permanent impacts would include the NHD2 components, the LAA Realignment, the Cactus Flats Road Realignment, and the diversion channel and NHD modifications.
- A low-to-moderate level of maintenance activities is assumed to occur during operation of the Proposed Project.

Applicable Best Management Practices

An appropriate combination of monitoring and resource impact avoidance measures would be employed during construction of the Proposed Project to avoid and reduce impacts to biological resources. This includes implementation of the following BMPs:

9) Dust control measures will be implemented by the contractor to reduce excessive dust emissions. The minimum amount of water necessary to prevent the formation of puddles which may attract wildlife and wildlife predators, will be used, while meeting safety and air quality requirements. Alternatively, nontoxic road sealants and soil stabilizing agents may be used to control dust.

10) Construction activities will be limited to daytime hours to the maximum extent feasible. Should night work be required, lighting will be designed, installed, and maintained to avoid impacts to listed species and habitat.

11) As identified in Mitigation Measure BIO-M Integrated Weed Management Plan, in Section 3.4.5, a weed abatement plan will be developed to minimize the spread and importation of non-native plant material during and after construction in compliance with EO 13112. This plan will include:

    a) An assessment of invasive species that occur within the Proposed Project area;

    b) Measures to avoid the introduction and spread of invasive species;

    c) Eradication procedures if an invasive species does become established; and

    d) Revegetation guidelines for temporarily disturbed areas, as identified in Mitigation Measure BIO-H Topsoil Salvage and Revegetation Plan.

12) Ground cover in disturbed areas shall be replaced with native species in a timely fashion when work is completed in the area per the Topsoil Salvage and Revegetation Plan prepared in compliance with Mitigation Measure BIO-H Topsoil Salvage and Revegetation Plan.

13) Fire suppression capability, including extinguishers, shovels, and water tankers, will be available onsite whenever construction occurs during the fire season (as determined by the Inyo County Fire Department).

14) Traffic speeds on all unpaved roads shall be limited to 15 miles per hour or less.

15) Vehicular traffic shall be confined to approved routes of travel to and from the Project Site, and cross country vehicle and equipment use outside designated work areas shall be prohibited.

16) No pets belonging to the construction contractor will be allowed in, or adjacent to, the Project Site.

17) Rodenticides, herbicides, insecticides, or other chemicals that could potentially harm wildlife will not be used, except during normal maintenance activities where protection of the dam from burrowing rodents and growth of trees and other vegetation could compromise the dam. In the event that these chemicals are required, the following would be implemented:

    a) Manage the use of widely spread herbicides and do not apply herbicides effective against dicotyledonous plants within 1,000 feet from the edge of a 100-year floodplain, stream and wash channels, and riparian vegetation or to soils less than 25 feet from the edge of drains. Exceptions will be made when targeting the base and roots of invasive riparian species such as tamarisk and *Arundo donax* (giant reed). Manage herbicides consistent with the most current national and California BLM policies;
    b) Minimize herbicide, pesticide, and insecticide treatment in areas that have a high risk for groundwater contamination;
    c) Clean and dispose of pesticide containers and equipment following professional standards. Avoid use of pesticides and cleaning containers and equipment in or near surface or subsurface water; and
    d) When near surface or subsurface water, restrict pesticide use to those products labeled safe for use in/near water and safe for aquatic species of animals and plants.

18) Trash will be stored in closed containers so that it is not readily accessible to scavengers and will be removed from the construction site on a daily basis so as not to attract potential predators. Particular attention will be paid to "micro-trash" such as screws, nuts, washers, coins, and any other debris or trash that is colorful and shiny.

19) Spoils and rubble will not be deposited outside the identified limits of construction, and material waste generated by the Proposed Project will be disposed of offsite.

3.4.4 Environmental Consequences

BIO-1 *Would the project have a substantial adverse effect, either directly or indirectly or through habitat modification, on any species identified as endangered or threatened in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?*

No Project Alternative

Under the No Project Alternative, the existing Dam, existing Cactus Flats Road, and existing LAA would remain on the Project Site as under existing conditions, and no excavation for earthen materials would be required. Typical maintenance activities would occur as they do under existing conditions. No construction activities would occur. Therefore, no impact to biological resources would occur under the No Project Alternative.

Build Alternatives

Thirteen of the 148 special-status plant and wildlife species detected during field surveys or identified as having a potential to occur within the Proposed Project area are designated as federally and/or state threatened or endangered (Table 3.4-5). Three species, bald eagle, Swainson's hawk, and yellow-billed cuckoo, were detected during focused field surveys; however, they were not detected in the Project Site but in adjacent areas. Three were determined to have Medium or High potential to occur. The remaining seven have an Unlikely or Low potential to occur and are not discussed further. The potential for occurrence determination was based on the results of focused field surveys and/or suitable habitat within the Project Site limits.

TABLE 3.4-5
FEDERALLY AND/OR STATE ENDANGERED AND THREATENED SPECIES DETECTED OR WITH A POTENTIAL TO OCCUR WITHIN THE PROPOSED PROJECT AREA

Species	Status Designation		Potential for Occurrence
	Federal	State	
Bakersfield cactus (*Opuntia basilaris* var. *treleasei*)	Endangered	None	Unlikely
Owens tui chub (*Siphateles bicolor snyderi*)	Endangered	Endangered	Unlikely
Owens pupfish (*Cyprinodon radiosus*)	Endangered	Endangered	Unlikely
Sierra Nevada yellow-legged frog (*Rana sierra*)	Endangered	Threatened	Unlikely
Southern mountain yellow-legged frog (*Rana muscosa*)	Endangered	Endangered	Unlikely
Desert tortoise (*Gopherus agassizii*)	Threatened	Threatened	High
Bald eagle (*Haliaeetus leucocephalus*)	None	Endangered	Detected
Swainson's hawk (*Buteo swainsoni*)	None	Threatened	Detected
Yellow-billed cuckoo (*Coccyzus americanus*)	Threatened	Endangered	Detected
Southwestern willow flycatcher (*Empidonax traillii extimus*)	Endangered	Endangered	Low
Least Bell's vireo (*Vireo bellii pusillus*)	Endangered	Endangered	Low
Bank swallow (*Riparia riparia*)	None	Threatened	Medium
Mohave ground squirrel (*Xerospermophilus mohavensis*)	None	Threatened	High

Source: Appendix E, Biological Resources Assessment

Construction

CDSM Alternative

NHD2 Components

Loss of Suitable Habitat. Native vegetation communities could be directly and indirectly impacted by construction activities associated with the CDSM Alternative. Although no threatened or endangered species were detected within the footprint of the Project Site during focused surveys, the desert scrub, Joshua Tree Woodland, and Tamarisk Thicket habitats have the potential to support threatened and endangered species, including desert tortoise, Swainson's hawk, and Mohave ground squirrel. Unavoidable permanent and temporary impacts would occur to these vegetation communities within the Project Site, which includes NHD2. The construction of the NHD2 components would result in the permanent loss of vegetation communities. In addition, the creation of staging areas, stockpiles, construction yards, the LAA Excavation Area, and other necessary construction activities could result in the temporary loss of native vegetation.

A total of 56.08 acres of permanent impacts would occur upon implementation of the Proposed Project, 39.83 acres of which would occur to natural vegetation communities (i.e. Allscale Scrub, Fourwing Saltbush Scrub, Joshua Tree Woodland, Cresotebush-Burrobush Scrubland, and Tamarisk Thicket) potentially suitable for threatened and endangered species and other special-status species. Permanent impacts of the Proposed Project are presented in Table 3.4-6.

TABLE 3.4-6
PERMANENT IMPACTS IN ACRES OF PROJECT COMPONENTS
FOR THE PROPOSED BUILD ALTERNATIVES (Entire Project Site)*

	Basin	Berm	Cactus Flats Road Grading and Ditch	Aqueduct Channel	Aqueduct Channel Excavation and Grading	NHD2	TOTAL Permanent Impacts (Entire Project Site)
Vegetation Communities							
Allscale Scrub	17.87	1.80	2.24	--	1.38	2.27	25.56
FourwingSaltbush Scrub	--	--	--	--	0.41	--	0.41
Joshua Tree Woodland	--	0.00	0.22	--	--	0.00	3.13
Cresotebush-Burrowbush Scrub	--	0.02	--	0.30	9.37	0.03	9.71
Tamarisk Thicket	0.95	0.03	--	--	--	0.04	1.02
Previously Disturbed Land Cover Types							
Aqueduct	--	0.07	--	--	1.30	0.08	1.45
Disturbed	0.86	0.09	0.76	0.00	2.22	5.14	9.07
Road	2.05	0.32	0.38	0.35	1.74	0.90	5.72
Total Permanent Impacts Per Project Component	**21.72**	**2.33**	**3.13**	**0.65**	**16.42**	**8.46**	**56.08**

* Permanent impact acreages are the same for both build alternatives.

A total of 60.13 acres of temporary impacts would occur during implementation of the Proposed Project, the majority of which (53.90 acres) would occur to natural vegetation communities. Temporary impacts are presented in Table 3.4-7.

TABLE 3.4-7
TEMPORARY IMPACTS IN ACRES OF PROJECT COMPONENTS
FOR THE PROPOSED BUILD ALTERNATIVES (Entire Project Site)*

	LAA Excavation Area	Cactus Flats Road Realignment Construction and Laydown Area	Construction Areas	NHD2 and LAA Construction, Earthwork	TOTAL Temporary Impacts (Entire Project Site
Vegetation Communities					
Allscale Scrub	--	3.64	24.10	8.05	35.79
Fourwing Saltbush Scrub	0.10	--	--	0.35	0.45
Cresotebush-Burrowbush Scrub	0.31	--	0.69	4.14	5.15
Joshua Tree Woodland	--	8.30	--	3.36	11.66
Tamarisk Thicket	--	--	0.27	0.58	0.85

TABLE 3.4-7
TEMPORARY IMPACTS IN ACRES OF PROJECT COMPONENTS
FOR THE PROPOSED BUILD ALTERNATIVES (Entire Project Site)*

	LAA Excavation Area	Cactus Flats Road Realignment Construction and Laydown Area	Construction Areas	NHD2 and LAA Construction, Earthwork	TOTAL Temporary Impacts (Entire Project Site
Previously Disturbed Land Cover Types					
Aqueduct	0.00	--	--	0.19	0.19
Dam	--	--	--	0.00	0.00
Disturbed	--	0.16	--	3.47	3.63
Road	0.01	0.58	0.18	1.64	2.41
Total Temporary Impacts per Project Components	**0.42**	**12.68**	**25.25**	**21.78**	**60.13**

Note: * Temporary impact acreages would be approximately the same for both build alternatives.

Overall, the direct effects from the construction of the NHD2 components to native plant communities that have the potential to support threatened or endangered species could include direct mortality of plant species, loss of plant habitat, plant injury, and alteration of plant community structure. Vegetation that is not directly affected could be indirectly impacted by the increase of dust during construction activities, which could indirectly decrease plant photosynthesis and would affect smaller vegetation. These effects would be short-term in nature.

Although the construction of the NHD2 components would result in the direct loss of vegetation communities, the disturbance is not considered substantial. Existing roads and other disturbances exist within the Proposed Site and, through refinement of the Proposed Project's design, impacts to undisturbed vegetation communities have been avoided to the greatest extent feasible and minimal habitat fragmentation would occur. Additionally, the desert scrub and woodland habitats that would be removed are common throughout the Proposed Project vicinity and Owens Valley. No long-term adverse indirect effects are anticipated because construction activities would be temporary in nature.

Direct effects from construction of the Proposed Project may potentially impact individual Joshua tree that occur on the Project Site on BLM land, resulting in both temporary and permanent impacts. These impacts would be minimized with the implementation of the mitigation measures detailed in Section 3.4.5, including Mitigation Measure BIO-O, which includes the implementation of Joshua tree salvage measures.

Although direct and indirect effects to vegetation communities would occur due to the implementation of the Proposed Project, these impacts are not considered to be significant based on the impact criteria defined in Section 3.4.3 above. Additionally, these impacts would be minimized with the implementation of the mitigation measures detailed in Section 3.4.5, including Mitigation Measures BIO-A, BIO-B, BIO-H, BIO-K, and BIO-M.

Approximately 13.7 acres of disturbance occurs on BLM-managed land. Of this, 2.2 acres have been previously disturbed, resulting in a total of 11.5 acres of disturbance to natural vegetation communities on BLM-managed land. The areas of vegetation communities and land cover types that will be disturbed on BLM-managed land are presented in Table 3.4-8.

TABLE 3.4-8
IMPACTS IN ACRES ON BLM-MANAGED LANDS*

	BLM-Managed Land (Acres)
Vegetation Communities	
Allscale Shrub	2.0
Fourwing Saltbush	0.5
Joshua Tree Woodland	--
Cresotebush-Burrobush Scrubland	9.0
Tamarisk Thicket	--
Subtotal	***11.5***
Previously Disturbed Land Cover Types	
Abandoned Agriculture	--
Aqueduct	0.7
Dam	--
Disturbed	0.2
Reservoir	--
Road	1.3
Subtotal	***2.2***
TOTAL	**13.7**

Note: * Impact acreages would be approximately the same for both build alternatives.

Introduction or Spread of Invasive Species. Construction activities for the Proposed Project would directly affect native vegetation, and disturbance to these communities could allow the introduction and increase of invasive weed species, such as Russian knapweed (*Rhaponticum repens*) and African mustard (*Brassica tournefortii*). Construction equipment, vehicles, or imported materials have the potential to introduce new non-native invasive plants into the Proposed Project area. The introduction of invasive species can have long-term effects on native plant communities, wildlife habitat, and special-status plants and animals by displacing native species and resulting in the overall degradation of native habitats. Areas of particular concern include newly graded areas, and areas where existing vegetation is disturbed and soils are exposed in which there are non-native weed species that could easily colonize in areas where they had not previously occurred.

Invasive weed species could out-compete native plants for such resources as water and space. Additionally, soil disturbance could reduce the native seed bank associated with the Project Site. Dust generated during construction could adversely affect on-site and off-site native vegetation communities by reducing photosynthetic activity. Reduction of native plant species could leave denuded areas at risk for the potential spread of non-native invasive weed species. This impact is considered substantially adverse; however, impacts would be reduced to less than significant with implementation of the mitigation measures detailed in Section 3.4.5, including implementing BMPs (Section 3.4.3) and Mitigation Measures BIO-A, BIO-B, BIO-H, BIO-K, and BIO-M.

Desert Tortoise. The absence of desert tortoise sign, combined with no identification of live tortoises in any of the biological resources surveys, indicate that the probability of desert tortoises inhabiting the Proposed Project area is low. However, this probability is not unlikely due to the presence of suitable habitat and prior CNDDB records indicating previous presence of desert tortoise in the Proposed Project area.

Construction activities associated with the NHD2 components would permanently and temporarily impact desert scrub and Joshua Tree Woodland habitats, which are considered desert tortoise habitat. Permanent losses of suitable habitat would occur as a result of the construction of the NHD2 components, and the creation of staging areas, stockpiles, the LAA Excavation Area, and construction yards would result in temporary losses of suitable habitat.

Should a desert tortoise occur within the Proposed Project area during construction, then direct and indirect impacts could occur. Encounters with vehicles or heavy equipment could result in direct mortality, injury, or harassment of individuals, whether in the Proposed Project area or from vehicles straying from existing roads or designated areas into adjacent habitat. Other direct impacts may include individuals being crushed or entombed in their burrows; collection or vandalism by Proposed Project personnel; disruption of tortoise behavior during construction; disturbance by noise or vibrations from heavy equipment; and harassment, injury, or mortality from encounters with workers' or visitors' pets, particularly dogs allowed off leash to roam in occupied desert tortoise habitat.

Other potential direct impacts could include those from capturing, handling, and relocating desert tortoises within the construction area. Tortoises may be injured, die, or transfer disease when captured and relocated if proper handling and relocation techniques are not used, particularly during extreme temperatures. When approached or harassed, desert tortoises may release fluids from their bladder and lose their vital water supply, significantly increasing the chances of dehydration and death if water is not located within a few days. Additionally, if multiple desert tortoises are handled by biologists without sterilized gloves or other protective measures, diseases may be spread between tortoises.

Indirect effects of construction, if a desert tortoise were to occur within the Proposed Project area, could include an increase in human activity, which could result in vehicle collisions, illegal collection of tortoises, and an increase in opportunistic predators that are attracted to litter and road kill, such as common raven (*Corvus corax*), which are a leading source of mortality for desert tortoises. Tortoises could be susceptible to mortality from the inadvertent ingestion of hazardous chemicals leaking from vehicles and equipment. Vibrations from heavy equipment could cause burrows to collapse, resulting in either direct mortality to tortoise present in the burrows or indirect loss of habitat. Making new burrows would require heavy energetic expenditure for the animals and could leave them exposed prior to reconstruction of burrows. The compaction of soil due to construction vehicles could decrease the availability of friable soils for burrow creation. Construction and mechanical soil disturbance would adversely affect tortoise habitat on-site by encouraging the spread of invasive plant species. Invasive weeds have low or no nutrition value for this species; thus, proliferating weed species throughout the Proposed Project area could indirectly result in loss of high quality forage habitat and an increase in fire frequency.

Additional surveys may occur within one year of ground breaking construction to further validate desert tortoise absence within the Proposed Project area. The Proposed Project would not significantly impact the objectives of the USFWS Recovery Plan as desert tortoise and/or sign have not been observed within the Proposed Project area. Furthermore, the implementation of minimization and avoidance measures described in this report such as Mitigation Measures BIO-A, BIO-B, BIO-C, BIO-J, and BIO-L would ensure that less than significant impacts would occur to desert tortoises if this species was incidentally observed within the Proposed Project area.

If desert tortoises were to occur within the Proposed Project area during construction, then the aforementioned impacts would be considered significant based on impact criteria defined in Section 3.4.3 above. Additional minimization measures and desert tortoise protection measures would be implemented per Mitigation Measure BIO-C in order to reduce impacts to less than significant.

Bald Eagle. Although Bald eagle was detected foraging over NHR and South Haiwee Reservoir during focused raptor surveys, the Proposed Project is not expected to significantly impact Bald eagles. The construction of the NHD2 components would result in some permanent losses of suitable foraging habitat; however, losses would be minimal, and suitable foraging habitat is common throughout the region.

No nesting Bald eagles were detected; however, Bald eagles could potentially nest in the Proposed Project area and indirectly be affected by Proposed Project construction due to disturbances from increased traffic in the area and noise and lighting from construction activities. Impacts would be reduced to less than

significant levels by implementing Mitigation Measures BIO-A, BIO-B, BIO-D, BIO-I, BIO-L, and BIO-N. These mitigation measures would minimize the impacts of noise and lighting by ensuring lighting is focused only on work areas, not unnecessarily extending beyond work areas, and scheduling noisy construction activities within the Proposed Project area outside the sensitive breeding season. In addition, these impacts would be short-term in nature.

Swainson's Hawk. Although detected during focused raptor surveys, the Proposed Project is not expected to significantly impact Swainson's hawks. The construction of the NHD2 components would result in some permanent losses of suitable foraging habitat; however, losses would be minimal and suitable foraging habitat is common throughout the region.

Indirect impacts to Swainson's hawks nesting at the Butterworth Ranch could be indirectly affected by Proposed Project construction due to disturbances from increased traffic in the area and noise and lighting from construction activities. However, impacts would be reduced to less than significant levels by implementing Mitigation Measures BIO-A, BIO-B, BIO-D, BIO-I, BIO-L, and BIO-N. These mitigation measures would minimize the impacts of noise and lighting by ensuring lighting is focused only on work areas, not unnecessarily extending beyond work areas, and scheduling noisy construction activities within the Proposed Project area outside the sensitive breeding season. In addition, these impacts would be short-term in nature.

Bank Swallow. No direct impacts to bank swallows are expected to occur as a result of the construction of the NHD2 components. Suitable breeding habitat exists for this species along the banks of Haiwee Reservoirs; however, these areas occur outside of the Proposed Project footprint and would not be impacted during construction. Temporary indirect impacts may occur from noisy construction activities displacing bank swallows foraging near the Proposed Project area. However, these impacts would be minimal and short-term in nature. In addition, impacts would be reduced to less than significant levels by implementing Mitigation Measure BIO-I.

Yellow-billed Cuckoo. A single yellow-billed cuckoo was observed within riparian habitat at Merritt Cut, located approximately 3.5 miles south of the Project Site. This individual was detected during surveys performed in the vicinity of a previously-considered proposed site for NHD2 construction materials. However, riparian habitat at Merritt Cut is not expected to be impacted by Proposed Project construction. As a result, the Proposed Project is not expected to significantly impact yellow-billed cuckoo. The construction of the NHD2 components would not result in any loss of suitable habitat for this species. A few isolated riparian trees would be removed during construction; however, yellow-billed cuckoo prefers dense stands of riparian habitat and the Tamarisk Thicket that would be removed is too isolated and sparse to provide suitable breeding habitat. Although unlikely due to the distance between the Proposed Project components and suitable riparian habitat, temporary indirect impacts may occur from noisy construction activities should an individual of this species migrate along riparian areas along the banks of Haiwee Reservoirs. However, these impacts would be short-term in nature and would be reduced to less than significant levels by implementing Mitigation Measure BIO-I, which would schedule noisy construction activities outside the sensitive breeding season.

Mohave Ground Squirrel. Mohave ground squirrel was not detected within the Proposed Project area during general biological resource surveys. However, one Mohave ground squirrel was captured during spring 2017 trapping sessions near the Cactus Flats Road Realignment area. In addition, there are six CNDDB occurrence records in the vicinity of the Proposed Project area, and this species was trapped approximately 15 miles southeast of the Proposed Project area in the Coso Mountains in the last week of March 2015. These captures provide evidence that Mohave ground squirrels are active and reproducing in the region even with limited rainfall in the area. Additionally, adult and juvenile antelope ground squirrels (*Ammospermophilus leucurus*) were trapped during focused trapping surveys in the region, reinforcing the notion that conditions are suitable for ground squirrels in the region.

Construction activities for the NHD2 components would permanently and temporarily impact suitable habitat for Mohave ground squirrel, including desert scrub and Joshua Tree Woodland habitats. Permanent losses of suitable habitat would occur as a result of the construction of the NHD2 components, and the creation of staging areas, stockpiles, the LAA Excavation Area, and construction yards would result in temporary losses of suitable habitat.

Due to a past CNDDB occurrence within the southern portion of the Project Site, an Incidental Take Permit (ITP) was issued by CDFW in 2012 for the geotechnical investigation phase of the current Proposed Project. This permit assumed presence and covered incidental take of Mohave ground squirrel over approximately 25 acres of disturbed habitat from the geotechnical investigations that took place from 2012 to 2013. It is currently unknown how much of the 393-acre Project Site would be directly impacted from new construction in addition to the 25 acres already disturbed. No Mohave ground squirrel were trapped during previous trapping sessions in 2015. However, a new ITP will be issued by CDFW assuming presence in a portion of the Project Site, with consideration that one Mohave ground squirrel was captured during spring 2017 trapping sessions near the Cactus Flats Road Realignment area.

Should Mohave ground squirrel occur within the Proposed Project area during construction, then direct and indirect impacts could occur. Mortality of Mohave ground squirrel could occur from vehicle strikes in work areas, as well as being crushed in burrows by construction equipment. Temporary impacts could occur from noise, dust, and motion disturbance. Indirect impacts during construction would potentially include alteration of soils, such as compaction. Compaction and the placement of fill may also alter vegetative cover, reducing habitat suitability. The inadvertent introduction of invasive weeds could reduce habitat value for this species. Construction activities could attract opportunistic predators (e.g., common ravens, feral cats, raccoons [*Procyon lotor*]) that may feed on Mohave ground squirrel.

If Mohave ground squirrel were to occur within the Proposed Project area during construction, then these impacts would be considered significant based on impact criteria defined in Section 3.4.3 above. An ITP per CFGC Section 2080 would be issued by CDFW with conditions that would be implemented to reduce impacts to less than significant. Furthermore, the implementation of minimization and avoidance measures described in this report such as Mitigation Measures BIO-A, BIO-B, BIO-C, BIO-J, and BIO-L would ensure that impacts would be less than significant to Mohave ground squirrel if this species were incidentally observed within the Proposed Project area.

Cactus Flats Road Realignment

Similar to the NHD2 components, the Cactus Flats Road Realignment would result in both direct and indirect temporary impacts to suitable habitat for threatened and endangered species, including desert tortoise, Swainson's hawk, and Mohave ground squirrel. Although desert tortoise and Swainson's hawk were not observed within the Proposed Project footprint, one Mohave ground squirrel was captured during spring 2017 trapping sessions near the Cactus Flats Road Realignment area. In addition, there are past CNDDB occurrence reports for desert tortoise and Mohave ground squirrel within the Proposed Project area, and Swainson's hawk is reported to nest on the Butterworth Ranch property just north of the Proposed Project area.

If desert tortoise or Mohave ground squirrel were to occur within the Proposed Project area during construction, then direct effects could include mortality. Indirect effects to these species, as well as to possible Swainson's hawk nesting in the nearby vicinity, could occur from disturbance and displacement from noise, increased traffic, and nighttime lighting, as described above. These impacts are considered significant. However, with the implementation of mitigation measures identified in Section 3.4.5, and specified above for the NHD2 components, impacts would be reduced to less than significant.

LAA Realignment

The LAA Realignment and construction of the diversion structure would result in the same direct and indirect temporary impacts to threatened and endangered species as the NHD2 components, as described

above. Impacts would be reduced to less than significant with the implementation of mitigation measures identified in Section 3.4.5, and specified above for the NHD2 components.

The sourcing of construction materials from the LAA Excavation Area would result in both direct and indirect temporary impacts to suitable habitat for threatened and endangered species, including desert tortoise, Swainson's hawk, and Mohave ground squirrel. Although desert tortoise and Swainson's hawk were not observed within the Proposed Project footprint, one Mohave ground squirrel was captured during spring 2017 trapping sessions near the Cactus Flats Road Realignment area. In addition, there are past CNDDB occurrence reports for desert tortoise and Mohave ground squirrel within the Proposed Project area, and Swainson's hawk is reported to nest on the Butterworth Ranch property just north of the Project Site.

If desert tortoise or Mohave ground squirrel were to occur within the LAA Excavation Area during Proposed Project construction, then direct effects could include mortality. Indirect effects to these species, as well as to possible Swainson's hawk nesting in the nearby vicinity, could occur from disturbance and displacement from noise, material sourcing activities, increased traffic, and nighttime lighting, as described above. These impacts are considered significant. However, with the implementation of mitigation measures identified in Section 3.4.5, and specified above for the NHD2 components, impacts would be reduced to less than significant.

Diversion Channel and NHD Modifications

The construction of the diversion channel and NHD modifications would result in the same direct and indirect temporary impacts to threatened and endangered species as the NHD2 components, as described above. Impacts would be reduced to less than significant with the implementation of mitigation measures identified in Section 3.4.5, and specified above for the NHD2 components.

Excavate and Recompact Alternative

The impacts of construction of the NHD2 components, Cactus Flats Road Realignment, the LAA Realignment, and diversion channel and NHD modifications would be the same as under the CDSM Alternative. Impacts would be reduced to less than significant with the implementation of mitigation measures identified in Section 3.4.5, and specified above for the CDSM Alternative.

Build Alternatives - Operation

After completion of Project construction, the Proposed Project would consist of passive uses (dam and associated facilities and a roadway). No direct or indirect impacts to threatened or endangered species are expected to occur during operation of the Proposed Project.

BIO-2 *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 California Department of Fish and Game or U.S. Fish and Wildlife Service?*

No Project Alternative

Under the No Project Alternative, the existing Dam, existing Cactus Flats Road, and existing LAA would remain on the Project Site as under existing conditions, and no excavation for earthen material would be required. Typical maintenance activities would occur as they do under existing conditions. No construction activities would occur. Therefore, no impact to biological resources would occur under the No Project Alternative.

Build Alternatives

As discussed in Section 3.4.2, a total of 148 special-status plant and wildlife species may potentially occur within the Proposed Project area. Ninety-three of these were determined to have an Unlikely or

Low potential for occurrence based on lack of suitable habitat or known ranges and are not discussed further. The remaining 55 special-status species were either Detected, or determined to have a Medium or High potential for occurrence designation.

Special-status species could be both directly and indirectly affected by construction activities associated with the Proposed Project. Construction activities may adversely affect plants and wildlife through habitat reduction, alteration, or fragmentation; introduction of invasive vegetation; injury or mortality; dust; noise; exposure to contaminants; interference with behavioral and migratory activities; disturbance associated with activities of workforce personnel; and increased potential for fire. Section 3.4.5 provides a complete listing of the mitigation measures designed to avoid, offset, and minimize the impacts detailed below.

Construction

CDSM Alternative

North Haiwee Dam No. 2 Components

Special-Status Plant Species. The Proposed Project would result in the temporary and permanent loss of native habitats, including loss of suitable habitat for special-status plant species. One special-status plant species, sanicle cymopterus, was observed within the Proposed Project area. Clearing and grading activities could directly remove this species from the Proposed Project area, could denude the area of seed banks for this species, and could cause temporary and permanent soil disturbance that would impede future establishment of special-status plants. Dust generation from construction activities could cause the indirect loss of plants by covering the leaves, and thereby impairing photosynthetic activity. The frequent use of vehicles on-site during construction could introduce invasive and noxious weeds to the Project Site. Once these weeds become established, they proliferate very quickly and can out-compete native special-status plants. The habitat can become monotypical, thereby reducing quality and diversity for wildlife dependent on native habitat. There is potential for sanicle cymopterus to be impacted by Proposed Project construction; however implementation of Mitigation Measures BIO-G, BIO-H, BIO-K, and BIO-M would reduce impacts to less than significant.

Special-Status Wildlife Species. The Proposed Project would result in the temporary and permanent loss of native habitats. Vegetation clearing and grading associated with construction would directly affect special-status wildlife by removal and crushing of shrubs and herbaceous vegetation, resulting in loss and fragmentation of cover, breeding, and foraging habitat. Furthermore, these activities and vehicle use could cause direct mortality to special-status wildlife; especially to slower-moving species and species that have subsurface burrows, such as reptiles, small mammals, and ground nesting birds.

Direct effects would also occur due to an increase in human presence, which could result in exposure of special-status wildlife to contaminants from leaking vehicles and equipment, increase in fire potential, and harassment, injury, or mortality from encounters with workers' or visitors' pets, particularly dogs allowed off leash to roam. Human activities in the Proposed Project area could also potentially provide food or other attractants in the form of trash, litter, or water, which could draw unnaturally high numbers of opportunistic predators and scavengers such as common raven and coyote.

Noise, vibration, and human activity would likely cause most special-status wildlife species to avoid the Proposed Project area until the disturbance conditions have concluded. The presence of humans, construction equipment, and dust would cause special-status wildlife to alter foraging and breeding behavior and could cause them to avoid suitable habitat. Nesting birds may abandon nests due to these disturbances. No long-term indirect effects on special-status wildlife due to noise, vibration, or dust are anticipated because construction activities would be temporary in nature. Most species are expected to reoccupy adjacent habitats following completion of construction activities and recovery of the vegetation.

Indirect effects on wildlife would occur due to loss of native vegetation communities and increases in invasive plant species. Loss of vegetation communities would indirectly reduce available forage and shelter habitat for special-status wildlife. An increase in invasive plant species would indirectly affect special-status wildlife because weed species, like African mustard, generally have no or lower nutrition value for native wildlife.

Redhead, common loon, American white pelican, Northern harrier, ferruginous hawk, bald eagle, golden eagle, Swainson's hawk, prairie falcon, Caspian tern, yellow-billed cuckoo, Le Conte's thrasher, yellow warbler, Brewer's sparrow, rufous hummingbird, olive-sided flycatcher, willow flycatcher, loggerhead shrike, Yuma myotis, Townsend's big-eared bat, western small-footed myotis, pallid bat, western red bat, hoary bat, and silver-haired bat were identified from the nine-quad survey area of the Project Site, but were not recorded from the Proposed Project. These species may migrate through or use the area for forage, and in the case of loggerhead shrike, potentially for nesting, as this species was observed breeding at Haiwee Reservoirs. These species would be susceptible to visual and noise disturbance as described above, potentially resulting in alteration of foraging behaviors to avoid the Project Site. This would cause avoidance of suitable habitat and energetic costs to locate other suitable habitat in the area around the Proposed Project. If species are using the vegetation on-site to nest, then direct losses could occur due to clearing and grading activities. These species could also abandon their nests due to disturbance.

The impacts to special-status wildlife are considered substantial; however, impacts would be reduced to less than significant with the implementation of BMPs (Section 3.4.3) and mitigation measures, including Mitigation Measures BIO-A, BIO-B, BIO-D, BIO-I, BIO-J, BIO-L, and BIO-N.

Burrowing Owl. Burrowing owl habitat suitability and occupancy surveys resulted in no sign or owls present, indicating that the owls have not occupied the area for years. However, individuals could migrate into the area anytime due to CNDDB records indicating presence of burrowing owl in the Proposed Project area. Occupancy surveys would take place again prior to Proposed Project construction via Mitigation Measure BIO-C Special-Status Wildlife Surveys. If any burrowing owls are detected, guidelines for avoidance shall be implemented via the CDFG Staff Report on Burrowing Owl Mitigation. Additionally, Mitigation Measures BIO-A, BIO-B, and BIO-J would be implemented to reduce any potential impacts to burrowing owl to less than significant levels.

Raptors. Overall, Proposed Project construction is not expected to significantly impact raptors. Most of the raptors observed were either nesting along the Haiwee Reservoirs outside of the Proposed Project footprint, or foraging/migrating through the Proposed Project area. Many raptor species were observed nesting within the vicinity of the Proposed Project; however, only two raptor nesting sites have the potential to be directly impacted by the Proposed Project. These include the LAA inlet (just south of the Project Site) where barn owls were observed nesting, discussed below, and the riparian tree stand in the southeast corner of the Project Site where American kestrels were observed nesting. Construction of the NHD2 components includes removal of the small riparian tree stand in the southeast corner of the Project Site. Such an action would remove a tree with a cavity where a pair of American kestrels was nesting, as well as suitable nesting habitat for red-tailed hawks. However, there is abundant riparian habitat outside of the Proposed Project area throughout the Haiwee Reservoirs that is more contiguous and less fragmented than the small patch of riparian trees at the Project Site. Indirect impacts to nesting raptors in the surrounding area could occur as a result of construction of the NHD2 components from disturbance due to construction activities, including noise, increased traffic, and nighttime lighting. Although direct and indirect impacts could occur to nesting raptors at the riparian tree stand in the Project Site, these impacts would be reduced to less than significant levels by implementing Mitigation Measures BIO-A, BIO-B, BIO-D, BIO-I, BIO-L, and BIO-N.

Bats. Although local bat populations may utilize the Proposed Project area for foraging, no roosting bats were found within the Proposed Project footprint during general or focused bat surveys. Foraging bats may be temporarily indirectly affected by construction activities through effects on habitat and behavior

from human activity or noise. Lighting may also affect behavior, as it would likely attract nocturnal insects and, in turn, bats. A maternity colony of Townsend's big-eared bats is known from the Pumice Mine, approximately 3.5 miles south of the Project Site. This species is sensitive to noise and disturbance, and if felt threatened by such disturbance, may abandon their pups and colony. However, these potential impacts are not expected to occur as construction of the Proposed Project would not occur in the vicinity of this colony. Additionally, implementing Mitigation Measures BIO-B, BIO-E, BIO-I, and BIO-N would minimize potential indirect impacts of noise and lighting on foraging, and would ensure that no bat species are impacted during the breeding season by conducting ground disturbing activities from September through February.

American Badgers and Desert Kit Fox. No American badgers were sighted during visual transect surveys; however, sign was observed throughout the Proposed Project area, which included scat, tracks and hundreds of burrows. Burrows were particularly abundant in the lower elevation flatlands of the Project Site. No live desert kit foxes were observed during visual transect surveys and no other sign such as tracks or scat was found; however, some keyhole-shaped burrows were found in the Proposed Project area, which are typically indicative of canid burrows. Most of these burrows are larger than that of the badger burrows and are most likely occupied by coyotes. However, because the desert kit fox range is within the Proposed Project area, it is possible that this species could utilize one of the canid burrows, or even an abandoned badger burrow complex. There is potential for direct impacts to badger and kit fox if a burrow is graded, or heavy machinery is working close to the burrow location. Potential natal burrows and burrow complexes would be avoided by implementing construction activities outside of the pup-rearing season. If this is not feasible, potential impacts to these species would be minimized through the implementation of Mitigation Measures BIO-A, BIO-B, BIO-C, BIO-F, AND BIO-J, and impacts would be less than significant.

Cactus Flats Road Realignment

Similar to the NHD2 components, the Cactus Flats Road Realignment would result in both direct and indirect temporary impacts to special-status plants and wildlife and their suitable habitat. Impacts include direct mortality, temporary and permanent losses of suitable habitat, decreased photosynthetic abilities due to dust, increased fire risk, foraging and nesting disturbance, and displacement due to noise, construction activities, increased traffic, and nighttime lighting, as described above. These impacts are considered significant. However, with the implementation of mitigation measures identified in Section 3.4.5, and specified above for the NHD2 components, impacts would be reduced to less than significant.

LAA Realignment

The LAA Realignment, including construction of the diversion structure, would result in the same direct and indirect impacts to special-status plant and wildlife species as the NHD2 components, as described above. In addition, potential direct impacts to nesting barn owls may occur at the LAA inlet (just south of the Project Site) due to the removal of riparian trees; the extent of impacts to the LAA riparian zone have yet to be determined within the LAA. In addition, construction in the area may prevent barn owls that have previously utilized the area from using that site. Impacts would be reduced to less than significant with the implementation of mitigation measures identified in Section 3.4.5, and specified above for the NHD2 components.

The sourcing of construction materials from the LAA Excavation Area would result in both direct and indirect impacts to special-status plants and wildlife and their suitable habitat. Impacts include direct mortality, temporary and permanent losses of suitable habitat, decreased photosynthetic abilities due to dust, increased fire risk, foraging and nesting disturbance, and displacement due to noise, construction activities, increased traffic, and nighttime lighting, as described above. These impacts are considered significant. However, with the implementation of mitigation measures identified in Section 3.4.5, and specified above for the NHD2 components, impacts would be reduced to less than significant.

Diversion Channel and NHD Modifications

The construction of the diversion channel and NHD modifications would result in the same direct and indirect temporary impacts to threatened and endangered species as the NHD2 components, as described above. Potentially adverse impacts would be reduced to less than significant with the implementation of mitigation measures identified in Section 3.4.5, and specified above for the NHD2 components.

Excavate and Recompact Alternative

The impacts of construction of the NHD2 components, Cactus Flats Road Realignment, LAA Realignment, and diversion channel and NHD modifications would be the same as under the CDSM Alternative. Potentially adverse impacts would be reduced to less than significant with the implementation of mitigation measures identified in Section 3.4.5, and specified above for the CDSM Alternative.

Build Alternatives - Operation

No direct or indirect impacts to special-status plant or wildlife species are expected to occur during operation of the Proposed Project due to the passive-nature of the facilities (dam, basin, etc.).

BIO-3 *Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulation or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?*

No Project Alternative

Under the No Project Alternative, the existing Dam, existing Cactus Flats Road, and existing LAA would remain on the Project Site as under existing conditions, and no excavation for earthen material would be required. Typical maintenance activities would occur as they do under existing conditions. Therefore, no impact to biological resources would occur under the No Project Alternative.

Build Alternatives - Construction

CDSM Alternative

Sensitive Natural Communities. No sensitive natural communities tracked by CDFW (CDFG, 2010) occur within the Project Site. As such, no direct or indirect impacts to such a community are anticipated as a result of implementation of the Proposed Project.

As previously presented, Joshua Tree Woodland is listed as a SVF under the DRECP; however, as presented in the BRA, the Joshua trees found on the Project Site on BLM-managed land do not meet the definition of "Joshua tree woodlands" as defined in the DRECP.

Riparian Habitats. A 0.8-acre area of riparian trees occurs at the southeastern section of the Project Site. This area would be impacted by the Proposed Project via the removal of these Tamarisk Thicket riparian trees. Additionally 1,100 feet west of the Tamarisk Thicket is another small Tamarisk Thicket proposed for removal. Nesting and roosting birds that utilize this area may be displaced by the removal of these trees. However, because Haiwee Reservoirs are just south of the Project Site, there is a large and significant amount of riparian habitat with mature riparian trees present for wildlife. Additionally, prior to any tree disturbance within the Project Site, nesting bird surveys would be conducted per Mitigation Measures BIO-D and BIO-K. Implementation of these mitigation measures and the availability of surrounding riparian habitat would reduce potential impacts to riparian habitats to less than significant.

Riparian habitat in the form of Black Willow Thicket occurs along the banks of NHR south of the LAA Excavation Area; however, the implementation of mitigation measures identified in Section 3.4.5, and specified above would reduce any potentially adverse indirect impacts to this community to less than significant.

Excavate and Recompact Alternative

The impacts of construction of the NHD2 components, the Cactus Flats Road Realignment, the LAA Realignment, including the LAA Excavation Area, and the diversion channel and NHD modifications would be the same as under the CDSM Alternative. With the implementation of mitigation measures identified in Section 3.4.5 and specified above, potentially adverse impacts would be reduced to less than significant.

Build Alternatives - Operation

No direct or indirect impacts to sensitive natural communities or riparian habitats are expected to occur due to the passive-nature of the proposed facilities (dam, basin, etc.).

BIO-4 *Would the project have a substantial adverse effect on federally protected wetlands, as defined by Clean Water Act Section 404 (including but not limited to marsh, vernal pool, and coastal wetlands) through direct removal, filling, hydrological interruption, or other means?*

No Project Alternative

Under the No Project Alternative, the existing Dam, existing Cactus Flats Road, and existing LAA would remain on the Project Site as under existing conditions, and no excavation for earthen material would be required. Typical maintenance activities would occur as they do under existing conditions. No construction activities would occur. Therefore, no impact to biological resources would occur under the No Project Alternative.

Build Alternatives - Construction

CDSM Alternative

No federally or state-jurisdictional wetlands were identified within the Project Site during a wetland delineation conducted for the Proposed Project (refer to Section 3.4-2 Jurisdictional Waters). Two ephemeral washes were identified in the Proposed Project area; however, it is anticipated that these features would not be impacted by construction activities. These washes may function to transport sediment during rain events, with one wash terminating at the LAA and the other within the Project Site itself. Based on preliminary coordination with CDFW, it is anticipated that the Proposed Project will not impact ephemeral washes under State jurisdiction. If it is determined through on-going coordination efforts that these washes may be impacted, the appropriate permits would be obtained from CDFW, USACE, and the RWQCB. Furthermore, implementation of BIO-A, BIO-B, BIO-H and BIO-K would ensure that impacts to the ephemeral washes are minimized and avoided.

Excavate and Recompact Alternative

The impacts of construction of the NHD2 components, Cactus Flats Road Realignment, LAA Realignment, and diversion channel and NHD modifications would be the same as under the CDSM alternative. With the implementation of mitigation measures identified in Section 3.4.5 and specified above, potentially adverse impacts would be reduced to less than significant.

Build Alternatives - Operation

No direct or indirect impacts to federally or state-protected wetlands or other waters are expected to occur during operation of the Proposed Project due to the passive-nature of the proposed facilities (dam, basin, etc.).

BIO-5 *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 substantially impede the use of native wildlife nursery sites?*

No Project Alternative

Under the No Project Alternative, the existing Dam, existing Cactus Flats Road, and existing LAA would remain on the Project Site as under existing conditions, and no excavation for earthen material would be required. Typical maintenance activities would occur as they do under existing conditions. No construction activities would occur. Therefore, no impact to biological resources would occur under the No Project Alternative.

Build Alternatives - Construction

CDSM Alternative

There are no major terrestrial wildlife crossings or corridors nor are there any significant nursery sites present for native terrestrial species within the Project Site. There are a few scattered ephemeral drainages that terrestrial wildlife may utilize. If these drainages are altered by construction activities, connectivity would be limited by temporarily eliminating movement opportunities across the Proposed Project area for terrestrial wildlife species. These species may then have to navigate to other nearby drainages for dispersal. However, based on observations made during special-status plant and wildlife surveys conducted for the Proposed Project, there are larger, more extensive drainages and networks of unpaved roads present in the vicinity of the Proposed Project area that wildlife may alternately utilize. Additionally, wildlife may use thick saltbush scrub as cover outside of these drainages for dispersal pathways.

The Proposed Project is not likely to permanently affect existing wildlife movement as no new barriers would be created within a major wildlife crossing. However, construction of the Proposed Project could temporarily impact wildlife movement due to the increased presence of equipment, structures, and construction personnel, as well as noise and lighting associated with construction activities. However, with the implementation of Mitigation Measures BIO-B, BIO-I, BIO-L, and BIO-N, temporary impacts to wildlife movements would be reduced to less than significant.

Excavate and Recompact Alternative

The impacts of construction of the NHD2 components, Cactus Flats Road Realignment, LAA Realignment, and diversion channel and NHD modifications would be the same as under the CDSM Alternative. With the implementation of mitigation measures identified in Section 3.4.5 and specified above for the CDSM Alternative, impacts would be reduced to less than significant.

Build Alternatives - Operation

No direct or indirect impacts to major terrestrial wildlife crossings and/or corridors or significant nursery sites are expected to occur during operation of the Project.

BIO-6 *Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*

No Project Alternative

Under the No Project Alternative, the existing Dam, existing Cactus Flats Road, and existing LAA would remain on the Project Site as under existing conditions, and no excavation for earthen material would be required. Typical maintenance activities would occur as they do under existing conditions. No construction activities would occur. Therefore, no impact to biological resources would occur under the No Project Alternative.

Build Alternatives - Construction

CDSM Alternative

The Proposed Project would not conflict with any local policies or ordinances to protect biological resources, including any Conservation Element or Open Space Element policies described in the Inyo County General Plan (Inyo County, 2001). Native habitat that would be removed as a result of Proposed Project construction consists of common desert scrub habitats that occur throughout the region. No sensitive communities or wetlands would be impacted (per policies BIO-1.2 and BIO-1.5 in Section 3.4.1). In addition, the Project Site is not located within an ERA or major wildlife migration corridor (per policies BIO-1.4 and BIO-1.6 in Section 3.4.1, respectively). The Proposed Project would avoid Joshua Tree Woodland to the maximum extent practicable but may potentially impact Joshua Tree Woodland that occur on the Project Site, resulting in both temporary and permanent impacts. However, with adherence to the CDNPA and Mitigation Measure BIO-O, which includes the implementation of Joshua tree salvage measures, impacts would be reduced to less than significant.

With the implementation of Mitigation Measures BIO-H and BIO-M, the Proposed Project would avoid the spread of invasive non-native weedy species (per policy BIO-1.7 in Section 3.4.1), and impacts would be reduced to less than significant.

Excavate and Recompact Alternative

The impacts of construction of the NHD2 components, Cactus Flats Road Realignment, LAA Realignment, and diversion channel and NHD modifications would be the same as under the CDSM alternative.

Build Alternatives - Operation

Operation of the Project would not conflict with any local policies or ordinances to protect biological resources, as described above.

BIO-7 *Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state conservation plans?*

No Project Alternative

Under the No Project Alternative, the existing Dam, existing Cactus Flats Road, and existing LAA would remain on the Project Site as under existing conditions, and no excavation for earthen material would be required. Typical maintenance activities would occur as they do under existing conditions. No construction activities would occur. Therefore, no impact to biological resources would occur under the No Project Alternative.

Build Alternatives - Construction

CDSM Alternative

Portions of the Project Site, including all of the LAA Excavation Area, occur on BLM-managed land and are subject to the DRECP. Through coordination with BLM, it is anticipated that the Proposed Project would not conflict with provisions of an adopted HCP or NCCP. The Proposed Project has been designed to be consistent with the DRECP and to avoid impacts to BLM Special-Status Species, Focus Species, and covered vegetation communities to the maximum extent practicable, so that any impacts would be mitigated to ensure the continued conservation of BLM-covered communities and species per the intent of the DRECP. The consistency of the Proposed Project with the DRECP CMAs is provided in Appendix B of this Draft EIR/EA. In addition, during the design phase and prior to project construction, LADWP would be required to comply with Section 7 of the FESA (through a consultation between BLM and USFWS) and applicable regulatory permits. A consultation would be required because the Proposed

Project may adversely affect endangered species and their habitat. This consultation would ensure that the Proposed Project would not be in conflict with the DRECP. With design of the Proposed Project to avoid impacts to the maximum extent practicable, and through coordination and consultation with BLM, USFWS, and CDFW, conflicts with this regional conservation plan would be considered less than significant.

Excavate and Recompact Alternative

Similar to the CDSM Alternative, the Project Site is located within the DRECP area. Through project design to avoid impacts of the Proposed Project to the maximum extent practicable, and coordination with BLM, USFWS, and CDFW, the Proposed Project would be consistent with the provisions of the DRECP; as such, conflicts with this regional conservation plan would be considered less than significant.

Build Alternatives - Operation

No direct or indirect impacts to an HCP or NCCP are expected to occur during operation of the Proposed Project.

3.4.5 Mitigation Measures

Potentially significant impacts to biological resources from implementation of the Proposed Project would be minimized or avoided by the mitigation measures described below. Further mitigation measures applicable to biological resources are presented in Section 3.13, Noise and Vibration.

BIO-A Biological Monitor: A biological monitor from LADWP or their contractor will be on site during all initial ground-disturbing activities. Biological monitors shall be familiar with the wildlife species and other sensitive biological resources known to occur in the general Project area, and be qualified to recognize potential construction effects on these resources. They will coordinate with the construction foreman or supervisor daily, and with LADWP project management when necessary for any biological resource issues that may arise. Biological monitors will conduct preconstruction clearance surveys prior to each day's construction activities, stake and flag biological resources for avoidance, and ensure compliance with the biological resources mitigation measures and BMPs. They shall also have the authority to immediately stop any activity that is not in compliance with these measures. After initial ground disturbing activities, the biological monitor will be on-call to resolve any biological resource issues that arise during Proposed Project construction. Biological monitors shall implement a robust monitoring program to regularly check for wildlife carcasses, document the cause of mortality, and promptly remove the carcasses.

BIO-B Worker Education Training: All field related project personnel, including surveyors, construction engineers, employees, contractors, contractor‘s employees, supervisors, inspectors, and subcontractors will be required to undergo a worker environmental awareness program (WEAP) prior to construction. The WEAP shall be implemented during site preconstruction, construction, and closure. WEAP training shall include a brief review of special-status species and other sensitive resources that could exist in the Proposed Project area (including their life history and habitat requirements), the locations of sensitive biological resources, and their legal status and protection under the FESA of 1973 and the CESA (CFGC Sections 2080-2080.5). The education program shall include materials describing sensitive resources, legal protection for protected resources, resource avoidance, how to address dead or injured wildlife, permit conditions, and possible fines and other penalties for violations of state or federal environmental laws. The program shall also cover the mitigation measures, BMPs, environmental permits, and the Proposed Project plan. Morning "tailgate" sessions may be conducted at the biological monitor's

discretion to update crews as they advance into sensitive areas. A record of all personnel trained during the Project shall be maintained and made available for compliance verification. In compliance with the DRECP LUPA CMA LUPA-BIO-5 (refer to Appendix B), the WEAP shall provide interpretation for non-English speaking workers and shall provide instruction for new workers prior to working on site.

BIO-C Special-Status Wildlife Surveys: Pending requirements under an ITP issued by CDFW, preconstruction surveys for special-status wildlife may be conducted prior to Proposed Project construction. Surveys will be conducted by a qualified biologist(s) and the biologist will be able to identify all special-status or incidental wildlife by sight, sound, or track, as applicable. All stationary occurrences (e.g., burrows) will be documented with a Garmin GPS unit and identified to species by tracks, scat and other sign, if possible. Biologists conducted USFWS and CDFW protocol level desert tortoise surveys, Mohave ground squirrel trapping surveys, bat surveys, burrowing owl surveys, and nesting raptor and bird surveys in the fall of 2014, the spring/summer of 2015, and the spring/summer of 2017 within the Proposed Project area to ensure that special-status wildlife will not be impacted by construction activities. Prior to and within one year of Proposed Project implementation, additional protocol level surveys may be conducted during the appropriate season for special-status wildlife that have the potential to occur within the Proposed Project area. If any special-status wildlife are encountered, additional minimization and avoidance measures will be prepared by a biologist and implemented as required.

BIO-D Preconstruction Nesting Surveys: Prior to ground disturbing activities during bird breeding season March 1 through August 15 (as early as February 1 for raptors), a biologist will conduct preconstruction nesting surveys within the potential areas of disturbance. These surveys will be conducted no more than three days prior to the initiation of clearance/construction work. If an active nest is located, clearing and construction within 300 feet of the nest (within 500 feet for raptor nests) shall be postponed until the nest is vacated and juveniles have fledged, and when there is no evidence of a second attempt at nesting. Limits of construction to avoid a nest should be established in the field with flagging and stakes or construction fencing that meets bird and bat compatible design standards. Construction personnel will be instructed on the sensitivity of the area. If there are periods of inactivity of two weeks or more during the breeding bird season, the construction area will be resurveyed.

BIO-E Roosting Bat Surveys: Preconstruction surveys for burrows and crevices containing suitable bat roosting habitat that could be used as individual bat roosts will be conducted within seven days prior to disturbance. If bat roosts are found, they shall be identified as night roosts or day roosts. Night roosts are typically utilized from the approach of sunset until sunrise. In most parts of the State, night-roost use will only occur from spring through fall. If a night roost is identified, Proposed Project disturbance will not occur within 100 feet of the roost between sunset and sunrise. Day-roosts are utilized during the spring, summer, and fall in California, and some other areas where large, non-hibernating winter colonies can be found. The most critical time, known as the non-volant period, occurs during the breeding season (from April through August) when young are present, but are not yet ready to fly. Proposed Project disturbance will be avoided during the breeding season, and will not occur within 100 feet of an identified day roost.

BIO-F American Badger and Desert Kit Fox Exclusion Plan: American badger (and potentially desert kit fox) must be excluded from all burrows and burrow complexes in the Proposed Project area where ground disturbing activities will occur. All potential kit fox or badger burrows shall be classified as inactive, potentially active, or definitely active. Inactive

burrows that are within the Proposed Project area and will be impacted by construction will immediately be excavated by hand and backfilled to prevent reuse. Potentially active burrows within the Proposed Project area shall be monitored for up to three consecutive nights using a tracking medium around the burrow apron (such as diatomaceous earth or fine clay) and/or motion-activated infrared camera stations at the entrance, as needed. If no tracks are observed in the tracking medium, or no photos of the target species are captured after three nights, the burrow shall be considered inactive, and excavated and backfilled by hand. If tracks are present, or badgers or foxes are captured in camera photos, then "passive hazing" may be implemented to deter them from using the burrow or burrow complex. These options will further be developed in the exclusion plan in coordination with CDFW.

BIO-G Special-Status Plant Species Surveys: A botanist(s) will be familiar with potential plant species of concern in all potential identifiable life stages. Special-status plant species that may be impacted by Proposed Project activities shall be avoided, where feasible. Botanists conducted rare plant surveys during four floristic blooming periods in spring and summer 2015 within the Proposed Project area to ensure that rare plants (i.e. sanicle cymopterus) will not be impacted by construction activities. Prior to and within one year of Proposed Project implementation, additional surveys, in accordance with accepted BLM survey protocols, will be conducted during optimal blooming periods for species with the potential to occur within the Proposed Project area. Rare plants will be identified during pre-construction surveys, and their populations will be counted and flagged. They will be marked with yellow stakes, and pink flagging will mark an area 10 feet around all known locations. If a rare plant is identified within the construction footprint, the plants will be counted and may be transplanted to a suitable habitat adjacent to the Project Site. Topsoil from the site containing rare plants will be salvaged and used during the vegetation post construction in sites as close to practicable to the original locations.

BIO-H Topsoil Salvage and Revegetation Plan: Native vegetated areas subject to temporary Proposed Project disturbance shall be restored to pre-project grade and allowed to revegetate. A detailed Revegetation Plan will be prepared and implemented to ensure that success is achieved to revegetate disturbed areas. The Revegetation Plan shall include top soil salvage, seeding with native locally adapted species, as needed, and minimizing the spread of invasive weeds (refer to BIO-M). Topsoil shall be stockpiled from the Project Site for use in natural revegetation of the disturbed soils. The upper soil horizons that contain the seed bank as identified in the Revegetation Plan shall be segregated as needed and stockpiled under conditions shown to sustain seed bank viability for use as the top-dressing for revegetation areas. After construction is complete, the salvaged topsoil will be spread over disturbed areas and seeded with native species using methods appropriate for the area.

BIO-I Timing of Ground-clearing Activities: Ground-clearing and ground-disturbing activities will be timed to minimize and reduce impacts to wildlife species, where feasible. When possible, ground-clearing and ground-clearing activities will take place during early fall through late winter (September through February) to minimize impacts during the breeding season to terrestrial wildlife, nesting birds, and roosting bats.

BIO-J Avoid Wildlife Entrapment: At the end of each work day, the biological monitor and/or Project personnel shall ensure that all potential wildlife pitfalls (trenches, bores, and other excavations) have been backfilled. If backfilling is not a feasible option, all trenches, bores, and other excavations shall be sloped at a 3:1 ratio at the ends to provide wildlife escape ramps, or covered completely to prevent wildlife access. All trenches, bores, and

other excavations shall be inspected periodically by the biological monitor or Project personnel. If escape ramps are not a feasible option, all trenches, bores, and excavations will be monitored no less than three times throughout the day and at the end of each workday. If wildlife were to become trapped, the biological monitor shall be contacted to either guide the animal to an earthen ramp for escape or safely remove and relocate the individual a safe distance from construction activities. Construction materials, such as uncapped pipes or other open materials on the Project Site shall also be checked for the presence of wildlife prior to their movement or use. Any wildlife encountered during the course of construction and subsequent operation, shall be allowed to leave the construction area unharmed.

BIO-K Minimize Construction-Related Impacts: The following measures would be implemented by the Proposed Project to minimize impacts of construction activities to biological resources.

- Proposed Project design shall minimize temporary construction work areas to the extent feasible and minimize the impacts to native vegetation and habitat.
- Prior to the start of construction, work areas (including, but not limited to, staging areas, access roads, and sites for temporary placement of construction materials and spoils) will be delineated with orange construction fencing that meets bird and bat compatible design standards or with staking to clearly identify the limits of work, and will be verified by the biological monitor prior to ground-disturbing activities. Fencing/staking will remain in place for the duration of construction. All disturbances, vehicles, and equipment will be confined to the fenced/flagged areas.
- Spoils will be stockpiled in disturbed areas lacking native vegetation or where habitat quality is poor. To the extent possible, disturbance of shrubs and surface soils due to stockpiling will be minimized.
- When feasible, construction activities will implement the drive and crush method rather than grading. Under this method, construction equipment would drive over and crush native plants to minimize impacts to their roots. Drive and crush is expected to reduce the recovery time of native plants within temporary construction areas. Alternatively, where drive and crush may not be feasible, native vegetation may be mowed instead to facilitate vegetation recovery and the RWQCB will be consulted for evaluation of applicability of the Timber Waiver.
- Construction personnel and contractors shall be responsible for working around all shrubs and trees within the construction zone to the extent feasible. Particular avoidance shall be applied to Joshua trees and riparian trees (i.e., cottonwoods and willows). Shrubs and trees shall be flagged by the biological monitor to indicate top priority for avoidance.
- Appropriate levels of dead and downed wood should be promoted in order to provide wildlife habitat and seed beds for vegetation establishment, and to reduce soil erosion.

BIO-L Personnel Guidelines and Traffic: Precautionary measures will be implemented during construction to protect wildlife resources.

- During construction all work areas shall be kept free of trash and debris and all trash and food-related waste shall be placed in self-closing containers and removed daily from the site and prior to periods when workers are not present at the Project Site. Particular attention shall be paid to “micro-trash” (including such small items as

screws, nuts, washers, nails, coins, rags, small electrical components, small pieces of plastic, glass or wire, and any debris or trash that is colorful or shiny) and organic waste that may attract predators.

- Personnel shall not feed or harass wildlife or bring pets to the Project Site.
- Personnel shall not collect native plants.
- Vehicular traffic shall be confined to approved routes of travel to and from the Project Site, and cross country vehicle and equipment use outside designated work areas shall be prohibited. The speed limit when traveling on dirt access routes shall not exceed 25 miles per hour. Workers shall be trained to comply with the speed limit, and enforcement provisions shall apply. Any vehicle-wildlife collisions shall be immediately reported to the construction manager and biological monitor to determine if further action is required.
- Any time a vehicle or construction equipment is parked in desert tortoise habitat outside of areas fenced with desert tortoise exclusion fencing, the ground under the vehicle shall be inspected for tortoise presence. If a desert tortoise is seen, it may move on its own. If it does not move within 15 minutes, a designated biologist may remove and relocate the animal to a safe location.

BIO-M Integrated Weed Management Plan: Containment measures will be implemented to prevent the introduction and spread of weed species in the Proposed Project area and will be addressed in the preparation of a weed management plan. These measures shall meet the requirements of CMA LUPA-BIO-10 under the DRECP, and may include limiting disturbance areas during construction to the minimum required to perform work; limiting ingress and egress to defined routes and limiting vehicle storage to designated areas; maintaining and utilizing vehicle wash and inspection stations; closely monitoring the types of materials brought on site to minimize the potential for weed introduction; quickly reestablishing native vegetation on disturbed sites; monitoring and quickly implementing control measures to ensure early detection and eradication of weed invasions; and using certified weed-free mulch, straw, hay bales, or equivalent fabricated materials for installing sediment barriers.

BIO-N Night Lighting Control: The Proposed Project will minimize the use of lighting that could attract migrating birds and bats (that could feed on concentrations of insects at lights). Lighting will be kept to the minimum level necessary for safety and security and will be designed, installed, and maintained to prevent side casting of light towards wildlife habitat outside of the Proposed Project footprint.

BIO-O Joshua Tree, Cactus, and Nolina Salvage: In accordance with the CDNPA and DRECP CMA LUPA-BIO-7, LADWP will implement Joshua tree, Cactus, and Nolina salvage measures, in cooperation with CDFW and BLM, that outlines the necessary steps for salvaging and relocating yucca, including Joshua trees, cactus, and nolina in the Project area that cannot be avoided during Project construction activities. For yucca that cannot be transplanted due to size, issuance of a permit and payment of a fee may be approved.

3.4.6 Residual Impacts After Mitigation

With implementation of Mitigation Measure BIO-A through Mitigation Measure BIO-D and Mitigation Measure BIO-H through Mitigation Measure BIO-O, potential impacts to federally and/or state-listed endangered or threatened species would be reduced to less than significant levels. With implementation of Mitigation Measure BIO-A through Mitigation Measure BIO-N, potential impacts to candidate, sensitive, or special-status species would be reduced to less than significant levels. With implementation of

Mitigation Measure BIO-D and Mitigation Measure BIO-K, potential impacts to sensitive natural communities and/or riparian habitats would be reduced to less than significant levels. Implementation of Mitigation Measure BIO-A, Mitigation Measure BIO-B, Mitigation Measure BIO-H, and Mitigation Measure BIO-K would reduce potential impacts to wetlands to a less than significant level. With implementation of Mitigation Measure BIO-B, Mitigation Measure BIO-I, Mitigation Measure BIO-L, and Mitigation Measure BIO-N, potential impacts to migratory wildlife corridors and/or native wildlife nursery sites would be reduced to less than significant levels. Implementation of Mitigation Measure BIO-H, Mitigation Measure BIO-M, and Mitigation Measure BIO-O would reduce potential impacts to local policies or ordinances protecting biological resources to a less than significant level.

3.4.7 NEPA Conclusions

No Project Alternative

Under the No Project Alternative, the NHD2 components would not be constructed. The existing Dam and NHR operation would remain as-is. Normal operation of NHR has no significant effects on biological resources. The LAA would not need realignment and Cactus Flats Road would remain as-is since NHD2 would not be constructed. Operation of the LAA and Cactus Flats Road would continue as they do today, along with already planned maintenance and minor repairs, as needed. Normal use of Cactus Flats Road would continue to result in direct and indirect effects to wildlife and habitats due to vehicular traffic, including wildlife mortality from vehicle strikes and disturbance from dust, pollution, and noise. As no construction activities would occur under the No Project Alternative, no excavation for earthen materials would be required. No changes to the existing conditions of the LAA Excavation Area would occur.

Build Alternatives

Construction of the NHD2 components, the LAA Realignment, the Cactus Flats Road Realignment, the diversion channel and NHD modifications would result in the temporary loss of native habitat. However, the native habitat that would be removed as a result of Proposed Project construction consists of common desert scrub habitats that occur throughout the region. In addition, following the completion of Proposed Project construction, native vegetated areas subject to temporary disturbance shall be restored to pre-project grade and salvaged topsoil would be spread over disturbed areas, allowing the area to revegetate naturally.

The Proposed Project would not impact any federally and/or state listed threatened or endangered species, sensitive communities, wetlands, or major wildlife migration corridors. Minimal riparian habitat, in the form of Tamarisk Thicket vegetation alliance, would be impacted as a result of the Proposed Project construction. However, because Haiwee Reservoirs are just south of the Project Site, there is a large and significant amount of riparian habitat with mature riparian trees present for wildlife in the direct vicinity. In addition, implementing mitigation measures would minimize impacts, including preconstruction nesting bird surveys and avoiding removing riparian trees to the maximum extent possible. Joshua tree woodland that could not be avoided during construction activities would be salvaged, as necessary, in coordination with BLM. The implementation of mitigation measures would also minimize indirect effects from construction, including dust, increased fire risk, noise, and nighttime light pollution.

Operational impacts to biological resources from the Proposed Project would be minimal. The maintenance of NHD, as it would remain in place, would be the same as it is under existing conditions. The NHD2 components would require similar maintenance to NHD. Generally, operations of the basin would require minimal maintenance and would be dredged every 10 to 15 years, and would be similar in scale to operations of the existing NHD, NHR, and LAA. The use of the realigned LAA would remain unchanged and the LAA Excavation Area would be revegetated/restored with implementation of the Proposed Project's Topsoil Salvage and Revegetation Plan (Mitigation Measure BIO-H). Use of the realigned Cactus Flats Road would be the same as current use and would continue to result in direct and

indirect effects to wildlife and habitats due to vehicular traffic, including wildlife mortality from vehicle strikes and disturbance from dust, pollution, and noise.

The Proposed Project would be consistent with the DRECP LUPA through the implementation of the BMPs and mitigation measures identified in this section. The Proposed Project is consistent with all applicable CMAs from the DRECP LUPA. Applicable LUPA-wide CMAs are related to: general biological resources, resource setback standards, seasonal restrictions, worker education, subsidized predators standards, restoration of areas disturbed by construction activities but not converted long-term, general closure and decommissioning standards, water and wetland dependent species resources, standard practices for weed management, nuisance animals and invasive species, noise, general siting and design, general standards for biology, activity-specific bird and bat CMAs, BLM special status riparian bird species, bat species, focus and BLM special status plants, special vegetation features, general vegetation management, desert tortoise, burrowing owl, Swainson's hawk, Mohave ground squirrel and compensation. LUPA-COMP-1 also applies to the Proposed Project, and is related to compensation for third party actions. Applicable Conservation CMAs which apply to the Proposed Project include CMAs related to plants and BLM special status species and Mohave ground squirrel. The consistency of the Proposed Project with the DRECP CMAs is provided in Appendix B of this Draft EIR/EA.

3.5 Cultural Resources

This section analyzes the potential impacts of the Proposed Project as it relates to cultural resources. The applicable laws, regulations, and methods used to determine the effects of the Proposed Project are described herein. The section describes the affected environment and analyzes the environmental consequences of the Proposed Project and, if applicable, provides mitigation measures. The analysis in the section is based in part on information from the Cultural Resources Inventory Report for the North Haiwee Dam No. 2 Project in Appendix F1 and the Potential Fossil Yield Classification (PFYC) Analysis in Appendix F2 of this Draft EIR/EA.

3.5.1 Terminology

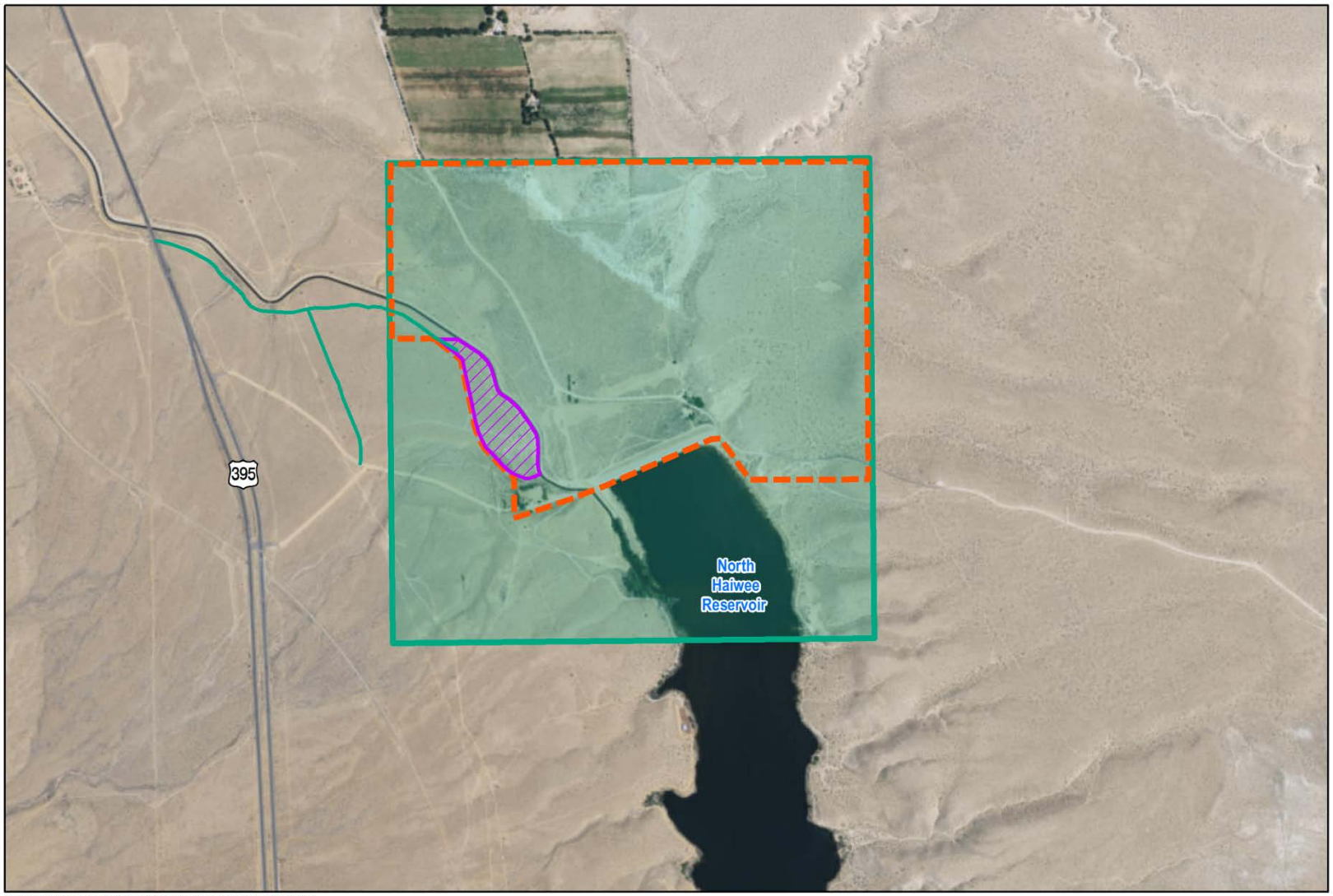
Cultural resources are historic and prehistoric archaeological sites; historic architectural and engineering features and structures (historical sites); and sites and resources of traditional cultural significance to Native Americans and other groups. Various studies were conducted by professional archaeologists between 2002 and 2016, including inventories of Project Site's Area of Potential Effects (APE); monitoring activities undertaken in support of geotechnical and geophysical investigations; and limited subsurface testing at five archaeological sites.

Fossils are defined as the remains or other indications (trace fossils) of prehistoric organisms such as animals and plants. Together with the data pertinent to the fossils (e.g., locality, stratum, orientation, radiometric dates, collector, date of collection) they constitute paleontological resources. The guiding federal law for paleontological resources is the Paleontological Resources Preservation Act (PRPA).

APE – The federal definition of "Area of Potential Effects" (APE) describes the maximum area that may be affected by a project. Both direct and indirect effects to historic resources must be considered when determining the APE. "The geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking" [36 CFR 800.16(d)]. The APE for the Proposed Project is shown in Figure 3.5-1, and encompasses Township 19 South Range 37 East, Sections 33 and 34, and Township 20 South, Range 37 East, Sections 3 and 4 as well as two nearby existing dirt access roads.

California Register of Historical Resources (CRHR) eligible/historical resource – In California law, a historical resource includes, but is not limited to any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California (PRC 5020.1(j)). A CRHR eligible resource is a historic resource which meets the criteria of a historical resource but is not on the CRHR.

National Register of Historic Places (NRHP) eligible/historic property – In federal law, historic property means any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the NRHP maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization, and that meet the National Register criteria [36 CFR § 800.16(l)(1)]. A NRHP eligible resource is a historic resource which meets the criteria of a historical resource but is not on the NRHP.



Source: Esri Maps & Data, 2017; Prepared By: AECOM, 2017.

0 1,000 2,000 Feet

Project Site APE

LAA Excavation Area

Project Site

Figure 3.5-1

Project Site APE

3.5.2 Regulatory Setting

Federal

National Historic Preservation Act Section 106

If a federal permit of any kind is needed (such as, in the case of the Proposed Project, an SF299 Application for Transportation and Utility Systems and Facilities on Federal Lands for the LAA Realignment and roadway use and improvements and Cultural Resources Fieldwork Authorizations from the BLM), the National Historic Preservation Act of 1966 (NHPA) and its implementing regulations (16 U.S.C. § 470 et seq., 36 CFR § 800, 36 CFR § 60, and 36 CFR § 63) apply. The NHPA establishes the federal government's policy on historic preservation and the programs, including the National Register of Historic Places (NRHP), through which that policy is implemented.

Both Section 106 of the NHPA and BLM policy (8100 Manual) require federal agencies, prior to implementing an "undertaking" (e.g., issuing a federal permit), to consider the effects of the undertaking on historic properties, and to afford the Advisory Council on Historic Preservation (ACHP) and the California State Historic Preservation Officer (SHPO) a reasonable opportunity to comment on any undertaking that would adversely affect properties eligible for listing on the NRHP. If significant (i.e., NRHP eligible) resources are identified, then federal agencies are directed to take prudent and feasible measures to avoid or reduce adverse impacts. Under the NHPA, historic properties include *any* prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the NRHP (16 U.S.C. §§ 470w (5)).

Section 101(d)(6)(A) of the NHPA allows properties of traditional religious and cultural importance to a tribe to be determined eligible for inclusion in the NRHP. Cultural institutions, lifeways, culturally valued viewsheds, places of cultural association, and other valued places and social institutions must also be considered under NEPA, EO 12898, and sometimes other authorities (EO 13006, EO 13007, Native American Graves Protection and Repatriation Act [NAGPRA]).

Bureau of Land Management 8100 Manual

The BLM 8100 The Foundations for Managing Cultural Resources Manual Section .06 Policy describes the role of BLM in regards to cultural resources management:

> "B. The BLM manages cultural resources under its jurisdiction or control according to their relative importance, protecting against impairment, destruction, and inadvertent loss, and encouraging and accommodating the uses determined appropriate through planning and public participation.
>
> C. Apart from certain considerations derived from specific cultural resource statutes, management of cultural resources on the public lands is primarily based on FLPMA and is governed by the same multiple use principles and the same planning and decision-making processes as are followed in managing other public land resources" (BLM, 2004).

American Indian Religious Freedom Act of 1978

The American Indian Religious Freedom Act of 1978 allows access to sites of religious importance to Native Americans. On federal land, the ARPA and NAGPRA apply. ARPA assigns penalties for vandalism and the unauthorized collection of archaeological resources on federal land, and provides for federal agencies to issue permits for scientific excavation by qualified archaeologists. NAGPRA assigns ownership of Native American graves found on federal land to their direct descendants or to a culturally affiliated tribe or organization, and provides for repatriation of human remains and funerary items to identified Native American descendants.

Antiquities Act of 1906

The Antiquities Act of 1906 historically has been used as the basis for federal protection of paleontological resources on federal lands. The act authorizes the government to regulate the disturbance of objects of antiquity on federal lands through the responsible managing agency and to prosecute individuals responsible for the unauthorized damage or removal of such objects. NEPA requires that important natural aspects of our national heritage be considered in assessing the environmental consequences of any proposed project.

Federal Land Policy and Management Act of 1976

The FLPMA (P.L. 94-579; 90 Stat. 2743, U.S.C. 1701-1782) requires that public lands be managed in a manner that protects the quality of their scientific values. Paleontological resources are also afforded federal protection under 40 CFR 1508.27 as a subset of scientific resources.

Paleontological Resources Protection Act of 2009

The Paleontological Resources Protection Act of 2009 (PRPA) provides the most explicit federal protection for paleontological resources. This act regulates who may collect fossils on public lands and where such fossils must be curated. It also provides for prosecution of violators.

Bureau of Land Management 8270 Manual

The BLM is charged with regulating and administrating paleontological resources within its purview. The BLM recognizes paleontological resources on public lands as a fragile and nonrenewable record of ancient life and an important component of America's natural heritage. Management of paleontological resources is described as identification, evaluation, protection, and use. The collection and inadvertent destruction of some sorts of fossils on BLM-managed lands is minimally regulated, but the collection of vertebrate fossils and impacts to them is strictly regulated. Consequently, the BLM considers paleontological resource management a distinct BLM program, to be given full and equal consideration in all its land use planning and decision making actions. Adverse impacts to paleontological resources shall be mitigated as necessary.

Desert Renewable Energy Conservation Plan of 2016

The DRECP LUPA, approved by BLM in September 2016, is an amendment to the BLM CDCA Plan. The key objectives of the DRECP are to streamline renewable energy development and to provide for long-term conservation and management of special-status species, vegetation, and other resources within the DRECP Plan area. The DRECP identifies Development Focus Areas and Variance Process Lands where renewable energy development is more streamlined, as well as conservation areas, and several other land uses. The DRECP LUPA implements its objectives through specific Conservation and Management Actions (CMAs). Some CMAs apply across the entirety of the DRECP Plan area, while others apply only to specific land uses.

The DRECP LUPA contains several LUPA-wide CMAs related to cultural resources. These include: LUPA-CUL-2, which requires use of relevant archaeological and environmental data to identify priority geographic data for new field inventory; LUPA-CUL-3, which requires identification of and maintenance of access to places of traditional cultural and religious importance to federally recognized Tribes; LUPA-CUL-4, which requires design of activities to minimize impacts on cultural resources, including places of traditional cultural and religious importance to federally recognized Tribes; LUPA-CUL-5, which requires development of interpretive material to correspond with recreational uses to educate the public about protecting cultural resources and avoiding disturbance of archaeological sites; LUPA-CUL-6, which requires development of partnerships to assist in training groups and individuals to participate in site stewardship programs; LUPA-CUL-8, which requires conducting regular contact and consultation with federally recognized Tribes and individuals, consistent with statute, regulation, and policy; LUPA-CUL-9, which requires promoting DRECP desert vegetation types/communities by

avoiding them where possible, then through use of compensatory mitigation, off-site mitigation, and other means to ensure Native American vegetation collection areas and practices are maintained; LUPA-PALEO-1, which requires preparation of paleontological sensitivity maps consistent with the PFYC; LUPA-PALEO-2, which requires incorporation of all guidance provided by the PRPA; LUPA-PALEO-3, which ensures proper data recovery of significant paleontological resources where adverse impacts cannot be avoided or otherwise mitigated; and LUPA-PALEO-4, which requires paleontological surveys and construction monitors for ground disturbing activities requiring an EIS.

In addition, the DRECP LUPA contains several CMAs which apply because the Project Site occurs within California Desert National Conservation Lands (CDNCL), and is partially within the Olancha Greasewood Area of Critical Environmental Concern (ACEC) and the Olancha Dunes Special Recreation Management Area (SRMA). These include: NLCS-CUL-1, which requires addressing any adverse effects to historic properties resulting from allowable uses through the Section 106 process and the implementing regulations of 36 CFR Part 800; ACEC-CUL-1, which requires survey, identification, and recordation of new cultural resources within ACEC boundaries; ACEC-CUL-2, which requires updates to records for existing cultural resources within ACECs; ACEC-CUL-3, which requires development of a baseline assessment of specific natural and man-made threats to cultural resources in ACECs; ACEC-CUL-4, which requires ongoing monitoring for cultural resources based on the threat assessment; ACEC-CUL-5, which requires identification, development, or incorporation of standard protection measures and best management practices to address threats; and ACEC-CUL-6, which requires, where specific threats are identified, implementation of protection measures consistent with agency NHPA Section 106 responsibilities. CMAs not applicable to cultural resources include: LUPA-CUL-1, 7; LUPA-TRANS-CUL-2, 3, 4, 5, 6, 7; NLCS-NSHT-1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15; DFA-VPL-CUL-1, 2, 3, 4, 5, 6, 7; and GPL-CUL-1, 2, 3, 4, 5, 6, 7. The consistency of the Proposed Project with the DRECP CMAs is provided in Appendix B of this Draft EIR/EA.

State

California Register of Historical Resources

In addition, the significance of such resources that may be affected by the undertaking must be evaluated using the criteria for listing on the CRHR. The CRHR lists properties that are to be protected from substantial adverse change, and includes properties which are listed or have been formally determined to be eligible for listing in the NRHP, State Historic Landmarks, and eligible Points of Historical Interest.

California Public Resources Code

Other state-level requirements for cultural resources management are within the California PRC, Chapter 1.7, Section 5097.5 (Archaeological, Paleontological, and Historical Sites), and Chapter 1.75, beginning at Section 5097.9 (Native American Historical, Cultural, and Sacred Sites) for lands owned by the State or a state agency. The disposition of Native American burials is governed by Section 7050.5 of the California Health and Safety Code and Sections 5097.94 and 5097.98 of the PRC and fall within the jurisdiction of the Native American Heritage Commission (NAHC). If human remains are discovered, the County Coroner must be notified within 48 hours and there should be no further disturbance to the site where the remains were found.

The California PRC prohibits knowingly and willfully excavating upon, or removing, destroying, injuring, or defacing any vertebrate paleontological site, or any other paleontological feature situated on public lands, except with the express permission of the public agency having jurisdiction over the lands. It establishes maximum fine and prison sentences for violation.

Local

Inyo County General Plan

According to the ICGP's Conservation/Open Space Element (Inyo County, 2001), the focus of cultural resources is to "Preserve and promote the historic and prehistoric cultural heritage of the County." Table 3.5-1 lists the ICGP policies related to cultural resources.

TABLE 3.5-1
INYO COUNTY GENERAL PLAN – CULTURAL GOALS AND POLICIES

No.	Policy	Details
CUL-1.1	Partnerships in Cultural Programs	Encourage and promote private programs and public/private partnership that express the cultural heritage of the area.
CUL-1.2	Interpretive Opportunities	Support and promote the development of interpretive facilities, such as roadside kiosks, museums, and restored historic buildings that highlight the County's cultural resources.
CUL-1.3	Protection of Cultural Resources	Preserve and protect key resources that have contributed to the social, political, and economic history and prehistory of the area, unless overriding considerations are warranted.
CUL-1.4	Regulatory Compliance	Development and/or demolition will be reviewed in accordance with the requirements of CEQA and the NHPA.

Note: CUL = Cultural Resources
Source: Inyo County, 2001

Inyo County Code

Ordinance Title 9, Section 9.52.030 (Project or action – Commission approval, Requirements) of the Inyo County Code asserts the following:

> "No publicly or privately sponsored project or action shall be expressly permitted by the county planning commission, hereinafter, "the commission," or any other county agency where the commission finds that any archaeological, paleontological, and historic features, or Native California Indian burial sites may be disturbed in any way by the project or action; provided, the commission may conditionally expressly permit the project or action if the project or action sponsor takes responsibility for preservation, protection, or relocation that shall be reviewed and approved by the commission by the commission after a public hearing. The public hearing shall be held, in the instance of Native California Indian burial sites, following the review and comment [period] required by Section 9.52.020" (Inyo County, 1973).

3.5.3 Affected Environment

The Project APE is within Owens Valley, a long, narrow landform in east-central California that spans a distance of more than 100 miles, reaching north to the Volcanic Tablelands and south beyond Haiwee Reservoirs. The largest towns in Owens Valley are Independence, Big Pine, Lone Pine, and Bishop. Owens Valley, which measures six to 20 miles wide, is a deep, block-faulted trough formed by uplift of the Sierra Nevada Mountains to the west and the Inyo and White Mountains to the east. Elevations range from 1,328 m (4,356 ft.) near Bishop to 1,090 m (3,575 ft.) at Owens Lake. The Sierra Nevada Mountains rise to an elevation of 4,418 m (14,495 ft.) at Mt. Whitney, while the Inyo-White Mountains to the east rise to a height of 4,342 m (14,246 ft.) at White Mountain. Prehistoric, ethnographic, and historic setting overviews of the Owens Valley and the Project APE, including the LAA system, NHD, and Haiwee Reservoirs, are included in Appendix F1 of this Draft EIR/EA.

Previously Recorded Cultural Resources

As described in Appendix F1, between 2003 and 2016, three record searches were completed for the Project APE and adjacent areas, in advance of cultural resources inventories conducted by EDAW, Inc. (EDAW), Jones & Stokes Associates (JSA), and URS/AECOM. Two records searches undertaken for the

Project Site are associated with pre-2007 cultural resources inventories directed by EDAW, Inc. (EDAW) or Jones & Stokes Associates (JSA). These record searches were undertaken to identify historically documented archaeological, historical, and architectural resources within a one-mile radius of the EDAW and JSA survey areas. The third records search was conducted in 2016 by AECOM to support the inventory of areas within the Project APE that were not subject to previous inventory (supplemental areas). Combined, the three records searches identified 144 previously recorded resources, consisting of 88 prehistoric, 30 historic-period, and 26 multiple component resources. In total, 22 previous cultural resources studies have occurred within one mile of the APE, with 15 of these studies conducted within the APE. The studies within the APE include five monitoring projects for geotechnical investigations and soil sampling.

The 144 previously identified resources include 74 archaeological sites, 3 built environment resources, and 67 isolated finds. Archaeological sites consist of 35 prehistoric, 13 historic-period, and 26 multiple component properties. The prehistoric sites comprise 27 lithic scatters defined by flaked stone debitage, some with an occasional tool; 3 properties with flaked stone, ground stone and pottery artifacts; 1 lithic scatter with a handstone; 2 lithic scatters with bedrock milling features; 1 locale with a single bedrock milling feature; and 1 area of fire-affected rock.

The historic-period sites consist of late-nineteenth or early-twentieth century properties, including the Southern Pacific Railroad's Owenyo-Mojave branch line; a railroad work camp; a wooden post utility line; water pipeline; the Bernard H. Sears homestead; and a segment of the Three Flags Trail stage road, later referred to as the Los Angeles-Owens River Road and State Highway 23. Other historic-period sites include a four refuse scatters, two bulldozer push scars, and a cobble feature.

The multiple component sites include prehistoric lithic scatters or isolated prehistoric tools as well as historic-period artifacts and features. Such features include a former homestead location, historic reservoir, ore-processing complex, communication line, and several LAA1 labor camps.

Between November 2016 and January 2017, AECOM conducted Phase II fieldwork at six archaeological sites within the APE: CA-INY-6577, -6578, -6581, -6582, -7616, and RB-03. Analyses and reporting for these Phase II investigations are currently underway.

Surveys Conducted for the Proposed Project

Cultural resources studies conducted within the Project APE have identified a broad array of prehistoric and historic-period archaeological sites, built environment resources, and isolated finds. Overall, 92 resources have been recorded, consisting of 34 archaeological sites, 3 built environment resources, and 55 isolated finds. These resources are widely distributed across the landscape, with most occurring in the western half of the Project APE. Archaeological sites and built environment resources demonstrate a resource density of 1:17 acres, while isolated finds indicate a resource density of 1:12.8 acres; overall, cultural resource density, incorporating all resource types, is 1:7 acres.

Archaeological sites consist of 12 prehistoric, 5 historic-period, and 17 multiple component resources (Table 3.5-2). Obsidian lithic scatters, consisting of flaked stone debitage and occasional formed tools, characterize most prehistoric site components. Two sites with prehistoric components also contain Owens Valley Brownware, one site includes incised steatite fragments, and one other resource exhibits bedrock milling features. Collectively, the prehistoric components document over 6,000 years of human land use. Two deeply buried prehistoric fire hearths identified at CA-INY-2243/5703, both associated with the middle Holocene (Little Lake period [5950–3150 B.P)], provide the earliest evidence of land use within the Project APE. Time-sensitive prehistoric artifacts noted among the prehistoric components indicate continued and expanded land use during the late Holocene, beginning as early as the Newberry period (3150–1350 B.P.) and extending into the Haiwee (1350 – 650 B.P.) and Marana (650 B.P.–Historic) periods.

Historic-period archaeological components represent a variety of resources, with most reflecting a common theme of early twentieth-century land use. These resources, which occur at either historic-period or multiple component archaeological sites, include several LAA1 labor camps, two former borrow sites associated with construction of the existing Dam (Borrow Site #1 and #2), a former homesite, an ore processing area, general artifact refuse scatters, and a segment of communication line. One site, comprised of the Los Angeles-Owens River stage road, was used as early as the 1860s, continuing into post-1910 contexts. Three built environment resources, which remain in active use, also occur within the Project APE: the LAA, NHD, and a LADWP caretaker's residence.

In addition to archaeological sites and built environment resources, 55 isolated finds have been identified with the Project APE, including 49 prehistoric and 6 historic-period locales (Table 3.5-2). Prehistoric isolates are largely defined by single obsidian or basalt flakes (35 locations), or single flaked stone tools (3 locations). Multiple obsidian flakes characterize nine isolated finds, including six finds with two obsidian flakes each, two finds with three obsidian flakes, and one find with four obsidian flakes. Finally, two isolated find locations contain a combination of one obsidian flake and one flaked stone tool. Historic-period isolates include small quantities of domestic debris, such as glass fragments, tin cans, and other metal, as well as a rock feature and wooden posts.

TABLE 3.5-2
CULTURAL RESOURCES BY RESOURCE TYPE AND CLASS

Project Location	Site Type			Total
	Prehistoric	Historic	Multiple Component	
Archaeological Sites	12	5	17	34
Historical Site	-	3	-	3
Isolated Finds	49	6	-	55
Total	61	14	17	92

Source: AECOM, 2017

Site Evaluation and Determination of Eligibility to the NRHP

As part of the compliance with the NHPA (54 U.S.C. § 300101 nonseq.), the regulations at 36 CFR Part 800 requires that sites within the APE of the undertaking that may be affected by the undertaking need to be evaluated for eligibility to the NRHP. Presented below are NRHP and management recommendations for the 37 archaeological sites and built environment resources identified within the Project APE. Several factors were used to develop the recommendations, including surface observations, assessment of resource function, the presence/absence of multiple artifact classes and feature types, indications of apparent and demonstrated subsurface deposits, Phase II testing results, and resource integrity.

Table 3.5-3 summarizes NRHP eligibility recommendations, while Table 3.5-4 provides resource-specific information regarding NRHP eligibility, Project effects, and management recommendations.

TABLE 3.5-3
NRHP ELIGIBILITY RECOMMENDATIONS BY RESOURCE CLASS

Resource Class	NRHP Recommendation				Total
	Eligible	Not Eligible	Unevaluated	Evaluation in Progress[1]	
Prehistoric	2	5	3	2	12
Multiple Component	3	5	--	--	8
Historic	3	6	4	4	17
Total	8	16	7	6	37

1 – NRHP eligibility evaluation is currently in progress, as of the date of publication of this Draft EIR/EA.
Source: AECOM, 2017

TABLE 3.5-4
NRHP ELIGIBILITY FOR ARCHAEOLOGICAL AND HISTORICAL SITES LOCATED WITHIN THE APE

Trinomial Site No.	Other Designation	Site Type	Site Description	Land Ownership	NRHP Eligibility
NRHP Eligible Sites					
CA-INY-2243/5703	DL-131; Olancha Pipeline Temp 1	Multiple Component	Prehistoric Lithic Scatter and Historic Homestead	LADWP/ BLM	Eligible
CA-INY-4591H	AG-3	Historic	First Los Angeles Aqueduct	LADWP/ BLM	Eligible
CA-INY-6580	HD-RD-007H	Multiple Component	Prehistoric Lithic Scatter and Historic Subterranean Structure and Artifact Scatter	LADWP	Eligible
CA-INY-6931/7276	HTL-2 and SRI-101	Multiple Component	Prehistoric Lithic Scatter and Historic LAA1 Labor Camp	BLM	Eligible
CA-INY-7816	PLI-90	Historic	Historic Los Angeles – Owens River Valley Road; Highway 23	LADWP/ BLM	Eligible
CA-INY-9345	JD-4	Prehistoric	Lithic Scatter	LADWP	Eligible
CA-INY-9347	JD-7	Prehistoric	Lithic Scatter	BLM	Eligible
–	P-14-012887 (aka P-14-012178)	Historic	North Haiwee Dam and Historic Borrow Site 1	LADWP	Eligible
Evaluation in Progress					
CA-INY-6577	HD-RD-004	Multiple Component	Prehistoric Lithic Scatter with Bedrock Milling Stations and Historic LAA1 Labor Camp	BLM	Evaluation in Progress
CA-INY-6578/6579	HD-RD-005 and HD-RD-006	Multiple Component	Prehistoric Lithic Scatter and Historic Artifact Scatter	BLM	Evaluation in Progress
CA-INY-6581	HD-CS-008	Prehistoric	Lithic Scatter	BLM	Evaluation in Progress
CA-INY-6582	HD-CS-009	Multiple Component	Prehistoric Lithic Scatter and Historic Communication Line	BLM	Evaluation in Progress
CA-INY-7616	MS-1	Multiple Component	Prehistoric Lithic Scatter and Historic Artifact Scatter	LADWP	Evaluation in Progress
–	RB-03	Prehistoric	Lithic Scatter	LADWP	Evaluation in Progress
NRHP Not Eligible Sites					
CA-INY-2242	DA-130	Prehistoric	Lithic Scatter	LADWP	Not Eligible
CA-INY-6574	HD-CS-1	Multiple Component	Prehistoric Lithic Scatter, NHD Borrow Site #2, and Historic Features and Artifact Scatter	LADWP	Not Eligible
CA-INY-6575	HD-CS-002H	Historic	Artifact Scatter and Earthen Berm	LADWP	Not Eligible
CA-INY-6576	HD-RD-003	Prehistoric	Lithic Scatter	BLM	Not Eligible
CA-INY-6583	HD-CS-010	Multiple Component	Prehistoric Flake and Historic Artifact Scatter	LADWP	Not Eligible

TABLE 3.5-4
NRHP ELIGIBILITY FOR ARCHAEOLOGICAL AND HISTORICAL SITES LOCATED WITHIN THE APE

Trinomial Site No.	Other Designation	Site Type	Site Description	Land Ownership	NRHP Eligibility
CA-INY-6584	HD-CS-011H	Historic	Rock Alignment	LADWP	Not Eligible
CA-INY-6586	HD-CS-013	Multiple Component	Prehistoric Flake and Historic Artifact Scatter	LADWP	Not Eligible
CA-INY-6587	HD-CS-014	Prehistoric	Lithic Scatter	LADWP	Not Eligible
CA-INY-6933/7278	HTL-4/5/12	Multiple Component	Prehistoric Lithic Scatter and Historic Artifact Scatter	BLM	Not Eligible
CA-INY-7615	EN-1	Prehistoric	Flaked Stone, Ground Stone, and Pottery Scatter	LADWP	Not Eligible
CA-INY-9343	JD-2	Prehistoric	Lithic Scatter	LADWP	Not Eligible
–	DD-03	Multiple Component	Prehistoric Tool and Historic Artifact Scatter	LADWP	Not Eligible
–	JA-02	Multiple Component	Prehistoric Flake and Historic Artifact Scatter	BLM	Not Eligible
–	JM-01/RB-01	Historic	Artifact Scatter	LADWP	Not Eligible
–	MK-01	Historic	Artifact Scatter	BLM	Not Eligible
–	RB-05	Historic	NHD Caretaker's Residence	LADWP/ BLM	Not Eligible
NRHP Unevaluated Sites					
CA-INY-6932/7277	HTL-3/13 and SRI-102	Multiple Component	Prehistoric Lithic Scatter and Historic LAA1 Labor Camp	BLM	Unevaluated
CA-INY-7279	SRI-104	Multiple Component	Prehistoric Lithic Scatter and Historic Artifact Scatter and Rock Ring Feature	BLM	Unevaluated
–	DD-01	Prehistoric	Lithic Scatter	BLM	Unevaluated
–	DD-02	Multiple Component	Prehistoric Lithic Scatter and Historic Dump and Artifact Scatters	LADWP/ BLM	Unevaluated
–	DD-04	Multiple Component	Prehistoric Lithic Scatter and Historic Artifact Scatter	LADWP	Unevaluated
–	JA-01	Prehistoric	Lithic Scatter	LADWP	Unevaluated
–	RB-04	Prehistoric	Lithic Scatter	LADWP	Unevaluated

Source: Appendix F1, AECOM, 2017

Prior Cultural Resources Evaluations in the Project APE

In addition to the archaeological inventories discussed above, prior geophysical and geotechnical activities conducted in the Project APE had resulted in the cultural resources monitoring of some of these resources. Field methods specific to subsurface testing conducted at five archaeological sites (CA-INY-2243/5703, CA-INY-6577/6578, CA-INY-6582, CA-INY-7615, and CA-INY-9347) within the Project APE are presented in Appendix F1 of this Draft EIR/EA.

Paleontological Resources

The Proposed Project lies within the Basin and Range geomorphic province, characterized by interior drainages with lakes and playas, and typical horst and graben structure. The entire province was subject to crustal extension in late Cenozoic times. Owens Valley is a graben (down-dropped basin) between the

eastern fault scarp of the Sierra Nevada and the Inyo Mountains. Paleozoic marine sediments from Ordovician to Permian periods are found on the northeastern part of the study area.

Owens Valley is a deep north-south trending valley. The Owens River receives runoff from the eastern side of the Sierra Nevada and drains southward for 183 miles. During historic times, it terminated in the Owens Lake basin. However, the Ancestral Owens River once continued south beyond the lake. Owens Lake was a closed basin in historic times. Hence, minerals accumulated in the closed basin making mining of them in the 20th century possible. Borings to 320 meters in Owens Lake bed demonstrate that river and lake sediments there extend back to at least 800,000 years (Sarna-Wojeicki et al., 1993). The Haiwee Reservoirs are artificial bodies of water in the same valley, and does not have a history before the 20th century.

There are river sediments older than the Pleistocene Epoch in this valley. These sediments make up the Coso Formation, which produced radiometric dates ranging from 2.5 to 6 million years. The Coso Formation is of Pliocene age, and it may extend into the late Miocene. Fish fossils found in sediments of the formation indicate that fish have been in the Owens Valley for at least 2.5 million years. Some have argued that the uplift of the Sierra Nevada was a relatively recent development and those mountains may not have been present during part or all of the Coso Formation deposition. Other research indicates the Sierra Nevada may have attained its present height 40 million years ago.

Sediments within and around the Project Site are mapped as Quaternary Alluvium (Qal) and Quaternary Older Alluvium (Qoa), as shown in Appendix F2. The Natural History Museum of Los Angeles County (LACM) records indicate that the Qal unit has produced significant paleontological resources where SR-136 crosses the Owens River. However, more detailed mapping shows the floor of the valley to be made of younger, Holocene sediment (Qaf1). The west wall of the Owens Valley is made of late Pleistocene sediment (Qaf3) and the east wall composed of older alluvium (Qoa) of early Pleistocene age. The soils within the Project Site are primarily rated as Class 4 – High, which indicates that these soils may produce significant paleontological resources. The LACM has reported significant paleontological resources from this geologic unit (refer to Appendix F2).

No known paleontological surveys have been completed around Haiwee Reservoirs. As no paleontological examination was made, there is no information regarding whether Pleistocene desert fossil soils, or paleosols, might be present. They are not recorded on geologic maps and can contain significant paleontological resources (Stewart et al., 2012; Stewart and Hakel, 2016). The creosote bush-dominated landscape suggests that paleosols might overlie sediments of Pleistocene age or older.

3.5.4 Methodology for Analysis

The following steps, consistent with the requirements of Section 106 of the NHPA and CEQA, have been taken to evaluate the potential cultural resource impacts of the Proposed Project: (1) coordination by LADWP on the scope of the assessment with the federal lead agency (BLM); (2) identification of cultural resources within the Project APE potentially affected by the Proposed Project through both archival research and field survey; (4) preliminary recommendations regarding evaluation of the NRHP/CRHR eligibility of identified cultural resources; (5) consultation by the BLM with the California SHPO and ACHP; and (6) assessment of the Proposed Project's potential effects or impacts on NRHP- or CRHR-eligible cultural resources. Information pertaining to Native American consultation is included in Section 3.18, Tribal Cultural Resources.

Office of Historic Preservation Coordination

As part of ongoing coordination efforts, BLM and LADWP met with the California Office of Historic Preservation (OHP) on May 22, 2017, in order to provide an overview of the Proposed Project and request concurrence on recommendations and determinations set forth in this document. OHP has requested additional information, and BLM and LADWP are continuing to coordinate and consult with OHP on the Proposed Project.

Historical and Archaeological Records Searches and Literature Review

As set forth in BLM Manual 8110, a literature review consists of a reasonable compilation of existing information about known cultural resources, which is assembled from a review of previously recorded sites in the OHP databases and from the available literature. Three records searches were conducted for the Proposed Project each associated with a cultural resources inventory. The Analysis Area for the search of the California SHPO database and site files includes those cadastral sections crossed by a radius of 0.25 miles from the haul routes, 0.5 miles from the LAA Excavation Area, or 1 mile from the Dam Area conducted by the California Historical Resources Information System, Eastern Information Center, University of California, Riverside. The records searches cover the APE shown in Figure 3.5-1. The records searches sought to determine the level of past survey and the types of cultural resources recorded within the Project and its vicinity. National, state, and local inventories of architectural and historic resources were examined to identify significant local historical events and personages, development patterns, and unique interpretations of architectural styles.

Class III Surveys Conducted for the Proposed Project

Phase I investigations, also known as Class III investigations, involve intensive field survey of an entire survey area, aimed at locating and recording all archaeological and historical sites that have surface indications. Surveys provide additional knowledge on site types, densities, and precise locations of sites within the APE. As described in Appendix F1, field surveys have been conducted for the entire APE, including the Project Site, adjacent areas, and haul routes, and were completed between 2002 and 2017. The various surveys encompassed a mix of federal and municipal lands. Areas greater than 25 percent slope associated with the LAA Excavation Area were excluded from survey due to steep terrain and low archaeological sensitivity. Each survey location was inventoried on foot using 15- to 30-meter-wide transects, depending upon the Proposed Project component. No surveys were conducted at existing mine in Keeler because the Proposed Project would not develop this site but would only purchase materials from this active mine. The entirety of the APE, totaling 641.2 acres of land, was surveyed for cultural resources. For detailed information regarding the findings of the Class III surveys, refer to Appendix F1 (Cultural Resources Inventory Report for the North Haiwee Dam No. 2 Project, Inyo County, California) of this Draft EIR/EA.

Phase II Investigations

In 2015, AECOM conducted Phase II archaeological investigations at 12 prehistoric and/or historic-period archaeological sites that, at that time, had the potential to be affected by Project-related activities. The study was conducted to provide information necessary to examine the significance and eligibility of the sites to the NRHP and CRHR. Management recommendations advanced four NRHP-eligible sites to Phase III data recovery (CA-INY-6580, -9785, -9345, and -9347), since these sites had the potential to be affected by Project activities. Because they were recommended as non-eligible properties, no further cultural resources studies or treatment measures were advanced for the remaining eight Phase II sites.

Between November 2016 and January 2017, AECOM conducted Phase II fieldwork at six project-related archaeological sites: CA-INY-6577, -6578, -6581, -6582, -7616, and RB-03. Additional analyses and reporting for the Phase II study is currently underway.

Paleontological Records Searches and Literature Review

Paleontological records searches were requested from the LACM for an area extending one mile beyond the Project Site and personal communications were sent to the University of Michigan Museum of Paleontology. Both institutions have localities producing vertebrate fossils in the Project APE (refer to Appendix F2).

A search was made for geologic maps that would elucidate the geology of the area. Very little of the geologic mapping of the area is available at a scale of 1:24,000. Most of the area is mapped at a scale of

1:62,500. However, there are areas at the north end of the Owens Lake Basin that are not mapped at that scale, and this analysis had to rely on 1:250,000 scale maps for the northern extremity. The geologic and paleontological literature was searched for publications relevant to the Project APE.

No known paleontological surveys have been completed around the Haiwee Reservoirs. The creosote bush-dominated landscape suggests that paleosols might overlie sediments of Pleistocene age or older.

Evaluating Direct and Indirect Cultural Impacts

Direct Impacts

Direct impacts involve physical effects to resources typically associated with ground disturbance for Project construction. The area of potential direct impacts with the Project Site includes the footprint of the NHD2 components; construction staging and stockpile areas; the Cactus Flat Road Realignment; the LAA Realignment, including the LAA Excavation Area; the diversion channel and NHD modifications; and associated haul routes, including both new road segments and the widening of existing access roads.

Indirect Impacts

Indirect effects cover a broader range at a landscape scale than direct impacts and include visual, auditory, and atmospheric effects to the resource as a by-product of the Proposed Project's construction and operation. Resources indirectly impacted by the Proposed Project, as a function of visual, auditory, and atmospheric effects, may be located within the direct impact areas; however, these resources may also be located outside. The area of impact of a project often may be a corridor several miles wide, especially for visual impacts.

CEQA Significance Criteria

For the purposes of CEQA, a historical resource is a resource listed in, or determined eligible for listing in the CRHR (PRC § 5024.1, Title 14 CCR, Section 4852). The significance of such resources that may be affected by the Proposed Project must be evaluated using the criteria for listing on the CRHR. The CRHR lists properties that are to be protected from substantial adverse change and includes properties, which are listed or have been formally determined to be eligible for listing in the NRHP, California Historical Landmarks, and eligible Points of Historical Interest.

The CRHR is an authoritative guide in California to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change (PRC Section 5024.1[a]). Certain properties, including those listed in or formally determined eligible for listing in the NRHP and California Historical Landmarks numbered 770 and higher, are automatically included in the CRHR. A resource, either an individual property or a contributor to a district, may be listed in the CRHR if the State Historical Resources Commission determines that it meets one or more criteria, which are modeled on NRHP criteria (PRC Section 5024.1[c]).

Resources nominated to the CRHR must retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. It is possible that a resource whose integrity does not satisfy NRHP criteria may still be eligible for listing in the CRHR. A resource that has lost its historic character or appearance may still have sufficient integrity for the CRHR if, under Criterion 4, it maintains the potential to yield significant scientific or historical information or specific data. Resources that have achieved significance within the past 50 years may be also eligible for inclusion in the CRHR provided that enough time has lapsed to obtain a scholarly perspective on the events or individuals associated with the resource. CEQA applies to archaeological resources when (1) the archaeological resource satisfies the definition of a historical resource, or (2) the archaeological resource satisfies the definition of a unique archaeological resource (PRC Section 21083.2[g]).

Under CEQA, a project is considered to have a significant impact on the environment if it causes a substantial adverse change in the significance of a historical resource. A historical resource includes, but is not limited to, any object, building, structure, site, area, place, record, or manuscript that is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California (CEQA sec. 21084.1).

Furthermore, under CEQA, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. Whenever a historical resource (PRC 21084.1 and CEQA Guidelines 15064.5(a)) or unique archaeological resource (PRC 21083.2) cannot be avoided by project activities, impacts must be addressed and mitigated if feasible, as outlined in CEQA Guidelines 15126.4 and 15331.

For the purposes of CEQA, fossils are defined as the remains or other indications (trace fossils) of prehistoric organisms such as animals and plants. Together with the data pertinent to the fossils (e.g., locality, stratum, orientation, radiometric dates, collector, date of collection) they constitute paleontological resources. Almost any identifiable vertebrate fossil found in its geologic context is considered a significant paleontological resource (Society of Vertebrate Paleontology [SVP], 2010). Some invertebrate and plant fossils also constitute significant paleontological resources.

The thresholds of significance for the Proposed Project's potential to impact cultural resources are based on Appendix G of the State CEQA Guidelines. The following thresholds of significance were analyzed:

- Would the project cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?
    - Substantial adverse change in the significance of a historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the resource would be materially impaired or diminished (PRC Section 5020.1(q)), altering its ability to convey its historical significance and justify its eligibility for inclusion in the California Register as determined by a lead agency for purposes of CEQA Section 15064.5(b)(1-2)(A-C).
- Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?
    - CEQA discusses two types of archeological resources: a "unique archaeological resource" and an archaeological resource that qualifies as a "historical resource". Generally an archeological resource is determined to be an historical resource due to its eligibility for listing to the California Register under one of its four criteria.
- Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?
    - This is interpreted as to excavate upon, remove, destroy, injure, or deface a vertebrate paleontological site (PRC Section 5097.5), altering its ability to convey its paleontological significance.
- Would the project disturb any human remains, including those interred outside of formal cemeteries?

NEPA Requirements

The term "significantly" as used in NEPA requires considerations of both context and intensity (40 CFR 1508.27). Therefore, thresholds serve as a benchmark for determining if a project action would result in a significant adverse environmental impact when evaluated against the baseline. The environmental effects analysis of the Proposed Project related to cultural resources includes an assessment of the context and intensity of the impacts as defined in the NEPA implementing regulations, 40 CFR 1508.27, and the BLM *NEPA Handbook H-1790-1* of 2008. The BLM *NEPA Handbook*

H-1790-1 requires that duration be considered and that both short- and long-term adverse and beneficial impacts be disclosed in the NEPA analysis. The effects analysis must demonstrate that the BLM took a "hard look" at the impacts of the action. The level of detail must be sufficient to support reasoned conclusions by comparing the amount and the degree of change (impact) caused by the proposed action and alternatives (BLM *NEPA Handbook H-1790-1,* 2008, p. 55). Additionally, direct, indirect, residual, and cumulative impacts for the Proposed Project must be considered. BLM does not provide a determination on the level of significance in a NEPA document. Rather, BLM leaves that determination to the FONSI which will be completed prior to the signing of a Decision Record. Any characterization of significance in this Draft EIR/EA applies only to the CEQA determination.

NEPA establishes national policy for the protection and enhancement of the environment. Part of the function of the federal government in protecting the environment is to "preserve important historic, cultural, and natural aspects of our national heritage." Several federal agencies and regulations consider significant paleontological resources to qualify as important natural aspects of our national heritage. The ACHP regulations at 36 CFR Part 800 implement Section 106 of the NHPA and encourage the coordination of the NEPA and NHPA compliance processes (36 CFR Part 800.8). For this Draft EIR/EA, the processes are coordinated by using the NHPA process for evaluating the significance of cultural resources and the potential effects of the Proposed Project on cultural resources historic properties. An impact to a cultural resource under NEPA is considered the same as an adverse effect to a historic property under the NHPA and 36 CFR Part 800.

Historic property means any prehistoric or historic district, site, building, structure or object included in or eligible for inclusion in the NRHP maintained by the Secretary of the Interior. This term includes artifacts, records, and material remains that are related to and located within such properties. Properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization may be determined eligible for inclusion in the NRHP (36 CFR § 800.16(l) (1).

To be classified as a historic property, the resource must be recommended or determined by the BLM to be eligible for listing into the NRHP. The criteria for determining whether cultural resources are eligible for listing in the NRHP are provided in 36 CFR Part 60.4. To be listed in the NRHP, or determined eligible, a property must be shown to be significant under one or more criteria and must have integrity. Integrity is defined as the authenticity of a resource's historic identity as evidenced by the survival of physical characteristics that existed during the prehistoric or historic period of use. Historic properties must generally be at least 50 years old; however, a younger resource may be considered eligible if it is of exceptional importance.

For investigation for the Proposed Project, NRHP evaluation is derived through examination of archaeological materials observed at sites, presence or absence of subsurface deposits, degree of impacts, and discussions of research potential. As part of the compliance with the NHPA (54 U.S.C. § 300101 nonseq.), the regulations at 36 CFR Part 800 requires that sites within the APE of the undertaking that may be affected by the undertaking need to be evaluated for eligibility to the NRHP.

The analysis of potential effects on cultural resources is based on the Criteria of Adverse Effect described in regulations implementing Section 106 of the NHPA at 36 CFR 800.5. Under these regulations, an undertaking has an effect on a historic property when the undertaking may alter, directly or indirectly, the characteristics of the property that may qualify the property for inclusion in the NRHP [36 CFR Part 800.5(a)]. An effect is considered adverse on a historic property when it may diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association.

Consideration is given to all qualifying characteristics of a historic property during effects analysis, including those that may have been identified subsequent to the original evaluation of the property's NRHP eligibility. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance, or be cumulative. Adverse effects on historic properties include but are not limited to:

- Physical destruction of or damage to all or part of the property.
- Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access that is not consistent with the Secretary's Standards for the Treatment of Historic Properties (36 CFR. 68) and applicable guidelines.
- Removal of the property from its historic location.
- Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance.
- Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features.
- Neglect of a property that causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to a Native American tribe or Native Hawaiian organization.
- Transfer, lease, or sale of property out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

To determine potential impacts that could occur due to construction and operation activities, significant and potentially significant cultural resources within the Project APE were identified. Such activities were then considered for their potential to result in adverse effects on potential or known cultural resources within the Project APE. As part of the NEPA analysis, the impacts to cultural resources resulting from the Proposed Project must be identified. In addition, under the NHPA, effects of the Proposed Project on historic properties (eligible or listed on the NRHP) must be outlined. This section describes those impacts and effects to cultural resources by alternative.

Determinations of Effect—NHPA

Section 106 (54 U.S.C. § 306108) of the NHPA requires that the federal agency permitting the undertaking must "take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register." Effect is defined in the implementing regulations of Section 106 (36 CFR 800.16(i)) as "alteration to the characteristics of a historic property qualifying it for inclusion in or eligibility for the National Register." Effects of the Proposed Project upon all historic properties located with the defined APE will be determined by the lead agency, in consultation with SHPOs, and tribes, in compliance with Section 106 of the NHPA. Adverse effects are found when the undertaking alters—either directly or indirectly—the characteristics that qualify the property for inclusion in the NRHP in a manner that would diminish the property's integrity.

Analysis of Impacts—NEPA

Cultural resources under NEPA analysis are considered part of the "human environment" and "natural environment" and are included as part of the "affected environment" (40 CFR 1508.4). Thus, impacts to cultural and paleontological resources must be evaluated and disclosed. Analysis of cultural resource impacts under the NEPA process are not be limited to an examination of effect as applied to the narrower category of "historic properties" defined by the Section 106 process. Impacts under NEPA are examined in terms of whether the Proposed Action *w*ould "significantly affect the quality of the human environment." Impacts are analyzed based on an assessment of context, defined here as the affected cultural resource; and intensity, construed here as the severity, or magnitude, of the effect (40 CFR 1508.27). Although NEPA impact analysis is not limited to examination of effect to NRHP-eligible properties, information on NRHP eligibility is included in the analysis to assist with an approximation of the extent of an impact.

Applicable Best Management Practices

BMPs are practices and procedures that help to avoid, reduce or mitigate any adverse effects to protected resources (i.e., cultural resources) resulting from project implementation. The mitigation measures described below are consistent with best practices within the professional archaeological and historical resources communities and correspond with mitigation measures for similar scale projects conducted previously in California by LADWP and other proponents. Such practices have proven to be effective in achieving the stewardship goals of Section 106 and CEQA review.

3.5.5 Environmental Consequences

CR-1: *Would the project cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5, or would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?*

No Project Alternative

Under the No Project Alternative, the Proposed Project would not be constructed and existing land uses would remain as in existing conditions. The No Project Alternative would not contribute to any new cultural resource effects. Therefore, no direct or indirect construction impacts related to historical or archaeological resources would occur under the No Project Alternative.

Build Alternatives - Construction

The CDSM Alternative and the Excavate and Recompact Alternative would result in the same impacts to cultural resources as the footprints, staging areas, and haul routes of the Proposed Project components would be the same. The difference between the Build Alternatives would be the method of construction of NHD2; and the construction schedule timeline, including the haul truck trips, personnel, and duration, which would not affect cultural resources.

Soil excavation or compaction resulting from the use of heavy machinery on the construction site itself may affect the integrity of cultural-bearing deposits associated with known and as-yet undiscovered archaeological sites. Unknown or unrecorded archaeological resources, including subsurface buried archaeological deposits, may exist. Identification of new or previously recorded cultural resources and increased use of existing and new access roads may lead to unauthorized site access, unauthorized artifact collection, and vandalism. Impacts on the setting and feeling for cultural resources may be introduced through the addition of structural elements to the landscape. Setting is the physical environment of a historic property that illustrates the character of the place. Integrity of setting remains when the surroundings of the property have not been subjected to radical change. Feeling is the quality that a historic property has in evoking the aesthetic or historic sense of a past period of time. Although it is itself intangible, feeling is dependent upon the property's significant physical characteristics that convey its historic qualities.

A total of eight historical resources are within the APE and all of those resources fall within the footprint of the Proposed Project (refer to Table 3.5-5). Three eligible sites (CA-INY-2243/5703, CA-INY-6580, and CA-INY-6931/7276) are multiple component archaeological sites that contain both prehistoric and historic period remains. Site CA-INY-2243/5703 is a site that encompasses a 120-acre area and site CA-INY-6580 would be impacted by roadway improvements. As currently designed, the Proposed Project would not be able to feasibly avoid impacting these sites, and therefore impacts would have the potential to be significant. Implementation of Mitigation Measure AR-F would reduce the impacts to less than significant. Site CA-INY-6931/7276 is an eligible site; however, impacts to the site would be limited to widening of existing access roads. The Proposed Project would not adversely affect the portions of the site that contribute to its eligibility, and therefore impacts to this eligible site would be less than significant. In addition, road widening would be monitored by a professional archaeologist as described in

Mitigation Measure AR-C, further ensuring the portions of the site contributing to its eligibility are not impacted.

Three sites of the eight eligible sites are historical resources, and include a 0.5-mile-long segment of the LAA (CA-INY-4591H), NHD and its historic borrow site (P-14-012887), and two roadway segments which are part of a well-maintained, graded dirt road that crosses the Project Site (CA-INY-7816). The road segments that are part of the eligible site CA-INY-7816 lack contextual integrity, particularly with regard to design, workmanship, feeling, and materials. Therefore, impacts to this eligible site would be less than significant. In addition, road widening would be monitored by a professional archaeologist as described in Mitigation Measure AR-C, further ensuring the portions of the site contributing to its eligibility are not impacted.

Direct impacts, including the notch and installation of the impermeable geomembrane over the northern face of NHD, would diminish the integrity of NHD's (P-14-012887) significant historic features by (1) creating a concrete-lined notch that would impact approximately 10% of the dam's overall width and would diminish the dam's concrete slope on the south side by removal of existing concrete panels; (2) changing the dam's relatively uniform elevation and profile at the notching location; (3) removing a section of the dam's earthen construction; and (4) partially covering the dam's north slope with an impermeable membrane material within the confines of the basin that would alter the dam's soil-covered appearance. These modifications would directly affect the integrity of NHD including the resource's historic materials (removal of material within the notch, installation of membrane), and design (notch, concrete lining). In addition, direct impacts to the First LAA (CA-INY-4591H) would occur as a portion of the existing LAA would be demolished during construction of the Proposed Project.

Pursuant to PRC Section 21084.1, the threshold for a substantial adverse change includes "demolition, destruction, relocation, or alteration activities that would impair the significance of the historic resource." These alterations to the physical characteristics that make NHD and the existing LAA eligible for the NRHP and CRHR under Criteria A/1 and C/3 would constitute a substantial adverse change that would impair the significance of the historical resource. Therefore, construction of the Proposed Project would have a significant impact on these historical resources.

The portion of the LAA to be removed is a small portion of the overall LAA system and lacks important engineering features, and the realigned LAA which would be constructed would be visually compatible with the existing LAA. Implementation of Mitigation Measure HR-A would reduce the impact to the existing LAA. Therefore, impacts to CA-INY-4591H related to construction of the basin would be less than significant with incorporation of mitigation.

Implementation of Mitigation Measure HR-A would reduce the impact to NHD. However, NHD would remain materially impaired after implementation of the historical documentation and public interpretation has been completed. Therefore, impacts to P-14-012887 related to construction of the basin would remain significant even with incorporation of mitigation.

The remaining two sites are prehistoric sites, which include one site located within the Cactus Flats Road Realignment footprint (CA-INY-9345) and one site located within the LAA Excavation Area footprint (CA-INY-9347). Site CA-INY-9345 would be identified prior to construction as to avoid work within the cultural site, and therefore impacts to this eligible site would be less than significant. As currently designed, the Proposed Project would not be able to feasibly avoid impacting a portion of site CA-INY-9347 during Project grading activities, and therefore impacts would have the potential to be significant. However, the Proposed Project would not adversely affect the majority of the site that contributes to its eligibility. Implementation of Mitigation Measure AR-F would reduce the impacts to less than significant.

TABLE 3.5-5
IMPACT EVALUATION FOR HISTORICAL AND ARCHAEOLOGICAL RESOURCES/SITES WITHIN THE APE

Site No.	Age	Site Description	Component of Proposed Project that would Affect Resource							Impact Prior to Mitigation	Applicable Mitigation Measures	Impact After Mitigation
			Staging & Parking	NHD2 & LAA1 Construction	LAA Realignment	LAA Excavation Area	Cactus Flats Road Realignment	Basin	Haul Routes & Access Roads			
NHRP/CRHR ELIGIBLE												
CA-INY-2243/5703	Multiple	Prehistoric Lithic Scatter and Historic Homestead	✓	✓			✓	✓		Potentially Significant	AR-F	Less than Significant
CA-INY-4591H	Historic	First Los Angeles Aqueduct		✓	✓	✓				Potentially Significant	HR-A	Less than Significant
CA-INY-6580	Multiple	Prehistoric Lithic Scatter and Historic Subterranean Structure and Artifact Scatter							✓	Potentially Significant	AR-F	Less than Significant
CA-INY-6931/7276	Multiple	Prehistoric Lithic Scatter and Historic LAA1 Labor Camp							✓	Less than Significant	None Required	Less than Significant
CA-INY-7816	Historic	Historic Los Angeles – Owens River Valley Road; Highway 23					✓			Less than Significant	None Required	Less than Significant
CA-INY-9345	Prehistoric	Lithic Scatter					✓			Potentially Significant	AR-F	Less than Significant
CA-INY-9347	Prehistoric	Lithic Scatter		✓	✓	✓				Potentially Significant	AR-F	Less than Significant
P-14-012887	Historic	NHD & Historic Borrow Site		✓		✓		✓		Potentially Significant	HR-A	Significant and Unavoidable
EVALUATION IN PROGRESS												
CA-INY-6577	Multiple	Prehistoric Lithic Scatter with Bedrock Milling Stations and Historic LAA1 Labor Camp	Resource within APE but not within Proposed Project footprint							No Impact	None Required	N/A
CA-INY-6578/6579	Multiple	Prehistoric Lithic Scatter and Historic Artifact Scatter	Resource within APE but not within Proposed Project footprint							No Impact	None Required	N/A
CA-INY-6581	Prehistoric	Lithic Scatter							✓	Potentially Significant	AR-F[a]	Less than Significant
CA-INY-6582	Multiple	Prehistoric Lithic Scatter and Historic Communication Line		✓						Potentially Significant	AR-F[a]	Less than Significant
CA-INY-7616	Multiple	Prehistoric Lithic Scatter and Historic Artifact Scatter	Resource within APE but not within Proposed Project footprint							No Impact	None Required	N/A
RB-03	Prehistoric	Lithic Scatter					✓			Potentially Significant	AR-F[a]	Less than Significant
NRHP/CRHR UNEVALUATED												
CA-INY-6932/7277	Multiple	Prehistoric Lithic Scatter and Historic LAA1 Labor Camp	Resource within APE but not within Proposed Project footprint							No Impact	None Required	N/A
CA-INY-7279	Multiple	Prehistoric Lithic Scatter and Historic Artifact Scatter and Rock Ring Feature	Resource within APE but not within Proposed Project footprint							No Impact	None Required	N/A

TABLE 3.5-5
IMPACT EVALUATION FOR HISTORICAL AND ARCHAEOLOGICAL RESOURCES/SITES WITHIN THE APE

Site No.	Age	Site Description	Component of Proposed Project that would Affect Resource							Impact Prior to Mitigation	Applicable Mitigation Measures	Impact After Mitigation
			Staging & Parking	NHD2 & LAA1 Construction	LAA Realignment	LAA Excavation Area	Cactus Flats Road Realignment	Basin	Haul Routes & Access Roads			
DD-01	Prehistoric	Lithic Scatter	Resource within APE but not within Proposed Project footprint							No Impact	None Required	N/A
DD-02	Multiple	Prehistoric Lithic Scatter and Historic Dump and Artifact Scatters	Resource within APE but not within Proposed Project footprint							No Impact	None Required	N/A
DD-04	Multiple	Prehistoric Lithic Scatter and Historic Artifact Scatter	Resource within APE but not within Proposed Project footprint							No Impact	None Required	N/A
JA-01	Prehistoric	Lithic Scatter	Resource within APE but not within Proposed Project footprint							No Impact	None Required	N/A
RB-04	Prehistoric	Lithic Scatter	Resource within APE but not within Proposed Project footprint							No Impact	None Required	N/A
NHRP/CRHR NOT ELIGIBLE												
CA-INY-2242	Prehistoric	Lithic Scatter	Resource within APE but not within Proposed Project footprint							No Impact	None Required	N/A
CA_INY-6574	Prehistoric	Prehistoric Lithic Scatter, NHD Borrow Site #2, and Historic Features and Artifact Scatter		✓						No Impact	None Required	N/A
CA-INY-6575	Historic	Artifact Scatter and Earthen Berm		✓				✓		No Impact	None Required	N/A
CA-INY-6576	Prehistoric	Lithic Scatter			✓	✓				No Impact	None Required	N/A
CA-INY-6583	Multiple	Prehistoric Flake and Historic Artifact Scatter	Resource within APE but not within Proposed Project footprint							No Impact	None Required	N/A
CA-INY-6584	Historic	Rock Alignment	Resource within APE but not within Proposed Project footprint							No Impact	None Required	N/A
CA-INY-6586	Multiple	Prehistoric Flake and Historic Artifact Scatter					✓			No Impact	None Required	N/A
CA-INY-6587	Prehistoric	Lithic Scatter					✓			No Impact	None Required	N/A
CA-INY-6933/7278	Multiple	Prehistoric Lithic Scatter and Historic Artifact Scatter	Resource within APE but not within Proposed Project footprint							No Impact	None Required	N/A
CA-INY-7615	Prehistoric	Flaked Stone, Ground Stone, and Pottery Scatter		✓	✓	✓				No Impact	None Required	N/A
CA-INY-9343	Prehistoric	Lithic Scatter					✓			No Impact	None Required	N/A
DD-03	Multiple	Prehistoric Tool and Historic Artifact Scatter	Resource within APE but not within Proposed Project footprint							No Impact	None Required	N/A
JA-02	Multiple	Prehistoric Flake and Historic Artifact Scatter	Resource within APE but not within Proposed Project footprint							No Impact	None Required	N/A
JM-01/RB-01	Historic	Artifact Scatter	Resource within APE but not within Proposed Project footprint							No Impact	None Required	N/A
MK-01	Historic	Artifact Scatter							✓	No Impact	None Required	N/A
RB-05	Historic	NHD Caretaker's Residence	Resource within APE but not within Proposed Project footprint							No Impact	None Required	N/A

Notes:
[a] AR-F shall be implemented if Phase II investigations do not reduce impacts to a level of less than significant.
Source: Appendix F1, AECOM, 2016

There are six archaeological resources within the Project APE which are currently being evaluated in Phase II investigations. Three of the resources (CA-INY-6577, CA-INY-6578/6579, and CA-INY-7616) are multiple component archaeological sites that contain both prehistoric and historic period remains, but are not located within the Proposed Project's footprint. Therefore, there would be no impact to these sites. The three archaeological resources which are located within the Proposed Project footprint (CA-INY-6581, CA-INY-6582, and RB-03) have the potential to be significantly impact by construction of the Proposed Project components. If any of the three sites are considered eligible, Mitigation Measure AR-F would reduce impacts to less than significant.

There are seven archaeological resources within the APE which are unevaluated for NRHP/CRHR eligibility, and are therefore considered potential historical resources. However, based on current construction plans, the seven unevaluated resources are not located within the footprint of the Proposed Project components. Therefore, there would be no impact to these sites.

Lastly, there are sixteen archaeological resources that are not eligible for the NRHP. For sites which have been determined to be ineligible, impacts would not occur.

Indirect impacts to the historic setting of the NHD and existing LAA could potentially occur. The introduction of NHD2 would alter the visual environment of NHD and the existing LAA by introducing a new engineering feature that would be visible from both CRHR/NRHP-eligible historic properties and historical resources. The introduction of NHD2, however, would be compatible with the historic use and function of NHR. NHD2 would be similar in appearance to NHD and would present a weak to no contrast within the existing landscape (Refer to Appendix C, Visual Quality Technical Report). The LAA Realignment would also alter the setting for both the existing LAA and NHD, as it would require modifications to natural landscape features that would be visible from both the LAA and NHD. These modifications to landscape features would be consistent with the historic use and function of the First LAA and NHD and would present a weak to no contrast with the existing landscape. Indirect effects from the Proposed Project's activities, therefore, would not diminish the historic integrity of the LAA and NHD, or adversely affect the physical characteristics that make these properties and resources eligible for the NRHP and CRHR.

The potential exists for inadvertent discovery of historical and archaeological sites within the Project footprint under both the CDSM Alternative and Excavate and Recompact Alternative. Due to the extensive excavation and ground disturbance activities of the Proposed Project under the Build Alternatives, disturbance to these known or any unknown archaeological resources could not feasibly be avoided. The Proposed Project would incorporate a monitoring program with implementation of Mitigation Measures AR-C and AR-D to reduce impacts to previously unidentified historical and archaeological sites to less than significant.

Build Alternatives - Operation

The operational noise levels of the Proposed Project are not anticipated to be sufficient to have an effect on historical resources as the historic significance of First LAA and NHD is not linked to a particular soundscape or sense of quiet. NHD2 would not include sources of operational vibration, and the Cactus Flats Road Realignment and the LAA Realignment would not include significant sources of operational vibration beyond existing vibration conditions. These levels would not cause surficial or structural damage to either NHD or First LAA and thus, operational impacts related to historic/archaeological resources would be less than significant.

NHD2 and the LAA Realignment would require similar maintenance as the existing NHD and existing LAA. The basin would require similar maintenance as NHR and the LAA system. Once NHD2 has been constructed, the presence of the new Dam would introduce long-term visual impacts to the historic setting of NHD and First LAA. The existing Dam and LAA would be permanently impacted during construction, as described above. While these historical resources would remain affected after the completion of

construction, no new impacts to these or other resources would occur during operation of the Proposed Project. Site CA-INY-2243/5703 would be submerged once the basin would be filled. However, basin grading would disturb this site during construction, and no new impacts would be expected during operation. With implementation of the mitigation measures identified in Table 3.5-5 and described below in Section 3.5.6, operational impacts would be less than significant to historical and archaeological resources.

Periodic access to NHD2 would be required to maintain its operating function. In addition, portions of the existing Cactus Flats Road would be kept open upon completion of the Cactus Flats Road Realignment. Thus, the access roads and portions of the existing Cactus Flats Road would be kept open to maintenance crews, at least at a two-track level, which increases the potential for vandalism to cultural resources and illicit artifact collection. While access may increase the potential for vandalism to cultural resources and illicit artifact collection, access would be limited to LADWP staff. The Proposed Project would incorporate a monitoring program under Mitigation Measure AR-D to reduce impacts to historic/archaeological resources to less than significant.

The LAA Excavation Area would be revegetated/restored to a natural state after construction of the Proposed Project. Any impacts to historic/archaeological resources would be mitigated during construction of the Proposed Project. Thus, operational impacts related to historic/archaeological resources would not occur.

CR-2: *Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?*

No Project Alternative

The No Project Alternative assumes that the Proposed Project would not be constructed and that existing land uses would continue in their current condition. The No Project Alternative would not contribute to any new paleontological resource effects. Therefore, no direct or indirect construction impacts related to paleontological resources would occur under the No Project Alternative.

Build Alternatives - Construction

Construction activities that may cause impacts on paleontological resources can include excavation, staging, and heavy equipment usage and movement. No known paleontological localities exist in the immediate vicinity of the footprint of NHD2. As described previously, Qal (Quaternary Alluvium) and Qoa (Quaternary Older Alluvium) soils within the Project Site are classified as Class 4 – High and are likely to include paleontological resources. The LACM has reported significant paleontological resources from this geologic unit. It is anticipated that shallow digging would not impact significant paleontological resources, but deeper digging may do so.

Excavation depths for NHD2 could extend up to 15 feet bgs for the CDSM Alternative, with the CDSM columns reaching up to 80 feet bgs, and 30 feet bgs for the Excavate and Recompact Alternative. In addition, excavations in the side walls of the excavation for the NHD2 foundation may impact significant paleontological resources. Construction of the Cactus Flats Road Realignment would involve only minimal/shallow excavation for the ditch, culvert construction and realignment of Cactus Flats Road; however, some cut and fill activity would be required to permit the Cactus Flats Road Realignment to follow the necessary grade. Similarly, grading of the basin would occur only in shallow soil depths, but would require cut and fill activities. The east and west berms may require excavation for construction. Construction activities would realign approximately 0.5-mile of the LAA and would result in the demolition and backfilling of 0.5-mile of the existing LAA. Excavation for the LAA Realignment would reach 60 feet bgs. Construction of the diversion channel would also require excavation.

These excavation activities have the potential to contact or expose, and thereby affect, previously unidentified paleontological resources. It is not anticipated that construction of the notch would impact

paleontological resources, as NHD is a manmade structure comprised of already disturbed earth. In addition, construction of NHD modifications would be on and near the surface, and would only occur within already disturbed areas. Excavation would also occur at the LAA Excavation Area, which has the potential to contact or expose, and thereby affect, previously unidentified paleontological resources. Creation of the CDSM columns would potentially affect paleontological resources which are located under the NHD2 site. The Proposed Project under the CDSM Alternative and Excavate and Recompact Alternative would incorporate a monitoring program implemented under Mitigation Measures PR-A through PR-E to reduce impacts to previously unidentified paleontological resources to less than significant under the Build Alternatives.

Haul routes for the Build Alternatives would primarily occur on existing roads. However, some roadway improvements and construction of new roads would be required, as shown in Figure 2-10. The LAA access road would require improvements, and three new road segments would be constructed, north of the existing LAA, crossing the existing LAA, and south of the reservoir keeper's house. The roadway improvements and construction have the potential to contact or expose, and thereby affect, previously unidentified paleontological resources. The Proposed Project under the CDSM Alternative and Excavate and Recompact Alternative would incorporate a monitoring program implemented under Mitigation Measures PR-A through PR-E to reduce impacts to previously unidentified paleontological resources to less than significant under the Build Alternatives.

Build Alternatives - Operation

Paleontological sites would only be subject to adverse effects during construction activities. NHD2 and the LAA Realignment would require similar maintenance as the existing Dam and existing LAA. The new Dam and LAA Realignment would remain in place and no ground disturbing activities would occur. The basin would require dredging every ten to 15 years during operation of the Proposed Project; however, any sediments would already be disturbed, having been recently deposited in the basin by the LAA system. Maintenance of the basin would be similar to existing maintenance for the LAA and NHR. Upon completion of construction, the LAA Excavation Area would be revegetated/restored to a natural state after construction of the Proposed Project. No activities would occur on the site, including ground-disturbing or earthmoving activities. Thus, operational impacts related to paleontological resources would not occur.

Once completed, the majority of the existing Cactus Flats Road would remain in place. The existing Cactus Flats Road that remains in place would operate at least at a two-track level, and would be restricted to LADWP use for access to NHD2. While access may increase the potential for vandalism to paleontological resources and illicit fossil collection, access would be limited to LADWP staff. In addition, implementation of Mitigation Measure PR-E during construction would result in no significant paleontological resources remaining accessible to the public during operation. The uppermost layers of the sediment beneath the proposed Cactus Flat Road Realignment are expected to have low paleontological sensitivity, and no impacts related to road maintenance are anticipated to occur. Thus, with implementation of Mitigation Measure PR-E, operational impacts related to paleontological resources would be less than significant.

Roads improved for construction of the Proposed Project would remain in place, and may increase the potential for vandalism to paleontological resources and illicit fossil collection. However, implementation of Mitigation Measure PR-E during construction would result in no significant paleontological resources remaining accessible to the public during operation. Thus, with implementation of Mitigation Measure PR-E, operational impacts related to paleontological resources would be less than significant.

CR-3: *Would the project disturb any human remains, including those interred outside of formal cemeteries?*

Section 15064.5 of CEQA assigns special importance to human remains, and specifies procedures to be used when Native American remains are discovered. These procedures are detailed under PRC Section 5097.98.

No Project Alternative

The No Project Alternative assumes that the Proposed Project would not be constructed and that existing land uses would continue. This alternative would not contribute to any new cultural resource effects. Therefore, no direct or indirect construction impacts related to disturbing human remains would occur under the No Project Alternative.

Build Alternatives - Construction

No human remains have been identified during cultural resources surveys or Phase II investigations conducted for the Proposed Project and, as such, no impacts to this type of resource are anticipated. Discovery of human remains would be a potentially significant impact. Should human remains be discovered at any time during implementation of the Proposed Project under any of the Build Alternatives, construction in the vicinity would halt and the Coroner would be contacted immediately, as outlined in Mitigation Measure AR-E. If the Coroner determines that the remains do not require an assessment of cause of death and are probably Native American, then the NAHC would be contacted to identify the most likely descendants in accordance with Mitigation Measure AR-E. Upon implementation of Mitigation Measure AR-E, direct construction impacts related to disturbing any human remains would be less than significant under any Build Alternative.

Build Alternatives - Operation

During operation, NHD2, the Cactus Flats Road Realignment, the LAA Realignment, and diversion channel and NHD modifications would require similar maintenance as the existing Dam, existing Cactus Flats Road, and existing LAA. These components would remain in place and no ground disturbing activities would occur. The basin would require dredging every ten to 15 years during operation of the Proposed Project; however, any sediments would already be disturbed, having been recently deposited in the basin by the LAA system. Maintenance of the basin would be similar to existing maintenance for the LAA and NHR. Thus, operational impacts related to disturbing any human remains would be less than significant.

Upon completion of construction, the LAA Excavation Area would be revegetated/restored to a natural state after construction of the Proposed Project. No activities would occur on the site, including ground-disturbing or earthmoving activities. Thus, operational impacts related to disturbing human remains would not occur.

3.5.6 Mitigation Measures

Cultural resources mitigation measures relevant to both Proposed Project alternatives are described below, and include procedures that would occur mainly during construction. These methods include protective measures, such as conducting archaeological and paleontological training; conducting Phase II archaeological test excavations and, if necessary, Phase III data recovery investigations; and Historic American Engineering Record (HAER) recordation for the First LAA and existing Dam before construction. Other protective measures, such as monitoring for archaeological and paleontological resources during ground-disturbing activities and halting work during construction in the event of a discovery, would occur during construction. For the purposes of NEPA and CEQA, the following mitigation measures represent all feasible and necessary treatment and management of affected cultural resources.

Archaeological Resources

AR-A Conduct Archaeological Training – Before the start of ground-disturbing activities within the Project APE, a qualified professional archaeologist who meets the Secretary of the Interior's Standards for Archaeology will develop a training program and printed material to be presented to construction personnel. The purpose of this training and accompanying materials will be to familiarize construction personnel with the relevant legal (Section 106/NEPA/CEQA) context for cultural resources of the Proposed Project, and with the types of cultural sites, features, and artifacts that could be uncovered during construction activities. A secondary goal of such training is to minimize unauthorized collection of archaeological materials or vandalism to know archaeological sites. These training sessions will be conducted before beginning construction and will be repeated as needed as construction crews and supervisors change.

AR-B Flagging of Avoidance Areas – The preferred approach to cultural resources within the Project APE is avoidance. The delineation and monitoring of Environmentally Sensitive Areas (ESAs) during construction will ensure that known sites are avoided where possible. Avoidance areas will be flagged or otherwise marked before construction activities by a qualified professional archaeologist who meets the Secretary of the Interior's Standards for Archaeology. Cultural resources locations and a 15 meter (50 foot) buffer around each location will be included in the ESA. Construction Managers will be informed that disclosure of cultural resource site locations to non-project personnel is prohibited. The workforce training program (AR-A) will include information about ESAs and an advisory that it is illegal to knowingly disturb, vandalize, or loot a cultural resource site. Flagging or other marking will be removed once construction is completed in an area.

AR-C Conduct Archaeological Monitoring in Areas of Sensitivity; Halt Work in the Event of a Discovery – Before ground-disturbing construction, LADWP will include a monitoring plan in their work plan or in the contract conditions of the construction contractor, identifying the following steps to be taken in the event of the inadvertent discovery of cultural resources.

An archaeological monitor will be present to observe construction at geographic locations that are sensitive for unidentified cultural resources. Such locations may consist of construction areas near identified cultural resources, or in other areas of identified sensitivity based on previous inventory work.

In the event of an archaeological resource discovery, work will cease in the immediate vicinity of the find, based on the direction of the archaeological monitor or the apparent location of cultural resources if no monitor is present. A qualified professional archaeologist who meets the Secretary of the Interior's Standards for Archaeology will assess the significance of the find and make recommendations for further evaluation and treatment as necessary. These steps will include evaluation for the CRHR and NRHP and necessary treatment to resolve significant effects if the resource is an historical resource or historic property. If the resource is an historical resource (eligible for the CRHR or NRHP), preservation in place will be considered as the first priority. If data recovery is the only feasible mitigation, LADWP will adopt a data recovery plan as required under CEQA Guidelines Section 15126.4(b)(3)(C) and NEPA Guidelines.

AR-D Inadvertent Discovery – LADWP will develop and implement procedures for their personnel and contractors in the event that historic properties are discovered or unanticipated effects on historic properties occur after during the Proposed Project's construction or operation. These procedures will be developed prior to the initiation of ground disturbance activities for the Proposed Project in accordance with 36 CFR § 800.13 (a)(2)(b) Post-review Discoveries.

Procedures will address such situations occurring once construction has commenced and throughout operation of the Proposed Project.

AR-E Comply with State and Federal Law for Human Remains – LADWP and BLM will ensure that any human remains encountered during the course of construction are treated in a respectful manner and consistent with applicable law. If human remains are discovered, construction will be immediately halted, the LADWP and/or BLM District Manager, law enforcement, and the coroner will be notified, and measures specified below will be followed. No construction activities will be allowed within 100 feet of the discovery.

If human remains are discovered on BLM-managed lands, BLM will contact the relevant county coroner to allow the coroner or medical examiner to determine if an investigation regarding the cause of death is required. If no investigation is required and the remains are of Native American origin, BLM will contact the NAHC to identify the appropriate Native American tribal representative to consult with about the disposition of the remains and any funerary objects.

Discoveries of human remains on private and state agency lands in California are governed by California Health and Safety Code Section 7050.5 and PRC Section 5097.98. Native American remains discovered on federal lands are governed by NAGPRA (25 U.S.C. Section 3001). If human remains are discovered on LADWP lands, LADWP will contact the relevant county coroner to allow the coroner or medical examiner to determine if an investigation regarding the cause of death is required. If no investigation is required and the remains are of Native American origin, LADWP will contact the NAHC to identify the appropriate Native American tribal representative to consult with about the disposition of the remains and any funerary objects.

If human remains are part of an archaeological site, LADWP or BLM (depending upon land ownership) will, in consultation with the Native American tribal representatives and other stakeholders, consider preservation in place as the first option, in the order of priority called for in CEQA Guidelines Section 15126.4(b)(3).

AR-F Phase III Data Recovery to Reduce Adverse Effects – For significant cultural resources that cannot be avoided during construction, mitigative data recovery may be necessary before construction. Planning for data recovery excavation to mitigate the loss of substantial and significant archaeological deposits will be based on the site's research potential beyond that realized during site recording and testing. The data gathered during the test investigation and the data recovery research design will guide the planning of full-scale excavation. Data recovery may range from detailed inspection and recordation of the resource, to supplemental historic research, to controlled excavation of construction impact zones. It is anticipated that archaeological data recovery would be the measure of last resort, to be undertaken only on significant resources where the resource cannot be avoided or impacts substantially decreased through other measures. The cultural resources specialist will consult with the BLM and LADWP regarding excavations for mitigation.

A professional archaeologist who meets the Secretary of the Interior's Standards for Archaeology will prepare a Data Recovery Plan for data recovery or additional mitigation of NRHP or CRHR eligible sites that cannot be avoided. The plan will include a site-specific research design and will direct any archaeological data recovery that is proposed. LADWP will submit the proposed research design and scope of work to BLM's archaeologist for review and consultation with SHPO and Native American groups as necessary and appropriate.

Data recovery methods, sample sizes, and procedures will be detailed in the Data Recovery Plan for SHPO review. If data recovery is necessary, sampling for data recovery excavations will follow standard statistical sampling methods, but sampling will be confined, as much as possible, to the direct impact area.

Data recovery on most sites would consist of surface collection and sample excavation. Only on very small sites would complete excavation or collection be considered an appropriate treatment. Other forms of mitigation may also include the collection of oral histories, historical documentation, including architectural and engineering documentation, preparation of a scholarly work, or some form of public awareness or interpretation.

LADWP will ensure that the authorized professional archaeologist performs the data recovery, preparation for analysis, preparation for curation, and delivery for curation of all cultural resource materials. LADWP will provide a copy of a curation agreement from a public repository that meets the requirements set out in 36 CFR 79 for the curation of cultural resources. In addition, LADWP will ensure that all cultural resource materials, maps, and data collected during data recovery and mitigation for the Proposed Project are delivered to the repository following the approval of the Cultural Resources Report. LADWP will pay any fees for curation required by the repository. BLM will retain ownership of artifacts collected from BLM-managed lands.

Historic Architectural Resources

HR-A Historical Resources Recordation – Impacts resulting from the demolition and realignment of the 0.5-mile-long segment of the LAA will be minimized through archival documentation of both as-built and as-existing condition. LADWP will ensure that documentation of the LAA segment proposed for demolition is completed in the form of a HAER Level II documentation that complies with the Secretary of the Interior's Standards for Architectural and Engineering Documentation. This documentation will include large-format photographic recordation, detailed historic narrative report, and compilation of historic research. The documentation will be completed by a qualified architectural historian or historian who meets the Secretary of the Interior's Standards for History and/or Architectural History. The original archival-quality documentation will be submitted to BLM and the National Park Service.

Consultation with the SHPO and the consulting parties will be conducted for the historic architectural resources to be documented. Recordation documents will follow the appropriate guidance for the recordation format and program selected.

Copies of the documentation will be provided to the consulting parties and offered to the appropriate local governments, historical societies and agencies, or other public repositories, such as libraries. The documentation will also be offered in printed and electronic form to any repository or organization to which the SHPO, the Authority, and the local agency with jurisdiction over the property, through consultation, may agree. The electronic copy of the documentation may also be placed on an agency or organization's website.

Paleontological Resources

Implementation of either Build Alternative would cumulatively affect the region's paleontological resources.

PR-A Retention of Principal Paleontologist and Paleontological Resources Survey – Before a paleontological monitoring and mitigation plan is composed for the Proposed Project, LADWP will retain a principal paleontologist to supervise a survey for paleontological resources of the footprints of NHD2 components, the Cactus Flats Road Realignment, the LAA Realignment, including the LAA Excavation Area, and diversion channel.

PR-B Conduct Paleontological Training – Before the start of ground-disturbing activities for the Proposed Project, a qualified principal paleontologist who meets the standards of the SVP (2010) shall develop a training program and printed material to be presented to construction personnel. The purpose of this training and accompanying materials will be to familiarize construction personnel with the significance and appearance of paleontological resources. A secondary goal of such training shall be to minimize unauthorized collection of paleontological materials or vandalism to know paleontological sites. These training sessions shall be conducted before beginning construction and will be repeated as needed as construction crews and supervisors change.

PR-C Flagging of Avoidance Areas – The preferred approach to preservation of paleontological resources within the Project APE is avoidance. The delineation and monitoring of Environmentally Sensitive Areas (ESAs) during construction will ensure that known sites are avoided where possible. Avoidance areas will be flagged or otherwise marked before construction activities by a principal paleontologist who meets the standards of the SVP (2010). For paleontological resources that are not to be collected, a 15 meter (50 foot) buffer around each location will be included in the ESA. Construction Managers will be informed that disclosure of paleontological resource site locations to non-project personnel is prohibited. The workforce training program (PR-B) will include information about ESAs and an advisory that it is illegal to knowingly disturb, vandalize, or loot a paleontological resource site. Flagging or other marking will be removed once construction is completed in an area.

PR-D Conduct Paleontological Monitoring in Areas of Sensitivity, Halt Work in the Event of a Discovery – Before ground-disturbing construction, LADWP shall include in the contract conditions of the construction contractor a stipulation to retain the services of a principal paleontologist meeting the standards of the SVP to compose a paleontological resources monitoring and mitigation plan identifying the steps to be taken in the event of the inadvertent discovery of paleontological resources.

The principal paleontologist shall ensure that a qualified paleontological monitor according to the criteria of SVP Guidelines (2010) will be present to observe construction in previously undisturbed sediments that are sensitive for paleontological resources. Sediments shall be tested frequently for the presence of microvertebrate fossils. Standard Samples, as defined by SVP Guidelines, shall be processed for paleontological resources as shown to be necessary for each paleontologically productive sedimentary unit. Monitors shall fill out daily monitoring forms and shall enter daily observations in a hard-bound notebook. Monitors shall photograph stratigraphy and paleontological resources as needed.

PR-E Recover Resources and Place in Repository – The principal paleontologist shall prepare, identify, report, and curate the significant paleontological resources recovered into a recognized permanent repository according to guidelines of the SVP.

3.5.7 Level of Significance After Mitigation

Implementation of BMPs and Mitigation Measures AR-A through AR-F and HR-A, under both NEPA and CEQA, would minimize the effects of Project-related impacts on cultural resources. Of the eight eligible sites, the Proposed Project would impact six historical resources, including the existing NHD as well as a 0.5-mile-long segment of the First LAA. A portion of the First LAA (CA-INY-4591H) would be demolished during construction of the Proposed Project under both Build Alternatives. In addition, NHD would be altered through construction of the notch and NHD modifications. The existing Dam and LAA are historical resources under CEQA and historic properties under Section 106. As the construction of the Proposed Project would result in their physical demolition or modification, the Build Alternatives would cause a direct substantial adverse change, which is a significant impact under CEQA. Given that the

portion of the LAA to be demolished is a very small portion of the LAA system and lacks important engineering features, and that the realigned LAA would be visually compatible with the existing LAA, implementation of Mitigation Measure HR-A would reduce impacts to less than significant. Impacts to the remaining four historical resources (CA-INY-2243/5703, CA-INY-6580, CA-INY-9345, and CA-INY-9347) would be reduced with the implementation of Mitigation Measure AR-F.

However, given that approximately 10% of NHD would be impacted by the notch, and that the historic integrity of this resource would be diminished, demolition of this historical resource cannot be mitigated to a less than significant impact under CEQA. Therefore, even with the implementation of all feasible mitigation measures, impacts to the existing NHD would be significant and unavoidable.

Impacts to previously unidentified paleontological resources would be reduced with the implementation of Mitigation Measures PR-A through PR-E. Therefore, impacts to paleontological resources would be less than significant after mitigation.

Impacts to previously unidentified human remains would be reduced with the implementation of Mitigation Measures AR-E. Therefore, impacts to human remains would be less than significant after mitigation.

Table 3.5-6 below summarizes the mitigation measures which apply to each cultural site, and the level of significance after mitigation.

TABLE 3.5-6
SITE-SPECIFIC MITIGATION MEASURES

Site	Component Type	NRHP Eligibility	Mitigation Measures	Significance After Mitigation
CA-INY-2243/5703	Multiple	Eligible	AR-F	Less than Significant
CA-INY-4591H (First LAA)	Historic	Eligible	HR-A	Less than Significant
CA-INY-6580	Multiple	Eligible	AR-F	Less than Significant
CA-INY-6931/7276	Multiple	Eligible	AR-F	Less than Significant
CA-INY-7816	Historic	Eligible	AR-F	Less than Significant
CA-INY-9345	Prehistoric	Eligible	AR-F	Less than Significant
CA-INY-9347	Prehistoric	Eligible	AR-F	Less than Significant
P-14-012887 (NHD and Historic Borrow Site)	Historic	Eligible	HR-A	Significant and Unavoidable
CA-INY-6577	Multiple	Evaluation in Progress	AR-F[a]	No Impact[b]
CA-INY-6578/6579	Multiple	Evaluation in Progress	AR-F[a]	No Impact[b]
CA-INY-6581	Prehistoric	Evaluation in Progress	AR-F[a]	Less than Significant
CA-INY-6582	Multiple	Evaluation in Progress	AR-F[a]	Less than Significant
CA-INY-7616	Multiple	Evaluation in Progress	AR-F[a]	No Impact[b]
RB-03	Prehistoric	Evaluation in Progress	AR-F[a]	Less than Significant
CA-INY-6932/7277	Multiple	Unevaluated	AR-F[a]	No Impact[b]
CA-INY-7279	Multiple	Unevaluated	AR-F[a]	No Impact[b]
DD-01	Prehistoric	Unevaluated	AR-F[a]	No Impact[b]
DD-02	Multiple	Unevaluated	AR-F[a]	No Impact[b]
DD-04	Multiple	Unevaluated	AR-F[a]	No Impact[b]
JA-01	Prehistoric	Unevaluated	AR-F[a]	No Impact[b]
RB-04	Prehistoric	Unevaluated	AR-F[a]	No Impact[b]

Note:
[a] AR-F shall be implemented if Phase II investigations do not reduce impacts to a level of less than significant.
[b] Resource within APE but not within Proposed Project footprint

3.5.8 NEPA Conclusions

No Project Alternative

Under the No Project Alternative, NHD, the existing LAA, and the existing Cactus Flats Road would remain in place. The Project Site would continue to function as it does today, and no excavation or other construction activities that may affect cultural resources would occur on the Project Site. NHD and the existing LAA would remain in place and would not be modified or demolished. Therefore, the No Project Alternative would not have a substantial adverse effect on cultural resources.

Build Alternatives

The Build Alternatives of the Proposed Project would have direct and indirect impacts and contribute toward cumulative impacts, as described in the analysis in Section 3.5.5. The Proposed Project would potentially impact cultural sites which are located within the Proposed Project footprint as well as haul routes, access roads, and staging areas. Implementation of the Mitigation Measures discussed in Section 3.5.6 would reduce adverse effects to these cultural resources, including impacts to the existing First LAA. Under Section 106 of the NRHP, due to the comparatively small length of the First LAA that would be removed, its lack of important engineering features, and the visual compatibility of the new replacement facility, the Proposed Project would not have a substantial adverse effect upon the existing LAA pursuant to 36 CFR §800.5(b). The characteristics that make the First LAA eligible for the NRHP would not be appreciably diminished, as the First LAA would continue to serve its historic function.

The Project would also involve the notching of NHD that would affect approximately 10% of the total width of the dam, install impermeable membrane over that portion of the north face of NHD that would within the confines of a storage basin that would border the north side of the NHD. The modifications to the structural materials and design of the dam would diminish the integrity of the resource's significant historic features that make it eligible for the NRHP and mitigation measures discussed in Section 3.5.7 would be implemented.

As demonstrated throughout this section and in detail in Appendix F1 and Appendix F2, the Proposed Project is consistent with the CMAs related to cultural and tribal resources under the DRECP LUPA. The Proposed Project is consistent with LUPA-CUL-2 because thorough field inventories have been conducted of and data gathering for the Project APE, as described in Section 3.5.3, Affected Environment. The Proposed Project is consistent with LUPA-CUL-3, because the APE was surveyed for places of traditional cultural and religious importance to federally recognized Tribes and BLM has communicated with the NAHC and potentially affected American Indian tribes. The Proposed Project is consistent with LUPA-CUL-4 through the avoidance of cultural resources through project design where feasible, and through the implementation of the mitigation measures described in Section 3.5.6. The Proposed Project is consistent with LUPA-CUL-5 through implementation of Mitigation Measures AR-F Phase III Data Recovery to Reduce Adverse Effects and HR-A Historical Resources Recordation. The Proposed Project is consistent with LUPA-CUL-6 through implementation of Mitigation Measure AR-A Conduct Archaeological Training. In addition, the Project Site would not be publicly accessible. The Proposed Project is consistent with LUPA-CUL-8 through the consultation efforts described in Section 3.5.4, Methodology for Analysis. The Proposed Project is consistent with LUPA-CUL-9 through the mitigation measures described in Section 3.4.5 Mitigation Measures of Chapter 3.4 Biological Resources.

The Proposed Project is consistent with LUPA-PALEO-1 as Appendix F2 contains paleontological sensitivity maps. The Proposed Project is consistent with LUPA-PALEO-2 through compliance with the PRPA, as discussed in Section 3.5.2, Regulatory Setting. The Proposed Project is consistent with LUPA-PALEO-3 through the implementation of Mitigation Measure PR-E Recover Resources and Place in Repository. Although the Proposed Project has been evaluated through an EA, rather than an Environmental Impact Statement (EIS), it meets the requirements of and is consistent with

LUPA-PALEO-4 through implementation of Mitigation Measures PR-A through PR-E as described in Section 3.5.6.

The Proposed Project is consistent with NLCS-CUL-1, ACEC-CUL-5, and ACEC-CUL-6 through implementation of Mitigation Measures AR-A through AR-F, HR-A, and PR-A through PR-E described in Section 3.5.6. Implementation of these mitigation measures would minimize the effects of Project-related impacts on cultural resources, and are consistent with best practices within the professional archaeological and historical resources communities. Such practices have proven to be effective in achieving the stewardship goals of Section 106 and are consistent with best practices within the professional archaeological and historical resources communities.

The Proposed Project is consistent with ACEC-CUL-1 and ACEC-CUL-2 because reviews of pertinent archaeological and environmental data and surveys of the APE have been conducted, as described in Section 3.5.3 Affected Environment. The Proposed Project is also consistent with ACEC-CUL-3 because specific natural and man-made threats to these cultural resources are evaluated above in Section 3.5.5, Environmental Consequences, as well as in Chapter 3.7, Geology and Soils, Chapter 3.15, Public Services and Recreation, and Chapter 3.16, Safety and Security. The Proposed Project is consistent with ACEC-CUL-4 through implementation of AR-C Conduct Archaeological Monitoring in Areas of Sensitivity; Halt Work in the Event of a Discovery.

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3.6 Environmental Justice

This section analyzes the potential impacts of the Proposed Project as it relates to environmental justice (EJ). The applicable laws, regulations, and methods used to determine the effects of the Proposed Project are described herein. The section describes the affected environment and analyzes the environmental consequences of the Proposed Project and, if applicable, provides mitigation measures.

3.6.1 Regulatory Setting

Federal

Age Discrimination Act of 1975

The Age Discrimination Act of 1975 (42 U.S.C. Sections 6101-6107) prohibits discrimination based on age in programs or activities that receive federal financial assistance.

Americans with Disabilities Act of 1990 (42 U.S.C. §§ 12101–12213)

The Americans with Disabilities Act of 1990 (ADA) prohibits discrimination based on disability and requires equal opportunity in employment, state and local government services, public accommodations, commercial facilities, and transportation.

Bureau of Land Management Land Use Planning Handbook Appendix D

The BLM *Land Use Planning Handbook (H-1601-1) Appendix D, Social Science Considerations in Land Use Planning Decisions,* contains EJ requirements. Appendix D states that BLM will determine if its proposed actions will adversely and disproportionally impact minority populations, low-income communities, and Tribes and consider aggregate, cumulative, and synergistic effects, including results of actions taken by other parties (BLM, 2005). While EJ analysis is specifically concerned with disproportionate effects on the three populations, the social and economic analysis produced in accordance with NEPA considers all potential social and economic effects, positive and negative, on any distinct group. Where disproportionately high adverse impacts are anticipated, BLM will work with local community groups/associations, governments, and Tribal leaders to determine if land disposition and/or acquisition policies affect real estate values and real income of minority and low income communities, and Tribes.

Council on Environmental Quality Environmental Justice Guidance (1997)

CEQ developed EJ Guidance under NEPA in December 1997. The CEQ guidance includes principles that agencies should consider in making the determination of whether an agency action raises EJ issues. If an agency action may potentially have an effect on minority populations, low-income populations, or Native American tribes, the document recommends that the agency develop a strategy for public engagement in the agency's determination of the scope of the NEPA analysis. The CEQ guidance states that the identification of a disproportionately high and adverse human health or environmental effect on a low-income or minority population does not preclude an agency from going forward or compel a finding that a proposed project is environmentally unacceptable. Instead, the identification of such effects is expected to encourage agency consideration of alternatives, mitigation measures, and preferences expressed by the affected community or population.

Executive Order 12898 (1994)

EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (February 11, 1994), also known as the Federal Environmental Justice Policy, requires federal agencies to address, to the greatest extent practicable and permitted by law, the potential disproportionately high adverse human health and environmental impacts of their programs, policies, and

activities on minority and low-income populations. Federal agency responsibilities under this EO also apply to Native American programs.

The Presidential Memorandum accompanying EO 12898 calls for specific actions to be directed in NEPA-related activities. They include:

- Analyzing environmental effects, including human health, economic, and social effects on minority populations and low-income populations when such analysis is required by NEPA.
- Ensuring that mitigation measures outlined or analyzed in EAs, environmental impact statements, and Records of Decision, whenever feasible, address disproportionately high and adverse environmental effects of proposed actions on minority populations and low-income populations.
- Providing opportunities for community input in the NEPA process, including identifying potential effects and mitigation measures in consultation with affected communities and improving accessibility to public meetings, official documents, and notices to affected communities.

Executive Order 13045 (1997)

EO 13045, Protection of Children from Environmental Health Risks and Safety Risks (April 21, 1997), requires federal agencies to minimize environmental health and safety risks to children, and to prioritize the identification and assessment of environmental health and safety risks that may have a disproportionate impact on children.

Executive Order 13166 (2000)

EO 13166, Improving Access to Services for Persons with Limited English Proficiency (August 11, 2000), requires each federal agency to ensure that recipients of federal financial assistance provide meaningful access to their programs and activities by Limited English Proficiency (LEP) applicants and beneficiaries. Meaningful access can include availability of vital documents, printed and internet-based information in one or more languages, depending on the location of the project, and translation services during public meetings.

Title VI of the Civil Rights Act of 1964

Title VI of the Civil Rights Act of 1964 (Public Law 88-352) prohibits discrimination on the basis of race, color, national origin, age, sex, or disability in programs and activities receiving federal financial assistance. Under Title VI, each federal agency is required to ensure that no person, on the grounds of race, color, or national origin, is excluded from participation in, denied the benefits of, or subjected to discrimination under any program or activity receiving federal financial assistance.

State

California Government Code 65040.12e

Government Code Section 65040.12e defines EJ as "the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies." It does not, however, require an analysis of impacts to these populations as part of the CEQA process.

Local

Inyo County General Plan

The 2013 Draft ICGP defines legacy communities as "communities in which the median household income is 80 percent or less than the statewide median household income, are geographically isolated, are inhabited, and have existed for at least 50 years" (Inyo County, 2013). Of the identified legacy communities in Inyo County, the legacy communities of Keeler and Lone Pine are located in the Project

vicinity. Policy LU-1.20, Disadvantaged Unincorporated Communities, states that the County will continue to encourage upgrades to water, wastewater, stormwater drainage, and structural fire protection in these communities, as appropriate.

3.6.2 Affected Environment

Environmental Justice Definitions

The typical communities of EJ concern evaluated for disproportionate adverse impacts are defined below.

Minority Communities

For this analysis, minority communities are defined as any readily identifiable groups of minority or low-income persons who live in geographic proximity to each other (and, if circumstances warrant, geographically dispersed/transient persons, such as migrant workers, students, or Native Americans) and could be affected by a project. These communities can be a recognized community, an informally recognized community, or a significant proportion of a geographic area. The term minority includes the following racial and ethnic groups:

- Black or African-American – a person having origins in any of the black racial groups of Africa.
- American Indian or Alaska Native – a person having origins in any of the original peoples of North and South America (including Central America) and who maintain tribal affiliation or community attachment.
- Native Hawaiian or Other Pacific Islander – a person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific islands. Includes people who indicate their race as "Native Hawaiian," "Guamanian or Chamorro," "Samoan," or "other Pacific Islander."
- Asian – a person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific islands. Includes "Asian Indian," "Chinese," "Filipino," "Korean," "Japanese," "Vietnamese," and "other Asian."
- Hispanic or Latino – considered an ethnicity, not a race. Hispanic or Latino persons may be of any race. All people who identify themselves as Hispanic or Latino are considered a minority, independent of their race. Those who fall into this category have indicated that they are "Mexican," "Puerto Rican" or "Cuban," along with those who indicate they are "other Spanish, Hispanic, or Latino."

Low-Income Populations

"Low-income" means a person whose median household income is at or below the U.S. Department of Health and Human Services (HHS) poverty guidelines. In 2014, for a four-person household, the federal HHS Poverty Guidelines threshold was $23,850 (HHS, 2014). Those households that fall below the applicable threshold based on household size meet the minimum eligibility requirements for income-based programs and are considered low-income. A low-income population means any readily identifiable group of low-income persons who live in geographic proximity to each other, and, if circumstances warrant, geographically transient persons (such as migrant workers, students, or Native Americans) who would be affected by a project.

Elderly Populations

For purposes of evaluating potential EJ impacts, elderly refers to individuals who are 65 years of age or older.

Limited English Proficiency

LEP is a term used to describe individuals who do not speak English as their primary language and who have a limited ability to read, write, speak, or understand English. Individuals who are considered to have LEP are individuals over five years old who have a limited ability to read, write, speak, or understand English. For purposes of this EJ analysis, LEP communities are considered to be those communities where five percent or more of the population have limited ability to read, write, speak, or understand English.

Disability

According to the ADA, as amended in 2008, the definition of disability with respect to an individual refers to:

- A physical or mental impairment that substantially limits one or more major life activities of such individual;
- A record of such an impairment; or
- Being regarded as having such an impairment whether or not the impairment limits or is perceived to limit a major life activity.

According to the ADA, the definition of impairment does not apply to impairments that are transitory and minor. A transitory impairment is an impairment with an actual or expected duration of six months or less. Disabled population data is not available at the Census Block Group level; therefore, Census Tract level data was used to identify disabled populations.

The following section details the geographies evaluated and their population characteristics, race and ethnicity, age, linguistic isolation, housing characteristics, and economic characteristics.

Geographies Evaluated

Inyo County

Inyo County is located in the east central part of California and an area of approximately 10,140 square miles. The County is bordered by Mono County to the north, Fresno and Tulare counties to the west, Kern and San Bernardino counties to the south, and the California and Nevada state borderline to the east. The majority of the County is federally owned (92 percent) and less than two percent is privately or County-owned. Topographical features include Death Valley National Park, Sierra Nevada Mountains, and Owens Valley, resulting in a generally sparsely populated County. Population centers are concentrated along US-395, the major highway which runs throughout the County. The Project Site is located in the southwest part of the County.

Community of Lone Pine

The community of Lone Pine is approximately 19 square miles, is located where SR-136 meets US-395, and is one of the larger population centers within the County. As shown in Figure 3.6-1, the community of Lone Pine is located approximately 27 miles northwest of the Project Site. The community of Lone Pine contains the Southern Inyo Healthcare District Hospital, and three schools, Lo-Inyo Elementary, Lone Pine High School, and Sierra Alternative Learning Academy.

Community of Olancha

The community of Olancha is approximately eight square miles and is located on the east and west sides of US-395, south of Owens Lake. The community of Olancha is located approximately one mile northwest of the Project Site (Figure 3.6-1).

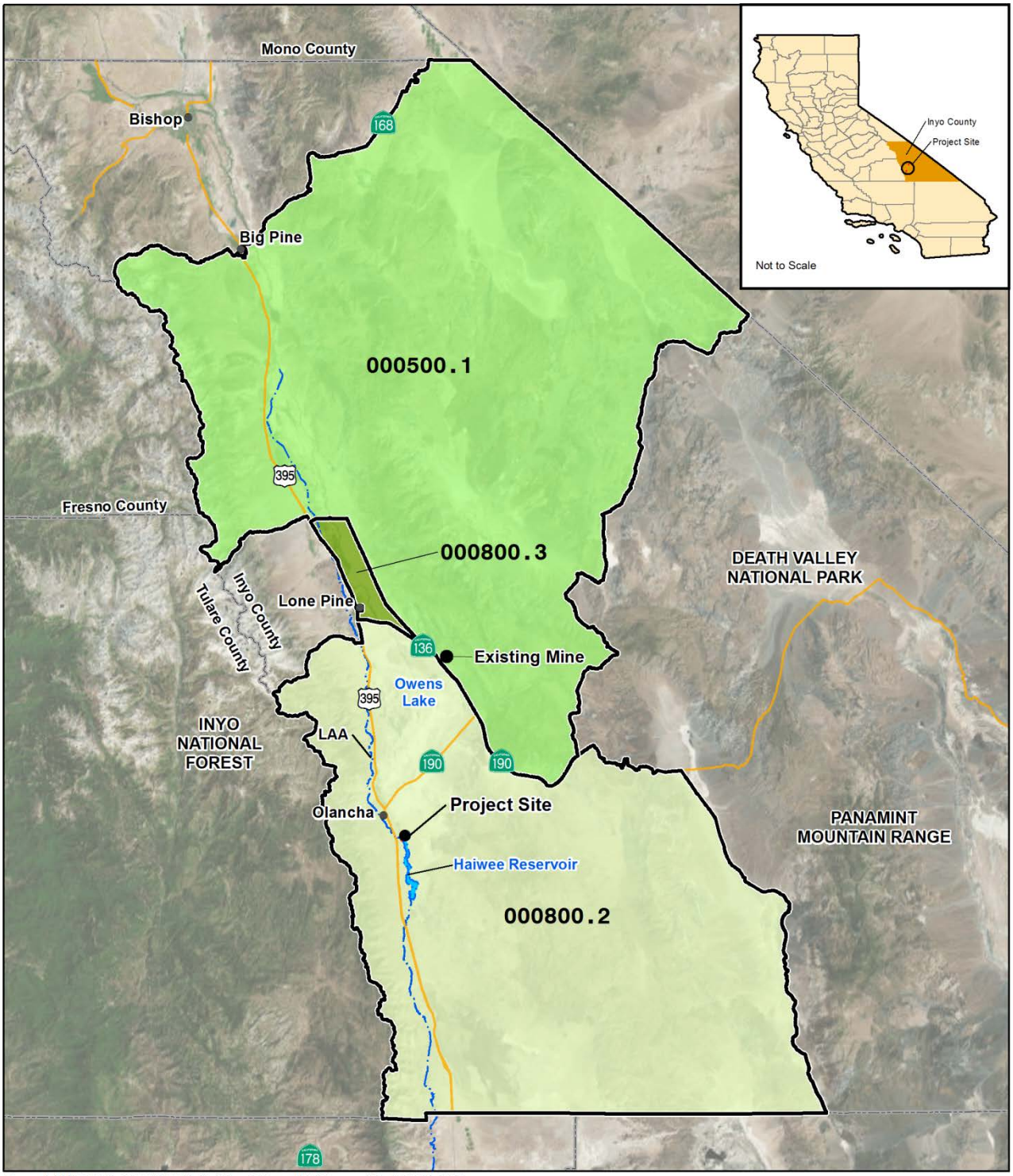


Figure 3.6-1
Census Block Groups within the Environmental Justice Study Area

Environmental Justice Study Area

The study area for evaluating EJ impacts (EJSA) includes the Census Block Groups that overlap a half-mile buffer area surrounding the sites of the Proposed Project components (Figure 3.6-1). The EJSA includes Block Groups 000500.1, 000800.2, and 000800.3.

Block Group 000500.1 includes the existing mine in Keeler and its haul route, and spans southward from the community of Big Pine to SR-190. This block group also spans across Inyo County, from the Inyo/Tulare County line to the California and Nevada state borderline on the east. Block Group 000500.1 is approximately 2,625 square miles in size, and includes the communities of Big Pine, Independence, Aberdeen, Blackrock, and Independence.

Block Group 000800.2 includes the Project Site and spans from just south of the community of Lone Pine to the Kern and San Bernardino County lines. The block group spans from the Inyo/Tulare County line on the west to the Panamint Mountain Range on the east, east of Death Valley National Park, and is approximately 1,937 square miles in size.

Block Group 000800.3 includes the community of Lone Pine, west of US-395. Although this block group does not include the Project Site or the existing mine in Keeler, haul routes are proposed to travel through Block Group 000800.3, and therefore, in close proximity to the population groups within the block group. Block Group 000800.3 is the smallest in size of the three block groups evaluated and contains approximately 42 square miles.

Population Characteristics

Lone Pine has a population of 2,017 and Olancha has a population of 287. Of the three block groups, Block Group 000800.3 has the largest population with a population of 1,074. Block Group 000500.1, which includes the existing mine in Keeler, has the next largest population with a population of 847. Block Group 000800.2, which contains the Project Site, has the smallest population of the three block groups evaluated with a population of 505. Population data for the County and EJSA is shown in Table 3.6-1.

TABLE 3.6-1
REGIONAL AND CENSUS BLOCK GROUP POPULATION

Geography	2014 Population (persons)
Inyo County	18,439
Community of Lone Pine	2,017
Community of Olancha	287
Block Group 000500.1	847
Block Group 000800.2	505
Block Group 000800.3	1,074

Source: U.S. Census Bureau, 2014b

Population Density

Inyo County has a population density of approximately 1.8 people per square mile with a population of 18,439 and an area of 10,181 square miles. Population densities within the communities of Lone Pine and Olancha are higher than the population densities of the generally rural County and block groups. Additionally the community of Lone Pine is a population center.

Population density within the EJSA varies substantially from 0.3 persons per square mile to 26 persons per square mile. Block Groups 000500.1 and 000800.2 each have population densities of 0.3 persons per square mile, which is less dense than the County at 1.8 persons per square mile. Block Group 000800.3

has a substantially higher population density (26 persons per square mile) than the County as it contains a portion of the community of Lone Pine. Population density data for both Inyo County and the EJSA is shown in Table 3.6-2.

TABLE 3.6-2
REGIONAL AND CENSUS BLOCK GROUP POPULATION DENSITY

Geography	2014 Population (persons)	Area (sq. mi.)	Population Density (persons/sq. mi.)
Inyo County	18,439	10,181	1.8
Community of Lone Pine	2,017	19	106
Community of Olancha	287	8	36
Block Group 000500.1	847	2,625	0.3
Block Group 000800.2	505	1,937	0.3
Block Group 000800.3	1,074	42	26

Note: sq.mi. = square miles
Source: U.S. Census Bureau, 2014b

Race and Ethnicity

The largest racial population groups in Inyo County are White and American Indian/Alaskan Native (65 percent and 11 percent, respectively). Approximately 20 percent of the Inyo County population is Hispanic. Minority populations make up approximately 35 percent of the Inyo County population. The community of Olancha contains the largest concentration of American Indian/Native Alaskan of the geographies evaluated and the largest percentage of minority population.

The percentage of minority population in the EJSA ranges from 29 percent to 54 percent. Block Group 000800.3 has the largest percentage of minority population of the three block groups at 54 percent, and Block Group 000500.1 has the smallest at 29 percent. Block Group 000800.2, which contains the Project Site, has a minority population percentage of 36 percent, just above the Inyo County average. Race and ethnicity data for Inyo County and the EJSA is shown in Table 3.6-3.

TABLE 3.6-3
REGIONAL AND BLOCK GROUP RACE AND ETHNICITY MIX

Geography	Percent of Total Geography Population								
	Population	White	Black/ African-American	Asian	American Indian/ Alaska Native	Native Hawaiian/ Pacific Islander	Other Race[a]	Hispanic (All Races)	Total Minority Population[b]
Inyo County	18,439	65%	1%	1%	11%	0%	2%	20%	35%
Community of Lone Pine	2,017	54%	1%	1%	8%	0%	1%	35%	**46%**
Community of Olancha	287	39%	3%	0%	13%	0%	25%	20%	**61%**
Block Group 000500.1	847	71%	1%	0%	10%	0%	5%	13%	29%
Block Group 000800.2	505	64%	1%	0%	8%	0%	14%	13%	**36%**
Block Group 000800.3	1,074	46%	2%	2%	1%	0%	1%	48%	**54%**

Note: **Bold** indicates substantial minority population, defined as when the percent of minority population within the Geography is greater than the Inyo County percentage (35%).
[a] = Includes Census racial groups "Some other race" and "Two or more races."
[b] = All groups except those identified as "White alone."
Source: U.S. Census Bureau, 2014c

Tribal Populations

As shown in Table 3.6-3 above, 11 percent of Inyo County's population is American Indian/Alaskan Native. Block Groups 000500.1, 000800.2, and 000800.3 all have less than 11 percent American Indian/Alaskan Native population (ten percent, eight percent, and one percent, respectively). In the communities of Lone Pine and Olancha, eight percent and 13 percent of the population is American Indian/Alaskan Native, respectively.

As discussed in Section 3.18, Tribal Cultural Resources, the Project area is located within the southwest portion of the vast homeland territory of the Western (Koso) Shoshone and near the southern boundary of the Northern (Owens Valley) Paiute. Ethnographic information places the boundary of these two groups at the community of Olancha, located approximately one mile northwest of the Project area, where a shared village existed, and where Paiute and Shoshone intermarried.

There are five Native American reservations in Inyo County, four of which are located within the EJSA (Bureau of Indian Affairs, 2013). The Bishop Paiute Reservation is located outside of the EJSA, approximately 81 miles northwest of the Project Site. Table 3.6-4 lists the reservations within the EJSA and the distance to the closest Proposed Project component, and Figure 3.6-2 shows the locations. Refer to Section 3.18, Tribal Cultural Resources, for an analysis of impacts of the Proposed Project on tribal cultural resources.

TABLE 3.6-4
REGIONAL NATIVE AMERICAN RESERVATIONS PROFILE

Reservation	Distance to Project Site/Existing Mine in Keeler
Big Pine Paiute	49 miles northwest of existing mine
Fort Independence	29 miles northwest of existing mine
Lone Pine Paiute-Shoshone	10 miles northwest of existing mine
Timbisha Shoshone	13 miles northeast of Project Site

Source: Bureau of Indian Affairs, 2013

Age

Within Inyo County, 20 percent of the population is age 65 and older. The <5, 5 to 19, and 20 to 64 age groups consist of six percent, 17 percent, and 57 percent of the population, respectively. Within the communities of Lone Pine and Olancha, 17 percent and 18 percent of the population are age 65 and older, respectively, which are both below the County average.

Age populations within the EJSA vary depending on the services and amenities available within each block group. Block Group 000800.2 has the largest population of age 65 and older at 35 percent. Block Group 000800.3, which includes the community of Lone Pine west of US-395, contains larger populations of people under the age of 5 and age 5 to 19 than the other two block groups. Age distribution for Inyo County and the EJSA is shown in Table 3.6-5.

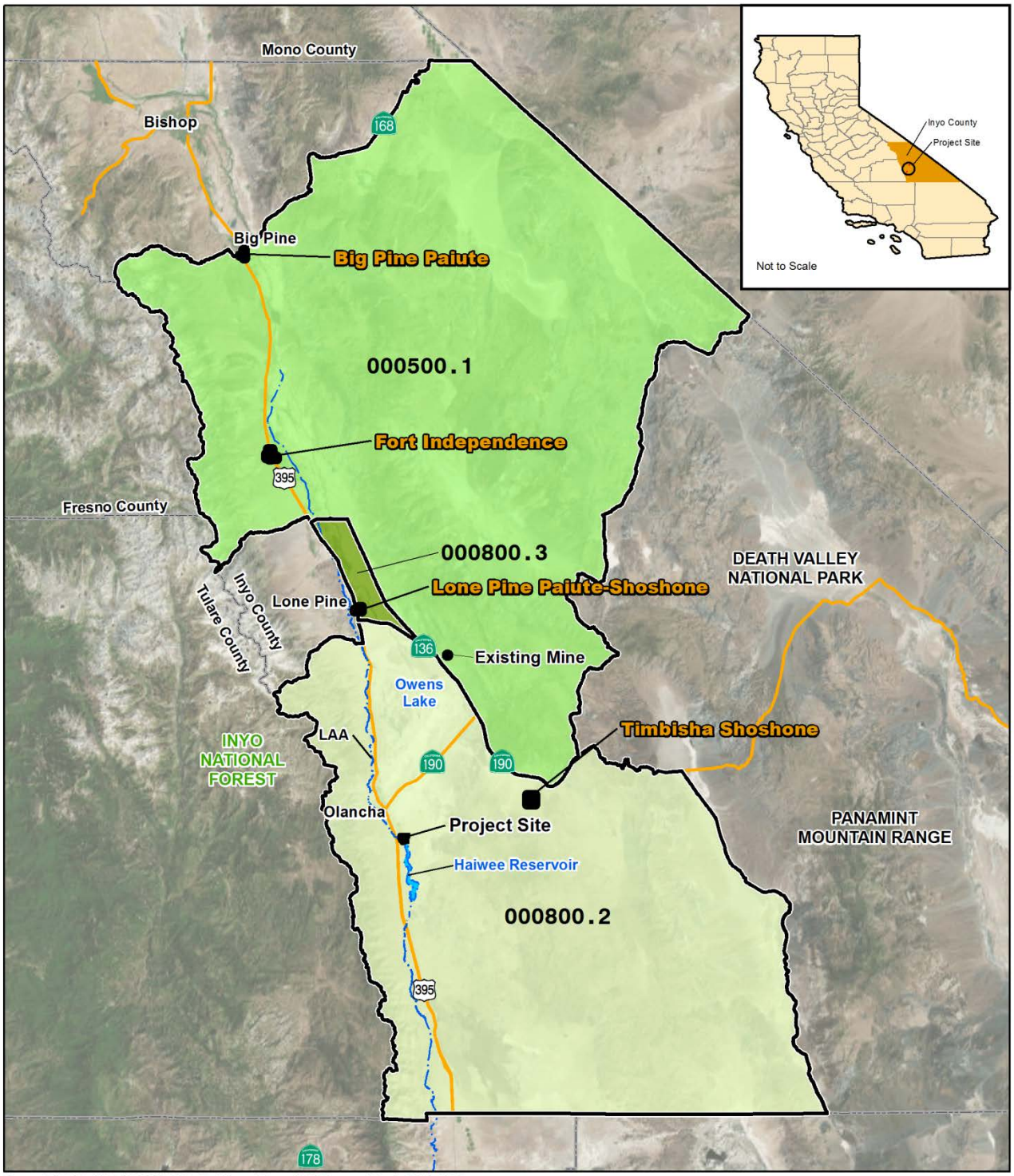


Figure 3.6-2
Native American Reservations within the Environmental Justice Study Area

TABLE 3.6-5
REGIONAL AND BLOCK GROUP AGE DISTRIBUTION

Geography	Total Population	Age Distribution (Percent of Total Population)			
		<5	5-19	20-64	65+
Inyo County	18,439	6%	17%	57%	20%
Community of Lone Pine	2,017	7%	25%	50%	17%
Community of Olancha	287	0%	29%	53%	18%
Block Group 000500.1	847	3%	8%	73%	16%
Block Group 000800.2	505	2%	16%	47%	**35%**
Block Group 000800.3	1,074	7%	31%	46%	16%

Note: **Bold** indicates a substantial child or elderly population, defined as when the percent of elderly population within the Geography is greater than the Inyo County percentage (20%).
Source: U.S. Census Bureau, 2014a

Linguistic Isolation

Within Inyo County, five percent of the County population age five and older is considered LEP. The communities of Lone Pine and Olancha both have LEP populations greater than the County threshold at nine percent and eight percent, respectively.

LEP populations within the EJSA range from two percent to six percent. Approximately two percent of Block Group 000500.1 is considered LEP. Block Groups 000800.2 and 000800.3 have LEP population percentages of five percent and six percent, respectively. LEP population data for both the County and the EJSA is shown in Table 3.6-6.

TABLE 3.6-6
REGIONAL AND BLOCK GROUP LEP POPULATIONS

Geography	Total Population (5+ Years)	Total LEP Population (5+ Years)	Percent of Total Population (5+ Years)
Inyo County	17,336	887	5%
Community of Lone Pine	1,872	159	**9%**
Community of Olancha	287	23	**8%**
Block Group 000500.1	824	19	2%
Block Group 000800.2	493	23	**5%**
Block Group 000800.3	1,001	62	**6%**

Note: **Bold** indicates an LEP population percentage of the total Geography population which is equal to or greater than the Inyo County threshold (5%).
Source: U.S. Census Bureau, 2014d

Disabled Population

According to the 2010 to 2014 American Community Survey (ACS) 5-Year Estimates, approximately 14 percent of Census Tract 5, which contains the existing mine in Keeler, civilian noninstitutionalized population and 13 percent of Census Tract 8, which contains the Project Site, civilian noninstitutionalized population have a disability (hearing, vision, cognitive, ambulatory, or self-care disability) (U.S. Census

Bureau, 2014l).[5] Approximately 14 percent of the County population has a disability (U.S. Census Bureau, 2014).

The U.S. Census does not include data related to developmental disabilities. Developmental disabilities are defined as a continuing disability that originates before an individual is 18 years old, and includes mental retardation, cerebral palsy, epilepsy, and autism. The Kern Regional Center, located in Bakersfield, California, provides services to individuals with developmental disabilities that live in Inyo County. It is estimated that approximately 74 people with developmental disabilities that live in Inyo County currently receive services from this center (Inyo County, 2014).

Within Inyo County, approximately 78 people live in some type of residential care facility. Approximately 50 of those people reside with a parent or guardian and 24 reside on their own. One person resides in a care facility labeled as "other" and three people reside in a skilled nurse facility (Inyo County, 2014). It is assumed that the population of disabled individuals is dispersed throughout the County. The closest skilled nursing facility to the Project Site is the Southern Inyo Healthcare District Hospital located in the community of Lone Pine, approximately 27 miles northwest of the Project Site.

Socioeconomic Characteristics

The percentage of the population living below the poverty line and the median household income for both the County and the EJSA are shown in Table 3.6-7. Within Inyo County, the percentage of the population living below the poverty line is 14 percent, which includes the percentage of people whose median household income is at or below the federal HHS Poverty Guidelines threshold of $23,850. The percentage of the population living below the poverty line in the community of Lone Pine is greater than the County threshold at 19 percent. The percentage of population living below the poverty line for the community of Olancha was not available. Within the EJSA, the percentage of the population living below the poverty line ranges from 10 percent to 21 percent. Block Groups 000500.1 and 000800.2 are below the County average of 14 percent at 13 percent and 10 percent, respectively. The percentage of the population living below the poverty line in Block Group 000800.3 is 21 percent, seven percent higher than the percentage of the population living below the poverty line within the County as a whole.

TABLE 3.6-7
SOCIOECONOMIC CHARACTERISTICS

Geography	Percentage of Population Living Below Poverty	Median Household Income (2014 $)
Inyo County	14%	$45,625
Community of Lone Pine	**19%**	$31,838
Community of Olancha	--	$41,974
Block Group 000500.1	13%	$57,857
Block Group 000800.2	10%	$39,615
Block Group 000800.3	**21%**	$31,129

Note: **Bold** indicates substantial percentage of population living below poverty, defined as when the percent of population living below poverty is greater than the Inyo County percentage (14%).
Sources: U.S. Census Bureau, 2014j

The median household income in the County was approximately $45,625 in 2014. All other geographies evaluated, except for Block Group 000500.1, have median household incomes less than the County average.

[5] U.S. Census data related to disabled populations was not available by block groups. Census tract data for Census Tract 5, which contains the existing mine in Keeler, and Census Tract 8, which contains the Project Site, are used to evaluate disabled populations.

Mobile Home Parks

In addition to the low-income block groups identified above in Table 3.6-7, existing mobile home parks were identified in the EJSA. For purposes of EJ analyses, mobile home parks are assumed to contain populations that are considered low-income. The mobile homes in the vicinity of the Project Site are shown in Table 3.6-8 and Figure 3.6-3.

TABLE 3.6-8
MOBILE HOME PARKS IN THE VICINITY OF THE PROPOSED PROJECT

Name	Address	Community	Distance to Project Site
Olancha RV and Mobile Home Park	2351 S US-395	Olancha	1.3 miles northwest
West Lake Mobile Home Park	233 W Lake Road	Cartago	7 miles northwest
Foothill Mobile Home Park	2541 S US-395	Lone Pine	21 miles northwest
Mountain View Mobile Home Park	1939 S Main Street	Lone Pine	24 miles northwest
ALS Mobile Home Park	1202 S Main Street	Lone Pine	25 miles northwest
Whitman Mobile Home Park	230 S Lone Pine Avenue	Lone Pine	26 miles northwest
Homers Mobile Home Park	238 W Post Street	Lone Pine	26 miles northwest
Double L Mobile Home Park	873 Bush Street	Lone Pine	26 miles northwest
Sierra View Mobile Home Park	532 N Main Street	Lone Pine	26 miles northwest
N/A	15 Gill Station Coso Road	Little Lake	13 miles south

Sources: Google Maps, 2015; Inyo County Map Viewer, 2015.

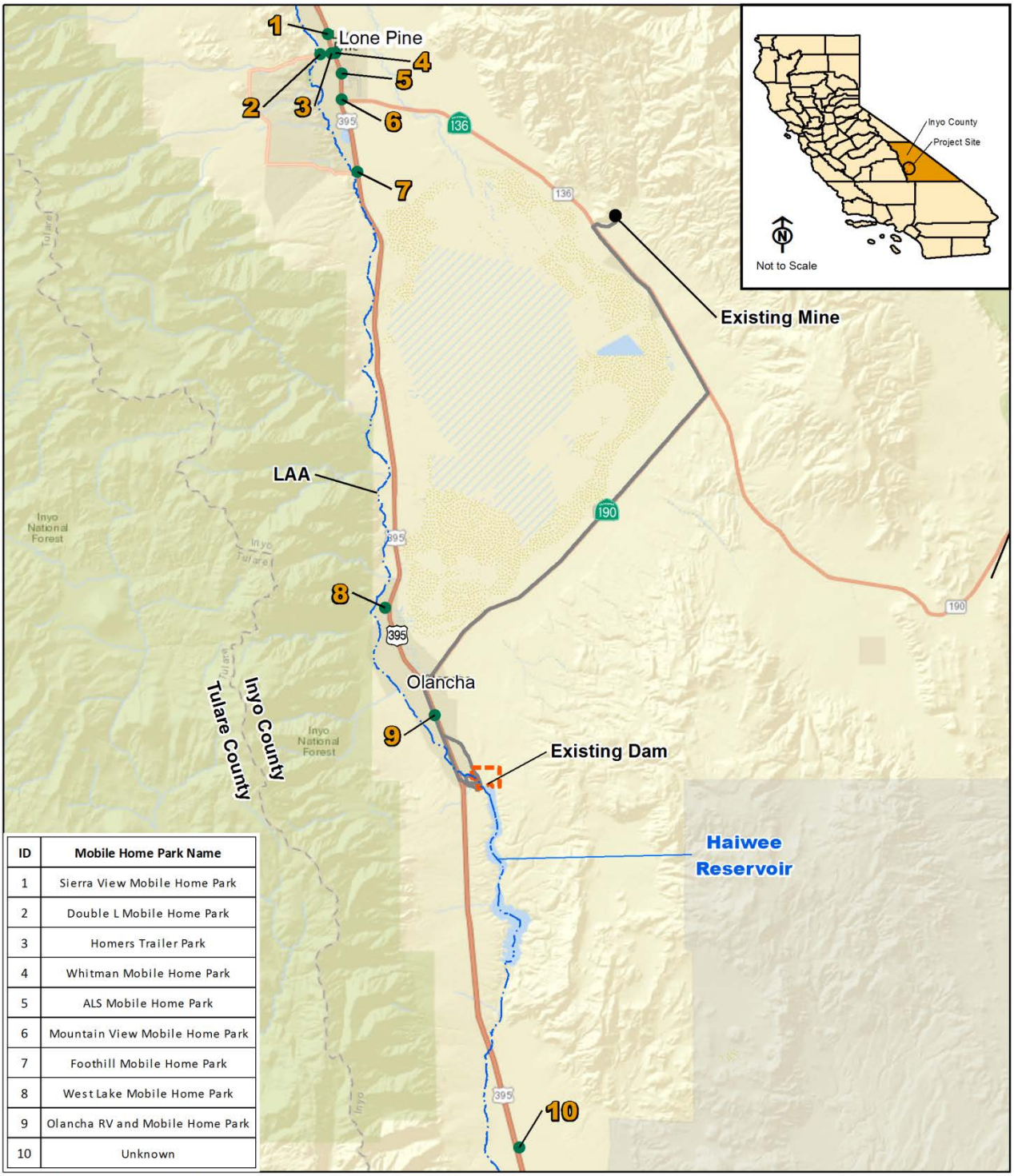
Children's Health

Schools, libraries, daycare centers, and parks are locations where a higher percentage of children are expected to gather. As discussed in Section 3.15, Public Services and Recreation, the closest schools, libraries, daycare centers, and parks to the Project Site are located approximately 27 miles northwest of the Project Site in the community of Lone Pine. Refer to Section 3.15 for additional details related to schools, libraries, daycare centers, and parks.

Communities of Environmental Justice Concern

Minority Communities

As previously discussed, 35 percent of the Inyo County population belongs to a minority group (U.S. Census Bureau, 2014c). For the purposes of this EJ analysis, a geography would be identified as a community of EJ concern if the geography's percentage of minority population is greater than the County minority population. Table 3.6-9 shows that the community of Olancha and Block Group 000800.2 would be considered geographies of EJ concern with respect to minority populations. Although the community of Lone Pine and Block Group 000800.3 have minority population percentages greater than the County minority population, they are not considered geographies of concern due their distances from the Project Site and associated haul routes.



ID	Mobile Home Park Name
1	Sierra View Mobile Home Park
2	Double L Mobile Home Park
3	Homers Trailer Park
4	Whitman Mobile Home Park
5	ALS Mobile Home Park
6	Mountain View Mobile Home Park
7	Foothill Mobile Home Park
8	West Lake Mobile Home Park
9	Olancha RV and Mobile Home Park
10	Unknown

Source: LADWP, 2017; AECOM, 2017; Esri Maps & Data, 2017; Prepared By: AECOM, 2017.

Figure 3.6-3

Mobile Home Parks within 15 Miles of Project Elements

TABLE 3.6-9
GEOGRAPHIES WITH MINORITY POPULATIONS
AT OR HIGHER THAN COUNTY AVERAGE

Geography	Percent Minority	Largest Minority Population Group (%)
Inyo County Threshold	35%	Hispanic (20%)
Community of Olancha	**61%**	Other race (25%)
Block Group 000800.2	**36%**	Other race (14%)

Notes: **Bold** indicates substantial minority population, defined as when the percent of minority population within the Geography is greater than the Inyo County percentage (35%).
"Other race" includes Census racial groups of "Some other race" and "Two or more races."
Source: U.S. Census Bureau, 2014c

Tribal Populations

As previously discussed and shown in Figure 3.6-2, four Native American reservations are located within the EJSA. In addition, as discussed in Section 3.18, Tribal Cultural Resources, the Project area is within the southwest portion of the vast homeland territory of the Shoshone and Northern Paiute. Therefore, the Shoshone and Northern Paiute territories as a whole are considered communities of EJ concern due to historical resources that have the potential to be located within the Project Site.

Elderly Populations

As previously discussed, 20 percent of the Inyo County population is considered elderly, which is defined as anyone 65 years or older (U.S. Census Bureau, 2014a). Sixteen percent of the population in Block Groups 000500.1 and 000800.3 are considered elderly, lower than the County percentage. The communities of Lone Pine and Olancha also have lower population percentages than the County at 17 percent and 18 percent, respectively. Block Group 000800.2 has a higher percentage of elderly population (35 percent) compared to Inyo County. For the purposes of this EJ analysis, Block Group 000800.2 would be considered an area of EJ concern with respect to elderly populations, as shown in Table 3.6-10.

TABLE 3.6-10
GEOGRAPHIES WITH ELDERLY POPULATIONS
AT OR HIGHER THAN COUNTY AVERAGE

Geography	Percent Elderly of Total Population (65 years and older)
Inyo County Threshold	20%
Block Group 000800.2	**35%**

Notes: **Bold** indicates substantial elderly population, defined as when the percent of elderly population within the Geography is greater than the Inyo County percentage (20%).
Source: U.S. Census Bureau, 2014a.

LEP Populations

As previously discussed, five percent of the Inyo County population is considered LEP, or linguistically isolated (U.S. Census Bureau, 2014d). Block Group 000800.3 has a higher percentage of LEP population than the County and Block Group 000800.2 has the same percentage of LEP population as the County. The communities of Lone Pine and Olancha also have higher percentages of LEP population than the County at nine percent and eight percent, respectively. For the purposes of this EJ analysis, the community of Olancha and Block Group 000800.2 would be considered communities of EJ concern with respect to LEP populations, as shown in Table 3.6-11. Although the community of Lone Pine and Block Group 000800.3 have population percentages are greater than the County population, they are not considered geographies of concern due to their distances from the Project Site and associated haul routes.

TABLE 3.6-11
GEOGRAPHIES WITH LEP CHARACTERISTICS
AT OR HIGHER THAN COUNTY AVERAGE

Geography	Total LEP Percentage
Inyo County Threshold	5%
Community of Olancha	**8%**
Block Group 000800.2	**5%**

Notes: LEP = Limited English Proficiency
Bold indicates substantial LEP population, defined as when the percent of LEP population within the Geography is greater than the Inyo County percentage (5%).
Source: U.S. Census Bureau, 2014d

Disabled Population

As previously discussed, there are no facilities that serve disabled populations located in close proximity to the Project Site or associated haul routes. Therefore, individuals with disabilities are not considered a community of EJ concern for the proposed actions, and this population group is not evaluated further within this section.

Low-Income Populations

As previously discussed, 14 percent of the total Inyo County population were considered a part of the low-income population, which is defined as anyone living below the federal poverty level (as determined by HHS). Of the geographies studied, the community of Lone Pine and Block Group 000800.3 have higher percentages of population living below poverty than the County (19 percent and 21 percent, respectively). However, as discussed above, these two geographies are located the furthest from the Project Site and haul routes, and are not considered geographies of concern. As neither the community of Olancha, nor Block Group 000800.2 have percentages of population below poverty level which are lower than the County average, no block group or community has been identified as a community of EJ concern.

Mobile Home Parks

As previously discussed and shown in Figure 3.6-3, there are ten mobile home parks located within the EJSA. The closest mobile home park is the Olancha RV and Mobile Home Park located at 2351 S US-395 in the community of Olancha, approximately 1.3 miles northwest of the Project Site. The Olancha RV and Mobile Home Park is located along the haul route to the existing mine in Keeler. The other mobile home parks are not located in close proximity to the Proposed Project components and are not located along any haul routes. Therefore, the Olancha RV and Mobile Home Park is considered a community of EJ concern in this analysis.

Children's Health

As discussed in Section 3.15, Public Services and Recreation, the closest schools, libraries, daycare centers, and parks to the Project Site are located approximately 27 miles northwest of the Project Site in the community of Lone Pine. Thus, there would be no areas where children are concentrated close to the Project Site or haul routes. Therefore, there would be no activity associated with the Proposed Project that would disproportionately affect children's health.

Summary of Environmental Justice Communities of Concern

Table 3.6-12 shows the communities of EJ concern that will be evaluated for direct EJ impacts. Block Group 000500.1 does not exceed any of the thresholds and is not further analyzed in this section. In addition, as discussed above, the community of Lone Pine and Block Group 000800.3 are not considered geographies of concern due to their distance from the Project Site and associated haul routes. Therefore,

the community of Olancha and Block Group 000800.2 are considered geographies of EJ concern in this analysis. The Shoshone and Paiute territories and the Olancha RV and Mobile Home Park are also considered communities of EJ concern.

TABLE 3.6-12
SUMMARY OF IDENTIFIED ENVIRONMENTAL JUSTICE COMMUNITIES OF CONCERN

Environmental Justice Communities	Environmental Justice Characteristic			
	Minority	Low-Income	Elderly	LEP
Community of Olancha	✓			✓
Block Group 000800.2	✓		✓	✓
Olancha RV and Mobile Home Park		✓		
Shoshone and Paiute territories	✓	✓	✓	✓

Source: Preceding table sources

3.6.3 Methodology

The EJSA was determined in accordance with the CEQ and BLM Guidance for identifying affected communities, which requires consideration of the nature of likely Project impacts and identification of a corresponding unit of geographic analysis. The EJSA corresponds to the cumulative study areas associated with the specific environmental issues analyzed in this Draft EIR/EA, which may differ depending on the environmental issue. Inyo County is considered to be the reference community, which is generally defined to determine whether a disproportionately high and adverse human health or environmental impact would be borne by communities of EJ concern when compared to the reference community's general population. The analysis in this section uses the US Census Bureau, 2014 ACS data and other known historical use information to evaluate potential impacts related to EJ.

The methodology for conducting the impact analysis for EJ included reviewing impact conclusions for each of the resource sections (Sections 3.1 to 3.5 and 3.7 to 3.19) in Chapter 3 of this Draft EIR/EA. An evaluation was then conducted to determine if any identified impacts would result in disproportionately high and adverse impacts on minority populations or low-income populations in the area of analysis.

CEQA Significance Criteria

EJ is not a required topic of analysis under CEQA. Therefore, there are no thresholds for EJ impacts under CEQA.

NEPA Requirements

Pursuant to CEQ's Environmental Justice Guidance under NEPA and Executive Order 12898, the following threshold would be applied to identify whether the Proposed Project would have the potential to result in a disproportionately adverse effect related to EJ:

- Would the project result in environmental impacts that are disproportionately high and adverse on minority and low-income populations?

Additionally, as required by BLM *Land Use Planning Handbook (H-1601-1) Appendix D, Social Science Considerations in Land Use Planning Decisions*, Proposed Project impacts are evaluated to determine whether social and/or economic effects, positive and negative, would occur in relation to any distinct group, including Tribes. BLM does not provide a determination on the level of significance in a NEPA document. Rather, BLM leaves that determination to the FONSI which will be completed prior to the signing of a Decision Record. As such, the analysis in this section only identifies the potential for the Proposed Project to result in EJ effects, and excludes NEPA determination.

3.6.4 Environmental Consequences

EJ-1: *Would the project result in environmental impacts that are disproportionately high and adverse on minority and low in-income populations?*

No Project Alternative

Under the No Project Alternative, the existing Dam, Cactus Flats Road, and LAA would remain on the Project Site as under existing conditions. Typical maintenance activities would occur as they do under existing conditions. No construction activities would occur and no excavation for or purchase of earthen material would be required. If the existing Dam were to fail, flow would travel northward and the area north of NHD towards Owens Lake would be inundated. The mapped inundation area includes part of the existing Cactus Flats Road, which runs upstream of NHD. Parts of the community of Olancha, located east of US-395, would be inundated in approximately 40 minutes. There is also a section of SR-190 located south of the Owens Lake that would be inundated approximately 50 minutes after the failure of NHD. As several communities of EJ concern are located in the areas that could be inundated during an MCE event, the No Project Alternative would disproportionately affect these communities and result in a potentially significant impact.

Build Alternatives - Construction

Environmental topics that would result in no impacts or less than significant impacts during construction and operation of the Proposed Project, per the CEQA analysis in this Draft EIR/EA, would not have the potential to result in disproportionately adverse effects on communities of EJ concern. Therefore, these environmental topics are not further discussed within this EJ analysis.

Table 3.6-13 identifies the resource topics analyzed in this Draft EIR/EA that were determined in the CEQA analysis to have less than significant impacts with implementation of mitigation measures or significant and unavoidable impacts during construction of the Proposed Project. Therefore, these resource topics are analyzed with respect to the identified EJ communities of concern. All impacts analyzed here would occur during construction. All impacts related to operation of the Proposed Project would be less than significant or would not occur, and therefore, are not further discussed within this EJ analysis.

Air Quality

As described in Section 3.3, Air Quality, the Build Alternatives have the potential to impact air quality through the violation of air quality standards by emitting VOC, NO_x, CO, PM10, and PM2.5 above the CEQA thresholds of significance during construction. Under CEQA, Mitigation Measures AQ-A through AQ-D would reduce VOC emissions under the CDSM alternative, and VOC and PM2.5 emissions under the Excavate and Recompact Alternative to less than significant levels; however, this impact would remain significant and unavoidable for the Build Alternatives, even with implementation of mitigation measures. The Proposed Project also has the potential to have a cumulatively considerable contribution to the region's air quality during construction, and to expose sensitive receptors to substantial pollutant concentrations. Under CEQA, the sensitive receptors for which exposure to substantial pollutant concentrations would be significant before mitigation are the reservoir keeper's residence located on-site and two other receptors near the Project Site. Mitigation Measures AQ-A through AQ-D would be implemented under each of the Build Alternatives and would include use of Tier 4 construction equipment, activity management, minimization of engine idling, and proper construction equipment maintenance.

TABLE 3.6-13
ENVIRONMENTAL TOPICS WITH SIGNIFICANT IMPACTS UNDER CEQA

Section	Environmental Topic	Subtopic/Thresholds	Level of Significance
3.2	Air Quality	AQ-2 Violation of Standards	Significant and Unavoidable
		AQ-3 Cumulative Net Increase	
		AQ-4 Exposure to Substantial Pollutant Concentrations	
3.4	Biological Resources	BIO-1 Endangered or Threatened Species	LTS with Mitigation
		BIO-2 Candidate, Sensitive, or Special-Status Habitats	
		BIO-3 Riparian Habitat	
		BIO-4 Protected Wetlands	
		BIO-5 Wildlife Movement	
		BIO-6 Local Policies and Ordinances	
3.5	Cultural Resources	CR-1 Historic/Archaeological Resources	Significant and Unavoidable
		CR-2 Paleontological Resources	LTS with Mitigation
		CR-3 Human Remains	
3.13	Noise and Vibration	NV-1 Construction Equipment Noise	Significant and Unavoidable
3.17	Transportation and Traffic	TT-2 Design Hazards	LTS with Mitigation
3.18	Tribal Cultural Resources	TCR-1 Change in the significance of a listed or eligible for listing tribal cultural resource	LTS with Mitigation
		TCR-2 Change in the significance of a tribal cultural resource determined by the lead agency	

Note: LTS = Less than significant

Air quality is a regional resource, and impacts related to violation of air quality standards as well as cumulative contribution to the region's air quality would affect all communities within the region. As a result, while air quality impacts would impact communities of EJ concern, these impacts would be comparable to other communities which are not identified as communities of EJ concern.

The exposure of sensitive receptors to substantial pollutant concentrations would be a localized impact for the Build Alternatives, affecting three receptors near the Project Site after implementation of mitigation measures. The Project Site is within Block Group 000800.2 and the Shoshone and Paiute territories, which are identified as communities of EJ concern. In addition, the community of Olancha and Olancha RV and Mobile Home Park are located in the vicinity of the Project Site. However, as described above, significant impacts under CEQA would be isolated to one receptor within the Project Site with the two other receptors located off-site. While sensitive receptors are located within EJ communities of concern (Block Group 000800.2 and the Shoshone and Paiute territories), impacts would be isolated to one residence (the reservoir keeper's residence) within such communities for the Build Alternatives. Therefore, communities of EJ concern would not be disproportionately affected.

Biological Resources

As described in Section 3.4, the Proposed Project has the potential to impact endangered or threatened species; candidate, sensitive, or special-status habitats; protected wetlands; riparian habitat; and wildlife movement. Mitigation measures would be implemented to reduce these impacts, and all significant impacts would be reduced to a level of less than significant after mitigation. Mitigation Measures BIO-A through BIO-O would be implemented and would include biological monitoring, worker education training, pre-construction surveys, an American badger/kit fox exclusion plan, topsoil salvage, revegetation, avoidance during construction, timing ground-clearing activities, avoiding wildlife entrapment, and other construction-related minimization measures.

Biological resources are not typically owned by individuals or communities, but rather are a public resource, with all groups having equal access, as well as limitations on access, to these resources. There is

potential that certain communities of EJ concern, the Shoshone and Paiute tribes, may have traditional ties to these resources. Section 3.18, Tribal Cultural Resources, does not identify any particular biological resources which would potentially be impacted by the Proposed Project as having a unique value to the Shoshone or Paiute tribes. In addition, all impacts to biological resources would be mitigated to less than significant, and mitigation measures would not disproportionately impact any particular community.

Cultural Resources

As described in Section 3.5, Cultural Resources, both Build Alternatives would have potentially significant impacts to historic, archaeological, and paleontological resources and human remains. Mitigation Measures AR-A through AR-F would be implemented for archaeological resources and would include archaeological training, flagging avoidance areas, an archaeological monitoring plan, on-site monitoring, actions for inadvertent discovery, procedures for any human remains encountered, and Phase III data recovery. Mitigation Measure HR-A would be implemented for the existing LAA, and would document the structure prior to demolition. Mitigation Measures PR-A through PR-E would be implemented for paleontological resources and would include retention of a principal paleontologist, surveying for resources, construction personnel training, a paleontological monitoring plan, sediment testing, on-site monitoring, and proper resource recovery.

Paleontological resources are not typically owned by individuals or communities, but rather are a public resource, with all groups having equal access, as well as limitations on access, to these resources. It is not anticipated that any communities of EJ concern would have traditional or important ties to paleontological resources. In addition, any impacts to paleontological resources would be less than significant with mitigation. Therefore, no adverse effects related to paleontological resources, which would disproportionately affect communities of EJ concern, would occur.

While mitigation would reduce impacts to most archaeological and historic sites to less than significant, impacts to NHD would remain significant after mitigation as the notch would diminish the historic integrity of NHD. While construction of NHD2 would change the visual character of the Project Site (refer to Section 3.1), the Project Site would retain its general character as a utility land use, with an operating dam and reservoir, and thus would provide similar local benefits. The historic value and contemporary function of NHD to be modified are closely tied to LADWP and to the City of Los Angeles. While a significant impact to this resource would occur, it would not disproportionately impact any communities of EJ concern. Therefore, no adverse effects related to archaeological and historic resources, which would disproportionately affect communities of EJ concern, would occur.

No known human remains, whether within or outside of a known cemetery, are within the Project Site. It is possible that remains, should previously undiscovered human remains be uncovered during construction, would have Native American origin and thereby, be related to the Shoshone and Paiute communities of EJ concern. However, any human remains discovered during construction would be respectfully handled in full compliance with laws, regulations, and Mitigation Measure AR-E. Mitigation Measure AR-E includes specific language regarding human remains of Native American origin, including consultation with the appropriate Native American tribal representative. As a result, any impacts to human remains would be less than significant. Therefore, no substantially adverse effects related to human remains, which would disproportionately affect communities of EJ concern, would occur.

Noise and Vibration

As described in Section 3.13, Noise and Vibration, both Build Alternatives have the potential to cause impacts related to noise generated by construction equipment. Noise would increase at the reservoir keeper's residence and Butterworth Ranch by more than 5dB L_{eq} during construction of all the Proposed Project components. Mitigation Measures NV-A through NV-F would be implemented and would include equipment mufflers, use of rubber-tired equipment rather than tracked equipment, minimization of engine

idling, location of construction staging areas away from sensitive uses, and appointment of a public liaison.

Significant noise impacts would affect only two sensitive receptors under CEQA, including the reservoir keeper's residence and Butterworth Ranch. The reservoir keeper's residence is on LADWP land and is owned by LADWP. Neither of these residences is located within the community of Olancha or Olancha RV and Mobile Home Park. These two residences represent a very small portion of the population of Block Group 000800.2 and the population within the Shoshone and Paiute territories. While impacts to these residences would be significant and unavoidable under CEQA, they would not be disproportionate impacts to any communities of EJ concern.

Transportation and Traffic

As described in Section 3.17, Transportation and Traffic, both Build Alternatives have the potential to cause impacts related to creating a hazard on US-395. Southbound trucks turning left from US-395 onto Cactus Flats Road could create a potentially hazardous speed differential due to the lack of a dedicated left turn lane on US-395. Mitigation Measure TT-A would be implemented and would include the provision of a flagman placed at the intersection of US-395 and Cactus Flats Road to control the flow of existing trucks as well as to control traffic to allow southbound trucks to make left turns onto Cactus Flats Road.

The intersection where the potential hazard would occur is located within identified communities of EJ concern (the community of Olancha, Block Group 000800.2, and the Shoshone and Paiute territories). However, US-395 is a federal highway, operated and maintained by Caltrans for use by the general public. The implementation of Mitigation Measure TT-A would reduce the hazard created by speed differentials for all users of the intersection, and would not disproportionately impact communities of EJ concern.

Tribal Cultural Resources

As described in Section 3.18, Tribal Cultural Resources, both Build Alternatives have the potential to significant impact unidentified tribal cultural resources. Should any tribal cultural resources be identified during ongoing consultation efforts, BLM would consult with appropriate tribal representatives and incorporate a monitoring program for the Proposed Project. Mitigation Measures TCR-A, TCR-B, TCR-C, and TCR-D would be implemented for tribal cultural resources, and would include flagging of avoidance areas, conducting tribal monitoring in areas of sensitivity, halting work in the event of a discovery, utilizing a Native American Monitor, Phase III data recovery, and implementing procedures for LADWP personnel and their contractors in the event that tribal cultural resources are discovered. Ongoing Native American consultation and implementation of Mitigation Measures TCR-A, TCR-B, TCR-C, and TCR-D would minimize or avoid impacts to tribal cultural resources and would not disproportionately impact communities of EJ concern.

Build Alternatives - Operation

Operation of the Proposed Project would be similar to existing conditions. The Project components would function similarly to the existing components at the Project Site, and would not disproportionately impact communities of EJ concern.

3.6.5 Mitigation Measures

As previously discussed, EJ is not a required topic of analysis under CEQA. As such, there are no CEQA thresholds of significance to which mitigation measures specific to EJ impacts could be applied to reduce impacts. Refer to Sections 3.3, 3.4, 3.5, 3.13, and 3.17 for a discussion of mitigation for each resource area having the potential to affect communities of EJ concern.

3.6.6 Residual Impacts After Mitigation

Refer to Sections 3.3, 3.4, 3.5, 3.13, and 3.17 for a discussion of residual impacts after mitigation for each resource area having the potential to affect communities of EJ concern.

3.6.7 NEPA Conclusions

Refer to Section 3.6.4 for the NEPA analysis of EJ for the No Project Alternative and the Build Alternatives. In addition, the DRECP LUPA does not contain any CMAs related to EJ (refer to Appendix B of this Draft EIR/EA).

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3.7 Geology and Soils

This section analyzes the potential impacts of the Proposed Project as it relates to geology and soils. The applicable laws, regulations, and methods used to determine the effects of the Proposed Project are described herein. The section describes the affected environment and analyzes the environmental consequences of the Proposed Project and, if applicable, provides mitigation measures. The analysis in the section is based on the Geology, Soils, and Seismicity Technical Report in Appendix H of this Draft EIR/EA. The existing mine in Keeler is a commercial mining operation owned by Federal and White Aggregate Incorporated, from which LADWP might purchase crushed rock for the Project; therefore, it is not considered part of the environmental analysis as it relates to geology and soils.

3.7.1 Regulatory Setting

Federal

There are no specific federal regulations that directly apply to geologic and seismic hazards. However, there are a few federal regulations that have incidental relevance to some of the geologic considerations considered under CEQA, such as erosion of soils.

Clean Water Act

The CWA provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters. Under the provisions of the CWA, the NPDES permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. One source of water pollution addressed by the CWA and the NPDES is sediment derived from grading activities. Thus, control of sediment discharge required by the CWA has a beneficial consequence related to the potential for soil erosion.

Bureau of Land Management

Grading and development on federal lands would be governed by BLM. A primary source of specifications for development actions on federal land, including clearing and grubbing, grading, excavation and fill, storm drainage, use of explosives, and seeding and soil remediation, is contained in the BLM 9100 Series Manuals.

Desert Renewable Energy Conservation Plan Land Use Plan Amendment of 2016

The DRECP LUPA, approved by BLM in September 2016, is an amendment to the CDCA Plan. The key objectives of the DRECP are to streamline renewable energy development and to provide for long-term conservation and management of special-status species, vegetation, and other resources, including soil resources, within the DRECP Plan area. The DRECP identifies Development Focus Areas and Variance Process Lands where renewable energy development is more streamlined, as well as conservation areas, and several other land uses. The DRECP LUPA implements its objectives through specific CMAs. Some CMAs apply across the entirety of the DRECP Plan area, while others apply only to specific land uses. The DRECP LUPA contains several CMAs related to geology and soils, including: LUPA-BIO-15, which requires construction and installation techniques that minimize soil erosion and deposition; LUPA-SW-5, which guides exceptions to specific soil stipulations; LUPA-SW-6, which requires up-to-date standard industry construction practices to prevent toxic substances from leaching into the soil; LUPA-SW-7, which requires a BLM-approved emergency response plan for toxic substances spills over soils; LUPA-SW-8, which requires a site specific plan for wind erodibility and hydrology soil Class D; LUPA-SW-10, which is related to sensitive soil areas; LUPA-SW-11, which requires avoidance of side casting during road construction where feasible; and ACEC-CUL-3, which assesses the threats to cultural resources in ACECs posed by erosion.

CMAs not applicable to geology and soils include: LUPA-SW-9 and LUPA-BIO-DUNE-1. The consistency of the Proposed Project with the DRECP CMAs is provided in Appendix B of this Draft EIR/EA.

State

Alquist-Priolo Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act regulates development projects near active faults. To be zoned under the Alquist-Priolo Earthquake Fault Zoning Act, a fault must be considered active or both sufficiently active and well defined. The California Geological Survey defines an "active fault" as one that has had surface displacement within Holocene time (approximately the last 11,000 years); a "sufficiently active fault" as one that has evidence of Holocene surface displacement along one or more of its segments or branches; and a "well defined" fault as one where its trace must be clearly detectable as a physical feature at or just below the ground surface. The Alquist-Priolo Earthquake Fault Zoning Act requires that cities and counties regulate certain development projects (structures for human occupancy) within the zones, which includes withholding permits until geologic investigations demonstrate that development sites are not threatened by future surface displacement.

Regulations Pertaining to the Supervision of Dams and Reservoirs

The DSOD, under the California Department of Water Resources, oversees the construction, enlargement, alteration, repair, maintenance, operation, and removal of dams and reservoirs for the protection of life and property. DSOD engineers and engineering geologists review and approve plans and specifications for the design of dams and oversee their construction to ensure compliance with the approved plans and specifications. In addition, DSOD engineers inspect operating dams on a yearly schedule to ensure they are performing and being maintained in a safe manner. Construction of any new dam or reservoir, or the enlargement of any dam or reservoir, shall not begin until the owner has applied for and obtained the DSOD written approval of plans and specifications.

The DSOD defines three general categories of fault activity: active fault, inactive fault, and conditionally active fault. An active fault is a fault that has ruptured within the last 35,000 years, and an inactive fault is a fault that is overlain by unbroken (unfaulted) geologic materials that are older than 35,000 years. A conditionally active fault is a fault that is known to be of Quaternary age and/or have attributes consistent with the current tectonic regime, but its displacement history during the last 35,000 years is not sufficiently known to determine the fault to be either active or inactive. The DSOD treats a conditionally active fault the same as an active fault for dam design or evaluation with the understanding that additional investigation could change the designation. The DSOD allows construction of dams across active and conditionally active faults if appropriate design mitigation is provided. The design mitigation requires paleo-seismic investigations that provide the accurate location and character of the fault zone.

Stormwater Pollution Prevention Plan (SWPPP)

The State of California administers the NPDES permit program authorized by the CWA. Under the provisions of the CWA, the NPDES permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. Dischargers whose projects disturb one or more acres of soil, or whose projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the Construction General Permit for discharges of stormwater associated with construction activity. Construction activities subject to this permit include clearing, grading, and disturbances to the ground, such as stockpiling or excavation.

The Construction General Permit requires the development and implementation of a SWPPP by the QSD and QSP, respectively. The SWPPP must list BMPs to protect and reduce/minimize stormwater runoff. BMPs in the SWPPP would typically include measures such as limiting construction activities to the

minimum area necessary, using silt fences or straw bales to filter sediment in runoff, re-vegetating bare soil areas before onset of the wet season, and locating covered material storage areas away from drainage channels. Additionally, the SWPPP must contain a sediment monitoring plan if the site discharges directly to a water body. The SWPPP is discussed in greater detail in Section 3.10, Hydrology, Water Quality, and Groundwater.

Local

Inyo County General Plan

The Public Safety and Conservation/Open Space elements of the ICGP contain policies related to geology and soils. The Public Safety Element seeks to minimize exposure to hazards and damage to structures from geologic and seismic conditions, and includes several policies that restrict development of structures in seismic hazard zones, support seismic upgrades to older buildings, provide disaster education materials, and require new developments to provide engineering design strategies to comply with appropriate building standards. The Conservation/Open Space Element contains policies to maintain the productivity of soils within the County, and to protect public health and safety through recognizing the development limitations of soil types. The goals and policies within the ICGP that relate to geology and soils are listed in Table 3.7-1.

TABLE 3.7-1
INYO COUNTY GENERAL PLAN GOALS AND POLICIES

Goal	Policy
Public Safety	
GEO-1. Minimize exposure to hazards and structural damage from geologic and seismic conditions.	GEO-1.1. Development Hazard Constraints: Restrict development of inhabitable structures in areas that are subject to severe geologic hazards, such as Alquist-Priolo Special Studies Zone, liquefaction zones, landslide areas, and seismically induced unstable soils.
Conservation/Open Space	
S-2. Recognize development limitations of soil types in review and approval of future development projects to protect public health and safety.	S-2.1 Soil Erosion: Minimize soil erosion from wind and water related to new development.

Note: GEO=Geologic and Seismic Hazards; S=Soils
Source: Inyo County General Plan, Website: http://inyoplanning.org/general_plan/goals/ch8.pdf, http://inyoplanning.org/general_plan/goals/ch9.pdf, accessed February 4, 2016.

3.7.2 Affected Environment

Geologic Setting

The Project Site is located in the southern end of Owens Valley. Owens Valley is an approximately 100 mile long fault-bounded valley bordered by the Sierra Nevada mountain range on the west and the White Mountains, Inyo Mountains, and the Coso Range on the east.

NHR occupies a paleo-drainage that previously flowed from Owens Lake on the north to Rose Valley on the south, which is informally named the "Haiwee Valley." Haiwee Valley is bounded on the west by late Pleistocene and Holocene alluvial fans that emanate from the Sierra Nevada mountain range; and on the east by Mio-Pliocene age volcanic and sedimentary rocks of the Coso Formation, and early to mid-Pleistocene alluvial fan deposits that flank the northwestern edge of the Coso Range. The Coso Formation is a weakly lithified, sedimentary, and volcaniclastic rock formation. The Haiwee Valley is filled with Holocene alluvial fan and channel deposits that originate from both the Sierra Nevada and the Coso Range.

Faulting and Seismicity

Faults

Fault rupture is ground deformation that occurs along the surface trace of the fault during an earthquake. Fault rupture is considered a potential hazard along faults that have ruptured the surface of the earth during the relatively recent geologic past (active faults). The presumption is that future fault rupture will occur where previous recent displacement (during the latest Quaternary) has taken place. If a fault is considered to be inactive, meaning that it has not had activity with the recent geologic past, it is presumed to not pose a fault rupture hazard.

As shown in Figure 3.7-1, the major active fault zones that are located within Owens Valley in the vicinity of the Project area include the Owens Valley Fault Zone (OVFZ) and the Sierra Nevada Frontal Fault Zone (SNFFZ). The primary strands of the OVFZ extend across Owens Lake into the northern Coso Range approximately three miles east of NHR. The SNFFZ extends along the eastern Sierra Nevada Range front, south and west of the Project area to the northern Owens Valley, and is located approximately one mile west of NHR.

The Project Site is not located within an Alquist-Priolo Earthquake Fault Zone. Additionally, as part of the Proposed Project, comprehensive investigations of local faulting were performed at and near NHD to assess fault rupture hazard for the existing Dam and NHD2. The principal conclusion of the investigations was that no active faults cut through the NHD2 footprint.

A fault that is informally named "Fault A" is the nearest active fault (as defined by the DSOD criterion of having at least one event in the last 35,000 years) to the NHD2 footprint. Fault A is located approximately 900 feet to the east of NHD2 and possibly crosses the Cactus Flats Road Realignment footprint somewhere near its southern end.[6] Although not an Alquist-Priolo Earthquake Fault zoned fault, Fault A is known to have experienced surface displacement within the latest Pleistocene to Holocene time and, therefore, is regarded as an active fault by DSOD.

Seismicity

The Project Site is located in a region that is well known for its many active faults and historic seismicity. As the Project area is located in a seismically active region, it is anticipated that the Project Site may be subjected to future seismic shaking and strong ground motion resulting from seismic activity along local, regional, and more distant active faults.

In accordance with the standard of practice and DSOD guidelines, a Deterministic Seismic Hazard Analysis was performed to estimate the maximum ground motions that could occur at the Project Site. This analysis is used to determine the design and construction criteria necessary to construct structures which would be seismically durable and withstand the most powerful expected groundshaking.

Soils and Geohazards

Soils

Late Pleistocene age alluvial fan deposits encompass the western abutment of NHD2. Older alluvial fan deposits form the eastern abutment of NHD2. Holocene age alluvial fan deposits would comprise the new Dam foundation between the east and west abutments and the basin that would be situated between NHD and NHD2. The alluvial deposits in the Haiwee Valley are up to approximately 100 feet thick and are underlain by Coso Formation bedrock. Beneath NHD2 and the basin, the Coso Formation is mainly interbedded sandstone and siltstone.

[6] The location of Fault A is approximate based on subsurface geophysical data. Its exact location at the surface is unknown, so it is possible that it crosses Cactus Flats Road further to the east, outside the limits of the Cactus Flats Road Realignment.

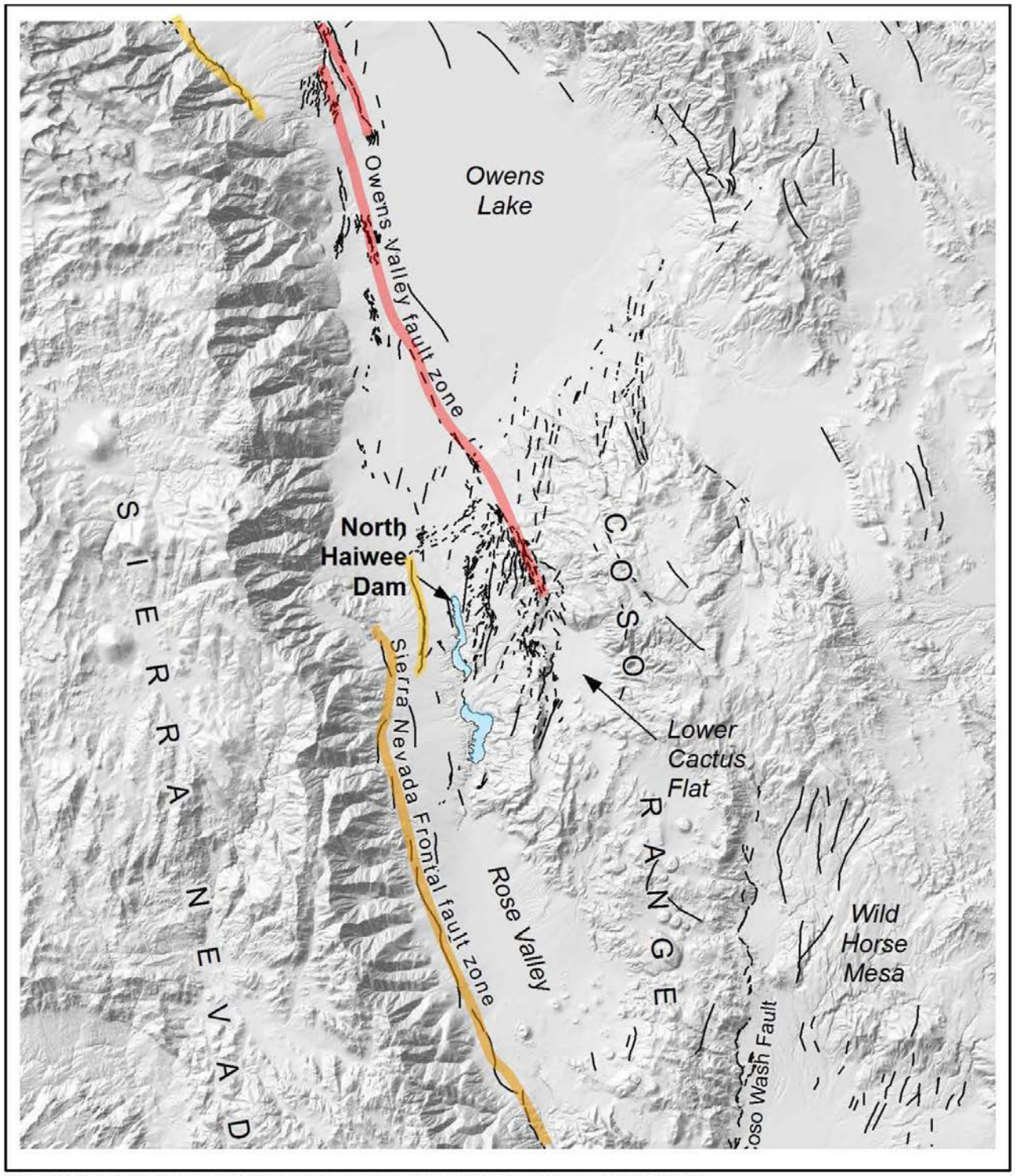

Figure 3.7-1

Regional Physiographic and Fault Map

The northwestern portion of the Cactus Flats Road Realignment that crosses the Haiwee Valley is underlain by Holocene age alluvial fan deposits that are typically poorly consolidated silty sands. The portion of the Cactus Flats Road Realignment that climbs the west facing slope from the valley floor to the higher hillside east of the Project Site is underlain by older (early Pleistocene) alluvial fan deposits that are typically moderately well consolidated silty sands with occasional beds and discontinuous lenses of gravel and cobbles. The portion of the Cactus Flats Road Realignment that crosses the higher terrace surface on the eastern portion of the Project Site is underlain by late Pleistocene fluvial terrace deposits overlain by colluvium and late Pleistocene to Holocene age alluvial channel and fan deposits. All of these deposits are typically poorly to moderately well consolidated sands and gravels.

Late Pleistocene age alluvial fan deposits underlie the LAA Realignment, including the LAA Excavation Area, the diversion structure, and the west berm. These deposits mostly consist of well consolidated silty sand with some gravel and cobble beds. No desert pavement or hydric soils exist in the LAA Realignment, including the LAA Excavation Area.

Geohazards

Liquefaction

Liquefaction is a phenomenon that causes water-saturated, cohesionless granular materials to change into a fluid-like state when subjected to powerful shaking associated with strong earthquakes. Liquefaction causes soils to lose their strength and ability to support a load. The susceptibility of a site to undergo liquefaction is a function of the type of sedimentary deposit, the density of cohesionless sediment, and the depth to groundwater. Saturated, cohesionless, granular sediment situated at depths less than 30 feet are generally regarded as the most susceptible to liquefaction.

The depth to groundwater in the Haiwee Valley is relatively shallow and fluctuates depending on seasonal rainfall and the water level in NHR. Groundwater levels beneath the Haiwee Valley and at the proposed NHD2 range from 13 to 16 feet below ground surface (bgs) when measured in July 2006 and 19 to 37 bgs when measured in November and December 2013. Groundwater levels at the proposed Cactus Flats Road Realignment are anticipated to range from 30 to 50 feet bgs. Levels at the LAA Realignment, including the LAA Excavation Area, are anticipated to range from 50 to 75 bgs.

Soils susceptible to liquefaction are present at the Project Site in proposed locations of NHD2 and at the western portion of the Cactus Flats Road Realignment that is located in the Haiwee Valley.

Landslides and Slope Failure

Landsliding, or slope failure, is the downward and outward movement of slope-forming materials, comprised of natural rock, soils, artificial fills, or a combination of materials. Landslides are often triggered by earthquakes, or a rise in groundwater brought about by precipitation. Landsliding usually occurs in areas of moderate to high topographic relief, weak soil or rock strength, and high groundwater. Areas that are the most susceptible to landslides are steep slopes in areas with poorly cemented or highly fractured rocks, areas underlain by loose and weak soils, and areas on or adjacent to existing landslides. According to the United States Geological Survey Landslide Susceptibility map, the Project area, located in the Owens Valley, has moderate susceptibility to landslides. However, the Project Site has a relatively flat landscape. Thus, much of the Project Site landscape is not prone to landsliding. Although the abutments of NHD2 would be constructed along modest slopes, the abutments are underlain by dense alluvial deposits that are not prone to landsliding.

Seismically-Induced Settlement

Seismically induced settlement can occur when relatively soft or loose soils are being compacted during earthquake shaking. Subsurface conditions susceptible to this hazard include loose or porous, poorly cemented soils near the ground surface. Differential seismic settlement occurs when seismic shaking causes one type of soil or rock to settle more than another type. It may also occur within a soil deposit

with relatively homogeneous properties if the seismic shaking is uneven, which could occur because of variable geometry, for example, and variable depth of the soil deposit. Differential seismic settlement is most likely to occur in areas that transition between rock formations and more recently deposited alluvial soils or artificial fill. As there is the potential for liquefaction to occur at the Project Site, the Project Site is also at risk of seismically-induced settlement.

Lateral Spread

Lateral spread of the ground surface during an earthquake usually takes place along weak shear zones that have formed within a liquefiable soil layer. Lateral spread has generally been observed to take place in the direction of a free-face (i.e., retaining wall, slope, channel, etc.) but has also been observed to a lesser extent on ground surfaces with gentle slopes. For sites located in proximity to a free-face, the amount of lateral ground displacement is correlated with the distance of the site from the free-face. Other factors such as earthquake magnitude, distance from the causative fault, thickness of the liquefiable layers, and the fines content and particle sizes of the liquefiable layers also influence the amount of lateral ground displacement. Liquefaction-induced lateral spreading involves the movement of soil blocks on gently sloping ground over shallow liquefied soil deposits. As there is the potential for liquefaction to occur at the Project Site, the Project Site is also at risk of liquefaction-induced lateral spreading.

Subsidence

The extraction of petroleum from sedimentary source rocks or the extraction of water from underground alluvial aquifers can cause the permanent collapse of the pore space previously occupied by the removed fluid. The compaction of subsurface sediment caused by fluid withdrawal can cause subsidence of the ground surface overlying the pumped aquifer. If the volume of water or petroleum removed is substantial, the amount of resulting subsidence may cause damage to nearby engineered structures. Ground subsidence has not been recognized as a problem in the vicinity of the Project Site. There are no petroleum fluids in the Haiwee Valley area, and the area is not currently being pumped for groundwater.

Expansive Soils

Expansive soils are fine-grained soils that can undergo a substantial increase in volume by an increase in water content and a substantial decrease in volume by a decrease in water content. Expansive soils can cause uplift pressures which, over a long period of time, can lead to structural damage to facilities and structures that are constructed directly on expansive soils. Expansive soils are not considered a significant concern at the Project Site as the alluvial deposits are typically granular (sandy and gravely) soils that have a low expansion potential.

Erosion

Erosion is the wearing away of the land surface by wind or water. Erosion can be intensified by land clearing practices. Water caused erosion is most prevalent in unconsolidated alluvium and surficial soils on steep slopes that are prone to down-cutting, sheet-flow, and slumping during heavy precipitation events.

Wind Erodibility Groups 1 and 2, as defined by the U.S. Department of Agriculture Natural Resource Conservation Area, are common throughout the Project Site. As previously discussed, the various components of the Proposed Project are generally located in areas of relatively flat terrain. Gentle gradients exist across most of the Project Site, with moderately sloping terrain on the west, in the vicinity of the LAA Excavation Area, and on the east, in the vicinity of the Cactus Flats Road Realignment.

3.7.3 Methodology for Analysis

CEQA Significance Criteria

The thresholds of significance for the Proposed Project's potential to impact geology and soils are based on Appendix G of the State CEQA Guidelines. The following thresholds of significance were analyzed:

- Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
    - 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.
    - Strong seismic ground shaking?
    - Seismic-related ground failure, including liquefaction?
    - Landslides?
- Would the project result in substantial soil erosion or the loss of topsoil?
- 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 on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?
- Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

The Appendix G significance criterion noted below was scoped out of the analysis for further consideration in the Initial Study (Appendix A), and is discussed in Chapter 4, Other CEQA and NEPA Considerations, of this Draft EIR/EA.

- 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?

NEPA Requirements

The term "significantly" as used in NEPA requires considerations of both context and intensity (40 CFR 1508.27). Therefore, thresholds serve as a benchmark for determining if a project action would result in a significant adverse environmental impact when evaluated against the baseline. The environmental effects analysis of the Proposed Project related to geology and soils includes an assessment of the context and intensity of the impacts as defined in the NEPA implementing regulations, 40 CFR 1508.27, and the BLM *NEPA Handbook H-1790-1* of 2008. The BLM *NEPA Handbook H-1790-1* requires that duration be considered and that both short- and long-term adverse and beneficial impacts be disclosed in the NEPA analysis. The effects analysis must demonstrate that BLM took a "hard look" at the impacts of the action. The level of detail must be sufficient to support reasoned conclusions by comparing the amount and the degree of change (impact) caused by the proposed action and alternatives (BLM *NEPA Handbook H-1790-1*, 2008, p. 55). Additionally, direct, indirect, residual, and cumulative impacts for the Proposed Project must be considered.

This section also presents a qualitative environmental assessment of the Proposed Project with regard to geology and soils and DSOD requirements. Based on the geologic conditions in the Project vicinity, the NEPA impact assessment considered the following:

- Intensity of an impact, i.e., the extent or magnitude to which a particular impact would affect a given area.
- Duration of an impact, i.e., temporary or permanent.
- Probability of an impact, i.e., the relative likelihood of large seismic events would be low within the anticipated time frame of construction activities, and would increase over the operational life of a facility.

The potential effects of the Proposed Project Alternatives are analyzed in relation to the baseline conditions (described in Section 3.7.2). Potential direct and indirect impacts of each Build Alternative

(the CDSM Alternative and the Excavate and Recompact Alternative) are analyzed below and discussed in relation to both construction and operation. BLM does not provide a determination on the level of significance in a NEPA document. Rather, BLM leaves that determination to the FONSI which will be completed prior to the signing of a Decision Record. Any characterization of significance in this Draft EIR/EA applies only to the CEQA determination.

Applicable Best Management Practices

- The construction contractor would develop and implement an erosion control plan and SWPPP for construction activities. Erosion control and grading plans may include, but would not be limited to, the following listed below:

  - Minimizing the extent of disturbed areas and duration of exposure;
  - Stabilizing and protecting disturbed areas;
  - Keeping runoff velocities low; and
  - Retaining sediment within the construction area.

  Construction erosion control BMPs may include the following:

  - Temporary desilting basins
  - Silt fences
  - Gravel bag barriers
  - Temporary soil stabilization with mattresses and mulching
  - Temporary drainage inlet protection
  - Diversion dikes and interceptor swales

  The Proposed Project would comply with the State and Regional Water Quality Control Board's NPDES permit requirements.

- The Proposed Project would implement Rule 401 and 431 as dust and particulate matter control measures required by the GBUAPCD.

3.7.4 Environmental Consequences

GEO-1: *Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, strong seismic ground shaking, seismic-related ground failure, including liquefaction, or landslides?*

No Project Alternative

Under the No Project Alternative, the existing Dam, Cactus Flats Road, and LAA would remain on the Project Site as under existing conditions. No construction activities would occur; therefore, current exposure to hazards involving fault rupture, seismic ground shaking, and seismic-related ground failure, and landslides would remain unchanged. No excavation for or purchase of earthen materials would be required. No construction workforce would be required as there would be no construction activities; therefore, there would be no increase in the number of people that would be exposed to geologic hazards. Seismic studies have found that existing Dam would have potential to fail during a MCE event, the largest possible earthquake. During this scenario, extensive liquefaction would occur in the foundation of existing Dam, causing the crest of the existing Dam to settle up to nine feet. This could result in an uncontrolled release of water from NHR and would also prevent LADWP from transporting water along the LAA, creating a safety hazard and severing a major water supply for the City. Therefore, the impact related to hazards involving fault ruptures, seismic ground shaking, and seismic related ground failure and landslides would be potentially significant under the No Project Alternative.

Build Alternatives - Construction

For the two Build Alternatives, the key assumption of this analysis is that the Proposed Project would be designed, constructed, and maintained in accordance with all applicable laws, ordinances and regulations in order to provide sufficient seismic reliability for NHR to maintain the function of an essential water conveyance infrastructure component for the City of Los Angeles and protect local populations from a hazardous flooding event.

CDSM Alternative

Fault Rupture

As discussed, the Proposed Project components would not be located within an Alquist-Priolo Earthquake Fault Zone. In addition, previous investigations by LADWP have demonstrated that there are no active or conditionally active faults that cross NHD2, the LAA Realignment, LAA Excavation Area, the basin, diversion channel, diversion structure, or east and west berms. Therefore, fault rupture would not pose a hazard during construction of these Project components, and no impact would occur under the CDSM Alternative.

The Cactus Flats Road Realignment is not located within an Alquist-Priolo Earthquake Fault Zone. However, local fault investigations performed for the Proposed Project suggest that Fault A, which was identified as an active fault according to DSOD criteria, may cross a portion of the Cactus Flats Road Realignment. In general, fault rupture is a relatively infrequent event, even with active faults. Due to the infrequent occurrence of fault rupture and the temporary nature of construction, the probability that a fault rupture would coincide with construction is extremely low. Further, LADWP and/or its contractors would implement a Health and Safety Plan, which include emergency response procedures, during the construction phase that would outline proper safety procedures during a seismic event. These plans would be prepared in accordance with applicable regulations and would mitigate potential hazards due to fault rupture during construction activities associated with the Cactus Flats Road Realignment. With implementation of these plans, the impact from fault rupture hazard during construction of the Cactus Flats Road Realignment would be less than significant under the CDSM Alternative.

Seismic Ground Shaking

Strong seismic ground shaking could potentially occur during construction of the Proposed Project components. However, due to the infrequent occurrence of seismic events and the temporary nature of construction activities, the probability that strong seismic shaking would coincide with construction activities is extremely low. As discussed, LADWP and/or its contractors would implement a Health and Safety Plan, which include emergency response procedures, during the construction phase that would outline proper safety procedures during a seismic event. With implementation of these plans, construction impacts would be less than significant under the CDSM Alternative.

Seismic-Related Ground Failure

Seismic-related ground failure would not be a significant hazard during construction of NHD2 components or the Cactus Flats Road Realignment. As the Project Site is located in a seismic region and liquefiable susceptible ground occurs along much of the footprints of NHD2 and Cactus Flats Road Realignment, liquefaction, lateral spreading, or seismically induced settlement-related damage could potentially occur during construction. However, due to the infrequent occurrence of seismic events and the temporary nature of construction activities, the probability that seismic-related ground failure would coincide with construction activities is extremely low. With implementation of a Health and Safety Plan, which includes emergency response procedures, discussed above, construction impacts would be less than significant under the CDSM Alternative. Similarly, seismic related ground failure would not be a significant hazard during construction of the LAA Realignment and excavation at the LAA Excavation Area, which would involve excavation of unsaturated alluvial fan deposits. Such materials are not

susceptible to liquefaction, lateral spreading or seismically induced settlement. Therefore, the impact from seismic related ground failure would be less than significant under the CDSM Alternative.

Landslides

The Proposed Project components do not cross an area where landslides have been identified on published geologic mapping. Most of the Project Site is located along the flat terrain of the Haiwee Valley where landsliding would not occur. Although the abutments of NHD2 would be constructed along modest slopes, the abutments are underlain by dense alluvial deposits that are not prone to landsliding. NHD2 would create temporary slopes during excavation and construction of the earthen dam. Construction would follow standard design practices to ensure the stability of the temporary slopes.

The Cactus Flats Road Realignment does not cross any areas where landslides have been identified. Most of the Cactus Flats Road Realignment would be located on flat ground where landsliding would not occur. One exception would be where the Cactus Flats Road Realignment would transition from the Haiwee Valley up to the higher terrace surface that is to the east of Haiwee Valley. The transition, through the west facing slope between the Haiwee Valley and the higher terrace, would require some cut and fill grading. The Cactus Flats Road Realignment would, therefore, create temporary and permanent slopes during cut and fill activities as well as creating the final road grade. Construction would follow standard design practices to ensure the stability of the temporary and permanent slopes.

The LAA Realignment, LAA Excavation Area, and the basin would be located on relatively flat ground and within alluvial deposits that are not prone to landsliding. The excavated channel of the LAA Realignment itself would be relatively shallow, up to 15 feet deep. Excavation of the LAA Excavation Area, adjacent to the LAA Realignment, may create up to 50 foot-high cut slopes bordering the west side of the LAA Realignment. Materials under these cut slopes would not be anticipated to fail, as existing natural and cut slopes that were excavated in 1913 for NHD borrow materials have exhibited no signs of instability. Furthermore, construction would follow standard design practices to ensure the stability of the temporary slopes.

Final construction activity at the LAA Excavation Area would consist of restoration of the excavated land in accordance with the Proposed Project's Topsoil Salvage and Revegetation Plan (refer to Section 3.4, Biological Resources). Therefore, the impact from landsliding and slope failure would be less than significant during construction under CDSM Alternative.

Excavate and Recompact Alternative

The impacts during construction of the Proposed Project components under the Excavate and Recompact Alternative would be the same as described under the CDSM Alternative. Therefore, impacts would be less than significant under the Excavate and Recompact Alternative.

Build Alternatives - Operation

Fault Rupture

As previously discussed, the NHD2 components, the LAA Realignment, and the diversion channel and NHD modifications would not be located within an Alquist-Priolo Earthquake Fault Zone, and previously completed investigations by LADWP have demonstrated that there are no active or conditionally active faults that would cross these components. The LAA Excavation Area would be restored and would not have any operational activity. Therefore, there would be no impact from fault rupture hazard during operation of the NHD2 components, the LAA Realignment, and diversion channel and NHD modifications.

The Cactus Flats Road Realignment would not be located within an Alquist-Priolo Earthquake Fault Zone; however, local fault investigations suggest that Fault A may cross the Cactus Flats Road Realignment. The Cactus Flats Road Realignment would be designed and constructed in accordance with

the latest versions of the applicable federal, state, and local codes relative to seismic criteria. Additionally, the Cactus Flats Road Realignment would be located in the vicinity of the existing Cactus Flats Road, and thus, would be exposed to the same risks as under existing conditions. Therefore, operation of the Cactus Flats Road Realignment would not substantially increase the risk of hazards associated with fault rupture, and the impact would be less than significant.

Seismic Ground Shaking

It is anticipated that strong seismic ground shaking may occur during the design life of NHD2, and like most engineering structures, earthen dams can potentially fail due to faulty design, improper construction, and/or poor maintenance practices. However, well-compacted, impervious zoned embankment dams, such as NHD2, are typically resistant to earthquake forces provided they are constructed on rock or overburden foundations that are resistant to liquefaction. The design objective of the Proposed Project is for the LAA, including NHR, to remain operational after an MCE earthquake event. This criterion requires that the safety of the dam embankment not be impaired by extensive cracking, crest settlement that would excessively impair freeboard, or excessive deformation in critical zones such as filters and drains. The Deterministic Seismic Hazard Analysis conducted for the Project Site would guide the design and construction of NHD2, which would be designed to withstand the MCE event and to allow for safe operation of NHR at the approved maximum water levels. The impact would be less than significant.

NHD2, the Cactus Flats Road Realignment, the LAA Realignment, the basin, and the east and west berms would be excavated and constructed in alluvial fan deposits or fill (i.e. the notch) and strong seismic ground shaking may occur during their design life. It is not expected that significant deformation and catastrophic failure of the diversion channel, notch, or east and west berms would occur directly from strong ground shaking. Strong ground shaking from a seismic event may cause some minor cracking of the concrete lining of the diversion channel and the notch, but such damage could be repaired in a relatively short amount of time and basin operations would resume quickly. The impact would be less than significant.

As with NHD2, it is anticipated that strong seismic ground shaking may potentially occur during the design life of the Cactus Flats Road Realignment that could produce some cracking of pavement and drainage structures. However, it is not expected that significant deformation and catastrophic failure of the Cactus Flats Road Realignment would occur directly from strong ground shaking. Should the Cactus Flats Road Realignment be affected by strong seismic shaking, it is expected that minor repairs would be required to restore Cactus Flats Road. Furthermore, the Cactus Flats Road Realignment would be located in the vicinity of the existing Cactus Flats Road, and thus, would be exposed to the same risks as under existing conditions. Therefore, operation of the Cactus Flats Road Realignment would not substantially increase the risk of hazards associated with seismic ground shaking. The impact would be less than significant.

Strong seismic ground shaking may occur during the design life of the LAA Realignment. The LAA Realignment would be excavated and constructed in alluvial fan deposits. Strong ground shaking from a seismic event may cause some minor cracking of the LAA Realignment's concrete liner. However, it is not expected that significant deformation and catastrophic failure of the LAA would occur directly from strong ground shaking. Furthermore, it is expected that LAA would be repaired in a relatively short amount of time if any minor damage were to occur during a seismic event, allowing LAA system operation to resume quickly. Furthermore, the LAA Realignment would be located in the vicinity of the existing LAA, and thus, would be exposed to the same risks as under existing conditions. The LAA Realignment would be designed to the same or higher design standards than the existing LAA and would perform similarly to or better than the existing LAA during seismic shaking. The impact would be less than significant.

The LAA Excavation Area would be restored to a natural state at the end of construction. During Project operation, no personnel or property would be located at the site, and there would no risk of harm or damage from seismic shaking.

Seismic-Related Ground Failure

The potential for liquefaction of the existing Dam and the underlying alluvium during a strong earthquake in the Owens Valley is the purpose for LADWP to undertake the Proposed Project. The design objectives of the Proposed Project are to provide sufficient seismic reliability for NHR, and to protect local populations from a hazardous flooding event. The design of NHD2 would ensure that liquefaction or other types of seismic-related ground failure would not impair the ability of NHD2 to safely impound NHR. The design of NHD2 would involve a comprehensive geotechnical investigation to characterize the soil, rock, and groundwater conditions of the dam foundation. Seismically induced displacement analyses would be performed to verify that any potential deformations of the embankment dam due to liquefaction are acceptable. These investigations and analyses would be performed to verify that the NHD2 design objective is achieved. Dam design and structure would also be evaluated and permitted by DSOD prior to operation. Therefore, the impact from seismic-related ground failure would be less than significant during operation of NHD2.

The NHD2 components would be located in areas of known alluvial fan deposits that have geotechnical properties that would not be susceptible to liquefaction, lateral spreading, or seismically induced settlement. However, the diversion channel and east and west berms would be entirely or partially constructed on alluvial fan deposits of the Haiwee Valley that are susceptible to liquefaction. Also the notch would be cut into NHD, which is also susceptible to liquefaction induced damage. Thus, it is conceivable that some deformation and damage of these components could occur. However, the localized damage that could potentially occur from liquefaction would not cause a catastrophic failure of these components and an uncontrolled release of reservoir water. It is anticipated that any damage to these components could be repaired in a relatively short timeframe and operations could be resumed. Therefore, the impact to the NHD components from seismic related ground failure would be less than significant.

The LAA Realignment would be located in areas of known alluvial fan deposits that have geotechnical properties that would not be susceptible to liquefaction, lateral spreading, or seismically induced settlement. There would be no operational activities at the LAA Excavation Area after construction activities are completed. Upon completion of construction (excavation), the LAA Excavation Area would be vacated and would have undergone restoration in accordance with the Proposed Project's the Topsoil Salvage and Revegetation Plan (refer to Section 3.4, Biological Resources). Therefore, the impacts from seismic-related ground failure would be less than significant for operation of the LAA Realignment.

The northwestern portion of the Cactus Flats Road Realignment that is located in the Haiwee Valley is underlain by liquefiable susceptible ground. Therefore, liquefaction related damage may occur during the design life of the road. However, considering the infrequent occurrence of large seismic events, seismic related ground failure would not pose a high level of risk. Furthermore, the northwestern portion of the Cactus Flats Road Realignment would be located in the vicinity of the northwest portion of the existing Cactus Flats Road, and thus, would be exposed to the same risks as under existing conditions. Therefore, operation of the Cactus Flats Road Realignment would not substantially increase the risk of hazards associated with seismic-related ground failure and the impact would be less than significant.

Landslides

As discussed above, the NHD2 components, the Cactus Flats Road Realignment, the LAA Realignment, including the LAA Excavation Area, and the diversion channel and NHD modifications do not cross areas where landslides have been identified on published geologic mapping. Any slopes present during operation, including the slopes comprising NHD2, would be sufficiently stable so as to prevent landsliding or other slope failure during operation.

Final construction activity at the LAA Excavation Area would consist of restoration of the excavated land in accordance with the Proposed Project's Topsoil Salvage and Revegetation Plan (refer to Section 3.4, Biological Resources). Furthermore, during Project operation, no personnel or property would be located at the site. Therefore, the impacts from landsliding and slope failure would be less than significant.

GEO-2: *Would the project result in substantial soil erosion or the loss of topsoil?*

No Project Alternative

Under the No Project Alternative, the existing Dam, existing Cactus Flats Road, and existing LAA would remain on the Project Site as under existing conditions. Typical maintenance activities would occur as they do under existing conditions. As no construction would occur, no disturbance of existing topsoil or exposure to increased wind and water erosion would occur. Vegetation would remain in place and no grubbing or removal of vegetation would occur. The LAA Excavation Area would not be utilized and would remain vacant. Therefore, no impact from soil erosion or loss of top soil would occur under the No Project Alternative.

Build Alternatives - Construction

Construction activities related to the NHD2 components, the Cactus Flats Road Realignment, the LAA Realignment, as well as excavation activities at the LAA Excavation Area would include earth-moving activities that could cause a loss or disturbance of existing topsoil and could potentially expose the site to increased wind and water erosion during and following construction activities. However, based on the gentle gradients that exist across most of the Project Site, the potential for water erosion is relatively low.

CDSM Alternative

Construction of the NHD2 components would involve excavation of the dam foundation, grading of the basin, and stockpiling of earth material and construction of the earthen embankment. Construction of the Cactus Flats Road Realignment would require grading, including some cut and fill activity. The LAA Realignment would require excavation of the new channel as well as stockpiling of earth to backfill the existing LAA once it has been demolished. Excavation and grading would also occur at the LAA Excavation Area. Construction activities would be required to comply with the NPDES Construction General Permit requirements, which include the preparation of a SWPPP for the Proposed Project. Additionally, as discussed in Chapter 2, the Proposed Project would implement Rule 401 and 431 dust and particulate matter control measures as required by GBUAPCD. These measures would require minimization of soil disturbance and erosion through implementation of applicable construction BMPs and would prevent off-site migration of eroded soils. With adherence to all applicable regulations and implementation of appropriate BMPs, construction impacts associated with soil erosion or the loss of topsoil would be less than significant under the CDSM Alternative.

Excavate and Recompact Alternative

Impacts during construction of the Proposed Project components would be the same as under the CDSM Alternative. Therefore, impacts under the Excavate and Recompact Alternative would be less than significant.

Build Alternatives - Operation

NHD2 would be covered with riprap or vegetation upon completion of construction. The level portions of the Cactus Flats Road Realignment would remain unpaved, but would be of similar design to the existing Cactus Flats Road. The LAA Realignment and the diversion channel would be lined with concrete, similar to the existing LAA, and would not be susceptible to erosion during operation. All other areas disturbed by construction would be revegetated at the end of construction activities. Therefore, the impacts of erosion would be less than significant during operation of the NHD2 components, the Cactus Flats Road Realignment, and the LAA Realignment, and diversion channel and NHD modifications.

Restoration of the LAA Excavation Area during construction would include revegetation and other measures to prevent erosion or loss of topsoil during operation, and would return the site to a state similar to existing conditions, as outlined in the Proposed Project's Topsoil Salvage and Revegetation Plan. Wind erosion and water erosion at the site would be similar to existing conditions. Furthermore, there would be no operations in the LAA Excavation Area after construction. Therefore, impacts would be less than significant.

GEO-3: *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 on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?*

No Project Alternative

Under the No Project Alternative, the existing Dam, Cactus Flats Road, LAA would remain as under existing conditions. No construction activities would occur; therefore, the current geologic unit and soils at the Project Site would remain unchanged. Seismic studies have found that the existing Dam would have the potential to fail during a MCE event, the largest possible earthquake. During this scenario, extensive liquefaction would occur in the foundation of the existing Dam, causing the crest of the existing Dam to settle up to nine feet. This could result in an uncontrolled release of water from NHR and would prevent LADWP from transporting water along the LAA, creating a safety hazard and severing a major water supply for the City. Therefore, the impact related to seismically related ground failure (liquefaction) would be potentially significant under the No Project Alternative.

Build Alternatives - Construction

CDSM Alternative

As previously discussed, the Project Site would not be located in areas that are susceptible to landslides. Although temporary slopes would be created during the construction phase, these slopes would be stabilized through standard design practices, and landsliding would not be caused by construction activities. Construction of the NHD2 components under the CDSM Alternative, the Cactus Flats Road Realignment, the LAA Realignment, including the LAA Excavation Area, and the diversion channel and NHD modifications would not destabilize soils offsite. As previously discussed, due to the earth materials underlying the proposed locations of these components, subsidence is not a hazard that would be anticipated to occur during construction of the Cactus Flats Road Realignment, the LAA Realignment, including the LAA Excavation Area, or the diversion channel or NHD modifications. Additionally, the dewatering activities at NHD2 would be localized removal of near surface water and would not involve the extraction of water from deep underground water reservoirs.

Additionally, as discussed above, there is a potential for liquefaction, lateral spreading, and/or seismically induced damage due to the cohensionless granular sediment and shallow groundwater that occur in the Haiwee Valley portion of the Project area. However, due to the infrequent occurrence of seismic events and the temporary nature of construction activities, the probability that strong seismic shaking and consequent seismically induced ground failure would coincide with construction activities is extremely low. Therefore, impacts from liquefaction, lateral spreading, or seismically induced settlement would be less than significant during construction of the NHD2 components, the Cactus Flats Road Realignment, the LAA Realignment, LAA Excavation Area, the basin, and the east and west berms.

Excavate and Recompact Alternative

Impacts during construction related to the Proposed Project components would be the same as described under the CDSM Alternative. Therefore, the impact would be less than significant under the Excavate and Recompact Alternative.

Build Alternatives - Operation

As discussed above, Proposed Project components would not cross an area where landslides have been identified. In addition, any slopes remaining after construction would remain stabilized in accordance with the standard design practices put into place during construction. As the LAA Excavation Area would undergo restoration at the end of construction, slopes would be stabilized and revegetated during operation. The Proposed Project would not be located on unstable soils or cause soil instability, which may cause landsliding or slope failure on- or off-site. The impact would be less than significant.

The potential for liquefaction of the existing Dam and the underlying alluvium during a strong earthquake in the Owens Valley is the reasoning for LADWP to undertake the Proposed Project. The design objective of NHD2 is to provide sufficient seismic reliability for NHR, and to protect local populations from a hazardous flooding event. NHD2 would provide this seismic reliability, as the existing Dam would potentially fail due to liquefaction. The design of NHD2 involved a comprehensive geotechnical investigation to characterize the soil, rock, and groundwater conditions of the dam foundation. Seismically induced displacement analyses would be performed to verify that the NHD2 design objective is achieved. Dam design and structure would also be evaluated and permitted by DSOD prior to operation. Therefore, during operation, the Proposed Project would not be located on a geologic unit or soil that is unstable, and would not cause a geologic unit or soil on- or off-site to become significantly unstable, potentially resulting in landslides, lateral spreading, subsidence, liquefaction, or collapse. The impact would be less than significant.

GEO-4: *Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?*

No Project Alternative

Under the No Project Alternative, the existing Dam, Cactus Flats Road, and LAA would remain on the Project Site as under existing conditions. The existing soils underlying the Project Site are granular (sandy and gravely) soils that have a low expansion potential. Typical maintenance activities would occur as they do under existing conditions. Therefore, no impacts from expansive soils would occur under the No Project Alternative.

Build Alternatives - Construction

CDSM Alternative

As discussed, expansive soils are not considered a significant concern at the Project Site as the alluvial deposits in the Project vicinity are typically granular (sandy and gravely) soils that have a low expansion potential. Furthermore, if expansive soils are discovered during construction, soil expansion hazards would be addressed through over-excavation and replacement with non-expansive fill, or other standard design and construction methods. Therefore, the impacts from expansive soils would be less than significant during construction of the NHD2 components, the Cactus Flats Road Realignment, the LAA Realignment, and the diversion channel and NHD modifications under the CDSM Alternative.

Excavate and Recompact Alternative

The impacts during construction of the Proposed Project components would be the same as described under the CDSM Alternative. Therefore, impacts would be less than significant under the Excavate and Recompact Alternative.

Build Alternatives - Operation

As previously discussed, the Project Site contains deposits that have low expansion potential. If expansive soils are discovered during construction, soil expansion hazards would be addressed through over-excavation and replacement with non-expansive fill, or through other standard design and

construction methods, which would ensure a stable, operational NHD2 and a stable Cactus Flats Road and LAA. The LAA Excavation Area would be restored to a natural state and would have no structures onsite which could be damaged by expansive soils. Therefore, impacts from expansive soils would be less than significant during operation of the Proposed Project.

3.7.5 Mitigation Measures

The Proposed Project would result in less than significant impacts related to geology and soils. No mitigation measures are required.

3.7.6 Residual Impacts After Mitigation

The Proposed Project would result in less than significant impacts related to geology and soils under CEQA.

3.7.7 NEPA Conclusions

No Project Alternative

The No Project Alternative would not change the existing conditions of the Project Site and would not utilize any earthen materials. During an MCE scenario, extensive liquefaction would occur in the foundation of the existing Dam, causing the crest of the existing Dam to settle up to nine feet. This could result in an uncontrolled release of water from NHR and would also prevent LADWP from transporting water along the LAA, creating a safety hazard and severing a major water supply for the City.

Build Alternatives

The two Build Alternatives would result in the impacts described above. Impacts related to geology and soils during construction would be temporary, and may include fault rupture, ground shaking, ground failure, or landslides. However, due to the infrequent occurrence of these phenomena and the temporary nature of construction activities, the probability that a fault rupture, ground shaking, ground failure, or landslide event would coincide with construction is extremely low. Furthermore, LADWP and/or their contractors would implement a Health and Safety Plan, which includes emergency response procedures, during the construction phase to outline safety procedures in the event of a seismic event.

During construction, excavation, earthmoving, and other ground disturbing activities could result in the loss of topsoil and could aggravate erosion. In compliance with requirements of the NPDES Construction General Permit, a SWPPP would be developed and prepared for the Proposed Project to ensure that soil resources are protected and construction is consistent with County and state regulations. The SWPPP would include measures that prevent excessive and unnatural soil erosion. The SWPPP, which would cover all activities associated with the construction of the Proposed Project, including clearing, grading, and other ground disturbance activities, would prevent off-site migration of eroded soils. LADWP and the contractor would also be required to implement Rule 401 fugitive dust control measures as required by GBUAPCD, which would reduce wind erosion during construction. Additionally, grading and development on federal lands (i.e., the LAA Realignment and LAA Excavation Area) would be governed by BLM in accordance with the BLM 9100 Series Manuals and the DRECP LUPA.

The DRECP LUPA contains several CMAs related to geology and soils. The Proposed Project would be consistent with LUPA-SW-5 through compliance with soil stipulations and the process for approving exceptions to the CMA. The Proposed Project would be consistent with LUPA-SW-6 and LUPA-SW-7 through implementation of the BMPs listed in Section 3.7.3 Methodology for Analysis as well as through implementation of the Health and Safety Plan, including emergency response procedures. The Wind Erodibility Groups 1 and 2 identified in LUPA-SW-8 are common to the Project Site, but it is not anticipated that excavation for the Proposed Project would substantially change the distribution of the exposed wind erodibility groups. Therefore, preparation of a map of these soil groups would not be useful in minimizing wind erosion. There may be potential for crytobiotic soils to exist at the Project Site;

however, the Proposed Project cannot be relocated due to its purpose and objectives (refer to the discussion of Project Site selection in Chapter 2, Project Description and Alternatives). Therefore, mapping of these soils per LUPA-SW-10 would not be applicable. The Proposed Project would be consistent with LUPA-SW-11 through avoidance of side casting where feasible, as described in Section 2.2, Alternatives Carried Forward for Analysis. Finally, the Proposed Project would be consistent with ACEC-CUL-3 through management of erosion as described above.

3.8 Greenhouse Gas Emissions

This section analyzes the potential impacts of the Proposed Project as it relates to greenhouse gas (GHG) emissions. The applicable laws, regulations, and methods used to determine the effects of the Proposed Project are described herein. The section describes the affected environment and analyzes the environmental consequences of the Proposed Project and, if applicable, provides mitigation measures. The analysis in the section is based on the Greenhouse Gas Emissions Technical Report in Appendix I of this Draft EIR/EA.

3.8.1 Regulatory Setting

Federal

The USEPA is the federal agency responsible for implementing the Federal CAA. The Supreme Court of the United States ruled on April 2, 2007, that CO_2 is an air pollutant as defined under the CAA, and that USEPA has the authority to regulate emissions of GHGs.

Mandatory Greenhouse Gas Reporting Rule

On September 22, 2009, the USEPA published the Final Mandatory Greenhouse Gas Reporting Rule (Reporting Rule) in the Federal Register. The Reporting Rule requires reporting of GHG data and other relevant information from fossil fuel and industrial GHG suppliers, vehicle and engine manufacturers, and all facilities that would emit 25,000MT CO_2e or more per year. Facility owners are required to submit an annual report with detailed calculations of facility GHG emissions on March 31 for emissions from the previous calendar year. The Reporting Rule also mandates recordkeeping and administrative requirements to enable USEPA to verify the annual GHG emissions reports.

United States Supreme Court Ruling

The United States Supreme Court ruled in Massachusetts v. Environmental Protection Agency, 127 S. Ct. 1438 (2007), that CO_2 and other GHGs are pollutants under the CAA, and must regulated by the USEPA if it determines they pose an endangerment to public health or welfare. On December 7, 2009, the USEPA Administrator made two distinct findings: (1) the current and projected concentrations of the six key GHGs in the atmosphere (i.e., CO_2, methane [CH_4], nitrous oxide [N_2O], hydrofluorocarbons [HFCs], perfluorocarbons [PFCs], and sulfur hexafluoride [SF_6]) threaten the public health and welfare of current and future generations; and (2) the combined emissions of these GHGs from motor vehicle engines contribute to GHG pollution, which threatens public health and welfare.

State

CARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the California CAA.

Assembly Bill 1493

AB 1493 requires CARB to develop and implement regulations to reduce automobile and light truck GHG emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with model year 2009. In June 2009, the USEPA Administrator granted a CAA waiver of preemption to California. This waiver allowed California to implement its own GHG emissions standards for motor vehicles beginning with model year 2009. California agencies worked with federal agencies to conduct joint rulemaking to reduce GHG emissions for passenger car model years 2017 to 2025.

Executive Order S-3-05

EO S-3-05, signed in June 2005, proclaimed that California is vulnerable to the impacts of climate change. EO S-3-05 declared that increased temperatures could reduce the Sierra Nevada's snowpack,

further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the EO established total GHG emissions targets. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

Assembly Bill 32

In 2006, California passed the California Global Warming Solutions Act (AB 32; California Health and Safety Code Division 25.5, Sections 38500, et seq.). AB 32 further details and puts into law the mid-term GHG reduction target established in EO S-3-05, which is to reduce statewide GHG emissions to 1990 levels by 2020 and 80 percent below 1990 levels by 2050. AB 32 also identifies CARB as the state agency responsible for the design and implementation of emissions limits, regulations, and other measures to meet the target.

In December 2008, CARB adopted its *Climate Change Scoping Plan* (Scoping Plan), which contains the main strategies California will implement to achieve the required GHG reductions required by AB 32. The Scoping Plan also includes CARB-recommended GHG reductions for each emissions sector of California's GHG inventory. CARB further acknowledges that decisions about how land is used will have large impacts on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emissions sectors.

CARB is required to update the Scoping Plan at least once every five years to evaluate progress and develop future inventories that may guide this process. CARB approved the first update to the *Climate Change Scoping Plan: Building on the Framework* in June 2014. The Scoping Plan update includes a status of the 2008 Scoping Plan measures and other federal, state, and local efforts to reduce GHG emissions in California, and potential actions to further reduce GHG emissions by 2020.

Executive Order S-1-07

EO S-1-07, which was signed by then California Governor Arnold Schwarzenegger in 2007, proclaims that the transportation sector is the main source of GHG emissions in California, at more than 40 percent of statewide emissions. EO S-1-07 establishes a goal that the carbon intensity of transportation fuels sold in California should be reduced by a minimum of 10 percent by 2020. CARB adopted the low carbon fuel standard on April 23, 2009.

Senate Bill 97

Senate Bill (SB) 97 required the Governor's Office of Planning and Research to develop recommended amendments to the CEQA Guidelines for addressing GHG emissions. The amendments became effective on March 18, 2010.

Senate Bill 1078, SB 107, and SB X1-2

SB 1078 established California's Renewable Portfolio Standard (RPS) in 2002. SB 1078 required retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. SB 107 changed the target date to 2010. Executive Order S-14-08 expanded the state's Renewable Energy Standard to 33 percent renewable power by 2020. This new goal was codified in 2011 with the passage of SB X1-2.

SB 1078 did not apply directly to municipally-owned utilities, such as LADWP; however, it did require those utilities to develop their own RPS. LADWP has met its goal of 20 percent by 2010 and has identified a goal to increase the supply of renewable energy to 35 percent by 2020.

Executive Order B-30-15

In April 2015, Governor Edmund Brown issued an EO establishing a statewide GHG reduction goal of 40 percent below 1990 levels by 2030. The emission reduction target acts as an interim goal between the AB 32 goal (i.e., achieve 1990 emission levels by 2020) and Governor Brown's EO S-03-05 goal of

reducing statewide emissions 80 percent below 1990 levels by 2050. In addition, the EO aligns California's 2030 GHG reduction goal with the European Union's reduction target (i.e., 40 percent below 1990 levels by 2030) that was adopted in October 2014.

Local

Great Basin Unified Air Pollution Control District

In Inyo County, the GBUAPCD is the agency responsible for protecting public health and welfare through the administration of federal and state air quality laws and policies. The GBUAPCD has no regulations relative to GHG emissions.

Inyo County

Inyo County is in the process of preparing a Cost, Energy and Service Efficiencies Action Plan (Inyo County, 2012). This planning effort will identify and promote activities that lead to long-term sustainable changes that support energy efficiency. As a part of this planning effort, the County adopted an Energy Action Plan in 2012. This plan outlines the strategies and programs that will guide energy reduction throughout the County. The primary focus of the plan is on energy efficiencies that can be achieved in new and existing buildings.

The County has also been addressing the need to implement energy efficiencies through its General Plan process. The draft Conservation/Open Space Element of the ICGP contains several proposed policies which indirectly address global climate change (Inyo County, 2013).

In addition to the Conservation/Open Space Element amendment, the County adopted a Renewable Energy General Plan Amendment in March 2015, which included updates to several elements of the ICGP that address potential utility scale and commercial scale renewable energy solar facilities within the County.

City of Los Angeles

In May 2007, the City of Los Angeles released its CAP, "*Green LA: An Action Plan to Lead the Nation in Fighting Global Warming*." The City of Los Angeles' CAP sets forth a goal of reducing the City's GHG emissions to 35 percent below 1990 levels by the year 2030. The CAP is a voluntary plan that identifies over 50 action items, grouped into focus areas, to reduce emissions. One of the key strategies listed in the Green LA Plan related to energy and water includes increasing the use of renewable energy to 35 percent by 2020. ClimateLA is the implementation program that provides detailed information, including a context, lead departments, and a timeline for completion, for each action item discussed in the City of Los Angeles' CAP. Where possible, the ClimateLA program document includes potential CO_2 emission reductions from full implementation of the measures.

LADWP developed a Sustainability Plan in 2009 that documents LADWP's sustainability initiatives and accomplishments. LADWP's Sustainability Plan includes goals and strategies for renewable energy, energy conservation and efficiency programs, sustainable water supply, and sustainable design practices in LADWP business operations.

3.8.2 Affected Environment

Climate Change

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. A portion of the solar radiation that enters the earth's atmosphere is absorbed by the earth's surface, and a smaller portion of this radiation is reflected back toward space. This infrared radiation (i.e., thermal heat) is absorbed by GHGs within the earth's atmosphere. As a result, infrared radiation released from the earth that otherwise would have escaped back into space is instead "trapped,"

resulting in a warming of the atmosphere. This phenomenon, known as the "greenhouse effect," is responsible for maintaining a habitable climate on the earth.

GHGs are present in the atmosphere naturally, are released by natural and anthropogenic sources, and are formed from secondary reactions taking place in the atmosphere. Natural sources of GHGs include the respiration of humans, animals and plants, decomposition of organic matter, and evaporation from the oceans. Anthropogenic sources include the combustion of fossil fuels, waste treatment, and agricultural processes. The following are GHGs that are widely accepted as the principal contributors to human-induced global climate change:

- Carbon dioxide
- Methane
- Nitrous oxide
- Hydrofluorocarbons
- Perfluorocarbons
- Sulfur hexafluoride
- Nitrogen Trifluoride (NF_3)

The majority of CO_2 emissions are byproducts of fossil fuel combustion. CH_4 is the main component of natural gas and is associated with agricultural practices and landfills. N_2O is a colorless GHG that results from industrial processes, vehicle emissions, and agricultural practices. HFCs are synthetic chemicals used as a substitute for chlorofluorocarbons in automobile air conditioners and refrigerants. PFCs are produced as a byproduct of various industrial processes associated with aluminum production and the manufacturing of semiconductors. SF_6 is an inorganic, odorless, colorless, nontoxic, nonflammable GHG used for insulation in electric power transmission and distribution equipment, and in semiconductor manufacturing. NF_3 is used in the electronics industry during the manufacturing of consumer items, including photovoltaic solar panels and liquid-crystal-display (i.e., LCD) television screens.

Global warming potential (GWP) is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to CO_2. The GWP of a GHG is based on several factors, including the relative effectiveness of a gas in absorbing infrared radiation and length of time (i.e., lifetime) that the gas remains in the atmosphere ("atmospheric lifetime"). The reference gas for GWP is CO_2; therefore, CO_2 has a GWP of 1. The other main GHGs that have been attributed to human activity include CH_4, which has a GWP of 28, and N_2O, which has a GWP of 265. For example, 1 ton of CH_4 has the same contribution to the greenhouse effect as approximately 28 tons of CO_2. GHGs with lower emissions rates than CO_2 may still contribute to climate change because they are more effective at absorbing outgoing infrared radiation than CO_2 (i.e., high GWP). The concept of CO_2e is used to account for the different GWP potentials of GHGs to absorb infrared radiation.

Although the exact lifetime of any particular GHG molecule is dependent on multiple variables, it is understood by scientists who study atmospheric chemistry that more CO_2 is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, and other forms of sequestration. GHG emissions related to human activities have been determined as "extremely likely" to be responsible (indicating 95 percent certainty) for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's atmosphere and oceans, with corresponding effects on global circulation patterns and climate.

GHG Sources

GHG emissions contributing to global climate change are attributable in large part to human activities associated with the transportation, industrial/manufacturing, electric utility, residential, commercial, and agricultural categories. The majority of CO_2 emissions are byproducts of fossil fuel combustion, and CH_4, a highly potent GHG, is the primary component in natural gas and is associated with agricultural practices and landfills. N_2O is also largely attributable to agricultural practices and soil management.

For purposes of accounting for and regulating GHG emissions, sources of GHG emissions are grouped into emission categories. CARB identifies the following main GHG emission categories that account for most anthropogenic GHG emissions generated within California:

- Transportation: On-road motor vehicles, off-road equipment, recreational vehicles, aviation, ships, and rail
- Electric Power: Use and production of electrical energy
- Industrial: Mainly stationary sources (e.g., boilers and engines) associated with process emissions
- Commercial and Residential: Area sources, such as landscape maintenance equipment, fireplaces, and consumption of natural gas for space and water heating
- Agriculture: Agricultural sources that include off-road farm equipment; irrigation pumps; crop residue burning (CO_2); and emissions from flooded soils, livestock waste, crop residue decomposition, and fertilizer volatilization (CH_4 and N_2O)
- High GWP: Refrigerants for stationary and mobile-source air conditioning and refrigeration, electrical insulation (e.g., SF_6), and various consumer products that use pressurized containers
- Recycling and Waste: Waste management facilities and landfills; primary emissions are CO_2 from combustion and CH_4 from landfills and wastewater treatment

California

CARB performs an annual GHG inventory for the six major GHGs. California produced 459 million MT of CO_2e in 2013. Combustion of fossil fuel in the transportation category was the single largest source of California's GHG emissions in 2013, accounting for 37 percent of total GHG emissions in the state. The transportation category was followed by the industrial category, which accounts for 23 percent of total GHG emissions in California, and the electric power category (including in-state and out-of-state sources), which accounts for 20 percent of the state's total GHG emissions.

Inyo County

Inyo County emitted approximately 3,618 MT of GHGs in 2011. Unleaded gasoline was the largest emissions source, accounting for approximately 47 percent of total emissions. Electricity was the next largest source of emissions at 29 percent of the total.

3.8.3 Methodology for Analysis

Emissions

Construction-related exhaust emissions for the Proposed Project were estimated for construction worker commutes, haul trucks, and the use of off-road equipment. Construction-related emissions for the Proposed Project were estimated using emission factors from the CARB's OFFROAD and Emissions Factor Model (EMFAC 2014) inventory models. Construction emissions from the operation of diesel-fueled off-road equipment were estimated by multiplying daily usage (i.e., hours per day) and total days of construction by OFFROAD equipment-specific emission factors. GHG emissions from on-road motor vehicles were estimated using vehicle trips, vehicle miles traveled, and EMFAC2014 mobile source emission factors. The emission factors represent the fleet-wide average emission factors within Inyo County.

Operation of the Proposed Project would be generally similar to existing conditions. As such, the Proposed Project would not substantially increase the generation or use of electricity, water, wastewater, or solid waste relative to existing conditions. Thus, operational impacts of the Proposed Project are evaluated qualitatively, and no operational GHG emissions were estimated.

Greenhouse Gas Emissions Reduction Plans, Policies, and Regulations

At the time of this writing, neither GBUAPCD nor Inyo County has developed CAPs. As previously discussed, the City of Los Angeles released its CAP, "*Green LA: An Action Plan to Lead the Nation in Fighting Global Warming*" in May 2007 The CAP is a voluntary plan that identifies over 50 action items, grouped into focus areas, to reduce emissions. LADWP developed a Sustainability Plan in 2009 that documents LADWP's sustainability initiatives and accomplishments.

Therefore, for the purposes of this analysis, the applicable GHG reduction plans to evaluate and compare the Proposed Project against are AB 32 CARB Scoping Plan, the City of Los Angeles' CAP, and the LADWP Sustainability Plan. If the Proposed Project is consistent with the goals and strategies of these plans, it would not be considered to conflict with the plan's purpose of reducing GHG emissions.

CEQA Significance Criteria

The thresholds of significance for the Proposed Project's potential to impact greenhouse gas emissions are based on Appendix G of the State CEQA Guidelines. The following thresholds of significance were analyzed:

- Would the project generate GHG emissions, either directly or indirectly, that may have a significant cumulative impact on the environment?
- Would the project conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs?

Screening Thresholds

The California Supreme Court, in Center for Biological Diversity v. Department of Fish and Wildlife (Case No. S217763), held that the lead agencies must connect the thresholds of significance to individual project emissions. As the GBUAPCD and Inyo County have not established screening thresholds for GHG emissions, the analysis uses the applicable significance thresholds developed by SCAQMD. SCAQMD has adopted a significance threshold of 10,000 MT of CO_2e per year for industrial (stationary source) projects. The GHG CEQA Significance Threshold Stakeholder Working Group recommended options for evaluating non-industrial projects, including thresholds for residential, commercial, and mixed-use projects. These draft thresholds include a threshold of 3,500 MT CO_2e per year for residential projects, 1,400 MT CO_2e per year for commercial projects, and 3,000 MT CO_2e per year for mixed-use projects.

The thresholds are based on an emission capture rate of 90 percent for all new or modified projects. A 90 percent emission capture rate means that 90 percent of total emissions from all new or modified stationary source projects would be subject to a CEQA analysis. A GHG significance threshold based on a 90 percent emission capture rate is appropriate to address the long-term adverse impacts associated with global climate change because most projects will be required to implement GHG reduction measures. The emission thresholds capture a substantial fraction of projects that will be constructed to accommodate future statewide population and economic growth.

The SCAQMD recommends that construction emissions associated with a project be amortized over the life of the project (typically 30 years) and added to the operational emissions. Therefore, this analysis includes a quantification of total modeled construction-related GHG emissions. Those emissions are then amortized and evaluated as a component of the Proposed Project's operational emissions over the 30-year life of the project.

The project type is closest to an industrial project (i.e., does not contain residential or commercial land uses), and therefore, this analysis compares the annual construction and operational emissions to the commercial project threshold used for commercial projects of 10,000 MT CO_2e per year. It is not the intent of LADWP to adopt this threshold as a mass emissions limit for this or other projects, but rather to

provide this additional information to put the project-generated GHG emissions in the appropriate statewide context.

NEPA Requirements

The BLM *NEPA Handbook H-1790-1* of 2008 requires that duration be considered and that both short- and long-term adverse and beneficial impacts be disclosed in the NEPA analysis. The effects analysis must demonstrate that BLM took a "hard look" at the impacts of the action. The level of detail must be sufficient to support reasoned conclusions by comparing the amount and the degree of change (impact) caused by the proposed action and alternatives (BLM *NEPA Handbook H-1790-1*, 2008, p. 55). Additionally, direct, indirect, residual, and cumulative impacts for the Proposed Project must be considered.

The NEPA analysis is based on the emissions reporting limit of 25,000 MT CO_2e per year as required by the Mandatory Greenhouse Gas Reporting Rule. BLM does not provide a determination on the level of significance in a NEPA document. Rather, BLM leaves that determination to the FONSI which will be completed prior to the signing of a Decision Record. Any characterization of significance in this Draft EIR/EA applies only to CEQA determination.

3.8.4 Environmental Consequences

GHG-1: *Would the project generate GHG emissions, either directly or indirectly, that may have a significant cumulative impact on the environment?*

No Project Alternative

Under the No Project Alternative, the existing Dam, Cactus Flats Road, and LAA would remain on the Project Site and would continue to operate as under existing conditions. Typical maintenance activities would occur as they do under existing conditions with no increase in GHG emissions. No construction activities would occur, and no earthen material would be utilized. Therefore, no impacts related to generation of GHG emissions, either directly or indirectly, that may have a significant impact on the environment, would occur under the No Project Alternative.

Build Alternatives - Construction

CDSM Alternative

Construction-related GHG exhaust emissions would be generated by sources such as heavy-duty diesel off-road equipment, trucks hauling materials from the LAA Excavation Area and existing mine in Keeler, and construction worker commutes. Construction emissions were estimated based on the construction data presented in Chapter 2, Project Description and Alternatives, and using the earliest calendar year when construction could begin (i.e., 2018) to generate conservative estimates. If construction occurs in later years, advancements in engine technology, retrofits, and turnover in the equipment fleet may result in lower levels of emissions. The annual construction emissions include all construction phases under the CDSM Alternative and are shown in Table 3.8-1.

As shown in Table 3.8-1, the maximum annual emissions would be 14,544 MT CO_2e in 2020. Total emissions over the entire construction period for the CDSM Alternative would be approximately 49,717 MT CO_2e. When this total is amortized over the 30-year life of the CDSM Alternative, annual construction emissions would be approximately 1,657 MT CO_2e per year. It should be noted that although all GHG emissions are important with respect to climate change because of the atmospheric lifetimes of GHGs, construction emissions would cease following completion of the CDSM Alternative. As shown in Table 3.8-1, the amortized construction-related emissions associated with the CDSM Alternative would be less than the 10,000 MT CO_2e per year threshold of significance recommended by SCAQMD. Therefore, impacts related to generation of GHG emissions during construction under the CDSM Alternative, either directly or indirectly, would be less than significant.

TABLE 3.8-1
CDSM ALTERNATIVE – CONSTRUCTION-RELATED GHG EMISSIONS

Year	Emissions (MT CO_2e)
2018	1,769
2019	2,565
2020	14,544
2021	13,716
2022	12,979
2023	74,144
Total	**49,717**
30-Year Amortized Emissions	**1,657**
SCAQMD Significance Threshold	**10,000**
Exceeds Threshold?	**No**

Notes: MT CO_2e = metric tons of carbon dioxide equivalent
Totals may not add due to rounding.
Source: Appendix I, Greenhouse Gas Emissions Technical Report

Excavate and Recompact Alternative

Under the Excavate and Recompact Alternative, the construction schedule and heavy-duty off-road equipment used for the Cactus Road Realignment, the LAA Realignment, and diversion channel would be the same as under the CDSM Alternative. NHD2 would be constructed as it would under the CDSM Alternative; however, the off-road equipment, haul truck trips, and schedule for that construction phase would vary from the CDSM Alternative. The notch and basin protection measures would also be constructed as they would under the CDSM Alternative; however, the schedule for that construction phase would be different under the Excavate and Recompact Alternative. The emissions associated with the LAA Excavation Area and existing mine in Keeler include haul truck trips. The annual construction emissions under the Excavate and Recompact Alternative are shown in Table 3.8-2.

TABLE 3.8-2
EXCAVATE AND RECOMPACT ALTERNATIVE – CONSTRUCTION-RELATED GHG EMISSIONS

Year	Emissions (MT CO_2e)
2018	1,769
2019	2,432
2020	14,689
2021	14,054
2022	11,798
2023	9,479
2024	421
Total	**54,642**
30-Year Amortized Emissions	**1,821**
SCAQMD Significance Threshold	**10,000**
Exceeds Threshold?	**No**

Notes: MT CO_2e = metric tons of carbon dioxide equivalent
Totals may not add due to rounding.
Source: Appendix I, Greenhouse Gas Emissions Technical Report.

As shown in Table 3.8-2, the maximum annual emissions would be approximately 14,689 MT CO_2e in 2020. Total emissions over the entire construction period for the Excavate and Recompact Alternative would be approximately 54,642 MT CO_2e. When this total is amortized over the 30-year life of the Excavate and Recompact Alternative, annual construction emissions would be approximately 1,821 MT CO_2e per year. It should be noted that although all GHG emissions are important with respect to climate change because of the atmospheric lifetimes of GHGs, construction emissions would cease following completion of the Excavate and Recompact Alternative. As shown in Table 3.8-2, the amortized

construction-related CO_2e emissions associated with the Excavate and Recompact Alternative would be less than the 10,000 MT CO_2e per year threshold of significance recommended by SCAQMD. Therefore, impacts related to generation of GHG emissions during construction under the Excavate and Recompact Alternative, either directly or indirectly, would be less than significant.

Build Alternatives - Operation

The Build Alternatives are not anticipated to generate new vehicle trips. The required maintenance of NHD2 would be similar to existing maintenance of NHD. The reservoir keeper's residence, located adjacent to NHD, would remain on-site and he would be the primary person responsible for monitoring the new Dam, LAA Realignment, and basin, along with the existing NHD, LAA, and NHR. Operation of the Proposed Project would not significantly increase the generation or use of electricity, water, wastewater, and solid waste. Therefore, impacts related to generation of GHG emissions during operation under all Build Alternatives, either directly or indirectly, would be less than significant.

GHG-2: *Would the project conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs?*

No Project Alternative

Under the No Project Alternative, the existing Dam, Cactus Flats Road, and LAA would remain on the Project Site as under existing conditions. Typical maintenance activities would occur as they do under existing conditions. No construction activities would occur and no earthen material would be utilized. No construction or operational GHG emissions would be emitted under the No Project Alternative. Therefore, no impact related to conflict with the CARB Scoping Plan update or any other plans, policies, or regulations for the purpose of reducing GHG emissions would occur under the No Project Alternative.

CDSM Alternative

Measures included in the CARB Scoping Plan Update indirectly address GHG emissions levels associated with construction activities, including the phasing-in of cleaner technology for diesel engine fleets (including construction equipment) and the development of a low-carbon fuel standard. According to CARB, the 2020 goal was established as an achievable, mid-term target, and the 2050 GHG emissions reduction goal represents the level scientists believe is necessary to stabilize the climate. However, the CARB Scoping Plan does not recommend additional measures for meeting specific GHG emissions limits beyond 2020. Policies formulated under the mandate of AB 32 that apply to construction-related activity, either directly or indirectly, are assumed to be implemented statewide and would affect construction of the CDSM Alternative should those policies be implemented before construction begins. Therefore, it is assumed that construction and operation of the CDSM Alternative would not conflict with the CARB Scoping Plan update.

The measures in the City of Los Angeles' CAP and LADWP's Sustainability Plan do not directly relate to the purpose and objectives of the Proposed Project. The purpose of the Proposed Project is to improve the seismic reliability of NHR through construction of NHD2 to the north of the existing Dam in the event the existing Dam is damaged by an earthquake event, thereby ensuring public health and safety and securing the City's water source.

The CDSM Alternative would avoid reactive rebuilding and repairing expenditures, as well as associated GHG emissions, associated with failure of NHD during an MCE. The CDSM Alternative would also help to avoid losses in water storage and a reliable water supply to the City of Los Angeles. The intent, purpose, and functions of the CDSM Alternative are consistent with the goals of the AB 32 Scoping Plan, City of Los Angeles' CAP, and LADWP's Sustainability Plan to protect against the detrimental effects of climate change and ensure a sustainable water supply.

The CDSM Alternative would not conflict with the CARB Scoping Plan update or any other plans, policies, or regulations for the purpose of reducing GHG emissions. As discussed earlier, the CDSM

Alternative would also not generate GHG emissions that would have a significant impact on the environment. Therefore, under the CDSM Alternative, no impacts related to conflict with any applicable plan, policy, or regulation for the purpose of reducing GHG emissions would occur.

Excavate and Recompact Alternative

Similar to the CDSM Alternative, the Excavate and Recompact Alternative would not conflict with the CARB Scoping Plan update or any other plans, policies, or regulations for the purpose of reducing GHG emissions. Additionally, the Excavate and Recompact Alternative would not generate GHG emissions that would have a significant impact on the environment. Therefore, under the Excavate and Recompact Alternative, no impacts related to conflict with any applicable plan, policy, or regulation for the purpose of reducing GHG emissions would occur.

3.8.5 Mitigation Measures

The Proposed Project would result in less than significant impacts related to GHG emissions. No mitigation measures are required.

3.8.6 Residual Impacts After Mitigation

The Proposed Project would not require mitigation and would result in less than significant impacts related to GHG emissions under CEQA.

3.8.7 NEPA Conclusions

No Project Alternative

As described above, under the No Project Alternative, the existing Dam, Cactus Flats Road, and LAA would remain on the Project Site as under existing conditions. Typical maintenance activities would occur as they do under existing conditions. No construction activities would occur and no earthen material would be utilized. No construction or operational GHG emissions would be emitted under the No Project Alternative.

Build Alternatives

As described above, the Build Alternatives would not exceed the NEPA threshold of 25,000 MT CO_2e per year for GHG emissions. The DRECP LUPA does not contain any specific CMAs regarding GHG emissions (refer to Appendix B of this Draft EIR/EA).

3.9 Hazards and Hazardous Materials

This section analyzes the potential impacts of the Proposed Project as it relates to hazards and hazardous materials. The applicable laws, regulations, and methods used to determine the effects of the Proposed Project are described herein. The section describes the affected environment and analyzes the environmental consequences of the Proposed Project and, if applicable, provides mitigation measures. The analysis in the section is on the Hazards and Hazardous Materials Technical Memorandum in Appendix J of this Draft EIR/EA.

3.9.1 Regulatory Setting

Federal

The USEPA is the primary federal agency regulating hazardous wastes and materials. The USEPA broadly defines a hazardous waste as one that is specifically listed in USEPA regulations, has been tested, and meets one of the four characteristics established by the USEPA (toxicity, ignitability, corrosiveness, and reactivity), or that has been declared hazardous by the generator based on its knowledge of the waste. The USEPA defines hazardous materials as any item or chemical that can cause harm to people, plants, or animals when released by spilling, leaking, pumping, pouring, emptying, discharging, injecting, leaching, dumping, or disposing into the environment. Federal regulations pertaining to hazardous wastes and materials are generally contained in Titles 29, 40, and 49 of the CFR, which are discussed herein.

Bureau of Land Management Environmental Compliance Handbook, 2015

The BLM *Environmental Compliance Handbook (H-1703-6)* is specifically targeted to Hazardous Materials Managers. The objective of the handbook is to ensure that BLM complies with federal and state environmental regulations specific to BLM assets. The handbook addresses select requirements under several statutes such as, the Comprehensive Environmental Response, Compensation and Liability Act, the Hazardous Materials Transportation Act, the Resource Conservation and Recovery Act, and the Toxic Substances Control Act.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) regulates former and newly discovered uncontrolled waste disposal and spill sites. CERCLA established the National Priorities List of contaminated sites, and the "Superfund" cleanup program.

Hazardous Materials Transportation Act

The Hazardous Materials Transportation Act, administered by the United States Department of Transportation, regulates the transport of hazardous materials by motor vehicles, marine vessels, and aircraft.

Resource Conservation and Recovery Act of 1976

The Resource Conservation and Recovery Act (RCRA) gives USEPA authority to control the generation, transportation, treatment, storage, and disposal of hazardous waste. The main objectives are to protect human health and the environment from the potential hazards of waste disposal, to conserve energy and natural resources, to reduce the amount of waste generated, and to ensure that wastes are managed in an environmentally sound manner. Regulated entities that generate hazardous waste are subject to waste accumulation, manifesting, and recordkeeping standards. Compliance monitoring is delegated to states and local authorities. The California Department of Toxic Substances Control has been delegated by USEPA to implement and enforce the RCRA requirements in California.

Desert Renewable Energy Conservation Plan Land Use Plan Amendment of 2016

The DRECP LUPA, approved by BLM in September 2016, is an amendment to the CDCA Plan. The key objectives of the DRECP are to streamline renewable energy development and to provide for long-term conservation and management of special-status species, vegetation, and other resources within the DRECP Plan area. The DRECP identifies Development Focus Areas and Variance Process Lands where renewable energy development is more streamlined, as well as conservation areas, and several other land uses. Some CMAs apply across the entirety of the DRECP Plan area, while others apply only to specific land uses. The DRECP LUPA implements its objectives pertaining to hazards through specific CMAs, including: LUPA-BIO-9, which is intended to prevent toxic chemicals, hazardous materials, and other fluids from affecting water and wetland dependent resources; LUPA-BIO-13, which requires use of nontoxic road sealants and soil stabilizing agents; LUPA-SW-6, which requires up-to-date BMPs for toxic substance spills; and LUPA-SW-7, which requires an emergency response plan for spills. The consistency of the Proposed Project with the DRECP CMAs is provided in Appendix B of this Draft EIR/EA.

State

California Hazardous Waste Control Act

The Hazardous Waste Control Act is similar to RCRA and regulates the identification, generation, transportation, storage and disposal of materials and wastes deemed hazardous by the State of California.

Titles 22 and 23 of the California Code of Regulations

In the State of California, Titles 22 and 23 of the CCR address hazardous materials and wastes. Title 22, Division 4.5 defines, categorizes, and lists hazardous materials and wastes including universal wastes. Title 23 addresses public health and safety issues related to hazardous materials and wastes, and specifies disposal options.

Local

Certified Unified Program Agencies

California SB 1082, passed in 1993, created the Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program). The Unified Program consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of six environmental and emergency response programs. CalEPA and other state agencies set the standards for their programs, while local governments implement the standards. These local implementing agencies are called Certified Unified Program Agencies.

Inyo County serves as the Certified Unified Program Agency, and its program includes oversight of Hazardous Materials Business/Emergency Contingency Plans, Underground Storage of Hazardous Materials, Aboveground Storage Tanks, Spill Prevention Control and Countermeasure Plans, Hazardous Wastes, and the California Accidental Release Program.

Inyo County General Plan Public Safety Element

The Public Safety Element of the ICGP (2001) contains policies that address wildfires and providing public safety from wildfire hazards. Table 3.9-1 includes policies relevant to the Proposed Project.

TABLE 3.9-1
INYO COUNTY GENERAL PLAN GOALS AND POLICIES

Goal	Policy
Wildfires	
WF-1. Prevent wildfires and provide public safety from wildfire hazards	WF-1.2. Limitations in Fire Hazard Zones: Discourage development within high fire hazard severity zones.
	WF-1.5. Emergency Access: All County public roads shall be developed and maintained at adequate standards to provide safe circulation for emergency equipment.

Note: WF=Wildfire
Source: 2001 Inyo County General Plan, Goals and Policies Report, Chapter 9 Public Safety Element, website: http://inyoplanning.org/general_plan/goals/ch9.pdf, accessed November 4, 2015.

Inyo County Hazardous Materials Area Plan

The Inyo County Hazardous Materials Area Plan (ICHMAP) was prepared in September 2008 to serve as a planning guide for the Inyo County Environmental Health Services Department (ICEHSD). The plan provides coordination of planning for all phases of emergency response to a hazardous materials incident or emergency. The plan also contains actions required by the County to protect its people and the environment in the event of a release or threatened release of hazardous materials.

3.9.2 Affected Environment

Hazardous substances are defined by state and federal regulations as substances that must be regulated in order to protect public health and the environment. Hazardous materials have certain chemical, physical, or infectious properties that cause them to be hazardous. The CCR Title 22, Division 4.5, Chapter 11, Article 2, Section 66261.10 provides the following definition:

> A hazardous material is a substance or combination of substances which, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may either (1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported, or disposed of or otherwise managed.

According to Title 22 (CCR Chapter 11, Article 3), substances having a characteristic of toxicity, ignitability, corrosivity, or reactivity are considered hazardous. Hazardous wastes are hazardous substances that no longer have a practical use, such as material that has been abandoned, discarded, spilled, contaminated, or which is being stored prior to disposal.

Toxic substances may cause short-term or long-term health effects, ranging from temporary effects to permanent disability or death. Examples of toxic substances include most heavy metals, pesticides, benzene, gasoline, hexane, natural gas, sulfuric acid, lye, explosives, pressurized canisters, and radioactive and biohazardous materials. Soils may also be toxic because of accidental spilling of toxic substances.

Use, Disposal, Storage, and Transport/Accidental Release of Hazardous Materials

The Project Site is currently developed with the existing Dam, existing Cactus Flats Road, existing LAA, and NHR. Existing operational activities associated with these facilities consist of completing minor repairs, when necessary, and routine maintenance, which include the use of potentially hazardous materials, such as fuels, oils, and cleaning solvents, which are regulated.

In addition, serpentine rock formations in Inyo County may contain naturally occurring asbestos (Inyo County, 2015). The potential of an asbestos-containing product to release fibers is dependent upon its degree of friability. Friable asbestos is defined as a hazardous waste if the product contains greater than

one percent friable asbestos fibers (Section 66699, Title 22) and must be handled as a hazardous waste as required in the California Health and Safety Code and Title 22 of the CCR. Within Inyo County, non-friable asbestos is accepted only at the Bishop-Sunland Landfill.

Emergency Evacuation and Response Plans

The Inyo County Fire Department provides emergency response services and has jurisdiction over the Project Site, with the exception of the LAA Excavation Area and a portion of the LAA Realignment, which is under federal jurisdiction. There are six fire protection districts (FPD) in Inyo County including the Independence FPD, Lone Pine FPD, Big Pine FPD, Bishop FPD, Olancha FPD, and Southern Inyo FPD. The nearest fire stations to the Project Site are the BLM Olancha Station, located adjacent to US-395 in Grant, California approximately two miles to the northwest, and the Olancha Cartago Fire Department, located in Olancha, California, approximately four miles to the northwest. Services provided include structure fire suppression, wildland fire suppression, emergency medical services, hazardous condition mitigation, hazardous materials first responder operations, fire/life safety inspections, ambulance response and transport, and public service response (Olancha Cartago Fire Department, 2014).

Each fire department in Inyo County has varying training and emergency response capabilities depending on the specific regional hazards. The training is generally based on the types of hazards that would be encountered in Inyo County, on new or improved response techniques, or on changes in the hazardous materials laws. When a hazardous materials incident occurs within Inyo County, the fire departments, along with the Inyo County Sheriff Department (ICSD), are the responsible parties. However, Inyo County does not have a full Hazardous Materials Response Team and utilizes a joint agreement with the neighboring counties as well as private contractors to conduct a coordinated hazardous materials response (Inyo County, 2008).

As identified in the Hazardous Materials Area Plan, primary evacuation routes in Inyo County consist of the major streets and highways within the County, as well as the interstate freeway system and state routes (Inyo County, 2008). However, no specific evacuation routes are discussed.

Wildland Fires

Wildland fires can occur in open spaces containing a mixture of flammable and nonflammable vegetation cover. Such fires can endanger human life and existing structures to the extent that they occur or originate in developed or partially developed areas. The California Desert District manages BLM-managed land within the Project vicinity and coordinates with other fire organizations, including USFS, NPS, and CAL FIRE. CAL FIRE's Fire Resource and Assessment Program provides Fire Hazard Severity Zone maps showing the severity of the threat of wildfires and the designation of responsibility for fire protection. Based on the Fire Hazard Severity Zone map for Inyo County, the LAA Realignment are located within Moderate Fire Hazard Severity Zones and the rest of the Project Site is located within Moderate and High Fire Hazard Severity Zones. There are no areas within the Project Site that are designated as Very High Fire Hazard Severity Zones (CAL FIRE, 2007). Figure 3.9-1 identifies the fire hazard severity zones for the Project Site.

3.9.3 Methodology for Analysis

The assessment of impacts concerning hazards and hazardous materials and their use, transport, disposal, or release related to public health and the environment was based in part on the technical memorandum discussed at the beginning of this section. Impacts to emergency response plans were assessed using information from ICEHSD, and impacts to wildland fires were assessed using maps and data from CAL FIRE.

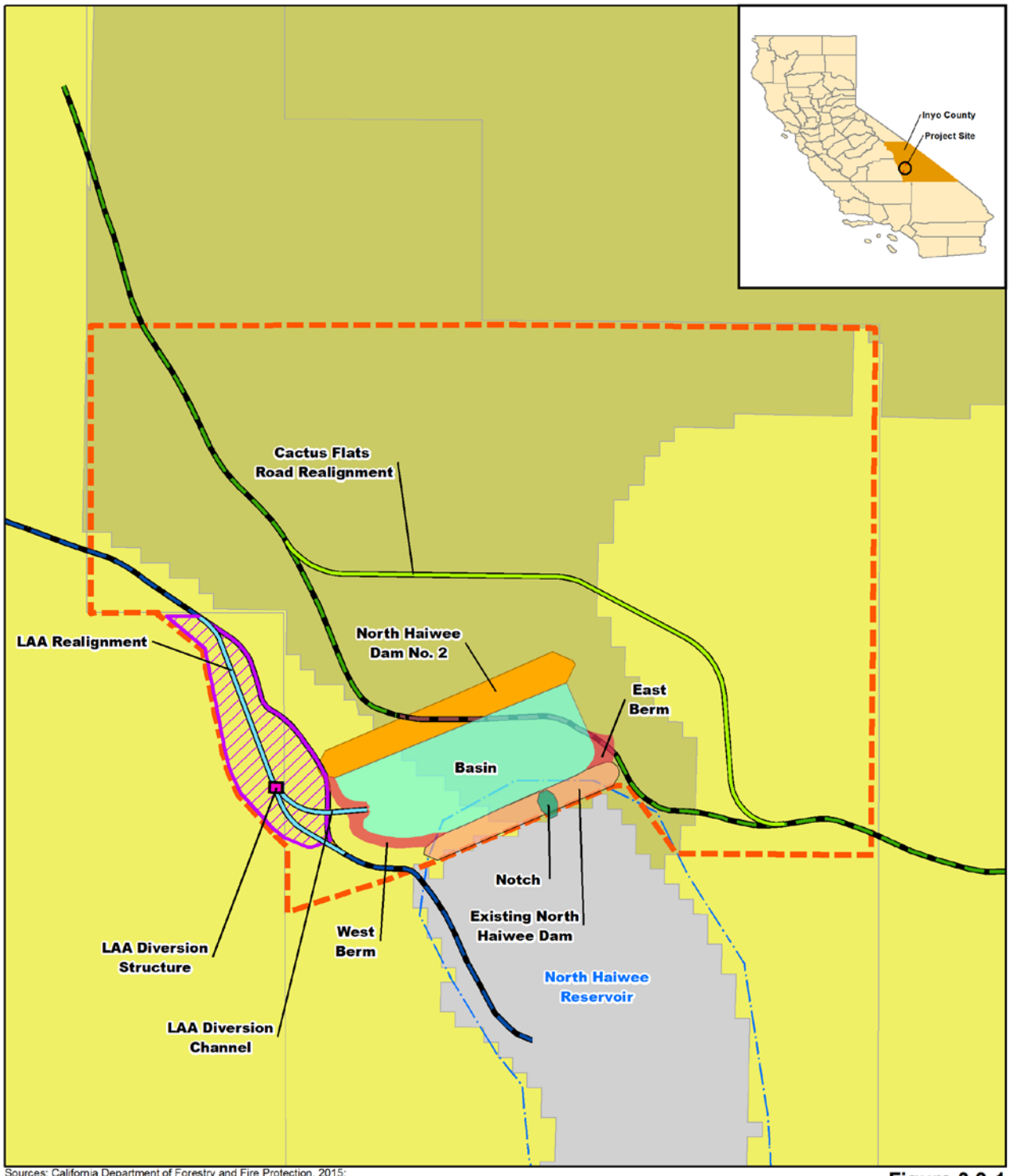

Figure 3.9-1
Fire Hazard Severity Zones within the Project Vicinity

CEQA Significance Criteria

The thresholds of significance for the Proposed Project's potential to impact hazards and hazardous materials are based on Appendix G of the State CEQA Guidelines. The following thresholds of significance were analyzed:

- Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
- 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?
- Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?
- Would the project expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

The Appendix G significance criteria listed below were scoped out of the analysis for further consideration in the IS (Appendix A), and are discussed in Chapter 4, Other CEQA and NEPA Considerations, of this Draft EIR/EA.

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

NEPA Requirements

The term "significantly" as used in NEPA requires considerations of both context and intensity (40 CFR 1508.27). Therefore, thresholds serve as a benchmark for determining if a project action would result in a significant adverse environmental impact when evaluated against the baseline. The environmental effects analysis of the Proposed Project related to hazards and hazardous materials includes an assessment of the context and intensity of the impacts as defined in the NEPA implementing regulations, 40 CFR 1508.27, and the BLM *NEPA Handbook H-1790-1* of 2008. The BLM *NEPA Handbook H-1790-1* requires that duration be considered and that both short- and long-term adverse and beneficial impacts be disclosed in the NEPA analysis. The effects analysis must demonstrate that BLM took a "hard look" at the impacts of the action. The level of detail must be sufficient to support reasoned conclusions by comparing the amount and the degree of change (impact) caused by the proposed action and alternatives (BLM *NEPA Handbook H-1790-1*, 2008, p. 55). Additionally, direct, indirect, residual, and cumulative impacts for the Proposed Project must be considered. BLM does not provide a determination on the level of significance in a NEPA document. Rather, BLM leaves that determination to the FONSI which will be completed prior to the signing of a Decision Record. Any characterization of significance in this Draft EIR/EA applies only to the CEQA determination.

Applicable Best Management Practices

The following applicable BMPs would minimize impacts to hazards and hazardous materials.

- A Health and Safety Plan will be prepared by LADWP and submitted as part of the Plan of Development for the Proposed Project to BLM for review and approval. The Health and Safety Plan will address safety situations for Project-site construction activities, and include safety training, emergency evacuation plans, potential accidents that could arise from construction activities, identification of hazards/risks, and recordkeeping procedures. The Health and Safety Plan will also include an emergency response plan and spill prevention, control, and countermeasure plan to be approved by a BLM contaminant remediation specialist, which includes the protocols for emergency response to spills of toxic contaminants (including petroleum) among other emergency procedures.
- LADWP will also prepare and submit a Fire Management and Protection Plan (FMMP) to BLM for review and approval as part of the Plan of Development for the Proposed Project, and ensure all construction crews have fire-suppression equipment (such as fire extinguishers) on-site to respond to the accidental ignitions of a fire.

3.9.4 Environmental Consequences

HAZ-1 *Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?*

No Project Alternative

Under the No Project Alternative, the existing Dam, existing Cactus Flats Road, and existing LAA would remain on the Project Site as under existing conditions. Additionally, no excavation for or purchase of earthen material would be required. As no construction would occur, no additional miscellaneous hazardous substances, such as gasoline and fuels, would be necessary to power construction equipment and haul trucks. Typical maintenance activities that currently use limited amounts of hazardous substances, such as gasoline, diesel fuel, hydraulic fluid, solvents, oils, would continue to be used in the same manner as they are under existing conditions, and would continue to be regulated as under existing conditions. Therefore, no impact would occur under the No Project Alternative.

Build Alternatives - Construction

CDSM Alternative

During excavation and construction activities, it is anticipated that limited quantities of miscellaneous hazardous substances, such as gasoline, diesel fuel, hydraulic fluid, solvents, oils, paints, etc., would be brought into the construction staging areas. The construction staging areas would be equipped with fire-suppression equipment and hazardous material spill kits. Temporary bulk aboveground storage tanks would be used for fueling and maintenance purposes. Construction workers could also use properly labeled sheds and trailers as temporary storage areas for these substances. Earthen materials, including sand, gravel, and/or riprap, would be hauled from the LAA Excavation Area and existing mine in Keeler and would be stockpiled within the Project Site. All hazardous materials would be transported, contained, stored, used, and disposed of in accordance with applicable federal, state, and local health and safety regulations, including those within the ICHMAP. In addition, prior to construction, a project-specific Health and Safety Plan would be required to ensure all transport, use, and disposal of hazardous materials is in accordance with applicable regulations. Compliance with applicable regulations and a project-specific Health and Safety Plan would ensure impacts related to the routine transport, use, or disposal of hazardous materials would be less than significant during construction of the CDSM Alternative.

Excavate and Recompact Alternative

Similar to the CDSM Alternative, compliance with applicable regulations and a project-specific Health and Safety Plan would ensure impacts related to the routine transport, use, or disposal of hazardous materials would be less than significant during construction of the Proposed Project under the Excavate and Recompact Alternative.

Build Alternatives - Operation

Operation of the Proposed Project would include the use of limited quantities of potentially hazardous materials, such as fuels, oils, and cleaning solvents. However, these types of materials are not acutely hazardous, and all storage, handling, and disposal of these materials are regulated by the DTSC, USEPA, and ICEHSD. In addition, the use of these hazardous materials during operation would be typical of maintenance and vehicle access, similar to existing conditions. Dredging within the basin would occur infrequently, approximately every 10 to 15 years. Removal of sediment, as well as any on-site treatment, transport, and off-site treatment or disposal of the sediment would be strictly regulated, and activities would comply with all laws and regulations regarding such materials. Compliance with applicable federal, state, and local health and safety regulations, including those within the ICHMAP, would ensure impacts related to the routine transport, use, or disposal of hazardous materials would be less than significant during operation of the Proposed Project.

HAZ-2: *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?*

No Project Alternative

Under the No Project Alternative, the existing Dam, existing Cactus Flats Road, and existing LAA would remain on the Project Site as under the existing environment conditions. Additionally, no excavation for or purchase of earthen materials would be required. No construction would occur and, therefore, no additional miscellaneous hazardous substances, such as gasoline, fuels, or fluids would be necessary to power construction equipment and haul trucks. Additionally, there would be no potential for naturally occurring asbestos to be released, as there would be no potential for construction to interfere with serpentine rock formations. Typical maintenance activities that currently use limited amounts of miscellaneous hazardous substances would continue to be used in the same manner as under existing conditions. Therefore, no impact would occur under the No Project Alternative.

Build Alternatives - Construction

CDSM Alternative

As discussed above, construction activities would be temporary in nature and the hazardous materials that would be used during construction of the Proposed Project would be transported, used, stored, and disposed of according to federal, state, and local health and safety regulations. Additionally, the types of hazardous materials that would be used during construction would involve limited quantities of miscellaneous hazardous substances, such as gasoline, diesel fuel, hydraulic fluid, solvents, oils, paints, etc. Hazardous materials would be properly labeled and stored in the construction staging areas (refer to Figure 2-9, Construction Staging and Stockpile area). As with any liquid and solid, during handling and transfer from one container to another, the potential for an accidental release exists. Depending on the relative hazard of the material, if a spill were to occur of significant quantity, the accidental release could pose a hazard to construction workers, the public, as well as the environment. However, these activities would be short-term or one-time events. Consequently, it is unlikely that a significant release of hazardous materials would occur. Construction of the Proposed Project would not 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.

Serpentine rock formations in Inyo County may contain naturally occurring asbestos (Inyo County, 2015). Serpentine rock is defined as metamorphic or magnesium-rich igneous rock (DOC, 2002). The known geology of the Project Site generally consists of Quaternary alluvium with the nearest occurrence of metamorphic rock located west of US-395. Therefore, while unlikely, site excavation activities may have the potential to expose construction workers to asbestos. Should the asbestos be friable asbestos-containing waste, the California Health and Safety Code and Title 8 of the CCR require that this material be handled as a hazardous waste to ensure safe handling and disposal should any asbestos be released. Asbestos waste would be watered down to prevent fibers from blowing around, packaged, and transported in sealed, leak-tight, and non-returnable containers to Bishop-Sunland Landfill.

NHR contains sediments that were deposited by the LAA where it enters NHR. These sediments contain naturally occurring arsenic which has been transported through the LAA system. Under the 1999 Interim Arsenic Management Plan, LADWP is managing arsenic concentrations in the aqueduct water through the addition of ferric chloride (FeCl3), which traps arsenic in sediments that are then deposited in NHR. This treatment method brings arsenic concentrations in the reservoir water to safe levels at Merritt Cut (just south of NHR), and the aqueduct water is further treated at the Los Angeles Aqueduct Filtration Plant (LAAFP). Potential impacts associated with the sediments are discussed in Section 3.10, Hydrology, Water Quality, and Groundwater.

Earth removal and excavation would occur within the footprint of the NHD2 components and grading would occur within the footprints of the Cactus Flats Road Realignment, the LAA Realignment, and the diversion channel and NHD modifications. Should any excavated material contain hazardous materials, such as asbestos, hazardous materials would be handled and transported in strict accordance with applicable health and safety regulations, including Title 22 Division 4.5, to minimize potential impacts. Additionally, all storage, handling, and disposal of these materials are regulated by the DTSC, USEPA, and ICEHSD; prior to construction, a project-specific Health and Safety Plan would be required. Compliance with applicable regulations, including those within the ICHMAP, and a project-specific Health and Safety Plan would ensure that any excavated hazardous materials would be handled appropriately to prevent accidental release of the hazardous materials.

Material from the LAA Excavation Area would be excavated to construct the NHD2 components. The east and west berms would be constructed using soil excavated at the LAA Excavation Area, the LAA Realignment, and leveling of the basin floor. The LAA Realignment site, including the LAA Excavation Area, and the basin site have not been identified as containing hazardous materials. However, the LAA Excavation Area was previously disturbed by construction of the existing LAA and the provision of fill materials for the existing Dam. Therefore, there is potential that previously unidentified hazardous materials could be present due to past mining operations at the LAA Excavation Area. In addition, serpentine rock formations in Inyo County may contain naturally occurring asbestos. As previously discussed, should any excavated material contain hazardous materials, such as asbestos, it would be handled and transported in strict accordance with applicable health and safety regulations. Additionally, all storage, handling, and disposal of these materials are regulated by the DTSC, USEPA, and ICEHSD.

Earthen material would be transported from the LAA Excavation Area and existing mine in Keeler to the NHD2 site. The types of hazardous materials that would be used to haul the material would involve limited quantities of miscellaneous hazardous substances, such as gasoline, diesel fuel, hydraulic fluid, etc. All hazardous materials used to transport earthen material would be transported, used, stored, and disposed of according to federal, state, and local health and safety regulations to avoid a potential accidental release. In addition, while unlikely, should any excavated material contain hazardous materials, the materials would be transported to an appropriate facility for disposal in compliance with federal, state, and local regulations. In addition, prior to construction, a project-specific Health and Safety plan would be required.

Compliance with applicable regulations, including those within the ICHMAP and a project-specific Health and Safety Plan, would also ensure that any excavated hazardous materials would be handled appropriately to further minimize potential impacts. Therefore, construction impacts related to the accidental release of hazardous materials would be less than significant under the CDSM Alternative.

Excavate and Recompact Alternative

Similar to the CDSM Alternative, compliance with applicable regulations, including those within the ICHMAP, and a project-specific Health and Safety Plan would ensure that any excavated hazardous materials would be handled appropriately to prevent accidental release of the hazardous materials under the Excavate and Recompact Alternative. Impacts to the LAA Excavation Area under the Excavate and Recompact Alternative would be similar to those under the CDSM Alternative as excavated material could contain previously unidentified hazardous materials due to past mining operations or naturally occurring asbestos. In addition, limited amounts of fuels and other miscellaneous hazardous substances would also be used to transport earthen material to the NHD2 site from the LAA Excavation Area and existing mine in Keeler and, while unlikely, excavated material could contain hazardous materials that would need to be transported to an appropriate disposal facility. Additionally, all storage, handling, and disposal of these materials are regulated by the DTSC, USEPA, and ICEHSD. Construction activities would be subject to applicable federal, state, and local health and safety regulations. Therefore, construction impacts related to the accidental release of hazardous materials into the environment would be less than significant for the Proposed Project under the Excavate and Recompact Alternative.

Build Alternatives - Operation

Operation of the Proposed Project would include the use of potentially hazardous materials, such as fuels, oils, and cleaning solvents in small quantities during maintenance activities, which could be accidentally spilled or released. However, these types of materials are not acutely hazardous, and all storage, handling, and disposal of these materials are regulated by the DTSC, USEPA, and ICEHSD. In addition, the use of these hazardous materials during operation would be typical of maintenance and vehicle access, similar to existing conditions, and would require compliance with applicable health and safety regulations, including those within the ICHMAP. Additionally, the Proposed Project will adhere to its project-specific Health and Safety Plan, which will include a spill prevention plan that outlines the protocols for emergency response to spills of toxic contaminants among other emergency procedures. Therefore, operational impacts related to the accidental release of hazardous materials would be less than significant under each of the Build Alternatives.

HAZ-3: *Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*

No Project Alternative

Under the No Project Alternative, the existing Dam, existing Cactus Flats Road, and existing LAA would remain on the Project Site as under the existing environment conditions. Additionally, no earthen material would be utilized. No construction would occur and no construction equipment or haul trucks would travel on Inyo County roads that would have the potential to interfere with emergency response. Therefore, no impact would occur under the No Project Alternative.

Build Alternatives - Construction

CDSM Alternative

North Haiwee Dam No. 2 Components

Construction of the NHD2 components would involve the transport of equipment and materials on public roadways and service roads. The Project Site would primarily be accessed via US-395, which is an interstate freeway within Inyo County and considered a primary evacuation route (Inyo County, 2008).

Haul trucks would access the LAA Excavation Area via North Haiwee Road, which is not a designated evacuation route, due to its adjacency to the proposed NHD2 site. Haul trucks would access the existing mine in Keeler using US-395, SR-190, and SR-136, all of which are designated primary evacuation routes (Inyo County, 2008).The Public Safety Element of the ICGP requires all County public roads to be developed and maintained at adequate standards to provide safe circulation for emergency equipment. However, other than the delivery of materials and supplies to the Project Site, construction of the proposed NHD2 components would be confined to the NHD2 site, basin area, and construction staging and stockpile areas. Therefore, no roadway lane closures are anticipated for construction of the NHD2 components, and all County public roads would be maintained at adequate standards for emergency equipment throughout construction. Additionally, prior to constructing NHD2 and the basin, an existing segment of an access road that travels north-south between NHD and the existing Cactus Flats Road would be taken out of service. The existing North Haiwee Road and the realigned Cactus Flats Road would continue to provide access to NHD following construction. In addition, construction of the basin would occur after Cactus Flats Road has been realigned. As discussed in Chapter 2, Project Description and Alternatives, construction of the Cactus Flats Road Realignment would begin in first quarter 2018 and end in fourth quarter 2018, while construction of NHD2 beginning in first quarter 2020, long after the Cactus Flats Road Realignment is completed. Therefore, construction impacts to emergency response and evacuation plans would be less than significant for the proposed NHD2 components under the CDSM Alternative.

Cactus Flats Road Realignment

Similar to the construction of the NHD2 components, construction of the Cactus Flats Road Realignment would also involve the transport of equipment and materials on public roadways, and the Project Site would be accessed via US-395, a primary evacuation route (Inyo County, 2008). As previously discussed, the ICGP requires all County public roads to be developed and maintained at adequate standards to provide safe circulation for emergency equipment. Other than the delivery of materials and supplies to the Project Site, construction of the Cactus Flats Road Realignment would be confined to a 155-foot wide area.

Additionally, as discussed in Chapter 2, Project Description and Alternatives and shown in Figure 2-9, Construction Staging and Stockpile Area, construction staging areas adjacent to NHD2 would be accessed via the existing Cactus Flats Road. This portion of Cactus Flats Road would be inaccessible to the general public during construction but would not be demolished, as it would provide access to NHD and NHD2 following construction. The existing Cactus Flats Road would not be closed to the public until the Cactus Flats Road Realignment is constructed, to ensure continued access. In addition, construction of NHD2 would occur after Cactus Flats Road has been realigned. As discussed in Chapter 2, Project Description and Alternatives, the Cactus Flats Road Realignment would begin in first quarter 2018 and end in fourth quarter 2018, with construction of NHD2 beginning after the Cactus Flats Road Realignment is completed in first quarter 2020.

Therefore, no roadway lane closures are anticipated for construction of the Cactus Flats Road Realignment and the existing Cactus Flats Road would be maintained at adequate standards to provide safe circulation for emergency equipment during construction. As stated in the ICHMAP, Cactus Flats Road is not a primary roadway and, thus, is not a designated evacuation route. Therefore, construction impacts to emergency response and evacuation plans would be less than significant for the Cactus Flats Road Realignment under the CDSM Alternative.

LAA Realignment

Similar to the construction of the NHD2 components, construction of the LAA Realignment, which includes the diversion structure, would also involve the transport of construction equipment, construction materials, and waste from construction activities, such as concrete demolition, on public roadways. The Project Site would be accessed via US-395, a primary evacuation route (Inyo County, 2008), and haul

trucks would access the LAA Excavation Area via North Haiwee Road, which is not a designated evacuation route. As previously discussed, the ICGP requires all County public roads to be developed and maintained at adequate standards to provide safe circulation for emergency equipment. Other than the delivery of materials and supplies to the Project Site and the hauling of debris from the Project Site, excavation, grading, and construction of the LAA Realignment would be confined to a 1,900 foot-long trapezoidal channel. The LAA Excavation Area is located within and around the 1,900 foot-long trapezoidal channel where excavation for and construction of the LAA Realignment would occur. In order to provide a haul route to the stockpile area, a temporary bridge would be constructed over the existing LAA. Additionally, two new road segments would be constructed from an existing dirt road and the existing Cactus Flats Road, and a segment of an existing access road adjacent to the west side of the existing LAA would be widened (refer to Figure 2-4, LAA Realignment and Excavation Detail). Therefore, no roadway lane closures are anticipated during construction of the LAA Realignment, and all County public roads in the area of the LAA would be maintained at adequate standards to provide safe circulation for emergency equipment. Therefore, construction impacts to emergency response and evacuation plans would be less than significant for the LAA Realignment components under the CDSM Alternative.

Diversion Channel and NHD Modifications

Similar to the construction of the NHD2 components, construction of the diversion channel and NHD modifications would also involve the transport of construction equipment, construction materials, and waste from construction activities such as concrete demolition on public roadways. The Project Site would be accessed via US-395, a primary evacuation route (Inyo County, 2008). As previously discussed, the ICGP requires all County public roads to be developed and maintained at adequate standards to provide safe circulation for emergency equipment. Other than the delivery of materials and supplies to the Project Site and the hauling of debris from the Project Site, excavation, grading, and construction of the diversion channel and NHD modifications would be confined to the basin footprint and the diversion channel area (approximately 675 feet long). Therefore, no roadway lane closures are anticipated during construction of these components, and all County public roads in the area of the LAA would be maintained at adequate standards to provide safe circulation for emergency equipment. Therefore, construction impacts to emergency response and evacuation plans would be less than significant for the diversion channel and NHD modifications under the CDSM Alternative.

Excavate and Recompact Alternative

Similar to the CDSM Alternative, construction impacts to emergency response and evacuation plans would be less than significant for the NHD2 components, the Cactus Flats Road Realignment, the LAA Realignment, and the diversion channel and NHD modifications, under the Excavate and Recompact Alternative.

Build Alternatives - Operation

Long-term operation of the Proposed Project would not impair implementation of or physically interfere with an adopted emergency response plan. Operation of the NHD2 components and the LAA Realignment would require minimal maintenance activities, similar to existing conditions. Maintenance of the Cactus Flats Road Realignment would be typical of paved and unpaved roads and would occur with the same frequency as maintenance of the existing Cactus Flats Road. The NHR reservoir keeper, whose residence is adjacent to NHD, would remain on site and be the primary person responsible for the upkeep of the existing Dam and the proposed NHD2. Therefore, operational impacts to emergency response and evacuation plans would be less than significant under each of the Build Alternatives.

HAZ-4: *Would the project expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?*

No Project Alternative

Under the No Project Alternative, the existing Dam, existing Cactus Flats Road, and existing LAA would remain on the Project Site, similar to existing conditions. Additionally, no earthen material would be utilized. No construction would occur and no construction equipment would operate that would have the potential to ignite an accidental fire. Therefore, no impact would occur under the No Project Alternative.

Build Alternatives - Construction

CDSM Alternative

The Project Site is generally undeveloped and covered with dry brush. The LAA Realignment is located within Moderate Fire Hazard Severity Zones and the rest of the Project Site is located within Moderate and High Fire Hazard Severity Zones. The Proposed Project is not located adjacent to urbanized or residential areas, and would not involve the construction of any new habitable structures. Construction activity could potentially cause wildland fires through sparking, or smoking and overheating equipment, which could expose construction workers to an increased fire risk while construction is ongoing. However, construction crews would have fire-suppression equipment available on-site (such as fire extinguishers) and be trained per the Health and Safety Plan to respond to potential accidental ignition of a fire. Therefore, construction impacts related to wildland fire would be less than significant for the Proposed Project under the CDSM Alternative.

Excavate and Recompact Alternative

Similar to the CDSM Alternative, construction impacts related to wildland fire would be less than significant for the Proposed Project under the Excavate and Recompact Alternative.

Build Alternatives - Operation

Project operation is not anticipated to increase the risk of wildland fires. The Proposed Project would construct a new earthen dam using rock and other natural materials, such as riprap, gravel, and/or sand, which do not present a fire hazard. In addition, realignment of Cactus Flats Road and the LAA would operate similar to existing conditions once constructed, and would not present a fire hazard. Operation of the NHD2 components, the LAA Realignment, and the diversion channel and NHD modifications would require minimal maintenance activities, which would be similar to existing conditions. Maintenance of the Cactus Flats Road Realignment would be typical of paved and unpaved roads and would occur with the same frequency as maintenance of the existing Cactus Flats Road. The NHR reservoir keeper, whose residence is adjacent to NHD, would remain on site and no additional permanent residents would be located at the Project Site following construction. As a result, fire risk due to the anticipated maintenance and operational activities would be similar to existing conditions. Therefore, operational impacts related to wildland fire would be less than significant under all Build Alternatives.

3.9.5 Mitigation Measures

The Proposed Project would result in less than significant impacts related to hazards and hazardous materials. No mitigation measures are required.

3.9.6 Residual Impacts After Mitigation

The Proposed Project would result in less than significant impacts related to hazards and hazardous materials under CEQA.

3.9.7 NEPA Conclusions

No Project Alternative

The No Project Alternative would not change the existing conditions of the Project Site and would not utilize any earthen material.

Build Alternatives

The Build Alternatives of the Proposed Project would result in short-term impacts during construction-related activities. The Proposed Project would comply with all federal, state, and local health and safety regulations, including those within the ICHMAP, related to the transport, storage, use, or disposal of hazardous materials and potential upset and accident conditions involving the release of hazardous materials into the environment. Construction of the Build Alternatives would not result in the closure of roads or lanes, and all County public roads would be maintained adequately to ensure safe circulation for emergency equipment. BMPs would be in place to prepare a project-specific Health and Safety Plan during construction and make fire suppression equipment available to construction crews in the event of potential accidental ignition of a fire. Given that the Proposed Project is constructing a new Dam, Cactus Flats Road Realignment, LAA Realignment, and diversion channel and NHD modifications, operation of the Proposed Project would result in similar conditions to the existing setting.

The Proposed Project would be consistent with DRECP LUPA and its applicable CMAs (LUPA-BIO-9, LUPA-SW-6, and LUPA-SW-7) through implementation of a Health and Safety Plan and other applicable BMPs identified in Section 3.9.3 Methodology for Analysis and Section 3.7, Geology and Soils. The Proposed Project would be consistent with LUPA-BIO-13 per the BMP 1 (dust control measures) listed in Section 3.4, Biological Resources.

3.10 Hydrology, Water Quality, and Groundwater

This section analyzes the potential impacts of the Proposed Project as it relates to hydrology, water quality, and groundwater. The applicable laws, regulations, and methods used to determine the effects of the Proposed Project are described herein. The section describes the affected environment and analyzes the environmental consequences of the Proposed Project and, if applicable, provides mitigation measures. The analysis in the section is based in part on information from the Hydrology and Water Quality Technical Report in Appendix K of this Draft EIR/EA.

3.10.1 Regulatory Setting

Federal

Clean Water Act of 1972

The 1972 Federal CWA established and implemented the NPDES Permit Program to regulate and control the discharge of pollutants into waters of the United States. National goals were set to regulate point-source and non-point-source discharges into receiving waters and achieve water quality standards suitable for fish, wildlife, and recreation. The CWA provides authority for establishing these water quality standards and specific technology-based effluent limitations that are enforceable as permit conditions. In California, issuance of NPDES Permits has been delegated, through a process referred to as primacy, to the SWRCB and nine RWQCBs who implement and enforce the requirements of the CWA. The CWA is also administered and enforced by USEPA. Key CWA provisions are discussed below in greater detail.

Clean Water Act Section 303

Section 303(d) of the CWA requires states to identify water bodies that do not meet, or are not expected to meet, water quality standards. States are required to establish Total Maximum Daily Loads (TMDLs) for impaired water bodies based on the severity of pollutants in the water. Each state also needs to establish a priority ranking for impaired waters, taking into account the severity of the pollution and the uses of these waters. The TMDL is a calculation for the maximum amount of a pollutant that a water body can receive and still meet water quality standards. TMDLs also define an allocation of that load among the various sources of that pollutant (i.e., municipalities, other permitted entities, etc.). The TMDL can also act as a plan to reduce pollutant loading, which improves water quality. The total maximum daily thermal load is also required to assure the protection of indigenous populations of shellfish, fish, and wildlife. After implementation of a TMDL, it is anticipated that the problems that led to placement of a given pollutant on the Section 303(d) List would be remediated. In California, SWRCBs and RWQCBs are responsible for assessing water quality monitoring data for surface waters every two years to determine if they contain pollutants exceeding the levels established in water quality standards. It is then their responsibility to add these water body pollutant combinations to the Section 303(d) List and establish TMDLs as applicable.

Clean Water Act Section 401

Section 401 of the CWA states that any applicant for a Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities which may result in any dredge and/or fill into the navigable waters of the United States, the State shall provide the licensing or permitting agency a Water Quality Certification. After receiving the certification, applicants are required to meet effluent limitations and monitoring requirements necessary to ensure compliance with the Federal license or permit. The 401 certification provides for the protection of the physical, chemical, and biological integrity of waters. In California, the authority to either grant water quality certification or waive the requirement is delegated by SWRCB to the nine RWQCBs.

Clean Water Act Section 402

Section 402 of the CWA establishes the NPDES permit program to regulate the discharge of pollutants from point sources (storm drains, ditches, etc.) into waters of the United States. NPDES permits regulate specific discharge limits for point sources, including stormwater, and establish monitoring and reporting requirements. The NPDES permit is required for construction activities larger than one acre and prohibits discharges not allowed under the permit. Section 402 of the CWA also requires municipal, industrial, and commercial facilities discharging wastewater and/or stormwater directly from a point source to obtain coverage under the NPDES permit.

Clean Water Act Section 404

Section 404 of the 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, but are not limited to, fill for development and water resource projects, including the construction of dams and levees. A permit is required before dredged or fill materials can be discharged into waters of the United States. The basic premise of the program is that no discharge of dredged or fill material may be permitted if a practical, less damaging alternative exists, or if United States waters will be significantly degraded. An applicant must demonstrate that steps have been taken to avoid adverse impacts to wetlands, streams, and other aquatic resources, that potential impacts have been minimized, and that compensation will be provided for any remaining unavoidable impacts. USACE reviews all individual permits and evaluates applications based on public interest review and environmental criteria set forth by the CWA. However, for most discharges that will have only minimal adverse effects, a general permit may be suitable. General permits are issued on a national, regional, or state basis for specific categories of activities. The general permits eliminate individual review and allows certain activities to proceed with little or no delay, provided that the general or specific conditions for the general permit are met.

Executive Order 11988 and the Federal Emergency Management Agency

EO 11988 requires federal agencies to avoid to the extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. The order requires USACE to minimize the impacts of floods and to restore and preserve beneficial values to floodplains. The Federal Emergency Management Agency (FEMA) is responsible for overseeing the National Flood Insurance Program to provide subsidized flood insurance to communities that comply with FEMA regulations limiting development in floodplains. Flood Insurance Rate Maps (FIRM) are issued by FEMA and identify areas prone to flooding. These maps also identify flood hazard zones in the community.

Federal Antidegradation Policy of 1968

The Federal Antidegradation Policy was established in 1968 and aims to protect and regulate water quality standards based on a three-tiered program. Tier 1 maintains and protects existing uses and water quality conditions to support such uses, and is applicable to all surface waters. Tier 2 maintains and protects "high quality" waters that support fishing and swimming. Tier 3 maintains and protects water quality in outstanding national resource waters, such as waters of national and state parks, wildlife refuges, and waters of exceptional recreational or ecological significance. The federal policy directs the states to adopt a statewide policy that includes the provisions identified in the three-tiered program.

Safe Drinking Water Act of 1974

The Safe Drinking Water Act of 1974 regulates the nation's drinking water supply and protects public health by authorizing USEPA to set national health-based standards for drinking water. Standards protect against both naturally-occurring and man-made contaminants. Protected drinking water sources include rivers, lakes, reservoirs, springs, and groundwater wells. Contaminants of concern relevant to domestic

water supply are defined as those that pose a public health threat or that alter the aesthetic acceptability of the water. These types of contaminants are regulated by USEPA primary and secondary Maximum Contaminant Levels that are applicable to treated water supplies delivered to the distribution system. In California, SWRCB has the primary enforcement authority to enforce federal and state safe drinking-water acts.

National Toxics Rule

The National Toxics Rule puts into effect for 14 states, including California, the chemical-specific numeric criteria for priority toxic pollutants, as needed to bring all states into compliance with the requirements of Section 303(c)(2)(B) of the CWA. States determined by USEPA to fully comply with Section 303(c)(2)(B) requirements are not affected by this rule.

The rule addresses two situations. For a few states, USEPA is implementing a limited number of criteria which were previously identified as necessary in disapproval letters to such states, and which the states have failed to address. For other states, Federal criteria are necessary for all priority toxic pollutants for which USEPA has issued Section 304(a) water quality criteria guidance and that are not the subject of approved State criteria. When these standards take effect, they will be the legally enforceable standards in the affected states for all purposes and programs under the CWA, including planning, monitoring, NPDES permitting, enforcement, and compliance.

Executive Order 11990 Protection of Wetlands

Under NEPA, EO 11990 requires federal agencies to prohibit construction or management practices that would adversely affect wetlands unless there is either no practicable alternative, or that a proposed action has considered all practical measures to minimize harm to the wetlands. Federal agencies shall minimize the destruction, loss, or degradation of wetlands, and preserve the natural and beneficial values of wetlands by (1) acquiring, managing, and disposing of federal lands and facilities; (2) providing federally undertaken, financed, or assisted construction and improvements; and (3) conducting federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities.

Desert Renewable Energy Conservation Plan Land Use Plan Amendment of 2016

The DRECP LUPA, approved by BLM in September 2016, is an amendment to the BLM CDCA Plan. The key objectives of the DRECP are to streamline renewable energy development and to provide for long-term conservation and management of special-status species, vegetation, and other resources within the DRECP Plan area. The DRECP identifies Development Focus Areas and Variance Process Lands where renewable energy development is more streamlined, as well as conservation areas, and several other land uses. The DRECP LUPA implements its objectives through specific CMAs. Some CMAs apply across the entirety of the DRECP Plan area, while others apply only to specific land uses. The DRECP LUPA contains several CMAs related to Hydrology, Water Quality, and Groundwater, including: LUPA-BIO-9, which protects water and wetland dependent species resources; LUPA-BIO-15, which requires state-of-the-art construction and installation techniques to minimize new site disturbance, soil erosion and deposition, soil compaction, disturbance to topography, and removal of vegetation; LUPA-SW-1, LUPA-SW-3, and LUPA-SW-4, which are general soil and water CMAs; LUPA-SW-5, LUPA-SW-20, LUPA-SW-21, LUPA-SW-22, LUPA-SW-24, LUPA-SW-25 and LUPA-SW30, which are related to groundwater resources; LUPA-SW-6, which is related to toxic spills; and LUPA-SW-14 and LUPA-SW-16, which are related to surface water regulations, rights, and floodplains. CMAs not applicable to hydrology, water quality, and groundwater include: LUPA-BIO-DUNE-3; LUPA-LIVE-1; LUPA-SW-2, 12, 13, 15, 17, 18, 18, 20, 23, 26, 27, 28, 29, 31, 32, 33, 34, 35; NLCS-MIN-5; and NLCS-SW-1. The consistency of the Proposed Project with the DRECP CMAs is provided in Appendix B of this Draft EIR/EA.

State

State Water Resources Control Board

SWRCB was established in 1967 by the California State Legislature and has the authority over water resources allocation and water quality protection within the State. SWRCB allocates water rights, adjudicates water right disputes, develops statewide water protection plans, establishes water quality standards, and guides the nine RWQCBs. The SWRCB also regulates stormwater from construction, industrial, and municipal activities; dredge and fill activities; the alteration of any federal water body; and several other activities with practices that could degrade water quality. The mission of SWRCB is "to preserve, enhance, and restore the quality of California's water resources, and ensure their proper allocation and efficient use, for the benefit of present and future generations."

Construction Stormwater NPDES Permit

California's Construction General Permit for Stormwater Discharges Associated with Construction and Land Activities (Construction General Permit [CGP]) Order No. 2009-0009-DWQ as amended by Order No. 2010-0014-DWQ and 2012-0006-DWQ issued by SWRCB is required for construction or demolition activity resulting in land disturbance of equal to or greater than one acre. Construction activities, including grading, trenching, excavation, stockpiling, and disturbances to the ground, are covered under the CGP. Dischargers must file Permit Registration Documents (PRDs) to SWRCB via the Stormwater Multi Application and Report Tracking System (SMARTS) by the Legally Responsible Person (LRP). PRDs consist of a Notice of Intent, risk assessment, site map, SWPPP, signed certification statement, and first annual fee. As part of the PRDs, RWQCB may require a risk assessment when the site poses a significant risk to water quality.

Under the CGP, a QSD must address pollutants and their sources, including sources of sediment associated with construction in order to prepare the SWPPP and a QSP installs effective site BMPs that result in the reduction or elimination of pollutants in stormwater discharges. In addition, all non-stormwater discharges must be either eliminated, controlled, or treated. BMPs are designed to reduce impacts to the Maximum Extent Practicable (MEP).

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) was established to protect water quality in the State of California and is responsible for creating the State's extensive regulatory program for water pollution control. Pursuant to the Porter-Cologne Act, the responsibility for protection of water quality in California rests with SWRCB. In turn, SWRCB has delegated the regulation of the hydrologic basin to the nine RWQCBs to regulate the nine hydrologic basins in the State. The Porter-Cologne Act gives SWRCB broad authority to establish water quality standards and discharge requirements, adopt water quality control plans, and implement provisions under the CWA, with the goal of protecting the beneficial uses of existing water bodies. Under the Porter-Cologne Act, the RWQCBs have the authority to specify certain conditions or areas where the discharge of waste, or certain types of waste, will not be permitted.

Under the authority of the Porter-Cologne Act, the RWQCBs require persons who discharge or propose to discharge waste that could affect the quality of waters in the State to file a Report of Waste Discharge with the appropriate RWQCB. RWQCB then issues or waives WDRs for the discharge or requires the discharger to enroll under the NPDES permit or WDR order.

Cobey-Alquist Flood Control Act

The Cobey-Alquist Flood Control Act states that a large portion of land resources are subject to recurrent flooding by overflow of streams and watercourses causing loss of life and property (California Water Code (CWC) Section 8400-8401). The public interest necessitates sound development of land use, as land

is a limited, value, and irreplaceable resource, and the floodplains of the state are a land resource to be developed in a manner that will prevent loss of life and economic loss caused by excessive flooding. Local governments have the primary responsibility for planning, adoption, and enforcement of land use regulations to accomplish floodplain management. It is a State of California policy to encourage local levels of government to plan land use regulations to accomplish floodplain management and to provide state assistance and guidance.

California State Nondegradation Policy

The California State Nondegradation Policy under SWRCB Resolution No. 68-16 is incorporated into all regional water quality control plans for the purpose of maintaining the highest water quality, and requires that existing high quality waters be maintained to the maximum extent possible. Resolution No. 68-16 states that the disposal of wastes into State waters shall be regulated to achieve the highest water quality consistent with maximum benefit to the people of the State, and to promote the peace, health, safety, and welfare of the people of the State. High water quality can lower if (1) change is consistent with maximum benefit to people of the State and will not result in water quality lower than applicable standards and (2) waste discharge requirements for proposed discharge will result in the best practicable treatment or control of the discharge necessary to assure no pollution or nuisance. California uses qualitative standards to determine if activities negatively impact water quality.

California Water Code

The CWC establishes laws relating to water, including the use of water, the acquisition and regulation of water rights, the control and utilization of water, the distribution of water, the supervision of dams, the use of and rights in streams, wells, pumping plants, and conduits, and the establishment and operation of public districts relating to water. Section 13260 of the CWC states that persons discharging or proposing to discharge waste that could affect the quality of the waters of the State, other than into a community sewer system, shall file a Report of Waste Discharge, if applicable. RWQCB adopts the WDRs specifying water quality limitations for the waste discharge reported. Pursuant to California Water Code 13267, a Monitoring and Reporting Program may be required by RWQCB as a condition of the WRD.

California Department of Public Health Drinking Water Regulations

The California Department of Public Health (CDPH) serves as the primary responsible agency for drinking water regulations. CDPH must adopt drinking water quality standards at least as stringent as federal standards, and may also regulate contaminants to more stringent standards than USEPA, or develop additional standards. CDPH regulations cover over 150 contaminants, including microorganisms, particulates, inorganics, natural organics, synthetic organics, radionuclides, and disinfection byproducts.

California Toxics Rule of 2000

In 2000, USEPA approved the California Toxics Rule (CTR), establishing numeric water quality criteria for priority toxic pollutants, including approximately 130 priority pollutant trace metals and organic compounds. The CTR also establishes other provisions for water quality standards to be applied to waters in the State of California. The CTR is consistent with Section 303(c)(2)(B) of the CWA, declaring that states must adopt numeric criteria for the priority toxic pollutants listed under Section 307(a), if those pollutants could be reasonably expected to interfere with the designated uses of States' waters. SWRCB adopted its State Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries (SIP). The SIP outlines procedures for NPDES permitting for toxic-pollutant objectives that have been adopted in Basins Plans and in the CTR.

California Fish and Game Code, Sections 1600-1616, as Amended

Sections 1602 of the CFGC states that activities may not substantially divert or obstruct the natural flow or otherwise substantially change the bed, channel, or bank of any river, stream, or lake, or that would

deposit or dispose of debris, waste, or other material where it may pass into waters that support fish or wildlife resources. Although there are several conditions that trigger authority and how it is acted upon, the CFGC states that all streams and lakes are subject to this regulation (Section 1600 et seq.). CDFW also has jurisdiction over riparian habitats that are associated with watercourses. CDFW is responsible for regulating this code and must receive written notification if activities will substantially divert or obstruct the natural flow, or substantially change the bed or channel of water bodies (Section 1602). A Lake or Streambed Alteration Agreement is required when activities substantially adversely affect existing fish or wildlife resources.

California Fish and Game Code, Sections 5650-5656, as Amended

Sections 5650-5656 of the CFGC states that it is unlawful to deposit in, permit to pass into, or place where it can pass into the waters of the State any substance or material deleterious to fish, plant life, mammals, or bird life. This section does not apply to a discharge that is authorized and in compliance with the terms and conditions of a WDR (pursuant to Section 13263 of the CWC), or a waiver issued pursuant to subdivision (a) of Section 13269 of the CWC issued by SWRCB or a RWQCB after a public hearing, or that is authorized and in compliance with the terms and conditions of a federal permit for which SWRCB or a RWQCB has, after a public hearing, issued a water quality certification pursuant to Section 13160 of the CWC.

Executive Order W-59-93

The primary objectives of EO W-59-93 are (1) to ensure no overall net loss and long-term net gain in the quantity, quality, and permanence of wetland acreage and values in California in a manner that fosters respect for private property, (2) to reduce procedural complexity in the administration of State and Federal wetlands conservation programs, and (3) to encourage partnerships to make restoration, landowner incentive programs, and cooperative planning efforts the primary focus of wetlands conservation. As directed by SWRCB in Resolution No. 2008-0026, the Wetland and Riparian Area Protection Policy is being implemented in three phases which allow for necessary infrastructure and program development. The current Phase 1 effort is now called the "Wetland Area Protection and Dredge and Fill Permitting Policy." The purpose of Phase 1 is to protect all waters of the State, including wetlands, from dredge and fill discharges. It includes a wetland definition and associated delineation methods, an assessment framework for collecting and reporting aquatic resource information, and requirements applicable to discharges of dredged or fill material. Phases 2 and 3 are not under consideration at this time.

Regional and Local

Lahontan Regional Water Quality Control Board

The Project Site is located within Inyo County, which is governed by the Lahontan RWQCB. The Lahontan Region has a Water Quality Control Plan, also referred to as the Basin Plan, which sets water quality standards for surface and ground waters in the Lahontan Region. The Basin Plan includes State standards along with federal water quality standards for certain toxic pollutants, including the National Toxics Rule and CTR. It also identifies general types of water quality problems that can threaten beneficial uses in the Lahontan Region, and then identifies control measures for these problems. Water quality control measures include TMDLs, which are often, but not always, adopted as Basin Plan amendments. Water quality objectives are intended to protect the public health and welfare, and to maintain or enhance water quality in relation to the existing and/or potential beneficial uses of the water, which are also identified in the Basin Plan.

Inyo County General Plan

The ICGP oversees development and must address elements of land use, circulation, housing, open-space, conservation, safety, and noise. The Land Use sub-element establishes goals and policies for residential,

commercial, industrial, public services and utilities, and other land uses in the County. The ICGP aims to protect and restore environmental resources from the effects of export and withdrawal of water resources. Policies relevant to the Project Site are listed below:

TABLE 3.10-1
INYO COUNTY GENERAL PLAN GOALS AND POLICIES

Goal	Policy
Public Services and Utilities	
PSU-1. To ensure the timely development of public facilities and the maintenance of adequate service levels for these facilities to meet the needs of existing and future County residents.	Policy PSU-1.2. On-Site Infrastructure**:** The County shall require all new development, including major modifications to existing development, to construct necessary on-site infrastructure to serve the project in accordance with County standards.
PSU-5. To collect and dispose of stormwater in a matter that minimizes inconvenience to the public, minimizes potential water-related damage, and enhances the environment.	Policy PSU-5.1. Project Design: The County shall encourage project designs that minimize drainage concentrations and coverage by impermeable surfaces.
	Policy PSU-5.2. Maintenance: The County shall require the maintenance of all drainage facilities, including detention basins and both natural and manmade channels, to ensure that their full carrying capacity is not impaired.
	Policy PSU-5.4. Runoff Quality: The County shall improve the quality of runoff from urban and suburban development through the use of appropriate and feasible mitigation measures including, but not limited to, artificial wetlands, grassy swales, infiltration/sedimentation basins, riparian setbacks, oil/grit separators, and other best management practices.
Flood Hazards	
FLD-1. Provide adequate flood protection to minimize hazards and structural damage.	Policy FLD-1.1.Floodplain Limitations: The County shall regulate development of habitable structures within floodplain areas (as established by FEMA), and areas within dam inundation zones (as recorded by California Office of Emergency Services).
	Policy FLD-1.2. Development in Floodplain: Prior to approval of any development in a floodplain area, the project applicant shall demonstrate that such development will not adversely impact downstream properties.
	Policy FLD-1.3. Mudflow Constraints: Discourage development within known or potential courses of mudflows.
	Policy FLD-1.4. Channelization: The natural condition of watercourses is to be maintained whenever feasible. The County shall discourage the channelization of watercourses unless necessary for the protection of public safety. If alterations of a watercourse are found to be necessary, the alterations shall be engineered to preserve or restore the natural characteristics of the watercourse to the greatest extent possible.
	Policy FLD-1.6. Stormwater Retention/Detention and Groundwater Recharge: Develop stormwater retention/detention ponds and groundwater recharge areas to make efficient use of stormwaters and to direct water away from hazard areas.
Soils	
S-2. Recognize development limitations of soil types in review and approval of future development projects to protect public health and safety.	Policy S-2.1. Soil Erosion: Minimize soil erosion from wind and water related to new development.
	Policy S-2.2. Soil Instability: In areas of unstable soils and/or steep terrain, the County shall limit the intensity of development in order to minimize the potential for erosion and landform instability.
Policy MER-1.4	Environmental Contamination. All mining operations will be required to take precautions to avoid contamination from wastes or incidents related to the storage and disposal of hazardous materials, or general operating activity at the site.

TABLE 3.10-1
INYO COUNTY GENERAL PLAN GOALS AND POLICIES

Goal	Policy
Water Resources	
WR-1. Provide an adequate and high quality water supply to all users within the County.	Policy WR-1.4. Regulatory Compliance: Continue the review of development proposals and existing uses pursuant to the requirements of the CWA, Lahontan RWQCB, and local ordinances to reduce polluted runoff from entering surface waters.
WR-2. Protect and preserve water resources for the maintenance, enhancement, and restoration of environmental resources.	Policy WR-2.1. Restoration: Encourage and support the restoration of degraded water surface and groundwater resources.
	Policy WR-2.2. Watercourse Alterations: Encourage the preservation of existing natural conditions of watercourses when considering flood control projects.
WR-3. Protect and restore environmental resources from the effects of export and withdrawal of water resources.	Policy WR-3.1. Watershed Management: Protect, maintain, and enhance watersheds within Inyo County.

Note: Acronyms include Public Services and Utilities (PSU), Flood Hazards (FLD), Soils (S), Mineral and Energy Resources (MER), Water Resources (WR)
Source: 2001 Inyo County General Plan

Inyo County Ordinance No. 1004

In 1998, the Inyo County Board of Supervisors adopted Resolution No. 1004 to govern sales and transfers of groundwater to another groundwater basin outside of the County, including sales and transfers to Los Angeles by another party.

Inyo-LADWP Long-Term Water Management Plan

In 1972, Inyo County filed a suit against the City of Los Angeles and LADWP claiming that increased groundwater pumping was harming the environment of Owens Valley, and that the practice should be analyzed in an EIR in accordance with the provisions of the CEQA. After several years of litigation, Inyo County and the City of Los Angeles formed a unique long-term surface water and groundwater management plan for the Owens Valley. In 1991, a long-term water resources management agreement was approved with an overall goal "to avoid certain described decreases and changes in vegetation and to cause no significant effect on the environment which cannot be acceptably mitigated while providing a reliable supply of water for export to Los Angeles and for use in Inyo County".

3.10.2 Affected Environment

The Proposed Project is located in the Basin and Range Geomorphic Province in Inyo County, California, near the southern portion of Owens Valley. The Owens Valley is bounded to the west by the Sierra Nevada Mountains and to the east by the Coso Range. The Project area is located just east of US-395, approximately one mile south of Olancha at an elevation of approximately 3,750 feet above mean sea level (amsl) (USGS, 2015).

The climate in Owens Valley is semi-arid to arid and is characterized by low precipitation, abundant sunshine, frequent winds, and moderate to low humidity (Danskin, 1998). The average annual maximum temperature recorded at Haiwee Reservoirs is about 73° F and the average annual minimum temperature is approximately 45° F; however, daily temperatures in the Owens Valley area may be as low as -2° F in the winter or as high as 107° F in the summer. Average annual snowfall in the Owens Valley is 3.4 inches. Average precipitation is approximately 6.8 inches (Western Regional Climate Center, 2015).

Surface Water

Watersheds and Hydrological Characteristics

Haiwee Reservoir is located in the Lower Owens Hydrologic Area (603.30). LADWP closed public access to Haiwee Reservoir in August 2005. Haiwee Reservoir is a closed system within the LAA which is part of the Los Angeles drinking water system that flows to the Los Angeles Filtration Plant.

The Project Site is located within the HUC-12 (hydrologic unit code with 12 digits) boundaries of the Carroll Creek-Owens Lake Watershed (180901030407) and the North Haiwee Reservoir Watershed (180901030502). The majority of the Project Site is located within the Carroll Creek-Owens Lake Watershed. Flows in this watershed are conveyed through surface drainage paths such as rills and gullies. A small portion of the Project Site is located within the North Haiwee Reservoir Watershed, which exhibits similar flow patterns to the southern region of the Carroll Creek-Owens Lake Watershed. The watersheds in the Project vicinity are shown on Figure 3.10-1. Elevation near the Project Site is 3,749 feet with a gradual decrease in elevation to the north. The topography is relatively flat, characterized by small slopes and terrain with sage brush, grasses, and bare earth for cover.

Several unnamed streams and creek flow tributary to the Project area; however, they are not listed in the Lahontan Basin Plan. Summit Creek, a perennial stream, is listed in the Lahontan Basin Plan and is tributary to the LAA near the Project Site (Lahontan RWQCB, 1995). The creek, which is located in the Lower Owens Hydrologic Area, begins in the mountains of Inyo National Forest and flows east into the LAA. Loco Creek also begins in the mountains and flows east where it confluences with Summit Creek. Table 3.10-2 lists the beneficial uses of Summit Creek and Haiwee Reservoir.

TABLE 3.10-2
BENEFICIAL USES OF SURFACE WATERS OF HYDROLOGIC UNIT NO. 603.30

Hydrologic Unit/ Subunit Drainage Feature	Waterbody Class Modifier	Beneficial Uses																					Receiving Water
		MUN	AGR	PRO	IND	GWR	FRSH	NAV	POW	REC-1	REC-2	COMM	AQUA	WARM	COLD	SAL	WILD	BIOL	RARE	MIGR	SPWN	WQE	FLD	
Summit Creek	Perennial Stream	X	X			X				X	X	X			X		X				X			L.A. Aqueduct
Haiwee Reservoir	Reservoir	X	X		X	X				X	X	X			X		X				X			L.A. Aqueduct

Notes: MUN = Municipal and Domestic Supply; AGR = Agricultural Supply; PRO = Industrial Process Supply; IND = Industrial Service Supply; GWR = Ground Water Recharge; FRSH = Freshwater Replenishment; NAV = Navigation, POW = Hydropower Generation; REC-1 = Water Contact Recreation; REC-2 = Noncontact Water Recreation; COMM = Commercial and Sportfishing; AQUA = Aquaculture; WARM = Warm Freshwater Habitat; COLD = Cold Freshwater Habitat; SAL = Inland Saline Water Habitat; WILD = Wildlife Habitat; BIOL = Preservation of Biological Habitats of Special Significance; RARE = Rare, Threatened, or Endangered Species; MIGR = Migration of Aquatic Organisms; SPWN = Spawning, Reproduction, and Development; WQE = Water Quality Enhancement; FLS = Flood Peak Attenuation/Flood Water Storage
Source: Lahontan Basin Plan (Lahontan RWQCB, 1995)

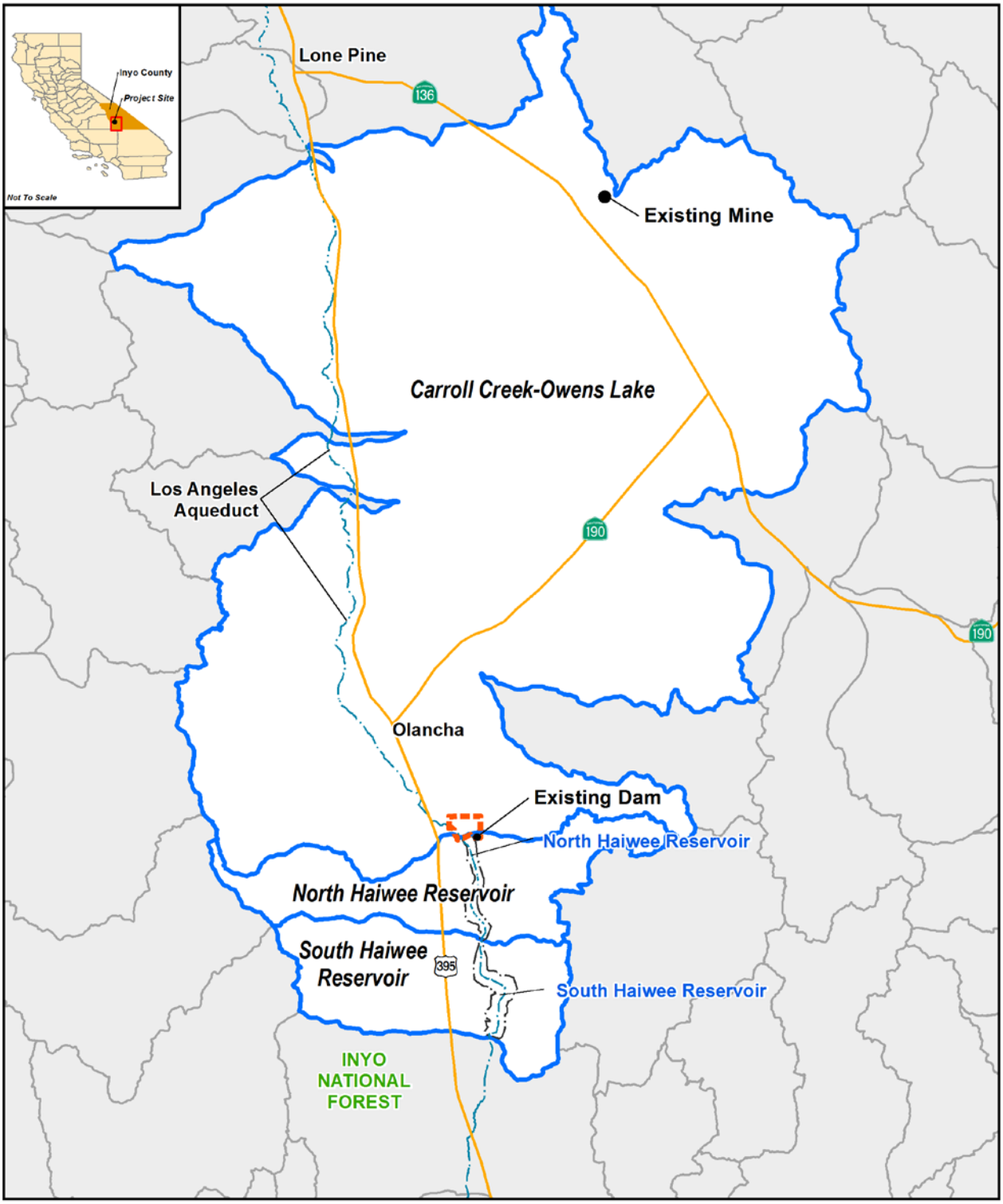

Figure 3.10-1
Watersheds in the Project Vicinity

Based on existing topography, the area west of the NHD2 site drains to the east towards the LAA. Once flows reach the LAA, they are conveyed along the LAA western parapet wall on a surface parallel to the LAA until they reach Loco Creek just upstream of NHR, where they are discharged into the LAA. If LAA overtops, flows would be conveyed towards the north. The additional flow capacity that the LAA can carry is 172 cfs. For each storm event, flows that exceed the 172 cfs capacity are allowed to bypass the system and drain to the north. Everything less than 172 cfs drains from the southwest and into the LAA.

Based on flow measurements in Loco Creek from 1977 through 2006, it is apparent that larger flows from the mountain spread out on the alluvial fan in the Loco Creek watershed, and infiltrate or flow along other flow paths before entering NHR or the Owens Valley. Smaller rainfall events are absorbed into the sandy soils before runoff is generated. Based on regional topography, surface materials and rainfall events, the 100-year flow is estimated to be approximately 7 cfs. This flow rate is comparable to that of Braley Creek, which is approximately eight miles to the north and has a 100-year flow rate of approximately 13 cfs (Appendix K).

Flood Hazards

The basic tools for regulating construction in potential flood hazard areas are local zoning laws and the FEMA floodplain mapping. The FIRM is the official map created and distributed by FEMA and the National Flood Insurance Program that delineates the Special Flood Hazard Areas for every county and community that participates in the National Flood Insurance Program. These areas are subject to inundation by the base flood. The FIRMs contain flood risk information based on historic, meteorological, hydrologic, and hydraulic data, as well as open-space conditions, flood control works, and development.

The flood zones were identified for each of the Proposed Project components so that impacts related to the floodplain could be assessed. The Proposed Project is located in an area currently designated by FEMA as Zone X, which are areas determined to be outside the 0.2 percent-annual-chance (500-year) floodplain. The flood zones in the Project Site are shown on Figure 3.10-2.

NHR and the existing Dam, located in close proximity to the NHD2 site, are designated as a Zone A flood hazard. Zone A areas are identified as having a one percent chance (100-year flood) of flows being equaled or exceeded in any given year.

Dam Failure

The Inundation Map of NHD provided by LADWP indicates the potential for inundation in case of a dam failure. LADWP has identified that NHD is seismically unstable and there is a risk of failure during the MCE seismic event due to the potential for liquefaction of the underlying alluvium and NHD itself. Since NHD is located approximately 800 feet to the south of the proposed NHD2 site, its failure would inundate the area behind NHD2 in less than two minutes. The area surrounding the NHD2 site is generally vacant. Less than two miles north from the Project Site are six homes with adjacent structures and large plots of land. Adjacent to the west side of the NHD are two facilities that are part of the reservoir keeper's residence; however, these dam facilities are located outside of the mapped inundation area if NHD fails.

Seiche

Seiches are seismically or wind induced tidal phenomena that occur in enclosed bodies of water. Seiches are waves typically caused by strong winds and rapid changes in atmospheric pressure pushing water from one end to another within a body of water. When the wind stops, the water bounces back to the other side of the enclosed area and continues to oscillate back and forth. The Project Site is located inland, approximately 150 miles from the Pacific Ocean at an average elevation of 3,700 feet. The nearest standing body of water is NHR, located adjacent to the Project Site. A study conducted to assess the potential for a seiche to be generated at NHR showed that the potential for a seiche to overtop NHD is

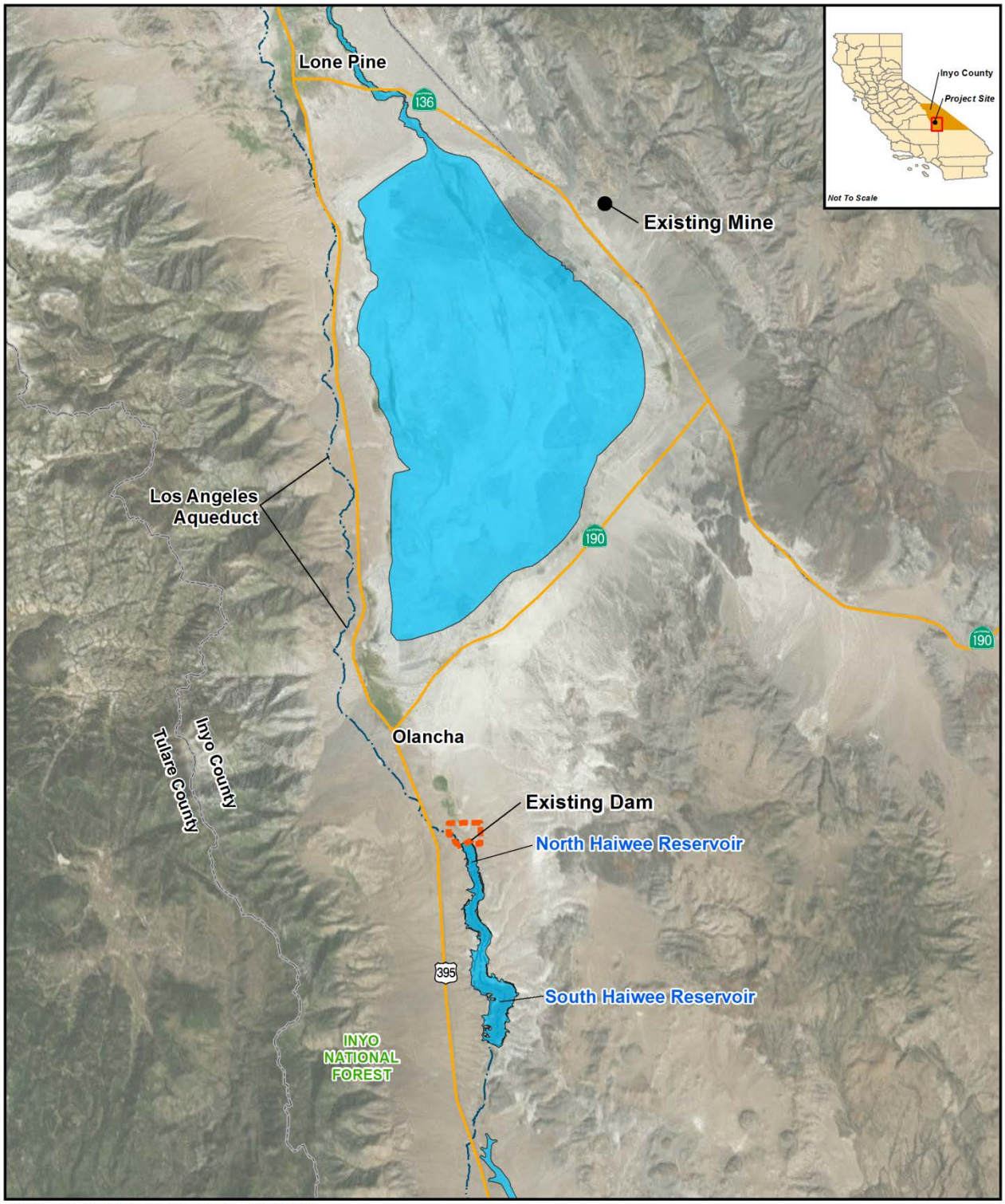

Figure 3.10-2

100 year Flood Zones in the Project Vicinity

low because the high wind speeds (75 miles per hour or greater) cannot be sustained for over an hour, which is the time required to generate a seiche wave (Refer to Appendix K). The maximum wave height generated by average wind speed of 75 miles per hour was determined to be 2.5 feet and would not overtop the 34-foot maximum height of the existing Dam. Seiche generation due to high sustained winds therefore is unlikely.

There are two major active faults located within Owens Valley in the vicinity of the Project area: the Owens Valley Fault Zone (OVFZ) and the Sierra Nevada Frontal Fault Zone (SNFFZ). A large earthquake on these or other faults may cause some seismically induced seiche waves. However, it is not anticipated that an earthquake would cause a substantial seiche and these disturbances are not expected to be larger than wave induced seiches.

Mudflow

Mudflows contain large amounts of water, silt, sand, boulders, organic material, and other debris. Mudflows most often are generated on steep slopes where vegetation is not sufficient to prevent rapid erosion, but can occur on gentle slopes if other conditions are met, such as large, sudden rainfall events. Mudflow can happen in any climate, but arid and semi-arid climates are more susceptible. Mudflow can run down a mountainside at speeds up to 60 miles per hour and can cause great damage to life and property.

The Project Site and immediate surrounding area have gently rolling hills with native groundcover and sparse vegetation. Due to the existing terrain and ground cover condition, mudflows may have the potential to occur within the Project area.

The Project Site is located within the basin of the Owens Valley, which is comprised of alluvial soils and small mountains. Surrounding the Owens Valley are the Sierra Nevada Mountains and Inyo Mountain ranges. Younger alluvial fans located at the base of these ranges have resulted in mudflow type events along the foothills and perimeter of the Owens Valley. The most significant events in recent history was the Oak Creek mudflows of 2008, which occurred northwest of Independence, located approximately 41 miles northwest of the Project Site, and the Haiwee Creek Debris Flows in 2010, located approximately four miles southwest of South Haiwee Dam. These events have occurred within adjacent areas to streams that have been impacted by wildfires. The mudflow in Haiwee Valley in the summer of 2006, located in the immediate vicinity of NHD, occurred during a heavy precipitation event.

Potential mudflows rates were calculated for the Project Site for five recurrence intervals of 2-, 10-, 25-, 50-, and 100-year events. Mudflow rates in the NHD2 area ranged from 125 cfs for the 2-year recurrence interval to 503 cfs for the 100-year recurrence interval event. The mudflow was calculated from surface water basins (Basins) 22 and 24, which extend to the east and southwest from the Project Site. Basins 21 and 25, which extend north of the NHD through the center of the Project Site, would not contribute to the total sediment yield since they are flat areas (Appendix K). Based on available information, the potential for mudflows to occur in the Project Site exists.

Surface Water Quality

Surface water quality within the Project vicinity is overseen by the Lahontan RWQCB. The natural quality of most high elevation waters is assumed to be very good or excellent. Water quality in the regional Project area is influenced by snowmelt and runoff from the eastern Sierra Nevada, San Gabriel, and San Bernardino Mountains.

Water quality problems in the region are largely related to nonpoint sources (including erosion from construction, timber harvesting, and livestock grazing), stormwater, acid drainage from inactive mines, and individual wastewater disposal systems. The water quality objectives in the Lahontan Basin Plan (Basin Plan) are intended to protect public health and welfare, and to maintain or enhance water quality in relation to the existing and/or potential beneficial uses of the water. Water quality objectives are both

numerical and narrative and define the upper concentration or other limits that the Lahontan RWQCB considers protective of beneficial uses. Additional details related to water quality objectives can be found in Appendix K of this Draft EIR/EA.

Water quality standards must also include an anti-degradation policy to protect high-quality waters. Whenever the existing quality of water is better than the quality of water established in the Basin Plan, such existing quality shall be maintained unless appropriate findings are made under the anti-degradation policy.

Water quality associated with NHD2 and runoff produced within the Project Site would be similar to the water quality from the surrounding region (i.e., excellent). Anticipated pollutants would include sediments, minerals, and nutrients from the Project Site and surrounding area. The Project Site includes partially paved roads that receive very little traffic. As such, the potential for contaminated runoff generated by vehicle pollutants is low. Pollutants associated with vehicles that could be present at the Cactus Flats Road Realignment site include heavy metals, fuels, oils, and hazardous fluids.

In general, water quality of the surface runoff in the Project Site is expected to be of excellent quality, except for the inclusion of natural sediments and potential metals or bacteria that are naturally occurring. These pollutants are considered to be natural and unavoidable, and the water only requires treatment prior to use as drinking water. The Proposed Project would not divert any surface water as surface water in the vicinity consists of stormwater runoff, and is not designated for beneficial use.

NHR is located adjacent to the existing Dam. LADWP has applied copper sulfate to NHR when necessary in order to control toxic algae blooms. In 1991 and 1994, an excess application of copper sulfate resulted in fish kills, prompting the Lahontan RWQCB to add NHR to the 303(d) list. LADWP has since modified and reduced its application of copper sulfate within NHR; as a result, no subsequent fish kills have occurred. In addition, copper is not a pollutant that is discharged by the existing land uses; therefore, overtopping at NHD would not be considered a water quality issue.

NHR contains sediments that were deposited by the LAA where it enters NHR. These sediments contain naturally occurring arsenic which has been transported through the LAA system. Under the 1999 Interim Arsenic Management Plan, LADWP is managing arsenic concentrations in the aqueduct water through the addition of ferric chloride (FeCl3), which traps arsenic in sediments that are then deposited in NHR. This treatment method brings arsenic concentrations in the reservoir water to safe levels at Merritt Cut (just south of NHR), and the aqueduct water is further treated at the Los Angeles Aqueduct Filtration Plant (LAAFP). The sediment delta has primarily formed at the mouth of the LAA inlet to NHR, roughly 1,300 feet south of NHD. Sediments typically show small and large desiccation cracks, with a light floc layer on the surface, when exposed and dried. Sediments show a very high percentage of fines, with many samples 60 to 95 percent comprised of silt and clay.

Groundwater Resources

Groundwater Occurrence

The Project area overlies the southern portion of the Owens Valley Groundwater Basin No. 6-12 (Owens Valley Basin), in Owens Valley, Inyo County. The boundaries of the Owens Valley Groundwater Basin are shown on Figure 3.10-3. This basin is managed under the Los Angeles/Inyo Groundwater Management Agreement of 1991. The water bearing units of the Owens Valley Basin is comprised of sediments that are at least 1,200 feet thick (California Department of Water Resources (CDWR), 2004). Quaternary age sediments are the primary productive unit, and are separated into upper, lower and middle members. The upper member is composed of unconsolidated coarse alluvial fan material; the middle member is composed of fine-grained fluvial and lacustrine material and some low permeability volcanic

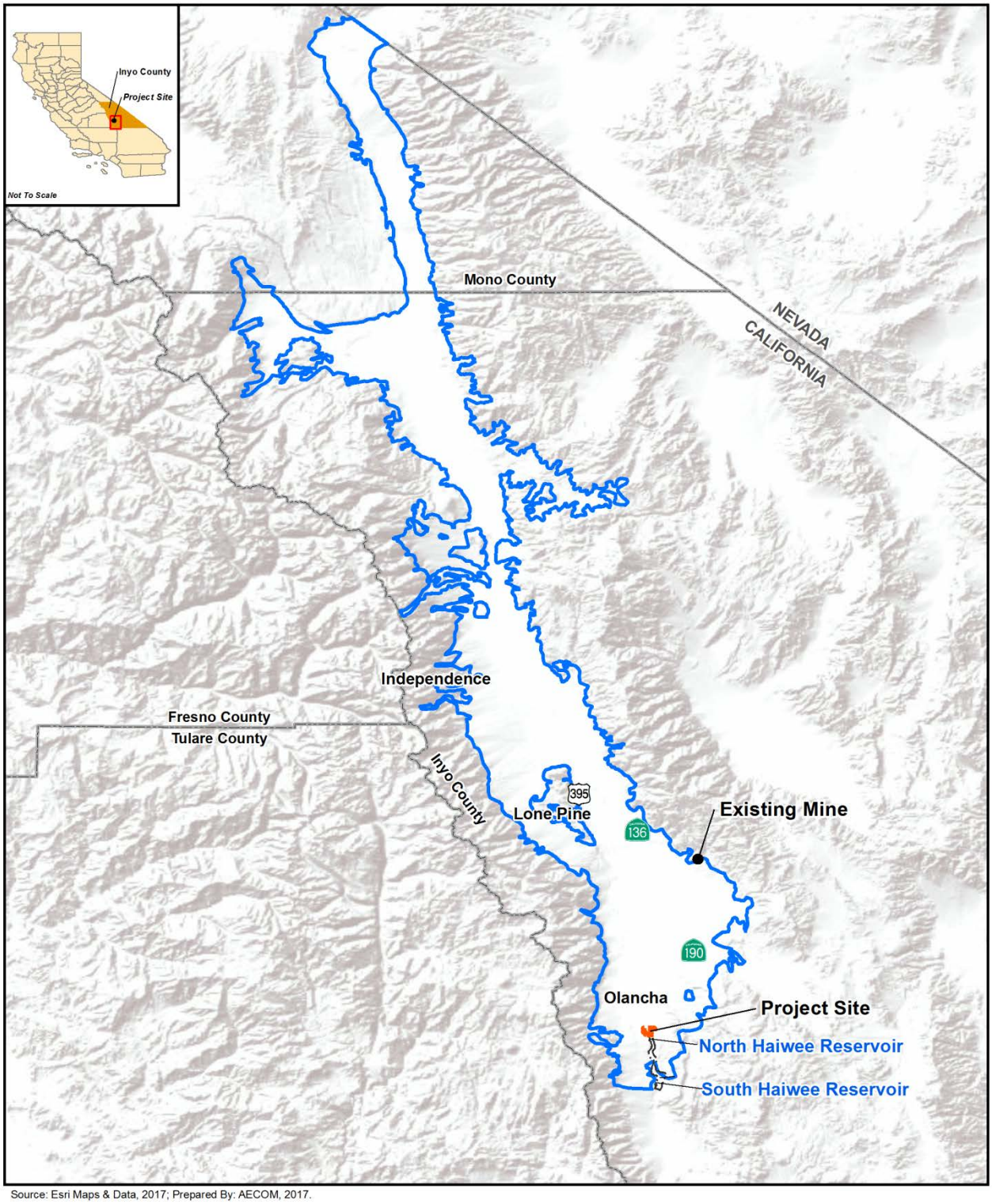

Figure 3.10-3
Owens Valley Groundwater Basin

layers; and the lower member is composed of Bishop Tuff, fluvial and lacustrine material, and older alluvial fan deposits (Danskin, 1998). Within the Project area, there are no restrictive structures impeding movement of groundwater.

The principal source of groundwater recharge to the basin is from percolation of stream flow from the surrounding mountains. Infiltration of excess irrigation waters and of precipitation to the valley floor, and underflow from Long Valley contributes lesser amounts of recharge to the basin (Danskin, 1998). Annual demands on the basin include pumping, spring flows, evapotranspiration (approximately 72,000 af/year) and subsurface outflow (approximately 10,000 af/year) (CDWR, 2004).

Total storage capacity of the basin is estimated to be 30,000,000 af and 35,000,000 af; however, the amount of groundwater in storage is unknown (CDWR, 2004). The Owens Valley Basin is not an adjudicated groundwater basin.

Groundwater Levels

A geotechnical study conducted in 2016 for planning NHD2 found that the groundwater depth under the NHD2 site measured in 2006 in exploratory trenches was 13 feet bgs at the base of the slope that forms the NHD2 east abutment, and was 16 feet bgs at the base of the slope that forms the NHD2 west abutment. The groundwater depth in 2013 was measured in observation wells at 19 feet near the proposed east abutment and 37 feet near the proposed west abutment. Groundwater depth beneath the basin is approximately at elevation 3,718 feet based on several well borings; however, groundwater elevation fluctuates depending on the season and the amount of rainfall received during the year. Groundwater under the LAA Realignment site ranged from elevation 3,709 to 3,748 feet based on apparent soil moisture during drilling of several borings. Groundwater depth under the western portion of the Cactus Flats Road Realignment site ranged from 19 to 37 feet bgs in 2013 and 2014.

Groundwater Quality

In general, most areas of the Owens Valley Basin exhibit good water quality and groundwater in most parts of the basin shows no distinct changes in quality over time. Groundwater in the Owens Valley Basin is mostly sodium bicarbonate and calcium bicarbonate in character, with total dissolved solids (TDS) contents less than 300 milligrams per liter (mg/L). In the Owens Lake area, groundwater contains sodium chloride and TDS concentrations reach 450,000 mg/L. Average concentration of TDS in the basin is 128 mg/L with a range of 60 to 587 mg/L (CDWR, 2004).

3.10.3 Methodology for Analysis

To establish baseline conditions, publicly accessible databases and information from various sources were referenced in addition to the Hydrology and Water Quality Technical Report (Appendix K).

To assess the impacts of the Proposed Project, activities have been divided into construction activities and operational activities. Construction activities include construction of the NHD2 components, the Cactus Flats Road Realignment, the LAA Realignment, the diversion channel and NHD modifications, as well as excavation of earthen materials, hauling materials, site clearing, grading, and other activities related to the construction of the Proposed Project. Operation activities include the ongoing use and maintenance of the Proposed Project structures.

Potential Project impacts were determined by evaluating the Proposed Project with respect to the significance criteria presented below. The changes were then evaluated for significant impacts based upon the State significance thresholds, if relevant, and taking into account required compliance with applicable regulations and standard best practices.

CEQA Significance Criteria

The thresholds of significance for the Proposed Project's potential to impact hydrology, water quality, and groundwater are based on Appendix G of the State CEQA Guidelines. The following thresholds of significance were analyzed:

- Would the project violate any water quality standards or waste discharge requirements?
- Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?
- Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?
- Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?
- Would the project create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?
- Would the project otherwise substantially degrade water quality?
- Would the project expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?
- Would the project expose people or structures to a significant risk of loss, injury, or death involving inundation by seiche, tsunami, or mudflow?

The Appendix G significance criteria listed below were scoped out of the analysis for further consideration in the IS (Appendix A), and are discussed in Chapter 4, Other CEQA and NEPA Considerations, of this Draft EIR/EA.

- Would the project place housing within a 100-year floodplain, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?
- Would the project place within a 100-year flood hazard area structures which would impede or redirect flood flows?
- Would the project expose people or structures to a significant risk of loss, injury, or death involving inundation by tsunami?

NEPA Requirements

The term "significantly" as used in NEPA requires considerations of both context and intensity (40 CFR 1508.27). Therefore, thresholds serve as a benchmark for determining if a project action would result in a significant adverse environmental impact when evaluated against the baseline. The environmental effects analysis of the Proposed Project related to hydrology, water quality, and groundwater includes an assessment of the context and intensity of the impacts as defined in the NEPA implementing regulations, 40 CFR 1508.27, and the BLM *NEPA Handbook H-1790-1* of 2008. The BLM *NEPA Handbook H-1790-1* requires that duration be considered and that both short- and long-term adverse and beneficial impacts be disclosed in the NEPA analysis. The effects analysis must demonstrate that BLM took a "hard look" at the impacts of the action. The level of detail must be sufficient to support reasoned conclusions by comparing the amount and the degree of change (impact) caused by the proposed

action and alternatives (BLM *NEPA Handbook H-1790-1*, 2008, p. 55). Additionally, direct, indirect, residual, and cumulative impacts for the Proposed Project must be considered.

Under NEPA, the adverse and beneficial effects of the project are also identified. These criteria should be considered together to define the significance of an impact to be negligible, moderate or substantial. These levels of significance are defined as follows:

- Effects with negligible intensity change different elements of the environment (e.g. ground water, floodplains, etc.) very close to the existing condition.
- Effects with moderate intensity change different elements of the environment (e.g. ground water, floodplains, etc.) but do not violate any regulatory standard.
- Effects with substantial intensity change different elements of the environment (e.g. ground water, floodplains, etc.) to an extent greater their capacity by violating the regulatory standard.

BLM does not provide a determination on the level of significance in a NEPA document. Rather, BLM leaves that determination to the FONSI which will be completed prior to the signing of a Decision Record. Any characterization of significance in this Draft EIR/EA applies only to the CEQA determination.

Applicable Best Management Practices

An erosion control plan and SWPPP for construction activities would be developed by a QSD/QSP. Erosion control and grading plans may include, but would not be limited to, the following listed below:

- Minimizing the extent of disturbed areas and duration of exposure;
- Stabilizing and protecting disturbed areas; and
- Retaining sediment within the construction area.

Construction erosion control BMPs may include the following:

- Temporary desilting basins
- Silt fences
- Gravel bag barriers
- Temporary soil stabilization with mattresses or mulching
- Temporary drainage inlet protection
- Perimeter fencing to minimize unauthorized entry and protect water resources

The Proposed Project would comply with any WDR and/or NPDES permit requirements. Additional BMPs, such as turbidity curtains, may be implemented if necessary to protect water quality during construction of the notch in NHD.

3.10.4 Environmental Consequences

HWQ-1: *Would the project violate any water quality standards or waste discharge requirements?*

Would the project otherwise substantially degrade water quality?

No Project Alternative

Under the No Project Alternative, the existing Dam, Cactus Flats Road, and LAA would remain on the Project Site as under existing conditions. Typical maintenance activities would occur as they do under existing conditions. No construction activities would occur and no excavation for or purchase of earthen materials would be required. The existing water quality conditions would remain the same as under existing conditions, and no temporary degradation of water quality would occur during construction. Therefore, no impact related to violating water quality standards, waste discharge requirements, or otherwise substantially degrading water quality would occur under the No Project Alternative.

Build Alternatives - Construction

Sediment would be the constituent of greatest concern during construction, resulting from potential erosion during excavation, grading, mining, compaction, trenching, and other construction activities. The Proposed Project would be subject to the Statewide CGP for Stormwater Discharges Associated with Construction and Land Activities (NPDES CGP Permit). As such, the Proposed Project would be required to implement stormwater BMPs to control onsite runon and runoff. Complying with the requirements identified in the CGP would prevent, or reduce the amount of, pollutants from being washed or discharged into Waters of the United States or Waters of the State. The Proposed Project would comply with the requirements of the CGP during construction and the Project Site would be stabilized once construction is completed.

The CGP requires the development and implementation of a SWPPP. The SWPPP would detail treatment measures and site-specific BMPs that would be implemented to minimize discharges of pollutants in stormwater runoff to the maximum extent practicable. The SWPPP prepared for the Proposed Project would be based on final engineering design and identify locations for storage of hazardous materials during construction as well as BMPs, notifications, and cleanup requirements for incidental spills or other potential releases of hazardous materials. In addition, the SWPPP would have inspection, monitoring, and reporting requirements that would be implemented and maintained during construction.

Additionally, the Proposed Project components that have the potential to come in contact with groundwater would require dewatering. A dewatering permit would be obtained from the Lahontan RWQCB. In addition, due to the amount of dewatering for the Project, a Waste Discharge Application/Report would need to be submitted to the Lahontan RWQCB and may require an amended water quality certification, along with an NPDES permit for groundwater pumping and discharge.

During the construction of the Proposed Project, excavation, grading, mining, compaction, trenching, and other construction activities would occur within the Project Site. These activities would involve the disturbance of soil which could introduce contaminants to stormwater runoff and affect water quality in local water bodies, including groundwater. Other pollutants that could affect surface and groundwater quality during Proposed Project construction include petroleum products (e.g., gasoline, diesel, kerosene, and grease) from operating heavy machinery and equipment, paints and solvents, lubricants, detergents, fertilizers, and pesticides. A centrally located on-site fueling station is anticipated due to the number of trips expected between the LAA Excavation Area and existing mine in Keeler and the Project Site. This station could be a source of polluted stormwater runoff if proper maintenance procedures and inspections are not followed. Fuels and hazardous materials from the machinery and fueling station can pollute groundwater and stormwater runoff through accidental leaks and spills; however, a spill prevention control and countermeasure plan would be implemented to reduce or avoid these risks.

Any sanitary waste produced during construction (e.g., from portable toilets) would be disposed of according to applicable laws, rules, and regulations. In addition, implementation of worker environmental awareness training would provide construction personnel with instruction on their individual regulatory compliance responsibilities. With respect to water quality, the training would include worker responsibilities under the CWA, the SWPPP, site-specific BMPs, and the location of Safety Data Sheets. The training also would provide instructions to notify the foreman and regional spill response coordinator in case of a hazardous materials spill or leak. Instruction also would be provided on the importance of maintaining the construction site in regards to trash disposal.

Construction activities have the potential to affect the beneficial uses of surface waters, including water quality, wildlife habitats, fishing, and recreational uses. As discussed, the Proposed Project would be required to implement site-specific BMPs and a SWPPP to prevent contaminants or sediments from entering NHR or Summit Creek. Water quality would be regularly monitored throughout construction of the Project to ensure BMP effectiveness. The Proposed Project is not expected to affect municipal, domestic, or agricultural supply.

With implementation of effective BMPs, as identified in the CGP and worker environmental awareness training, potential impacts to water quality would be minimized during construction. Additionally, control measures would be used as necessary when dewatering is required, compliant with the dewatering permit and NPDES permit, and water quality certification issued by the Lahontan RWQCB.

CDSM Alternative

NHD2 Components

Anticipated pollutants generated during construction include sediments from earthwork for the east and west berms, excavation, grading of the basin, dirt stockpiles, and sediments from potential mudflows during storm events. Additional pollutants anticipated during construction include heavy metals, oils, grease, lubricants, fuels from accidental equipment leaks, and trash and debris. A fueling station is anticipated on-site for vehicles and heavy equipment. Water quality may be affected if contaminated by runoff and infiltration through soil to the groundwater, especially during wet periods when the groundwater level rises. Well data for 2016 showed elevated levels of arsenic, iron, and manganese in the area near the NHD2 components; however the Proposed Project would comply with the requirements of a WDR permit submitted to the Lahontan RWQCB. Construction of NHD2 and excavation of the basin may come into contact with groundwater and require dewatering. Hence, groundwater contamination due to contact with the water table may be a concern during the construction of NHD2 and grading of the basin, as the groundwater has historically been higher than the bottom excavation limits of the existing Dam. If groundwater is encountered that requires dewatering, a dewatering permit may be required from the Lahontan RWQCB. A Waste Discharge Application/Report may be required to be submitted to the Lahontan RWQCB and may require an amended water quality certification, along with an NPDES permit for groundwater pumping and discharge (dependent upon whether the dewatered groundwater is discharged into the LAA, the ground, or another surface water). Dewatered groundwater may require analysis and/or treatment prior to re-entering the LAA drinking water conveyance, if it does not meet Basin Plan objectives. The need for and extent of treatment would be determined by groundwater testing. If treatment is necessary, it is anticipated to include removal of naturally occurring arsenic and zinc from water prior to use or discharge. After treatment, discharge pumps may be used to transfer the dewatered groundwater back to the LAA or NHR. The treatment systems would be powered by portable generators.

The Proposed Project would comply with the dewatering permit requirements to alleviate potential water quality violations. Additionally, control measures would be used as necessary if dewatering is required, compliant with the dewatering permit and NPDES permit, and water quality certification issued by the Lahontan RWQCB. The fueling station is not anticipated to adversely affect water quality if proper procedures from the applicable permits are followed.

The CDSM Alternative would involve the operation of a portable cement grout batch plant onsite to batch cement grout for the mixing rigs. Cement and/or other admixtures would be stored onsite in bulk quantities for the duration of CDSM operations. The cement grout batch plant, additional construction equipment (including drilling equipment), and materials storage areas could be sources of polluted stormwater runoff if proper maintenance procedures and inspections are not followed. Raw materials, cement, and admixtures can pollute stormwater runoff through accidental leaks and spills; however, the SWPPP, which includes a section on spill control and the application of appropriate BMPs, would be implemented to reduce or avoid these risks.

The NHD2 site would be located north of NHD. The land slopes north and away from the LAA (east). Construction activities have the potential to discharge sediments offsite. Construction of NHD2 components would comply with the CGP and all other regulations, and the implementation of BMPs and measures required by the SWPPP and water quality permits, if necessary, would minimize impacts to water quality. Therefore, construction impacts related to violating water quality standards, waste discharge requirements, or otherwise substantially degrading water quality would be less than significant for the NHD2 components under the CDSM Alternative.

Cactus Flats Road Realignment

During the construction of the Cactus Flats Road Realignment, including the realignment of the access road and construction of the four-foot wide drainage ditch, activities including vegetative clearing, grading, and stockpiling would disturb soil and could introduce contaminants to stormwater runoff. Runoff near the existing Cactus Flats Road would drain to the northeast, and ultimately infiltrate the sediments in the surrounding area. Implementation of BMPs that will be indicated in the SWPPP but could include silt fences, gravel bag barriers, diversion dikes, and interceptor swales would reduce or avoid the possibility of introducing excess contaminants into the receiving waters including the LAA and NHR. Therefore, construction impacts related to violating water quality standards, waste discharge requirements, or otherwise substantially degrading water quality would be less than significant for the Cactus Flats Road Realignment under the CDSM Alternative.

LAA Realignment

During the construction of the realigned portion of the LAA, diversion structure, and bridge, construction activities, including excavating, grading, dirt stockpiling, and concrete form work, could introduce sediments, concrete and concrete solvents, and vehicle fuels into the LAA. These activities could also introduce trash and debris on- and off-site. Implementation of BMPs that will be indicated in the SWPPP but could include silt fences, gravel bag barriers, diversion dikes, and interceptor swales would minimize or avoid potential impacts to water quality. Therefore, construction impacts related to violating water quality standards, waste discharge requirements, or otherwise substantially degrading water quality would be less than significant for the LAA Realignment under the CDSM Alternative.

Activities at the LAA Excavation Area would involve the disturbance of soil that could introduce contaminants to stormwater runoff. The water quality associated with runoff near the LAA Excavation Area is expected to include copper due to its proximity to NHR. During mining, contaminants including minerals, heavy metals, sediments, and vehicle fuels may be introduced to stormwater runoff that could ultimately discharge to the LAA. The type of potential contaminant and potential for contaminants to be introduced to stormwater runoff would depend on the excavation depth, the configuration, and the material quantities. The activities at the LAA Excavation Area would comply with the requirements of the CGP, and BMPs indicated in the SWPPP that could include silt fences, gravel bag barriers, diversion dikes, and interceptor swales. Therefore, construction impacts related to violating water quality standards, waste discharge requirements, or otherwise substantially degrading water quality would be less than significant for the LAA Excavation Area under the CDSM Alternative.

Diversion Channel and NHD Modifications

During the construction of the diversion channel and NHD modifications, construction activities, including excavating, grading, dirt stockpiling, and concrete from work for the notch, could introduce sediments, concrete and concrete solvents, and vehicle fuels into the LAA and NHR. These activities could also introduce trash and debris on- and off-site. Implementation of BMPs as indicated in the SWPPP, which could include silt fences, gravel bag barriers, diversion dikes, and interceptor swales, would reduce potential impacts to water quality to less than significant.

The water elevation in NHR would be lowered during construction of the notch in NHD, which could potentially disturb sediments and expose the sediment delta that currently exists in NHR. Based on current project design, it is anticipated that the notch would be constructed to minimize disturbance to any sediments or resuspension of reservoir sediments; however, due to the potential to disturb sediments or expose sediments, this impact would be significant. Appropriate BMPs, such as silt fences, sediment control, and diversions dikes, as identified in the CGP, would reduce the potential of introducing contaminants into NHR. In addition, with implementation of Mitigation Measure HWQ-A, construction impacts related to the sediment in NHR would be less than significant for the diversion channel and NHD modifications under the CDSM Alternative.

Excavate and Recompact Alternative

Anticipated pollutants generated during construction related to construction of NHD2 under the Excavate and Recompact Alternative would be similar to the CDSM Alternative, with the exception of the onsite portable cement grout batch plant. The Excavate and Recompact Alternative would not require the portable cement grout batch plant for construction. Similar to the CDSM Alternative, groundwater contamination due to contact with the water table may be a concern during the construction of NHD2 and basin. A dewatering permit would be obtained from the Lahontan RWQCB. In addition, due to the amount of dewatering for the Excavate and Recompact Alternative, a Waste Discharge Application/Report would need to be submitted to the Lahontan RWQCB and may require an amended water quality certification, along with an NPDES permit for groundwater pumping and discharge. Dewatered groundwater may require analysis and/or treatment prior to discharge to surface water in this area, if it does not meet Basin Plan objectives. The Excavate and Recompact Alternative would comply with the dewatering permit requirements to alleviate potential water quality violations. Additionally, control measures would be used as necessary if dewatering is required, compliant with the dewatering permit and NPDES permit, and water quality certification issued by the Lahontan RWQCB. Similar to the CDSM Alternative, the fueling station is not anticipated to adversely affect water quality if proper procedures from the CGP are followed and inspections and maintenance are conducted on a regular basis. Therefore, construction impacts related to violating water quality standards, waste discharge requirements, or otherwise substantially degrading water quality would be less than significant for the NHD2 components under the Excavate and Recompact Alternative.

Construction impacts related to the Cactus Flats Road Realignment, LAA Realignment, including the LAA Excavation Area, and the diversion channel and NHD modifications involving violations of water quality standards, waste discharge requirements, or otherwise substantial degradation of water quality would be the same as under the CDSM Alternative. With implementation of Mitigation Measure HWQ-A, construction impacts would be less than significant under the Excavate and Recompact Alternative.

Build Alternatives - Operation

Ongoing operation and maintenance of the NHD2 components and LAA Realignment would not result in the discharge of effluent. Stormwater would continue to fall and flow on and around the Project Site, but water quality would be similar to existing conditions. No water quality standards or waste discharge requirements are expected to be violated. NHD2 would be similar to the existing NHD in terms of operation and maintenance; therefore, impacts would be less than significant.

The ongoing operation of the basin would be similar to the operation of the existing NHR. However, with the installation of a geomembrane at the bottom of the proposed basin, infiltration of water into the local aquifer would be restricted. In addition to receiving water from the diversion channel, the basin would receive runoff from NHD2 and the east and west berms. Water that flows into the basin from the LAA would settle in the basin prior to flowing into NHR; as such, sediments may accumulate in the basin over time, and it is anticipated that dredging would be required periodically in order to remove sediments. Appropriate BMPs, such as silt fences, sediment control, and diversions dikes, as identified in the CGP, would reduce or avoid the possibility of introducing contaminants into NHR. Any sediments would be removed, treated if necessary, and disposed of in an appropriate manner. Impacts related to water quality standards or waste discharge requirements are expected to be would be less than significant during operation of the basin.

The operation and maintenance of the LAA Realignment and the diversion channel would be similar to the existing LAA and are not anticipated to violate water quality standards or waste discharge requirements. The LAA Excavation Area would be restored after construction is complete to prevent violations of water quality standards or waste discharge requirements. The Proposed Project's Topsoil Salvage and Revegetation Plan (refer to Section 3.4 Biological Resources) would be developed to identify procedures to stabilize the site once excavation is completed. Implementation of the Topsoil Salvage and

Revegetation Plan would restore the LAA Excavation Area such that water quality standards would not be violated. Impacts would be less than significant during operation of the LAA Realignment.

During the operation of the Cactus Flats Road Realignment, no water quality standards or waste discharge requirements are anticipated to be violated as routine activities would be conducted per all applicable standards. Cactus Flats Road receives very little traffic, so the potential for runoff contaminated by vehicle pollutants would be low and would be similar to the existing conditions. Impacts would be less than significant during operation of the Cactus Flats Road Realignment.

HWQ-2: *Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?*

No Project Alternative

Under the No Project Alternative, the existing Dam, existing Cactus Flats Road, and existing LAA would remain on the Project Site as under existing conditions. Typical maintenance activities would occur as they do under existing conditions. No construction activities would occur and no excavation for or purchase of earthen materials would be required. The existing groundwater supply and recharge would remain the same as under existing conditions, and no dewatering would be required. Therefore, no impact related to depletion of groundwater supplies or interfering with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level would occur under the No Project Alternative.

Build Alternatives - Construction

During construction, dewatering may be required for NHD2 under the CDSM Alternative and would be required under the Excavate and Recompact Alternatives. Dewatering may also be required for construction of the basin under both Build Alternatives. Groundwater extraction would occur only on LADWP-owned land. Construction activities such as dust control would require water during demolition, grading, and construction activities. Groundwater pumped for dewatering, if necessary, would meet water quality certification requirements as noted in WDRs, and would be handled in accordance with the NPDES permit. The groundwater pumped for dewatering would be treated to appropriate water quality standards and then likely diverted to NHR or used onsite for dust suppression, and therefore would recharge the same aquifer being pumped. In addition to dewatered groundwater, non-potable water for construction activities would be supplied from the LAA system and/or water tanks brought in by trucks. Water for dust suppression could also be supplied out of the existing NHR.

CDSM Alternative

NHD2 Components

The construction of NHD2 and the basin may require dewatering of groundwater, consisting of installing pumping wells on the south side of NHD2, because excavation under the CDSM Alternative has the potential to reach the groundwater table. The CDSM Alternative would involve the installation of a grid of overlapping CDSM columns under the NHD2 footprint. The columns would be approximately six feet wide, and would be drilled to depths of 55 to 80 feet bgs. The CDSM columns would be less permeable than recompacted soil, and therefore would result in reduced seepage into the NHD2 footprint. Groundwater flow through the columns would be reduced; however, groundwater would flow around and below the CDSM columns and would only locally impede the flow of groundwater in the basin. The impermeable footprint and vertical profile of NHD2 under the CDSM Alternative is relatively small when compared to the area and capacity of the groundwater basin. Should dewatering be required for the CDSM Alternative, the highest pumping rates expected would dewater approximately 700 million gallons

of water, over a period of 18 months, pumping 24 hours a day. Effects from dewatering would temporarily impact the groundwater table in the vicinity of the pumping; however, once dewatering activities cease, groundwater levels are expected to recover in a short period of time. Therefore, construction of NHD2 and the basin under the CDSM Alternative would not deplete groundwater supplies or interfere with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level, and impacts would be less than significant.

Butterworth Ranch, located north of the Project Site, is not expected to be impacted by dewatering activities. The well at the reservoir keeper's residence could be impacted by dewatering activities; however, as the resident is a LADWP employee, LADWP would provide potable water for the residence for the duration of dewatering activities. The need for dewatering would depend on the conditions during construction, along with the season, as groundwater levels tend to fluctuate. Groundwater pumped for dewatering would meet water quality certification requirements as noted in WDRs, and would be handled in accordance with the NPDES permit. Groundwater from dewatering would likely be diverted into NHR, where it could then be transferred out of NHR using the existing Merritt Spillway. The pumping associated with dewatering would not significantly deplete the local aquifer or significantly impact the groundwater table depth since the local aquifer will be recharged from NHR.

Construction of NHD2, basin, and the berms would create an area with impermeability, limiting the percolation of surface water into the groundwater basin. However, the impermeable footprint of NHD2, the berms, and the basin is relatively small when compared to the area of the groundwater basin. Therefore, construction impacts related to depletion of groundwater supplies or interfering with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level would be less than significant for the NHD2 components under the CDSM Alternative.

Cactus Flats Road Realignment

Groundwater levels near the Cactus Flats Road Realignment range from 15 to 35 feet bgs, based on data from wells south of the alignment. The grade along the Cactus Flats Road Realignment is very similar to the existing Cactus Flats Road and minimal excavation would be required for the construction of most of the Cactus Flats Road Realignment. Grading the road down the hillside would require significant grading, but this is not expected to encounter groundwater due to the elevations. Thus, it is not anticipated that dewatering would be required for the construction of the realigned portion of Cactus Flats Road, and the aquifer volume would not be impacted. Additionally, major diversions would not be necessary as only a few first order streams (small tributaries) cross the Cactus Flats Road Realignment footprint. These streams would likely be diverted to a temporary basin or off-site. The diverted flows would infiltrate into the same aquifer as they currently do, but the infiltration may occur in a different area. Construction of Cactus Flats Road would create an area with reduced permeability; however, the construction area is relatively small compared to the area of the groundwater basin. Therefore, construction impacts related to depletion of groundwater supplies or interfering with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level would be less than significant for the Cactus Flats Road Realignment under the CDSM Alternative.

LAA Realignment

It is not anticipated that groundwater would be encountered during construction of the LAA Realignment, given that groundwater is expected to be deeper than the depth of excavation. Construction of the LAA Realignment, including the diversion structure, would create an area with reduced permeability; however, the construction area is relatively small compared to the area of the groundwater basin. Large excavations would be required at the LAA Excavation Area as the materials sources from the site would be used to construct NHD2. The source area and quantity would depend on the final design of NHD2, based on geotechnical reports specific to the site; however, excavations at the site are not expected to reach groundwater depth as excavation would be designed to avoid contact with any groundwater. The local

groundwater aquifer would not be impacted for the LAA Excavation Area because groundwater would not be pumped and infiltration would still occur. Therefore, construction impacts related to depletion of groundwater supplies or interfering with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level would be less than significant for the LAA Realignment under the CDSM Alternative.

Diversion Channel and NHD Modifications

Construction of the notch in the NHD would require lowering of the surface water elevation in NHR; however, such activities would not interfere with the recharge of the local aquifer. It is not anticipated that groundwater would be encountered during construction of the diversion channel and NHD modifications. Construction of the diversion channel and installation of the geomembrane liner within the basin would create an area with reduced permeability; however, the construction area is relatively small compared to the area of the groundwater basin. Therefore, construction impacts related to depletion of groundwater supplies or interfering with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level would be less than significant for the diversion channel and NHD modifications under the CDSM Alternative.

Excavate and Recompact Alternative

Construction impacts related to the Cactus Flats Road Realignment, LAA Realignment, and the diversion channel and NHD modifications involving depletion of groundwater supplies or interference with groundwater recharge would be the same as under the CDSM Alternative. Therefore, construction impacts would be less than significant under the Excavate and Recompact Alternative.

Under the Excavate and Recompact Alternative, foundation excavation for NHD2 would occur down to 30 feet bgs. Dewatering would be required because excavation would come into contact with groundwater. Multiple dewatering pumping wells would be installed on the southern side of the NHD2 footprint and foundation excavation limit. Under the Excavate and Recompact Alternative, dewatering would occur 24 hours a day for 18 calendar months, for a total dewatered volume of 1.2 billion gallons of water. Effects from dewatering would temporarily impact the groundwater table in the vicinity of the pumping; however, once dewatering activities cease, groundwater levels are expected to recover in a short period of time. The dewatering process would be the same as described for the CDSM Alternative. Groundwater pumped for dewatering would meet water quality certification requirements as noted in WDRs, and would be handled in accordance with the NPDES permit.

Construction impacts related to Butterworth Ranch, the reservoir keeper's residence, and other NHD2 components, including the berms and basin, would be the same as under the CDSM Alternative. Therefore, construction of NHD2 under the Excavate and Recompact Alternative would not deplete groundwater supplies or interfere with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level and impacts would be less than significant.

Build Alternatives - Operation

Operation of the NHD2 components, Cactus Flats Road Realignment, LAA Realignment, and diversion channel and NHD modifications would not require groundwater pumping, and would not significantly impact infiltration in the area. Infiltration would be reduced within the footprints of NHD2, the geomembrane-lined basin, and other Proposed Project components; however, infiltration would occur in comparable quantities in different areas similar to the existing conditions, as water would be discharged to nearby pervious areas. Upon completion of the construction phase of the Proposed Project, the LAA Excavation Area would be restored in accordance with the Proposed Project's Topsoil Salvage and Revegetation Plan (refer to Section 3.4 Biological Resources). Therefore, the operational impact of the Proposed Project on groundwater supplies, groundwater recharge and groundwater levels would be less than significant.

HWQ-3: *Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?*

No Project Alternative

Under the No Project Alternative, the existing Dam, existing Cactus Flats Road, and existing LAA would remain on the Project Site as under existing conditions. Typical maintenance activities would occur as they do under existing conditions. No construction activities would occur and no excavation for or purchase of earthen materials would be required. The existing drainage pattern of the site would remain the same as under existing conditions as no construction activity would occur. Therefore, no impact related to erosion or siltation as a result of an altered drainage pattern would occur under the No Project Alternative.

Build Alternatives - Construction

The Project Site is generally flat, which results in sheet flows rather than intensely concentrated flows, reducing the potential for erosion and siltation. The design of the Proposed Project would change the grade and therefore drainage pattern. In addition, construction-related activities (i.e., earthmoving activities, spoils piles, material stockpiling, etc.) generally increase the potential for erosion and/or siltation on- and off-site because the ground surface is disturbed. As a result, the ground surface could become unstable and drainage patterns may be slightly altered, changing the way in which sheet flow occurs on the site. The Proposed Project is greater than one acre and would be required to develop and implement a SWPPP and BMPs, per the requirements of the CGP, which would minimize the potential for erosion and siltation. The design of the Proposed Project would identify the sources of pollution, erosion, and siltation and specify necessary BMPs to maintain and manage the existing drainage patterns.

NHD2 Components

Construction of NHD2, approximately 800 feet north of the existing Dam, would alter the existing drainage pattern of the Project Site. The existing drainage flows from the east and the west toward the Project Site. When NHD2 is constructed, the east and west berms would isolate the basin between NHD and NHD2. Under the Proposed Project, the flows from the east, directly north of the existing Dam, would be diverted around the east berm, and the flows from the west that are north of NHD2 would continue north. The Loco Creek drainage patterns that currently exist would remain as they are, draining to the LAA. Loco Creek, flowing at 9 cfs for the 100-year flow, would not exceed the capacity of LAA during the wet season, and flows would continue to enter the LAA in the same or a similar location. Earthwork would also loosen the soil, making it susceptible to siltation and wind and water erosion. BMPs or soil stabilizers would be used to reduce erosion on slopes, especially during the construction of the east and west berms. The SWPPP, compliant with the CGP, for the Proposed Project would reduce impacts related to these minor changes in drainage patterns. Therefore, construction impacts related to erosion or siltation as a result of an altered drainage pattern would be less than significant for the NHD2 components under the Build Alternatives.

Cactus Flats Road Realignment

The Cactus Flats Road Realignment includes the demolition and clearing of the existing Cactus Flats Road within the NHD2 footprint as well as excavation, grading, construction of drainage improvements including a four-foot wide ditch, and realignment of an intersecting access road. Two two-foot by four-foot concrete culverts would also be constructed within the embankment of the Cactus Flats Road Realignment. Construction activities would alter the existing drainage patterns during construction. Earthwork would expose loose soil to wind and water, increasing the potential for erosion and siltation. Within the footprint of the Cactus Flats Road Realignment, surface drainage would be conveyed as sheet flow from east to west and from south to north. There are a few minor first order streams that cross the

portion of Cactus Flats Road which would be realigned. The Cactus Flats Road Realignment would incorporate drainage features to properly manage these crossings. Erosion and siltation would be reduced and managed with the implementation of BMPs per the CGP and SWPPP requirements. The SWPPP would ensure that adequate drainage is able to occur during construction. Therefore, construction impacts related to erosion or siltation as a result of an altered drainage pattern would be less than significant for the Cactus Flats Road Realignment under the Build Alternatives.

LAA Realignment

The LAA Realignment would involve cutting into an existing slope and include the demolition of the existing section of the LAA, excavation, grading, compaction, trenching, concrete work, and construction of the diversion structure and temporary bridge. These activities would alter the topography and existing drainage patterns along the slope. Under existing conditions, the slope drains downhill to the southeast towards the existing LAA. Once the hillside is cut for the realigned portion of the LAA, the drainage would be conveyed to the new channel. Earthwork would expose loose soil to wind and water, increasing the potential for erosion and siltation. Erosion and siltation would be reduced and managed with the implementation of BMPs per the CGP and SWPPP requirements. While drainage patterns would change, most stormwater that drains towards the LAA from the east and west would not enter the LAA system, and would instead be redirected to the north along parapet walls on the east and west sides of the LAA Realignment. Stormwater in the vicinity of the Loco Creek watershed to the west-southwest of the Project Site drains east and northeast towards the LAA. Once flows reach the LAA Realignment, they would be conveyed to the south along the western parapet wall of the LAA Realignment and enter the LAA system through a notch in the parapet wall, as under existing conditions. If the LAA overtops, flows would be conveyed towards the north within Haiwee Valley.

The drainage patterns at the LAA Excavation Area would be altered due to large excavations that would create new sump conditions where water would collect in newly created depressions. The potential for erosion exists, particularly since the site is located within the natural flow paths, and disturbed earthen materials would be easily transported by surface runoff. The LAA Excavation Area would be accessed using North Haiwee Road, a portion of Cactus Flats Road, and other existing dirt or improved roads to reduce its impact on undeveloped lands. Additionally, three new, relatively small road sections would be constructed to connect some of the existing roads within the haul routes. The east side of the LAA Excavation Area is adjacent to the existing LAA and is located in a relatively flat area. Drainage in the LAA Excavation Area flows from southwest to northeast toward the LAA. Under existing conditions, regional scale flows likely are conveyed by a drainage ditch along the LAA until they cross US-395 at a location west of the Project Site. Excavation would alter the drainage pattern and topography at the LAA Excavation Area. Nevertheless, excavation and vegetative clearing would disturb soil and make it easier for storm events to transport sediments, which would increase the potential for erosion and siltation. Wind and water erosion would be minimized using effective BMPs (e.g. watering, silt fences, etc.). The SWPPP developed for the Proposed Project would be implemented on-site to address erosion, siltation, and drainage. Therefore, construction impacts related to erosion or siltation as a result of an altered drainage pattern would be less than significant for the LAA Realignment under the Build Alternatives.

Diversion Channel and NHD Modifications

Similar to the LAA Realignment, the diversion channel would include excavation, grading, compaction, trenching, and concrete work. The diversion channel would involve cutting into the existing slope. These activities would alter the topography and existing drainage patterns along the slope. Under existing conditions, the slope drains downhill to the southeast towards the existing LAA. Once the hillside is cut for the diversion channel, the drainage would be conveyed to the new channel. Earthwork would expose loose soil to wind and water, increasing the potential for erosion and siltation. Erosion and siltation would be reduced and managed with the implementation of BMPs per the CGP and SWPPP requirements. While drainage patterns would change, stormwater would be redirected to the north along a four foot high

parapet wall on the west side of the existing LAA and the LAA Realignment. Construction of the notch is not anticipated to alter any drainage patterns since construction activities would be limited to NHD and NHR. Therefore, construction impacts related to erosion or siltation as a result of an altered drainage pattern would be less than significant for the diversion channel and NHD modifications under the Build Alternatives.

Build Alternatives - Operation

During operation of the NHD2 components, Cactus Flats Road Realignment, LAA Realignment, and diversion channel and NHD modifications, the finished surface would be stabilized and drainage improvements would be incorporated into the design such that erosion and siltation would be minimized. However, water that flows into the basin from the LAA would settle in the basin between NHD and NHD2 prior to flowing into NHR; as such, sediments may accumulate in the basin over time, and it is anticipated that dredging would be required periodically in order to remove sediments. Appropriate BMPs, such as silt fences, sediment control, and diversions dikes, as identified in the CGP, would reduce or avoid the possibility of introducing contaminants into NHR. Any sediments would be removed, treated if necessary, and disposed of in an appropriate manner. Impacts related to erosion or siltation would be less than significant during operation of the basin.

The realigned portion of Cactus Flats Road would be paved and would include a four-foot wide drainage ditch along the east side of the realigned road and two two-foot by four-foot concrete culverts for drainage purposes. The realigned portion of the LAA would include a concrete lined channel, flood walls, and the removal of excavated material. The drainage systems included in the Proposed Project would be designed in a way that would preserve the existing drainage patterns to the maximum extent practicable, and would reduce erosion and siltation.

After construction, the LAA Excavation Area would be restored as outlined in the Topsoil Salvage and Revegetation Plan prepared for the Proposed Project (refer to Section 3.4 Biological Resources). Stabilization measures implemented as part of this plan would reduce the potential for erosion and siltation, as the loose soils would be compacted. The Topsoil Salvage and Revegetation Plan would address the contouring of the land, placement of topsoil, and other aspects pertaining to stabilizing the LAA Excavation Area after construction. The Topsoil Salvage and Revegetation Plan would be developed such that erosion and siltation would not be a concern on- and off-site following construction. The drainage patterns may be altered, but would not promote erosion and siltation. Therefore, operational impacts related to erosion and siltation on- and off-site due to a change in drainage patterns would be less than significant.

HWQ-4: *Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?*

No Project Alternative

Under the No Project Alternative, the existing Dam, Cactus Flats Road, and LAA would remain on the Project Site as under existing conditions. Typical maintenance activities would occur as they do under existing conditions. No construction activities would occur and no excavation for or purchase of earthen materials would be required. No disturbance of soil would occur as a result of construction; therefore, existing drainage patterns would remain the same as existing conditions. Additionally, the existing drainage and stream paths would not be altered as no new Dam would be constructed and Cactus Flats Road would remain as under existing conditions; therefore, no increase in the rate or amount of surface flow would occur. Therefore, no impact related to flooding on- or off-site due to a change in drainage patterns or an increase in the rate or amount of surface runoff would occur under the No Project Alternative.

Build Alternatives - Construction

Construction activities including clearing, grading, excavation, road construction, and vegetation removal would cause land disturbance and disrupt drainage patterns. The Proposed Project area is relatively flat and surface drainage is conveyed by sheet flow and by first order unnamed streams. The Proposed Project would be designed such that existing drainage patterns would be preserved to the maximum extent practicable. The structural components of the Proposed Project would not alter the existing drainage patterns of Loco Creek. The impact during construction is expected to be minimal, as the Proposed Project would comply with the CGP and a SWPPP would be developed and implemented. The SWPPP would include flow control measures to reduce the potential of flooding on- or off-site. In addition, a WDR may be required for Loco Creek.

The NHD2 components would consist of a new embankment dam 800 feet north of the existing Dam, a new basin between the new and existing Dams, and two new berms on the west and east sides of the basin, which would alter the existing drainage pattern during construction on the eastern portion of the Project Site. Stockpiles would be placed outside of the natural flow paths to minimize impacts to existing drainage patterns. The existing drainage flows from the east toward the Project Site and then flows north. The east berm would prevent runoff from flowing into the basin. Construction of the NHD2 components would not alter the Loco Creek drainage pattern, therefore the change related to the NHD2 components would not cause significant changes as the Project Site is vacant and construction materials would not cause significant changes in the impervious area. The impervious area would slightly increase due to the footprint of NHD2, the east and west berms, and the geomembrane liner in the basin, which would prevent the stored water from infiltrating the ground. With implementation of the SWPPP and associated BMPs as required by the CGP, the potential for the Proposed Project to affect surface water runoff would not be substantial. Therefore, construction impacts related to flooding on- or off-site due to a change in drainage patterns or an increase in the rate or amount of surface runoff would be less than significant for the NHD2 components under the Build Alternatives.

The Cactus Flats Road Realignment, LAA Realignment, and diversion channel and NHD modifications would include demolition of a portion of the existing Cactus Flats Road and existing LAA, excavation, grading, and concrete formwork. These activities would alter the existing drainage patterns. The extent of the alteration would depend on the progress of construction and the stockpile configuration. The stockpiles would be situated on-site such that the existing drainage is preserved to the maximum extent practicable. Drainage conduits could also be installed to allow flows to travel through the stockpiles instead of around them. The alteration in the drainage patterns would be insignificant as the impervious area and groundcover would not be significantly different from existing conditions. During excavation of the notch in the existing Dam, the water level of NHR would be temporarily lowered. The lowering of the reservoir's water level would require implementation of a temporary operation plan for NHR and South Haiwee Reservoir, as well as the LAA system, in order to avoid flooding due to increased discharge volumes. Therefore, construction impacts related to flooding on- or off-site due to a change in drainage patterns or an increase in the rate or amount of surface runoff would be less than significant during construction of the Cactus Flats Road Realignment, LAA Realignment, and diversion channel and NHD modifications under the Build Alternatives.

The LAA Excavation Area would provide sand and gravel materials for NHD2. Activities within the LAA Excavation Area would alter existing drainage patterns, as flows would likely need to be routed around the excavated pit. South of the LAA Excavation Area, Loco Creek eventually drains into the LAA. Implementation of the SWPPP for the Proposed Project would identify necessary flow routing to prevent the pit from filling with water. Therefore, construction impacts related to flooding on- or off-site due to a change in drainage patterns or an increase in the rate or amount of surface runoff would be less than significant for the LAA Excavation Area under the Build Alternatives.

Build Alternatives - Operation

During operation of the NHD2 components, the LAA Realignment, the Cactus Flats Road Realignment, and the diversion channel and NHD modifications, flooding is not expected to occur on-site. The basin between the existing Dam and NHD2 has been designed to collect water from the LAA diversion channel and allow sediments to accumulate before entering NHR. Dredging would be required periodically to remove accumulated sediments. Impacts would be less than significant.

The realigned portion of Cactus Flats Road would be designed to reduce flooding by utilizing a four-foot wide drainage ditch and two two-foot by four-foot concrete culverts. The Project components are not expected to contribute to on- or off-site flooding. After construction, the LAA Excavation Area would be stabilized. A Topsoil Salvage and Revegetation Plan would be prepared for the Proposed Project (refer to Section 3.4 Biological Resources) to address the contouring of the land, placement of topsoil, and other aspects pertaining to stabilizing the site after construction. The plan would be developed such that on-site and off-site flooding would not be a concern following construction.

Following construction, the LAA Excavation Area would be restored as outlined in the Topsoil Salvage and Revegetation Plan prepared for the Proposed Project (refer to Section 3.4 Biological Resources). The plan would be developed for the LAA Excavation Area before construction would occur, and the plan would address the contouring of the land, placement of topsoil, and other aspects pertaining to stabilizing the site after construction. The plan would be developed such that on-site and off-site flooding would not be a concern following construction. Drainage patterns at the LAA Excavation Area may be altered, but the rate and quantity of runoff would not change significantly as the drainage would be modified as needed, and the area would be revegetated in compliance with the Topsoil Salvage and Revegetation Plan prepared for the Proposed Project (refer to Section 3.4 Biological Resources). Therefore, operational impacts related to flooding on- or off- site due to a change in drainage patterns or an increase in the rate or amount of surface runoff would be less than significant.

HWQ-5: *Would the project create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?*

No Project Alternative

Under the No Project Alternative, the existing Dam, Cactus Flats Road, and LAA would remain on the Project Site as under existing conditions. Typical maintenance activities would occur as they do under existing conditions. No construction activities would occur and no excavation for or purchase of earthen materials would be required. Therefore, no impact related to creating or contributing runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff would occur under the No Project Alternative.

Build Alternatives - Construction

The Proposed Project is located in a remote area that does not have a stormwater system to manage runoff. Runoff infiltrates into the subsurface, evaporates, or runs off into local water bodies. Construction-related activities (e.g., spoils piles, material stockpiling, earthmoving activities, etc.) may slightly alter sheet flow at the Project Site and could potentially expose the area, the LAA, NHR, and other water bodies to an increase in pollutants. During earthwork activities, a SWPPP would be developed and implemented and would include BMPs to address water quality on-site. Surface water control would be managed through the implementation of the SWPPP and BMPs, per the CGP requirements. As such, the Proposed Project would not provide substantial increases in the amount of runoff or additional sources of polluted runoff. Therefore, construction impacts related to creating or contributing runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff would be less than significant under the Build Alternatives.

Build Alternatives - Operation

There is not an existing or planned stormwater drainage system within the Project Site, as the site is located in a remote area. Drainage improvements such as a drainage ditch and concrete culverts would be constructed as part of the Cactus Flats Road Realignment, and would be sized based on anticipated flows; thus, capacity would be sufficient. Parapet walls would be included in the construction of the LAA Realignment in order to prevent stormwater from entering the LAA system (except where notched), and would redirect stormwater runoff to existing flow paths. During operation of NHD2 components, the Cactus Flats Road Realignment, the LAA Realignment, and the diversion channel and the NHD modifications, there would not be substantial additional sources of polluted runoff as compared to the existing conditions. The proposed land uses are similar to those that currently exist, only in a different configuration. The basin would be layered with a geomembrane to prevent infiltration into the ground. Runoff into NHD would not be expected to exceed the capacity of the existing reservoir, as flow would be managed to maintain water levels within the capacity of the reservoir. Once construction of the Proposed Project is complete, the LAA Excavation Area would be stabilized based on the Topsoil Salvage and Revegetation Plan prepared for the Proposed Project (refer to Section 3.4 Biological Resources). Runoff from the site following construction would be nearly the same as the existing conditions, as the groundcover would likely remain the same. The potential pollutants and runoff quantity would be comparable to the current conditions. Additionally, there are no existing or planned stormwater drainage facilities in the vicinity of the LAA Excavation Area. Therefore, operational impacts related to an exceedance of the capacity of existing or planned stormwater drainage systems or a substantially greater contribution of polluted runoff would be less than significant.

HWQ-6: *Would the project expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam*?

No Project Alternative

Under the No Project Alternative, the existing Dam, Cactus Flats Road, and LAA would remain on the Project Site as under existing conditions. Typical maintenance activities would occur as they do under existing conditions. No construction activities would occur and no construction workers would be onsite. Operation of the existing Dam as it currently exists could result in failure of NHD due to an MCE event. Even with the current DSOD required water level restrictions, an MCE could potentially cause the catastrophic failure of the existing Dam which would result in the uncontrolled release of water onto communities, flooding them, resulting in significant impacts from the No Project Alternative.

Build Alternatives - Construction

LADWP has identified that, per DSOD standards, the existing Dam is seismically unstable and has the potential to fail during an MCE seismic event due to the potential for liquefaction of the underlying alluvium and NHD itself. The area surrounding NHD is sparsely populated and during construction, workers would be located within the Project area. Thus, construction workers, residents, and other people in the vicinity may be at risk for loss, injury, or death if NHD were to fail. If the existing Dam were to fail, flow would travel northward and the area north of NHD towards Owens Lake would be inundated. The mapped inundation area includes part of the existing Cactus Flats Road, which runs upstream of NHD. Parts of the community of Olancha, located east of US-395, would be inundated in approximately 40 minutes. There is also a section of SR-190 located south of the Owens Lake that would be inundated approximately 50 minutes after the failure of NHD.

The haul routes dedicated to transporting construction material from the LAA Excavation Area and existing mine in Keeler to the NHD2 construction site are partially located in the inundation area associated with the failure of NHD. If NHD fails, workers delivering materials along the proposed haul routes may be at risk of loss, injury, or death, depending on the extent of the inundation and their location at the time of the failure. However, the DSOD has directed LADWP to currently operate NHR at a

restricted maximum surface water elevation of 3,757.5 feet in order to prevent an uncontrolled release of water and flooding in the event of dam failure resulting from an MCE, thereby reducing the risks of loss, injury, or death associated with NHD failure. Emergency response plans would also be developed to address the safety of the Project Site during construction and would identify actions to be taken if NHD fails. Therefore, construction impacts related to the exposure of people or structures to a significant risk of loss, injury, or death involving flooding, resulting from a dam or levee failure would be less than significant.

The LAA Excavation Area is located outside of the inundation area associated with the failure of NHD. The haul routes associated with the LAA Excavation Area and existing mine in Keeler utilize Cactus Flats Road near the Project Site. Approximately two miles of the existing Cactus Flats Road nearest the existing Dam would be inundated if NHD were to fail. Inundation would occur within seconds to the portion of Cactus Flats Road nearest NHD and would spread approximately two miles north within 20 minutes. The haul route from the existing mine in Keeler to the Project Site includes a portion of SR-190, which is partially located within the inundation area. Flood flows would reach this portion of SR-190 approximately 45 minutes after the failure of NHD. As previously discussed, the DSOD has directed LADWP to currently operate NHR at a restricted maximum surface water elevation of 3,757.5 feet, in order to prevent an uncontrolled release of water and flooding in the event of dam failure resulting from an MCE, thereby reducing the risks of loss, injury, or death associated with NHD failure. Emergency response plans would also be developed to address the safety during construction of the Proposed Project and would identify actions to be taken if NHD fails. Therefore, construction impacts related to the exposure of people or structures to a significant risk of loss, injury, or death involving flooding, resulting from a dam or levee failure would be less than significant.

Build Alternatives - Operation

The fundamental purpose of the Proposed Project is to improve the seismic reliability of NHR through construction of NHD2, a new dam, to the north of NHD, in order to maintain the function of an essential water conveyance infrastructure component for the City, and protect local populations from a hazardous flooding event. NHD2 would serve to improve the seismic reliability of NHR in the event the existing Dam is damaged or breached by an earthquake event, thereby ensuring public health and safety and securing the City's water source. NHD2 would be constructed per DSOD requirements, and would be designed to withstand an MCE event. By incorporating the required design standards and complying with all applicable regulations and ordinances, flows would be controlled, flooding hazards would be reduced, and the risk of injury, loss of life, and property damage associated with hazards would be minimized. As a result, people or structures would not be exposed to flooding impacts, including flooding as a result of dam failure, and impacts would be less than significant.

HWQ-7: *Would the project expose people or structures to a significant risk of loss, injury, or death involving inundation by seiche, tsunami, or mudflow?*

No Project Alternative

Under the No Project Alternative, the existing Dam, Cactus Flats Road, and LAA would remain on the Project Site as under existing conditions. Typical maintenance activities would occur as they do under existing conditions but no construction activities would occur. As no construction would occur, no construction workers would be exposed to risk associated with inundation by mudflow. In addition, the Project Site is not located near the ocean and there is no risk of tsunami. As described in Section 3.10.2, a seiche event in NHR would not overtop NHD. Therefore, no impact related to the exposure of people or structures to a significant risk of loss, injury, or death involving inundation by seiche or mudflow would occur under the No Project Alternative.

Build Alternatives - Construction

As described in Section 3.10.2, a seiche event in NHR would not overtop NHD. The basin would not be filled with water until NHD2 and the realigned LAA are fully operational. In addition, the Project Site is 150 miles from the ocean coast and is not subject to ocean tsunamis.

The potential for mudflows to occur in the Project Site exists; however, the potential to expose workers to mudflows would be minimal because construction activities would be halted during large storm events. In addition, Project structures would be designed to redirect surface flows or to capture them. Mudflows from the west of the Project Site may transport lighter sediments towards the Project Site, but most of the heavier sediments would settle before reaching the Project Site. The parapet walls along the LAA Realignment and the west berm, depending on the stage of construction, would also lessen the impact of the mudflow. Due to the existing terrain and groundcover, mudflows may occur near the Cactus Flats Road Realignment, LAA Realignment, and the diversion channel footprints during construction. The proposed east berm would cause some of the sediments to settle and allow water and lighter materials to enter the basin. However, most of the heavier materials would most likely be deposited once it reaches the proposed east berm. In addition, construction work would be halted during large storm events. Furthermore, emergency response plans would be prepared to address the potential for mudflows. Therefore, with implementation of emergency response plans, construction impacts related to the exposure of people or structures to a significant risk of loss, injury, or death involving inundation by seiche or mudflow would be less than significant.

Change in terrain and groundwater conditions might result in mudflow at the LAA Excavation Area. However, during construction, work would cease during large storm events and there would be no risk to workers from mudflows. The LAA Excavation Area is not susceptible to seiche since it is located away from NHR and is significantly higher in elevation than NHR and NHD. In addition, NHD has sufficient freeboard to contain wind generated waves, as required by DSOD. Furthermore, emergency response plans would be prepared to address the potential for mudflows. Therefore, with implementation of emergency response plans, construction impacts related to the exposure of people or structures to a significant risk of loss, injury, or death involving inundation by seiche or mudflow would be less than significant.

Build Alternatives - Operation

Any oscillation of water within NHR would most likely not inundate the vicinity, as NHD has sufficient freeboard to contain wind generated waves. Additionally, the NHD2 components would be built to provide sufficient freeboard to contain waves generated due to strong winds or seismic events. NHD2 would protect a portion of the Cactus Flats Road Realignment from being inundated by a seiche in NHR or the proposed basin. Therefore, operational impacts related to inundation by seiche would be less than significant.

Mudflows may occur near the Project Site during operation. It is unlikely that mudflow would cause inundation to the basin, the Cactus Flats Road Realignment, and the LAA Realignment. However, the Proposed Project would not be staffed during operation and little traffic occurs on Cactus Flats Road. Therefore, operational impacts related to a significant risk of loss, injury, or death involving inundation by a mudflow would be less than significant.

Upon completion of the construction phase of the Proposed Project, the structures and construction personnel would be removed from the LAA Excavation Area in accordance with the Topsoil Salvage and Revegetation Plan prepared for the Proposed Project (refer to Section 3.4 Biological Resources). The LAA Excavation Area could experience mudflows; however, during operation, the site would be unmanned and all structures would have been removed. In addition, the site is not susceptible to seiche since it is located away from NHR. Therefore, operational impacts related to the exposure of people or

structures to a significant risk of loss, injury, or death involving inundation by seiche or mudflow would be less than significant.

3.10.5 Mitigation Measures

During construction and operation, the Project would be required to comply with the NPDES General Permit for stormwater discharges associated with construction activities, including the preparation of a SWPPP and the implementation of appropriate BMPs. A SWPPP would be implemented for the Project Site to reduce erosion and siltation impacts and address pollutants and their sources. If necessary, due to the amount of dewatering for the Project, a Waste Discharge Application/Report would need to be submitted to the Lahontan RWQCB and may require an amended water quality certification, along with an NPDES permit for groundwater pumping and discharge. With implementation of BMPs and adherence to the General Permit and SWPPP, potential impacts under HWQ-2 through HWQ-5, would be less than significant. Under HWQ-1, Mitigation Measure HWQ-A is proposed in order to reduce the potential for water quality issues during construction of the notch.

HWQ-A Prior to any sediment disturbing activities in and around Haiwee Reservoir, the soils must be sampled and characterized so that proper handling and disposal methods can be adequately evaluated. LADWP will prepare a Sediment Management Plan for construction of the notch in NHD, demonstrating compliance with all applicable regulations related to disturbance, removal, treatment, and/or transport and disposal of these sediments.

3.10.6 Residual Impacts After Mitigation

With the application of BMPs and Mitigation Measure HWQ-A, water quality impacts related to construction of the notch in NHD would be reduced to less than significant under CEQA.

3.10.7 NEPA Conclusions

No Project Alternative

Under the No Project Alternative, the existing Dam, Cactus Flats Road, and LAA would remain on the Project Site as under existing conditions. Typical maintenance activities would occur as they do under existing conditions. No construction activities would occur and no excavation for or purchase of earthen materials would be required. The existing surface and groundwater quality, groundwater supply and recharge, and surface water hydrology and drainage would remain the same as under existing conditions. However, because of the seismic instability of NHD, people would continue to be exposed to risk of loss, injury, or death involving flooding related to potential failure of NHD.

Build Alternatives

The Build Alternatives would comply with all federal, State, and local laws and regulations. The Proposed Project would comply with the NPDES permit for stormwater discharges, including the preparation of a SWPPP, and would implement appropriate BMPs and Mitigation Measure HWQ-A. The Proposed Project is consistent with the CMAs related to hydrology, water quality, and groundwater under the DRECP LUPA. The Proposed Project would be consistent with LUPA-BIO-9 and LUPA-BIO-15 through implementation of the Construction General Permit and SWPPP described above, as well as the BMPs and Mitigation Measure BIO-K Minimize Construction-Related Impacts in Section 3.4, Biological Resources. The Proposed Project would be consistent with LUPA-SW-1, LUPA-SW-3, LUPA-SW-4, and LUPA-SW-22 through the SWPPP and erosion control plans implemented for construction activities in order to protect water quality, as well as through compliance with Lahontan RWQCB's NPDES permit requirements and the requirements identified in Section 3.10.1, Regulatory Setting above. Section 3.10.2, Affected Environment, and Section 3.10.4, Environmental Consequences provide the existing water resources to which this CMA applies and the potential impacts to those resources. The Proposed Project

would be consistent with LUPA-SW-7 through implementation of the Health and Safety Plan detailed in Section 3.9, Hazards and Hazardous Materials, which includes the preparation of an emergency response plan.

The Proposed Project would be consistent with LUPA-SW-5 and LUPA-SW-25 as groundwater would only be extracted on LADWP-owned property, resulting in temporary impacts to groundwater levels during construction. The Proposed Project would be consistent with LUPA-SW-20 as unavoidable residual impacts would not occur. The Proposed Project would be consistent with LUPA-SW-21 as project design does not alter existing hydrology or redirect excess flows created by hardscapes and reduced permeability to a greater extent than necessary. As described in Section 2.3, Alternatives Considered and Withdrawn from Further Analysis, the Proposed Project is constrained to be constructed in a particular location on the Project Site in order to function as a dam.

The Proposed Project would be consistent with LUPA-SW-14 through compliance with EO 11988 and EO 11990. The Proposed Project would be consistent with LUPA-SW-16 as demonstrated in Figure 3.10-2 above as well through implementation of all permits shown in Table 1-2 in Chapter 1, Introduction. The Proposed Project would be consistent with LUPA-SW-30 through compliance with local wastewater treatment requirements, as described in Section 3.19.1, Regulatory Setting and Section 3.19.4, Environmental Consequences under Section 3.19, Utilities and Service Systems.

During operation, impacts would be similar to existing conditions. Additionally, proposed conditions in terms of drainage patterns, runoff, surface and groundwater quality, and flooding would be very similar to the existing conditions.

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3.11 Land Use and Planning

This section analyzes the potential impacts of the Proposed Project as it relates to land use and planning. The applicable laws, regulations, and methods used to determine the effects of the Proposed Project are described herein. The section describes the affected environment and analyzes the environmental consequences of the Proposed Project and, if applicable, provides mitigation measures.

3.11.1 Regulatory Setting

Federal

Federal Land Policy and Management Act of 1976

The FLPMA governs most uses of federal public lands and is administered by BLM. The FLPMA was created to establish public land policy and guidelines for its administration, and to provide for the management, protection, development, and enhancement of the public lands.

California Desert Conservation Area Plan

The CDCA Plan, administered under the FLPMA by BLM, serves as a long-range planning document outlining multiple use management of approximately 25 million acres of public lands within Imperial, Inyo, Kern, Los Angeles, Mono, Riverside, and San Bernardino counties. The CDCA Plan was approved in 1980 to implement the guidelines in the FLPMA. The Project Site is located within the boundaries of the CDCA. The CDCA Plan has been amended numerous times.

Desert Renewable Energy Conservation Plan Land Use Plan Amendment of 2016

The DRECP LUPA, approved by BLM in September 2016, is an amendment to the CDCA Plan. The key objectives of the DRECP are to streamline renewable energy development and to provide for long-term conservation and management of special-status species, vegetation, and other resources within the DRECP Plan area. The DRECP identifies Development Focus Areas and Variance Process Lands where renewable energy development is more streamlined, as well as conservation areas, and several other land uses. The DRECP LUPA implements its objectives through specific CMAs. Some CMAs apply across the entirety of the DRECP Plan area, while others apply only to specific land uses.

The DRECP LUPA is only applicable to BLM-managed land. A small portion of the western portion of the Project Site, which includes the LAA Realignment, LAA Excavation Area, and access roads, is located on BLM-managed land (Figure 3.11-1). The DRECP LUPA land uses applicable to the Project Site are the BLM Conservation Areas and Recreation Management Areas, including the following:

- Basin and Range Subarea CDNCL, which covers the entire Project Site;
- Olancha Greasewood ACEC; and
- Olancha Dunes SRMA.

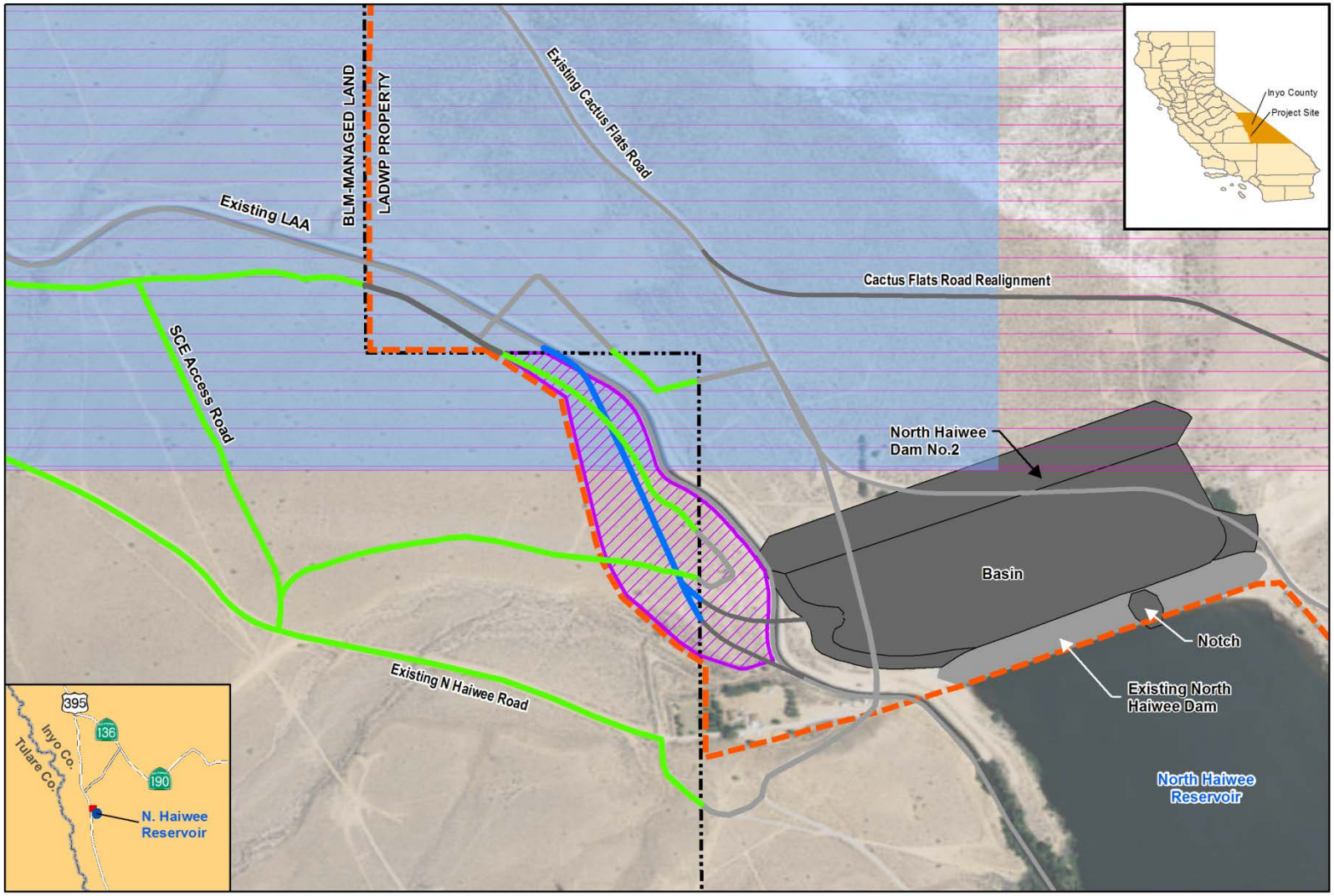

Figure 3.11-1
Existing DRECP LUPA Designations

CDNCL designations identify lands based on nationally significant ecological, cultural, and scientific values based on several criteria, such as landscape intactness, development pressure, and scenic quality. ACEC designations highlight areas where special management attention is needed to protect and prevent irreparable damage to important historic, cultural, and scenic values; fish, plant, or wildlife resources or other natural systems or processes; or to protect human life and safety from natural hazards. SRMA designations are recognized and managed for their recreation opportunities, unique value, and importance (BLM, 2016). A land use consistency analysis for the DRECP LUPA is included in this section.

The DRECP LUPA contains several CMAs related to land use and planning. LUPA-LANDS-4 excludes non-federal lands from this analysis. NLCS-DIST-1, 2 and ACEC-DIST-1, 2 implement a one percent total ground disturbance cap for development in CDNCL and ACEC designated areas and require mitigation for disturbances that exceed the cap. NLCS-LANDS-1 designated CDNCL areas as right-of-way avoidance areas with the exception of special stipulations. NLCS-LANDS-2 requires avoidance of use authorizations that negatively affect the values for which the CDNCL areas are designated.

CMAs not applicable to land use and planning include: LUPA-LANDS-1, 2, 3, 5, 6, 7, 8 (Lands and Realty), 8 (Exchanges with the State of California), 9, 10; LUPA-WC-4; LUPA-TRANS-WC-1, 2; NLCS-LANDS-3, 4; NLCS-MIN-4; ACEC-LANDS-1, 2; WILD-LANDS-2, 4; SRMA-LANDS-1, 2, 3; SRMA-REC-3; ERMA-LUPA-1, 3; ERMA-REC-1; DFA-VPL-VRM-1; DFA-LANDS-1, 2, 3, 4, 5, 6, 7; VPL-BIO-RE-4, 5; VPL-LANDS-1; VPL-REC-1; VPL-VRM-1, and GPL-LANDS-1.

For a detailed analysis of the applicability of all CMAs to the Proposed Project, and for Proposed Project consistency with the DRECP LUPA, refer to Appendix B.

Local

Inyo County General Plan

The parcels within the Project Site that border Cactus Flats Road, which include the parcels containing the NHD2 components, the Cactus Flats Road Realignment, the northwestern portion of the existing LAA, the diversion channel and NHD modifications, and the southeastern portions of the LAA Excavation Area and the LAA Realignment, are designated NR for Natural Resources land uses under the ICGP (Inyo County, 2015). The parcels comprising the majority of the LAA Excavation Area and the middle portions of the existing LAA and the LAA Realignment are designated as SFL for State and Federal Lands under the ICGP (Inyo County, 2015). The existing ICGP land use designations for the Project Site and the surrounding areas are shown in Figure 3.11-2.

The NR designation is applied to lands that are essentially unimproved and planned to remain open in character, and provides for the preservation of natural resources, the managed production of resources, and recreational uses (Inyo County, 2001). The SFL designation applies to those State- and Federally-owned parks, forests, recreation, and/or management areas that have adopted management plans (Inyo County, 2001).

Inyo County Zoning Code

All parcels of the Project Site are zoned OS for open space uses (Inyo County, 2015). One purpose of the OS Zone is to provide for compatible use of nonagricultural lands that are principally held by federal and other public agencies (Inyo County, 1994). Additionally, pursuant to Section 18.12.040 of the County Zoning Code, conditional uses permitted in the OS Zone include mining and processing of natural resources subject to the provisions of the California Surface Mining and Reclamation Act. The existing zoning designations for the Project Site and the surrounding areas are shown in Figure 3.11-3.

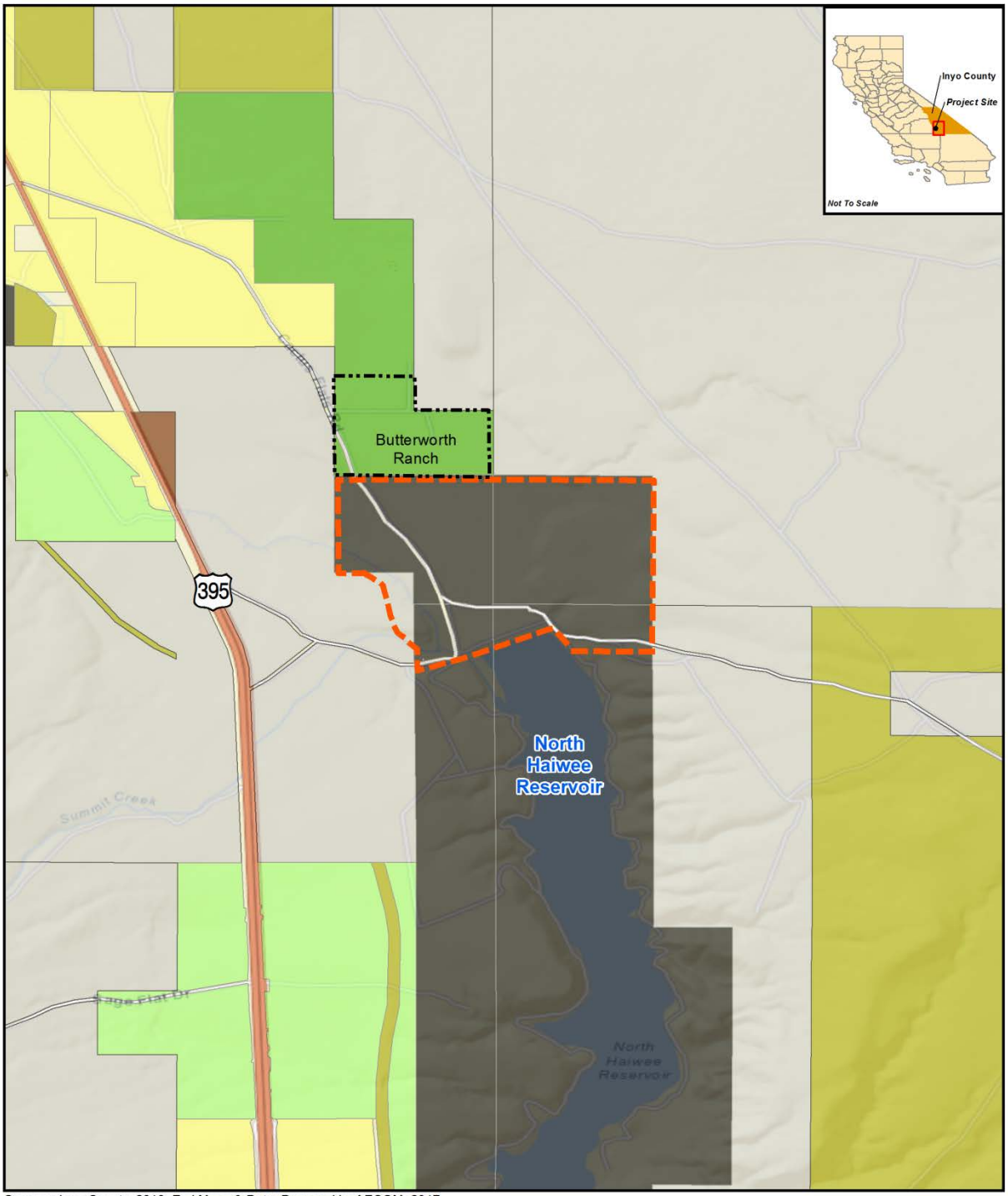

Figure 3.11-2
Existing General Plan Land Use Designations

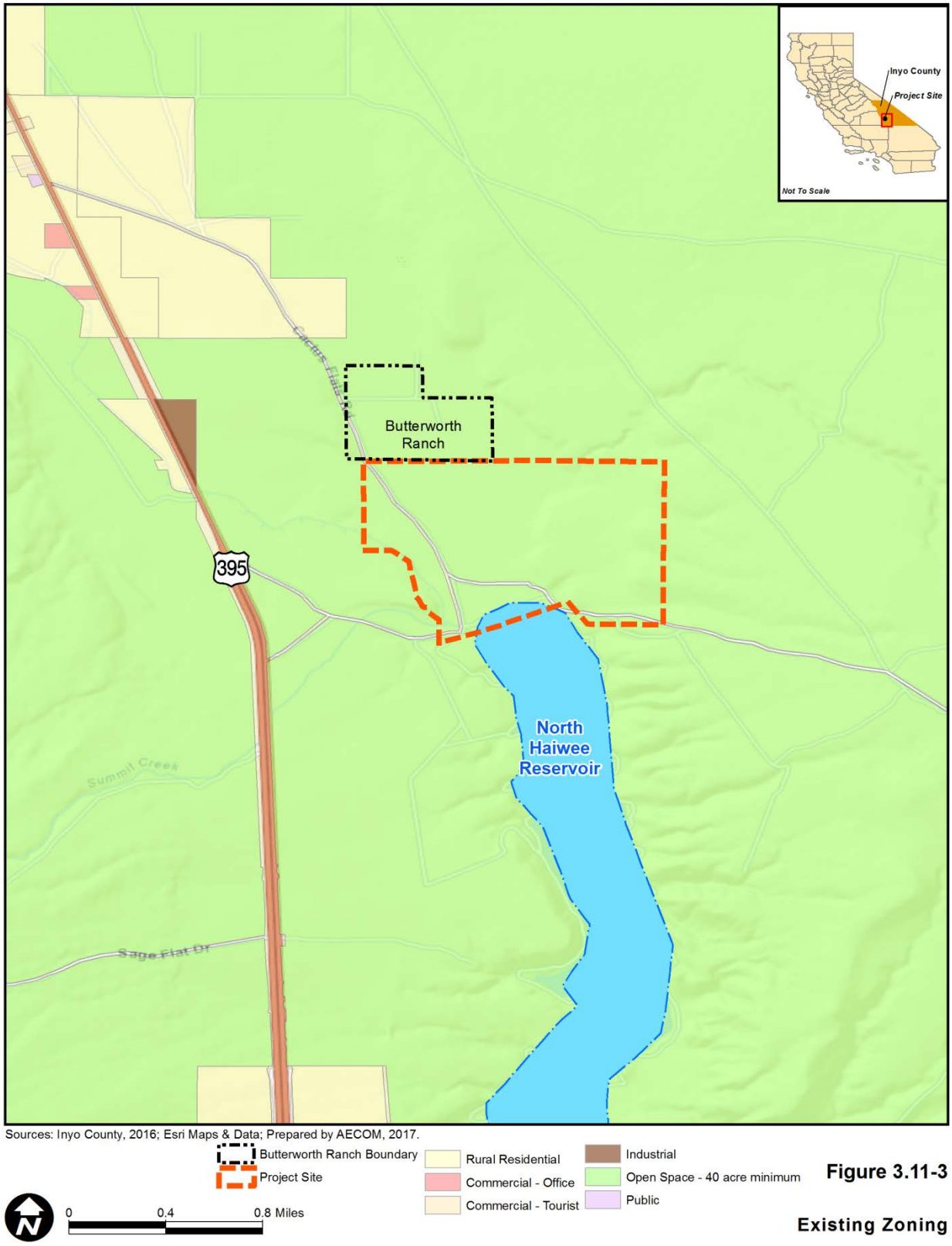

Figure 3.11-3

Existing Zoning

3.11.2 Affected Environment

Regional Setting

The Project Site is located in a sparsely populated and generally undeveloped area of Inyo County. The County is approximately 10,181 square miles, and the majority land use is designated SFL. Large land areas in the County are dedicated to wilderness such as Death Valley National Park and Inyo National Forest. Bishop, located over 80 miles north of the Project Site, is the only incorporated area in the County, with other population centers such as Big Pine, Independence, Lone Pine, and Olancha, located along US-395. Smaller communities, including mobile home parks, are primarily located along US-395 and SR-190. There are also five Indian reservations in Inyo County, including Lone-Pine Paiute-Shoshone Reservation which is 25 miles north of the Project Site.

Existing Land Uses

The Project Site primarily consists of a mix of undeveloped LADWP-owned and BLM-managed lands. The proposed location of the NHD2 components and the diversion channel and NHD modifications, and the southeastern portion of the LAA Realignment consist primarily of undeveloped LADWP-owned land. The majority of the LAA Excavation Area and the LAA Realignment are located on undeveloped BLM-managed land. The location of the LAA Excavation Area includes one residential property used as the residence of the NHR reservoir keeper. The NHD2 components would intersect a portion of the existing Cactus Flats Road alignment. The existing Cactus Flats Road consists of a partially paved roadway that enters the Project Site from the northwest and travels southeasterly across the Project Site, providing access for mining vehicles, LADWP personnel, and other motorists. The Cactus Flats Road Realignment would traverse currently undeveloped LADWP-owned property.

Surrounding Land Uses

The areas surrounding the Project Site are primarily undeveloped LADWP-owned and BLM-managed lands. The existing NHD and NHR are located approximately 0.4 miles southeast of the proposed NHD2 location. To the north of the Project Site is Butterworth Ranch, a privately-owned agricultural property. To the north east of the Project Site is the BLM-designated LCM livestock grazing allotment (approximately 165,140 acres). The LCM allotment is discussed in Section 3.2, Agricultural and Forestry Resources. The nearest populated areas to the Project Site include the unincorporated communities of Haiwee and Olancha, located approximately 1.1 miles southwest and 0.9 miles northwest of NHD, respectively. Haiwee has a population of approximately 20 people and is primarily designated for residential, open space, and recreational land uses. Olancha has a population of approximately 192 people and is primarily designated for residential uses, with some areas designated for agriculture, commercial, and recreational land uses.

3.11.3 Methodology for Analysis

The determination of consistency with applicable land use policies and ordinances is based on a review of the previously identified planning documents that regulate land use or guide land use decisions pertaining to the Project Site. CEQA Guidelines Section 15125(d) requires that an EIR discuss inconsistencies with applicable plans that the decision-makers should address. A project is considered consistent with the provisions of the identified regional and local plans if it meets the general intent of the plans, and would not preclude the attainment of the primary intent of the land use plan or policy. If a project is largely consistent with the land use goals of that plan and would not preclude the attainment of the primary intent of the land use plan, the project would not be considered inconsistent with the plan. In addition, inconsistency with specific objectives or policies of a land use plan does not necessarily mean that the project would result in a significant impact on the physical environment.

The analysis of land use compatibility addresses whether the Proposed Project would be compatible with the land uses in proximity to the Project Site in terms of use, size, intensity, density, scale, or other

factors. The compatibility analysis is based on aerial photography, land use and zoning maps, and applicable land use plans. Accordingly, the analysis addresses general land use relationships in the Project area.

CEQA Significance Criteria

- The thresholds of significance for the Proposed Project's potential to impact land use and planning are based on Appendix G of the State CEQA Guidelines. The following thresholds of significance were analyzed:
- Would the project physically divide an established community?
- Would the project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?
- Would the project conflict with any applicable habitat conservation plan or natural community conservation plan?

NEPA Requirements

The term "significantly" as used in NEPA requires considerations of both context and intensity (40 CFR 1508.27). Therefore, thresholds serve as a benchmark for determining if a project action would result in a significant adverse environmental impact when evaluated against the baseline. The environmental effects analysis of the Proposed Project related to land use and planning includes an assessment of the context and intensity of the impacts as defined in the NEPA implementing regulations, 40 CFR 1508.27, and the BLM *NEPA Handbook H-1790-1* of 2008. The BLM *NEPA Handbook H-1790-1* requires that duration be considered and that both short- and long-term adverse and beneficial impacts be disclosed in the NEPA analysis. The effects analysis must demonstrate that BLM took a "hard look" at the impacts of the action. The level of detail must be sufficient to support reasoned conclusions by comparing the amount and the degree of change (impact) caused by the proposed action and alternatives (BLM *NEPA Handbook H-1790-1*, 2008, p. 55). Additionally, direct, indirect, residual, and cumulative impacts for the Proposed Project must be considered. BLM does not provide a determination on the level of significance in a NEPA document. Rather, BLM leaves that determination to the FONSI which will be completed prior to the signing of a Decision Record. Any characterization of significance in this Draft EIR/EA applies only to the CEQA determination.

3.11.4 Environmental Consequences

LUP-1: *Would the project physically divide an established community?*

No Project Alternative

Under the No Project Alternative, the existing Dam, existing Cactus Flats Road, and existing LAA would remain on the Project Site as under existing conditions, and no excavation for or purchase of earthen material would be required. Typical maintenance activities would occur as they do under existing conditions. No construction activities would occur and no disruption to access between land uses or established communities would occur. Therefore, no impact to land use and planning would occur under the No Project Alternative.

CDSM Alternative

The NHD2 components, Cactus Flats Road Realignment, southeastern portions of the LAA Realignment, including a portion of the LAA Excavation Area, and the diversion channel and NHD modifications would be constructed on undeveloped LADWP property. The northwestern portion of the LAA Realignment, which includes the majority of the LAA Excavation Area, would occur on undeveloped

BLM-managed land. All portions of the Project Site are located on unpopulated lands, with the exception of the reservoir keeper's residence adjacent to the proposed location of the LAA Excavation Area. Although the Proposed Project includes the realignment of the existing Cactus Flats Road to accommodate the new Dam, demolition and closure of the existing Cactus Flats Road would not occur until the Cactus Flats Road Realignment is opened for public use. Additionally, the Cactus Flats Road Realignment would not pass through an existing community. Thus, no disruption of access would occur due to the Cactus Flats Road Realignment. No streets or sidewalks would be permanently closed with implementation of the CDSM Alternative, and no separation of existing uses or permanent disruption of existing access between land use types would occur. The proposed haul routes would primarily be located on existing roads and rights-of-way; however, portions of the haul route adjacent to and within the Project Site would require widening of existing dirt roads and the construction of two new road segments. These roadway improvements would be located on vacant land, and would not separate existing uses or disrupt existing access between land uses. Therefore, the Proposed Project would not divide an established community, and no impacts would occur under the CDSM Alternative.

Excavate and Recompact Alternative

Similar to the CDSM Alternative, the Excavate and Recompact Alternative involves the construction of the NHD2 components, Cactus Flats Road Realignment, the LAA Realignment, and the diversion channel and NHD modifications, none of which would result in a disruption of access between land use types. No streets or sidewalks would be permanently closed under this Alternative, and no separation of existing uses or permanent disruption of existing access between land use types would occur. To the extent feasible, the proposed haul routes would be located on existing roads and rights-of-way; however, portions of the haul route adjacent to and within the Project Site would require widening of existing dirt roads and the construction of two new road segments. These roadway improvements would be located on vacant land, and would not separate existing uses or disrupt existing access between land uses. Therefore, the Excavate and Recompact Alternative would not divide an established community, and no impacts would occur.

LUP-2: *Would the project conflict with any applicable land use plan, policy, or regulation with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?*

No Project Alternative

Under the No Project Alternative, the existing Dam, Cactus Flats Road, and LAA would remain on the Project Site as under existing conditions. Typical maintenance activities would occur as they do under existing conditions. No construction activities would occur and no excavation for or purchase of earthen material would be required. All land use and zoning designations would remain the same as under existing conditions. Therefore, no impact to land use and planning would occur under the No Project Alternative.

CDSM Alternative

Desert Renewable Energy Conservation Plan Land Use Plan Amendment

The DRECP LUPA designations apply to BLM-managed land only as specified by CMA LUPA-LANDS-4.

Basin and Range Subarea CDNCL

The Project Site is designated as Basin and Range Subarea CDNCL. The CDNCL designation identifies lands based on nationally significant ecological, cultural, and scientific values based on several criteria, such as landscape intactness, development pressure, and scenic quality. Ecological and cultural values in the Basin and Range CDNCL include Haiwee Reservoir and the First LAA. Haiwee Reservoir is located

outside of BLM-managed land, and would be consistent with the existing use. A portion of the LAA would require realignment within BLM-managed land; however, its land use would be consistent with the existing use and its cultural significance would be documented as discussed in Section 3.5, Cultural Resources. Therefore, the Proposed Project would be consistent with the Basin and Range Subarea CDNCL designation.

Excavation for the LAA Realignment in the LAA Excavation Area would comprise approximately 0.0061 percent of the Basin and Range CDNCL ground disturbance cap area. Based on calculations provided by BLM, the portion of the Project Site on BLM-managed land would exceed the one percent ground disturbance cap and the impact would be significant. Per CMA NLCS-DIST-1 and 2, LADWP would mitigate any land disturbance caused by the CDSM Alternative by a 3:1 ratio. As a part of the Proposed Project, a Topsoil Salvage and Revegetation Plan would be implemented, as outlined in Mitigation Measure BIO-H, in which areas or subject to Proposed Project disturbance would be restored to pre-project grade and allowed to revegetate. A detailed Topsoil Salvage and Revegetation Plan will be prepared for the proposed Project and would include top soil salvage, seeding with native locally adapted species, as needed, and minimizing the spread of invasive weeds. Therefore, with implementation of Mitigation Measure BIO-H, impacts would be reduced to less than significant.

Olancha Greasewood ACEC

Approximately the northern one-third of the Project Site located within BLM-managed land is within the Olancha Greasewood ACEC designation. The primary goal of the Olancha Greasewood ACEC is to increase the protection of sensitive biological resources, especially within the sand dunes that contain Greasewood assemblage, and continue using lands for recreational opportunities. The Project Site is not located in the area of the ACEC with sand dunes or the greasewood plant assemblage, as discussed in Section 3.4, Biological Resources, and the Proposed Project's land use would be similar to existing uses; therefore, the Proposed Project would be consistent with the objectives of the Olancha Greasewood ACEC.

Excavation for the LAA Realignment in the LAA Excavation Area would comprise approximately 0.045 percent of the Olancha Greasewood ACEC ground disturbance cap area. Based on calculations provided by BLM, the portion of the Project Site on BLM-managed land would exceed the one percent ground disturbance cap and would require mitigation. Per CMA ACEC-DIST-1 and 2, LADWP would mitigate any land disturbance caused by the CDSM Alternative by a 3:1 ratio. As a part of the Proposed Project, a Topsoil Salvage and Revegetation Plan would be implemented, as outlined in Mitigation Measure BIO-H, and impacts would be reduced to less than significant.

Olancha Dunes SRMA

Approximately the northern one-third of the Project Site located within BLM-managed land is within the Olancha Dunes SRMA designation. The primary objective is to maintain the open OHV riding area and recreational facilities. The Project Site is not located within the SRMA open OHV riding area, as discussed in Section 3.15, Public Services and Recreation, and the Proposed Project's land uses would be similar to existing uses. Therefore, the Proposed Project would be consistent with the objectives of the Olancha Dunes SRMA.

Inyo County General Plan

Under the CDSM Alternative, a majority of the Project Site is designated NR in the ICGP. The parcels comprising the majority of the LAA Excavation Area and the middle portions of the existing LAA and the LAA Realignment are designated as SFL. As previously discussed, the Proposed Project would occur on undeveloped LADWP-owned and BLM-managed lands. The NR designation provides for the preservation of natural resources, the managed production of resources, and recreational uses. The Proposed Project would be consistent with existing uses associated with operation at the LAA and NHR.

Additionally, the Project Site is not currently used for recreational purposes. Thus, Proposed Project would be consistent with existing land uses in the area and with the NR ICGP land use designation.

The SFL designation under the ICGP is applied to lands with state or federally adopted management plans. The SFL-designated parcels in the Project area are located within the boundaries of the West Mojave Plan area of the CDCA; however, as discussed, the portion of the Project Site within the West Mojave Plan area is identified as unclassified/undesignated lands that would not be subject to the land use guidelines under the CDCA Plan, including the West Mojave Plan.

Under the CDSM Alternative, approximately 311,000 yd^3 of earthen material would be excavated at the LAA Excavation Area. The NR designation applicable to a portion of the LAA Excavation Area allows for the managed production of resources. Excavated material is managed through County permitting and approvals processes. Accordingly, excavation activity for earthen material would be subject to approval of a conditional use permit from Inyo County. Additionally, as the LAA Excavation Area is located on BLM-managed land, and newly disturbed areas are subject to revegetation activities post-construction. As part of the Proposed Project, a Topsoil Salvage and Revegetation Plan would be implemented, in which areas subject to temporary Proposed Project disturbance would be restored to pre-project grade and allowed to revegetate. A detailed Topsoil Salvage and Revegetation Plan will be prepared for the Proposed Project and would include top soil salvage, seeding with native locally adapted species, as needed, and minimizing the spread of invasive weeds. With approval of the required terms and conditions of the ROW permit from BLM and conditional use permit from the County, the use of material from the LAA Excavation Area under the CDSM Alternative would not conflict with the existing ICGP land use designations for the site.

An analysis of the Proposed Project's consistency with applicable ICGP policies is provided in Table 3.11-1.

TABLE 3.11-1
PROJECT CONSISTENCY WITH APPLICABLE GENERAL PLAN POLICIES

Policy	Consistency Discussion
Land Use Element	
Policy LU-5.4 Natural Resources Designation (NR): This designation, which is applied to land or water areas that are essentially unimproved and planned to remain open in character, provides for the preservation of natural resources, the managed production of resources, and recreational uses. The County may permit the siting of public facilities and utility system components in lands designated as NR.	As discussed, the Proposed Project components that would be located in lands designated NR would be consistent with existing land uses in the area and with the NR ICGP land use designation. The Proposed Project would not conflict with this policy.
Policy LU-5.6 State and Federal Land Designation (SFL): This designation applies to those State- and Federally-owned parks, forests, recreation, and/or management areas that have adopted management plans.	As previously discussed, the SFL-designated portion of the Project Site is located within the West Mojave Plan area, and is identified as unclassified/undesignated lands that would not be subject to the land use guidelines under the habitat management plan. The Proposed Project would not conflict with this policy.

Note: This table lists only those policies that are applicable to the Proposed Project (i.e., policies relating to residential or other land uses are not analyzed).

As described in the analysis above, with adherence to the required permitting and approvals processes, the Proposed Project would not conflict with the existing ICGP land use designations for the Project Site, and would be compatible with the surrounding land uses. Additionally, the Proposed Project would be consistent with the applicable ICGP policies. Therefore, impacts related to consistency with the ICGP would be less than significant under the CDSM Alternative.

Inyo County Zoning Code

All parcels comprising the Project Site are zoned OS for open space uses, which allows for the compatible use of nonagricultural lands held by public agencies. The areas surrounding the Project Site are also zoned OS. The NHD2 components, Cactus Flats Road Realignment, the LAA Realignment, and the diversion channel and NHD modifications would be located in areas containing similar facilities. Thus, these Project components would be consistent with existing uses in the Project area and would not conflict with the OS zoning designation.

As discussed, the OS Zone conditionally permits mining and processing of natural resources. As such, approval of a conditional use permit to mine would be required from the Inyo County Planning Commission prior to the start of excavation activities at the LAA Excavation Area. Additionally, newly disturbed areas are subject to revegetation activities post-construction. With approval of the required permit, the use of material from the LAA Excavation Area under the CDSM Alternative would not conflict with the existing zoning designations for the site. Therefore, impacts related to consistency with the Inyo County Zoning Code would be less than significant under the CDSM Alternative.

Excavate and Recompact Alternative

Desert Renewable Energy Conservation Plan Land Use Plan Amendment

The Project components located on BLM-managed land and DRECP LUPA designations under the Excavate and Recompact Alternative would be the same as described for the CDSM Alternative. As such, impacts related to the consistency with the applicable DRECP LUPA policies would be less than significant under the Excavate and Recompact Alternative.

Excavation and ground disturbance under the Excavate and Recompact Alternative would be subject to the same ground disturbance caps as the CDSM Alternative. With the implementation of the Topsoil Salvage and Revegetation Plan, as outlined in Mitigation Measure BIO-H, impacts would be reduced to less than significant.

Inyo County General Plan

The Project components and ICGP land use designations under the Excavate and Recompact Alternative would be the same as described for the CDSM Alternative. As such, the Excavate and Recompact Alternative would not conflict with the existing ICGP land use designations for the Project Site, and would be compatible with the surrounding land uses. Additionally, the Proposed Project would be generally consistent with the applicable ICGP policies (Table 3.11-1).

The Excavate and Recompact Alternative would excavate 343,000 yd^3 earthen materials at the LAA Excavation Area and would be subject to the same permitting and approvals processes as would be required under the CDSM Alternative, including a conditional use permit from the Inyo County Planning Commission for the LAA Excavation Area. With approval of the required permit, the use of material from the LAA Excavation Area under the Excavate and Recompact Alternative would not change or conflict with the existing ICGP land use designations for the site. Therefore, impacts related to consistency with the ICGP would be less than significant under the Excavate and Recompact Alternative.

Inyo County Zoning Code

Similar to the CDSM Alternative, the NHD2 components, Cactus Flats Road Realignment, the LAA Realignment, and the diversion channel and NHD modifications under the Excavate and Recompact Alternative would be located in areas containing similar facilities. Thus, these Project components would be consistent with existing uses in the Project area and would not conflict with the OS zoning designation.

Earthen material excavated under the Excavate and Recompact Alternative would be subject to the same permitting and approvals processes as would be required under the CDSM Alternative, including a conditional use permit from Inyo County Planning Department for the LAA Excavation Area. With

approval of the required permit, the use of material from the LAA Excavation Area under the Excavate and Recompact Alternative would not change or conflict with the existing zoning for the site. Therefore, impacts related to consistency with the Inyo County Zoning Code would be less than significant under the Excavate and Recompact Alternative.

LUP-3: *Would the project conflict with any applicable habitat conservation plan or natural community conservation plan?*

No Project Alternative

Under the No Project Alternative, the existing Dam, Cactus Flats Road, and LAA would remain on the Project Site as under existing conditions. Typical maintenance activities would occur as they do under existing conditions. No construction activities would occur and no excavation for or purchase of earthen material would be required. All land use and zoning designations would remain the same as under existing conditions. Thus, there would be no conflict with applicable habitat conservation plans. Therefore, no impact to land use and planning would occur under the No Project Alternative.

CDSM Alternative

As previously discussed, the Project Site is located within the boundaries of the DRECP Natural Community Conservation Plan area. The Proposed Project would be consistent with the provisions in the DRECP LUPA to the maximum extent practicable through coordination and consultation with BLM (refer to Section 3.4, Biological Resources and Appendix B, DRECP CMA Checklist). Therefore, conflict with the DRECP Natural Community Conservation Plan Area would be considered less than significant under the CDSM Alternative.

Excavate and Recompact Alternative

Similar to the CDSM Alternative, the Project Site under the Excavate and Recompact Alternative is located within the boundaries of the DRECP Natural Community Conservation Plan area. The Proposed Project would be consistent with the provisions in the DRECP LUPA to the maximum extent practicable through coordination and consultation with BLM (refer to Section 3.4, Biological Resources and Appendix B, DRECP CMA Checklist). Therefore, conflict with the DRECP Natural Community Conservation Plan Area would be considered less than significant under the Excavate and Recompact Alternative.

3.11.5 Mitigation Measures

As discussed, the portion of the Project Site on BLM-managed land would exceed the one percent ground disturbance cap, resulting in potentially significant impacts to land use and planning. Implementation of Mitigation Measure, BIO-H, Topsoil Salvage and Revegetation Plan, would apply to the Proposed Project.

BIO-H Topsoil Salvage and Revegetation Plan: Native vegetated areas subject to temporary Proposed Project disturbance shall be restored to pre-project grade and allowed to revegetate. A detailed Revegetation Plan will be prepared and implemented to ensure that success is achieved to revegetate disturbed areas. The Revegetation Plan shall include top soil salvage, seeding with native locally adapted species, as needed, and minimizing the spread of invasive weeds (refer to BIO-M). Topsoil shall be stockpiled from the Project Site for use in natural revegetation of the disturbed soils. The upper soil horizons that contain the seed bank as identified in the Revegetation Plan shall be segregated as needed and stockpiled under conditions shown to sustain seed bank viability for use as the top-dressing for revegetation areas. After construction is complete, the salvaged topsoil will be spread over disturbed areas and seeded with native species using methods appropriate for the area.

3.11.6 Residual Impacts After Mitigation

With implementation of the 3:1 restoration ratio discussed in Mitigation Measure BIO-H, potential impacts to ground disturbance in the Basin and Range Subarea CDNCL and Olancha Greasewood ACEC would be reduced to less than significant levels.

3.11.7 NEPA Conclusions

No Project Alternative

The No Project Alternative would not change the existing conditions of the Project Site and would not utilize any earthen material.

Build Alternatives

The Build Alternatives would result in the impacts described in Section 3.11.4. The NHD2 components, Cactus Flats Road Realignment, and the diversion channel and NHD modifications would be consistent with existing land uses in the Project area and with the existing ICGP land use and zoning designations. The excavation of the LAA Realignment and LAA Excavation Area would be subject to a one percent ground disturbance cap, per the DRECP LUPA NLCS-DSIT-1, NLCS-DIST-2, ACEC-DIST-1, and ACEC-DIST-2. Based on calculations provided by BLM, the portion of the Project Site on BLM-managed land would exceed the one percent ground disturbance cap and would require mitigation. Per CMA ACEC-DIST-1 and 2, LADWP would mitigate any land disturbance caused by the Proposed Project by a 3:1 ratio. As a part of the Proposed Project, a Topsoil Salvage and Revegetation Plan would be implemented, as outlined in Mitigation Measure BIO-H.

Additionally, the excavation of material from the LAA Excavation Area would require approval of a conditional use permit for mining activities. With approval of the required permits, the use of material from the LAA Excavation Area would not change or conflict with the existing ICGP land use or zoning designations for the site. Additionally, the Build Alternatives would not result in the division of an established community. Although the Build Alternatives include the realignment of the existing Cactus Flats Road, demolition and closure of the existing road would not occur until the Cactus Flats Road Realignment is opened for public use. Additionally, the Cactus Flats Road Realignment would not pass through an existing community. No separation of existing uses or permanent disruption of existing access between land use types would occur. Further, the Proposed Project would not conflict with any habitat or natural community conservation plans, including the DRECP LUPA. Refer to the analysis in LUP-2 and LUP-3 for the DRECP LUPA consistency analysis.

As the Proposed Project is constructing a new dam and associated improvements, the Cactus Flats Road Realignment, and the LAA Realignment, operation of the Proposed Project would be similar to existing conditions and no changes to existing land use or zoning designations would occur. In addition, no operational activities would be associated with the LAA Excavation Area or existing mine in Keeler post-construction.

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3.12 Mineral Resources

This section analyzes the potential impacts of the Proposed Project as it relates to mineral resources. The applicable laws, regulations, and methods used to determine the effects of the Proposed Project are described herein. The section describes the affected environment and analyzes the environmental consequences of the Proposed Project and, if applicable, provides mitigation measures. The analysis in the section is based on the Geology, Soils, and Seismicity Technical Report in Appendix H of this Draft EIR/EA.

3.12.1 Regulatory Setting

Federal

Materials Act of 1947

The Materials Act of 1947 authorizes BLM to sell mineral resources at market value and the ability to grant use permits to government agencies and nonprofit organizations.

Federal Land Policy and Management Act of 1976

The Federal Land Policy and Management Act (FLPMA) of 1976 established a planning process for the management of public lands that accommodates multiple uses of the land and its resources. The FLPMA is administered by BLM.

Desert Renewable Energy Conservation Plan Land Use Plan Amendment of 2016

The DRECP LUPA, approved by BLM in September 2016, is an amendment to the CDCA Plan. The key objectives of the DRECP are to streamline renewable energy development and to provide for long-term conservation and management of special-status species, vegetation, and other resources within the DRECP Plan area. The DRECP identifies Development Focus Areas and Variance Process Lands where renewable energy development is more streamlined, as well as conservation areas, and several other land uses. The DRECP LUPA implements its objectives through specific CMAs. Some CMAs apply across the entirety of the DRECP Plan area, while others apply only to specific land uses. The DRECP LUPA contains CMAs related to mineral resources, including: LUPA-MIN-6, which requires case-by-case analysis of new mining operations and requires authorizations be subject to LUPA requirements; NLCS-MIN-2, which requires a Plan of Operations; and NLCS-MIN-3, which requires mitigation resulting in a net benefit for CDNCL values. CMAs not applicable to mineral resources include: LUPA-MIN-1, 2, 3, 4, 5; LUPA-WC-4; NLCS-MIN-1; and ACEC-MIN-1. The consistency of the Proposed Project with the DRECP CMAs is provided in Appendix B of this Draft EIR/EA.

State

California Surface Mining and Reclamation Act of 1975

Pursuant to the Surface Mining and Reclamation Act of 1975 (SMARA), the State Mining and Geology Board adopted guidelines for the management of mineral resources and preparation of local general plans. The purpose of SMARA is to identify significant mineral resources, and provide this information to local jurisdictions to be considered before land use decisions are made that may preclude future mining. SMARA also assures that adverse environmental impacts are minimized and mine lands are reclaimed to a usable condition. However, local governments retain the authority to control the use of lands within their jurisdictions. Accordingly, Inyo County has adopted a SMARA ordinance. Inyo County is the Lead Agency for the processing of surfacing mining reclamation plan applications.

Inyo County, in concurrence with the State of California, has determined that the Proposed Project is not subject to SMARA, per exceptions listed under Section 2714 of SMARA.

Local

Inyo County General Plan Conservation/Open Space Element

The Conservation/Open Space Element of the ICGP seeks to maintain the critical mineral and energy resources of Inyo County. The policies adopted under the Conservation/Open Space Element are focused on the protection of mineral resources that are important to the County's economy. The policies regarding mining are listed in Table 3.12-1.

TABLE 3.12-1
INYO COUNTY GENERAL PLAN GOALS AND POLICIES

Goal	Policy
Mineral and Energy Resources	
MER-1. Protect the current and future extraction of mineral resources that are important to the County's economy while minimizing impacts of this use on the public and the environment.	Policy MER-1.2. Minimize Land Conflicts: New mining operations shall be designed to provide a buffer between existing or likely adjacent uses to minimize incompatibility with nearby uses, and adequately mitigate their environmental and aesthetic impacts.
	Policy MER-1.3. SMARA Compliance: The County shall ensure that all mining projects comply with the requirements of the California SMARA. As part of this compliance, all mining operations shall prepare and implement reclamation plans that mitigate environmental impacts and incorporate adequate security to guarantee proposed reclamation.
	Policy MER-1.4. Environmental Contamination: All mining operations will be required to take precautions to avoid contamination from wastes or incidents related to the storage and disposal of hazardous materials, or general operating activity at the site.
	Policy MER-1.5. Maintain Accessibility: Ensure that extractive resource areas are protected from incompatible development that could interfere with extractive operations, now or in the future.

Note: MER=Mineral and Energy Resources
Source: 2001 Inyo County General Plan, Goals and Policies Report, Chapter 8 Conservation/Open Space Element website: http://inyoplanning.org/general_plan/goals/ch8.pdf, accessed November 4, 2015.

3.12.2 Affected Environment

Mineral resources are defined in the ICGP as "naturally occurring materials in the earth that can be utilized for commercial purposes" (Inyo County, 2001). According to the ICGP, approximately 60 percent of land within Inyo County is thought to have mineral potential. Mining activity within the County mainly consists of the extraction of aggregate resources, such as stone, sand, gravel, and clays. Other valuable minerals, such as silver and gold, are also mined within the County. Additionally, borates and soda ash from Owens Lake, located approximately five miles north of the Project Site, are considered valuable minerals within the County (Inyo County, 2001).

Mineral Resources

USGS Mineral Resource Data System

According to the United States Geological Survey (USGS) Mineral Resource Data System, the Project Site is not located within or in the immediate vicinity of active mines. The closest mine to the Project Site is the Olancha Mill, a closed clay mine, located approximately 0.3 miles south of the Project Site, west of NHD. The closest active mine to the Project Site is the Green Velvet Group Mine, a uranium mine, located approximately 2.5 miles northeast of the Project Site.

Several mines and prospects that are located a few miles to the east and southeast of the Project Site in the northern Coso Range are accessed by Cactus Flats Road. A pumice mine, known as the Haiwee Quarry, is located approximately two miles to the southeast of the Project Site. The Jack Henry Mine, a prospect mine located at the southeast end of Cactus Flats Road, approximately seven miles southeast of the Project Site, is a copper, zinc, and lead mine. Several other prospects, including the Five Tunnels Mine (copper, zinc, and lead), the Beebe Mine (copper, zinc, and lead), and the McCloud Mine (gold), are located in the vicinity of the Jack Henry Mine. Additionally, the existing mine in Keeler is an active dolomite mine.

California Department of Conservation, Office of Mine Reclamation Mines Online

The California Department of Conservation, Office of Mine Reclamation Mines Online (MOL) database was also reviewed for additional mines in the Project area not included in the USGS Mineral Resource Data System. The MOL database lists the N. Haiwee E/O Dam Mine as a former source of fill dirt used by LADWP located adjacent to the Project Site, east of the existing Dam at its northern end. Additionally, the Olancha Plant Mine, an active pumice mine, is located approximately two miles southeast of the Project Site. Although the Olancha Plant Mine is designated as an active mine, the database lists that reclamation is in progress (Department of Conservation [DOC] 2015).

Mineral Resource Zone Sites

Mineral Resource Zone (MRZ) investigations have been conducted for two areas in Inyo County: the Eureka-Saline Valley area and the southern Death Valley region (DOC, 2013). The Project Site is not located within either of these areas. The closest MRZ site is located approximately five miles east of the existing mine in Keeler and consists of two areas on the east side of the Inyo Mountains that are designated as MRZ-2b sites (DOC, 1987). MRZ-2b classification is assigned to areas where geologic information indicates that significant inferred resources or demonstrated sub-economic resources are present (DOC, 1993).

Patented and Federally Owned Lands

Land patents are in effect for a significant amount of land throughout the United States. These documents have been issued when property was purchased or transferred from the federal government to other government entities or other parties, such as private owners. Land patents describe the rights of the patentee and identify any exceptions (such as reservation of mineral rights to the federal government). The southern half of the LAA Excavation Area falls within a land patent (CACAAA 005781 01) issued June 6, 1917 by BLM to the State of California. The BLM General Land Office Records database states that this patent includes no mineral reservations. In addition, the northern tip of the LAA Excavation Area (on LADWP property, directly north of the BLM property line) falls within a land patent (CAI 0003246) issued by the federal government to Allan W. Ramsey on October 11, 1919. This patent does not reserve mineral rights to the United States (BLM, 2016b). Therefore, although land patents apply to lands within the LAA Excavation Area, BLM does not own the rights to or have a responsibility to permit mineral extraction on non-BLM-managed portions of the site.

High Potential Mineral Areas and High-Priority Mining Operations

The DRECP LUPA identifies areas within the DRECP boundary which are High Potential Mineral Areas. These areas are identified as mineral lands where existing and/or historic mining activity has occurred and which have a reasonable probability of future development of mineral resources. Through the DRECP, BLM has also identified several high-priority mining operations which are excluded from certain CMAs. The Project Site does not contain any High Potential Mineral Areas, nor are any existing high-priority operations present within or near the Project Site.

Fossil Fuel Resources

As discussed in the Geology, Soils, and Seismicity Technical Report (Appendix H), Inyo County and the Owens Valley are not known for having petroleum resources. Based on a review of the California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR) database, the Project Site is not located within the vicinity of a fossil fuel resource.

Geothermal Resources

As discussed in the Geology, Soils, and Seismicity Technical Report (Appendix H), based on review of the DOGGR California Geothermal Map, the Project Site is not located in a Geothermal Resource Area. The closest Geothermal Resource Area to the Project Site is the Coso Known Geothermal Resource Area, which is located approximately seven miles southeast of the Project Site (DOC, 2014).

3.12.3 Methodology for Analysis

Impacts to mineral resources are addressed in terms of whether the implementation of the Proposed Project would result in the permanent loss of or loss of access to mineral resources occurring within the Project area. The assessment of impacts is based on data from the Geology, Soils, and Seismicity Technical Report (Appendix H), information from the California DOC Office of Mine Reclamation, and the Inyo County Planning Department.

CEQA Significance Criteria

The thresholds of significance for the Proposed Project's potential to impact mineral resources are based on Appendix G of the State CEQA Guidelines. The following thresholds of significance were analyzed:

- 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?
- 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?

NEPA Requirements

The term "significantly" as used in NEPA requires considerations of both context and intensity (40 CFR 1508.27). Therefore, thresholds serve as a benchmark for determining if a project action would result in a significant adverse environmental impact when evaluated against the baseline. The environmental effects analysis of the Proposed Project related to mineral resources includes an assessment of the context and intensity of the impacts as defined in the NEPA implementing regulations, 40 CFR 1508.27, and the BLM *NEPA Handbook H-1790-1* of 2008. The BLM *NEPA Handbook H-1790-1* requires that duration be considered and that both short- and long-term adverse and beneficial impacts be disclosed in the NEPA analysis. The effects analysis must demonstrate that BLM took a "hard look" at the impacts of the action. The level of detail must be sufficient to support reasoned conclusions by comparing the amount and the degree of change (impact) caused by the proposed action and alternatives (BLM *NEPA Handbook H-1790-1*, 2008, p. 55). Additionally, direct, indirect, residual, and cumulative impacts for the Proposed Project must be considered. BLM does not provide a determination on the level of significance in a NEPA document. Rather, BLM leaves that determination to the FONSI which will be completed prior to the signing of a Decision Record. Any characterization of significance in this Draft EIR/EA applies only to the CEQA determination.

3.12.4 Environmental Consequences

MIN-1: *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 Project Alternative

Under the No Project Alternative, the existing Dam, existing Cactus Flats Road, and existing LAA would remain on the Project Site as they do today, under existing conditions. Typical maintenance activities would occur as they do under existing conditions. No construction activities would occur and no excavation for or purchase of earthen material would be required. Therefore, no impact related to the loss of availability of a known mineral resource would occur under the No Project Alternative.

Build Alternatives - Construction

CDSM Alternative

Construction of the NHD2 components, LAA Realignment, and diversion channel and NHD modifications would require various materials such as riprap, gravel, and/or sand, which are considered mineral resources within the ICGP. Earthen material would be excavated at the LAA Excavation Area, which is proposed as a source of sand and gravel materials for NHD2 and the east and west berms. Approximately 311,000 cubic yards of material would be excavated from the LAA Excavation Area. Therefore, while the earthen material that would be used to construct these components may be considered a mineral resource and of value to the region, excavation of the material would be subject to Inyo County approval. As the amount of excavated material would be regulated and permitted by the County, the potential for construction of the NHD2 components, LAA Realignment, diversion channel and NHD modifications to result in a loss or substantial reduction in availability of a known mineral resource is considered low. Additionally, as discussed previously, the closest active mine to the Project Site is the Green Velvet Group Mine, and construction activities, including trucks traveling along haul routes, would not interfere with mining operations. Approval of a conditional use permit would be required by the County.

Furthermore, as a portion of the LAA Excavation Area is located on BLM-managed land, LADWP would be required to submit a Plan of Operations to ensure excavation would meet BLM requirements. Newly disturbed areas are subject to revegetation activities post-construction. As part of the Proposed Project, a Topsoil Salvage and Revegetation Plan would be implemented, in which areas subject to temporary Proposed Project disturbance would be restored to pre-project grade and allowed to revegetate. A detailed Topsoil Salvage and Revegetation Plan will be prepared for the Proposed Project and would include top soil salvage, seeding with native locally adapted species, as needed, and minimizing the spread of invasive weeds. Therefore, adherence to the required permitting and approvals processes would ensure that impacts to the loss or substantial reduction in availability of a known mineral resource of regional or statewide value would be less than significant.

The Cactus Flats Road Realignment would incorporate compacted base material along the roadway and drainage system and a portion of the Cactus Flats Road Realignment would be paved and would not require the use of any excavated material. While not a primary roadway within Inyo County, Cactus Flats Road is used by mining vehicles traveling to and from local mining sites. The existing road would not be demolished until construction of the Cactus Flats Road Realignment is complete and open to the public. Therefore, the existing road would continue to provide access to mining vehicles during construction of the Cactus Flats Road Realignment, and following construction, mining vehicles would access nearby mines by using the realigned Cactus Flats Road. Construction of the Cactus Flats Road Realignment would not result in the loss or substantial reduction in availability of a known mineral resource of regional or statewide value. The impact would be less than significant.

Excavate and Recompact Alternative

Construction impacts of the Proposed Project related to the loss or substantial reduction in availability of a known mineral resource would be the same as described under the CDSM Alternative. The Excavate and Recompact Alternative would excavate approximately 343,000 cubic yards of material at the LAA Excavation Area. Earthen material excavated under the Excavate and Recompact Alternative would be subject to the same permitting and approvals processes as would be required under the CDSM Alternative, including a conditional use permit to mine from the Inyo County Planning Commission for all of the LAA Excavation Area and Plan of Operations for a portion of the LAA Excavation Area. Adherence to the required permitting and approvals processes would ensure that impacts under the Excavate and Recompact Alternative to the loss or substantial reduction in availability of a known mineral resource of regional or statewide value would be less than significant.

Build Alternatives - Operation

Operation and maintenance of the NHD2 components, Cactus Flats Road Realignment, LAA Realignment, and diversion channel and NHD modifications would not require the use of mineral resources and, thus, would not result in the loss of availability of mineral resources within the Project vicinity as operation of the Proposed Project would be similar to existing conditions. No operational impact would occur.

MIN-2: *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 Project Alternative

Under the No Project Alternative, the existing Dam, existing Cactus Flats Road, and existing LAA would remain on the Project Site as they do today, under existing conditions. Typical maintenance activities would occur as they do under existing conditions. No construction activities would occur and no excavation for or purchase of earthen material would be required. Therefore, no impact related to the loss of availability of a locally-important mineral resource recovery site would occur under the No Project Alternative.

Build Alternatives - Construction

CDSM Alternative

As discussed previously, no locally-important mineral resource recovery sites are specifically delineated within the ICGP. However, the ICGP states that approximately 60 percent of land in Inyo County is considered to have mineral potential, with the predominant mining activity being the extraction of aggregate resources such as stone, sand, and gravel (Inyo County, 2001). No portion of the Project Site is located in identified MRZ areas. In addition, no High Potential Mineral Areas or high-priority existing mines identified in the DRECP LUPA are within the Project Site or vicinity. Therefore, no impact related to the loss of availability of a locally-important mineral resource recovery site would occur during construction of the Proposed Project under the CDSM Alternative.

Excavate and Recompact Alternative

Construction impacts of the Proposed Project related to the loss of availability of a locally-important mineral resource recovery site would be the same as under the CDSM Alternative. No impact would occur.

Build Alternatives - Operation

Operation and maintenance of the NHD2 components, Cactus Flats Road Realignment, LAA Realignment, and diversion channel and NHD modifications would not require the use of mineral

resources and, thus, would not have the capacity to limit availability of a locally-important mineral resource recovery site. Therefore, no operational impacts related to 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 would occur.

3.12.5 Mitigation Measures

The Proposed Project would result in less than significant impacts to mineral resources. No mitigation measures are required.

3.12.6 Residual Impacts After Mitigation

The Proposed Project would result in less than significant impacts to mineral resources under CEQA.

3.12.7 NEPA Conclusions

No Project Alternative

The No Project Alternative would not change the existing conditions of the Project Site and would not utilize any earthen material.

Build Alternatives

The Build Alternatives of the Proposed Project would result in the impacts described above. The Project Site is not located within or in the vicinity of an active mine. While construction of the Proposed Project would require the use of riprap, sand, and/or gravel, which are considered mineral resources within the ICGP, all excavated earthen material would be subject to Inyo County approval. Compliance with the Inyo County approval process for mining activity would ensure construction of Proposed Project would not result in the loss or substantial reduction in availability of a known mineral resource of regional or statewide value.

Construction of the Build Alternatives of the Proposed Project would not result in the loss of availability of a locally-important mineral resource recovery site as the Project Site is not located in or near a designated MRZ site.

Implementation of the Proposed Project's Topsoil Salvage and Revegetation Plan would ensure that the LAA Excavation Area would be restored to a natural state and a usable condition for future use. Therefore, construction would not 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. As demonstrated throughout this section, the Proposed Project is consistent with the CMAs related to mineral resources under the DRECP LUPA. The Proposed Project is consistent with LUPA-MIN-6, as this EIR/EA provides the required case-by-case analysis for the new mining operation at the LAA Excavation Area, and authorization of this mining operation is consistent with the LUPA requirements as described throughout the EIR/EA and in Appendix B. The Proposed Project is consistent with NLCS-MIN-2 as it would include a Plan of Operations as described in MIN-1 under Section 3.12.4 above. The Proposed Project is consistent with NLCS-MIN-3 through the implementation of mitigation measures which preserve the biological, cultural, and scientific values of the CDNCL Basin and Range ecoregion subarea to the extent feasible. These mitigation measures are provided in Section 3.4, Biological Resources, and Section 3.5, Cultural Resources. Implementation of either Build Alternative also improves the seismic reliability of NHR, reducing the risk of flooding resulting from NHD failure, which would adversely affect CDNCL lands.

Given the Proposed Project is constructing a new Dam, Cactus Flats Road Realignment, LAA Realignment, and diversion channel and NHD modifications, operation of the Proposed Project would be similar to existing conditions. No operational activities would be associated with the LAA Excavation Area. Mineral resources would not be required for the operation of the Proposed Project post-construction.

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3.13 Noise and Vibration

This section analyzes the potential impacts of the Proposed Project as it relates to noise and vibration. The applicable laws, regulations, and methods used to determine the effects of the Proposed Project are described herein. The section describes the affected environment and analyzes the environmental consequences of the Proposed Project and, if applicable, provides mitigation measures. The analysis in the section is based on the Noise and Vibration Impacts Technical Report in Appendix L of this Draft EIR/EA.

3.13.1 Introduction

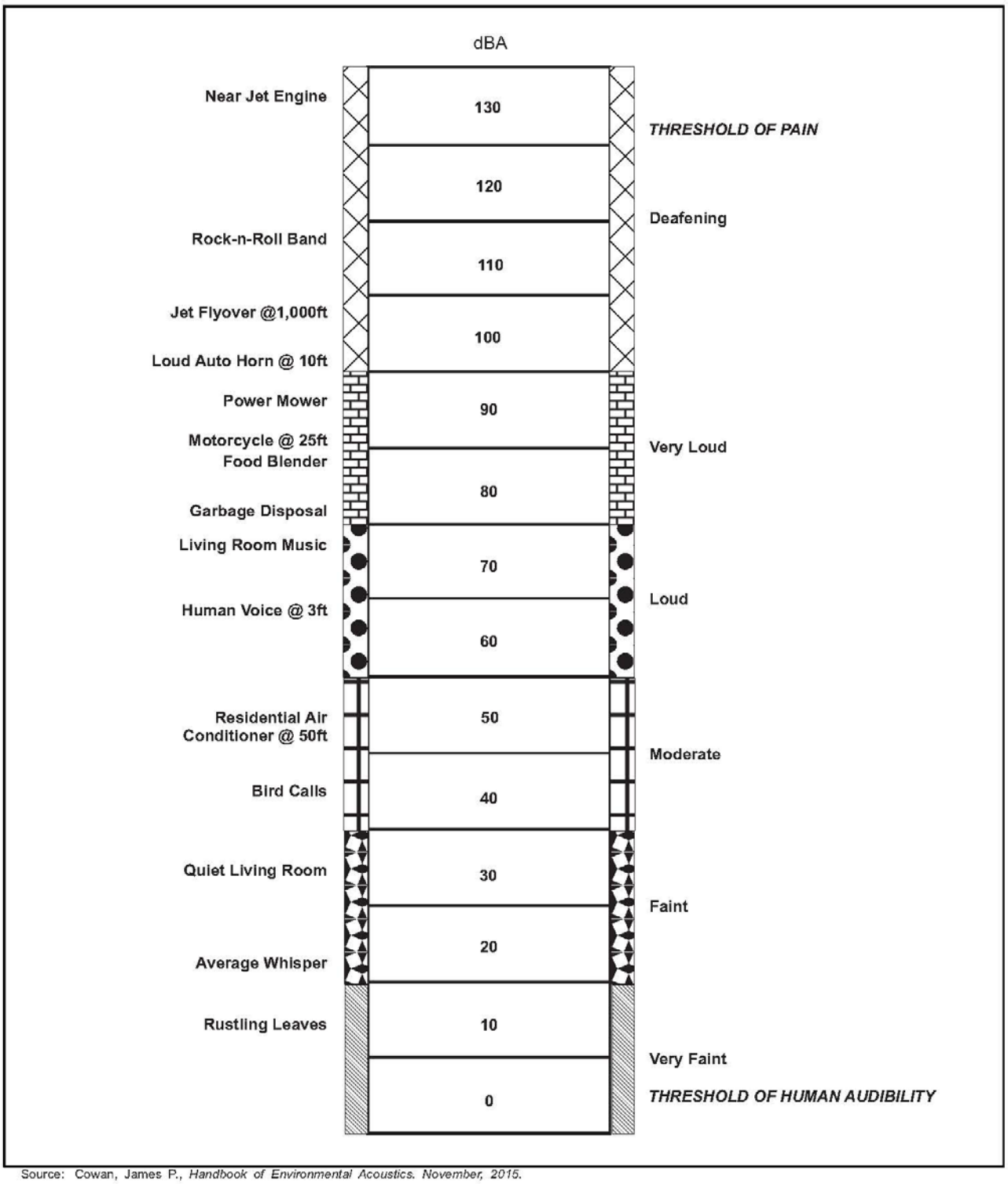
Noise Characteristic and Effects

Sound is technically described in terms of the loudness (amplitude) and frequency (pitch). The standard unit of measurement for sound is the decibel (dB). The human ear is not equally sensitive to sound at all frequencies. The A-weighted dB scale, abbreviated dBA, reflects the normal hearing sensitivity range of the human ear. Figure 3.13-1 provides examples of A-weighted noise levels from common sounds.

This noise analysis discusses average sound levels in terms of Equivalent Noise Level (L_{eq}) and Community Noise Equivalent Level (CNEL). L_{eq} is the average sound level for any specific time period, on an energy basis. The L_{eq} for one hour is the energy average noise level during the hour. The CNEL is an average sound level during a 24-hour period. The CNEL is a noise measurement scale, which accounts for noise source, distance, single-event duration, single-event occurrence, frequency, and time of day. Due to the lower background noise level, human reaction to sound between 7:00 p.m. and 10:00 p.m. is as if the sound were actually 5 dBA higher than if it occurred from 7:00 a.m. to 7:00 p.m. From 10:00 p.m. to 7:00 a.m., humans perceive sound as if it were 10 dBA higher. Hence, the CNEL is obtained by adding an additional 5 dBA to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and 10 dBA to sound levels in the night from 10:00 p.m. to 7:00 a.m. Because the CNEL accounts for human sensitivity to sound, it is always a higher number than the actual 24-hour average sound level.

Noise is generally defined as unwanted sound. The degree to which noise can impact the human environment ranges from levels that interfere with speech and sleep (annoyance and nuisance) to levels that cause adverse health effects (hearing loss and psychological effects). Human response to noise is subjective and can vary greatly from person to person. Factors that influence individual response include the intensity, frequency, and pattern of noise; the amount of background noise present before the intruding noise; and the nature of work or human activity that is exposed to the noise source. Studies have shown that the smallest perceptible change in sound level for a person with normal hearing sensitivity is approximately 3 dBA. A change of at least 5 dBA would be noticeable and may evoke community concern. A 10-dBA increase is subjectively heard as a doubling in loudness and would likely cause a community response.

Noise levels decrease as the distance from the noise source to the receiver increases. Noise levels generated by a stationary noise source, or "point source," will decrease by approximately 6 dBA over hard surfaces (e.g., pavement) and 7.5 dBA over soft surfaces (e.g., grass) for each doubling of distance. Generally, noise is most audible when it travels by direct line-of-sight. In urban environments, barriers, such as walls, berms, or buildings, are often present, which break the line-of-sight between the source and the receiver, greatly reducing noise levels from the source since sound can only reach the receiver by bending over the top of the barrier (diffraction).



Source: Cowan, James P., *Handbook of Environmental Acoustics. November, 2015.*

NOT TO SCALE

Figure 3.13-1
A-Weighted Noise Levels

Vibration Characteristic and Effects

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Vibration can be a serious concern, causing buildings to shake and rumbling sounds to be heard. In contrast to noise, vibration is not a common environmental problem. It is unusual for vibration from sources, such as buses and trucks, to be perceptible, even in locations close to major roads. Some common sources of vibration are trains, buses on rough roads, and construction activities, such as rock blasting, pile driving, and heavy earth-moving equipment.

There are several different methods that are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings and is usually measured in inches per second. The root mean square (RMS) amplitude is most frequently used to describe the effect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal. The decibel notation (Vdb) is commonly used to measure RMS.

High levels of vibration may cause physical personal injury or damage to buildings. However, vibration levels rarely affect human health. Instead, most people consider vibration to be an annoyance that may affect concentration or disturb sleep. In addition, high levels of vibration may damage fragile buildings or interfere with equipment that is highly sensitive to vibration (e.g., electron microscopes).

In contrast to noise, vibration is not a phenomenon that most people experience every day. The background vibration velocity level in residential areas is usually 50 Vdb RMS or lower, well below the threshold of perception for humans which is around 65 Vdb RMS. Most perceptible indoor vibration is caused by sources within buildings, such as operation of mechanical equipment, movement of people, or slamming of doors. Typical outdoor sources of perceptible vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If the roadway is smooth, the vibration from traffic is rarely perceptible.

3.13.2 Regulatory Setting

Federal

Noise Control Act

The Federal Noise Control Act of 1972 established programs and guidelines to identify and address the effects of noise on public health, welfare, and the environment. In 1981, USEPA administrators determined that subjective issues such as noise would be better addressed at local levels of government, thereby allowing more individualized control for specific issues by designated federal, state, and local government agencies. Consequently, in 1982, responsibilities for regulating noise control policies were transferred to specific federal agencies and state and local governments. However, noise control guidelines and regulations contained in USEPA rulings in prior years remain in place. BLM has not established noise standards. No federal noise regulations are directly applicable to the Proposed Project.

State

State of California Department of Transportation (Caltrans) Guidance

Caltrans has published guidance for assessing roadway noise (Caltrans, 2011). The guidance includes Noise Abatement Criteria (NAC), which are used to identify potential impacts. The exterior NAC for land uses such as residences, schools, and parks is 67 dBA L_{eq}. The exterior NAC for motels and other commercial land uses is 72 dBA L_{eq}. In California, a noise level is considered to approach the NAC for a given activity category if it is within 1 dBA of the NAC. In addition, Caltrans guidance states that a substantial noise increase is considered to occur when project-related hourly noise levels exceed existing

hourly noise levels by 12 dBA or more. The use of 12 dB was established in California many years ago and is based on the concept that a 10 dB increase generally is perceived as a doubling of loudness.

Noise

The State of California has adopted noise standards in areas of regulation not preempted by the federal government. State standards regulate noise levels of motor vehicles, sound transmission through buildings, occupational noise control, and noise insulation. State regulations governing noise levels generated by individual motor vehicles and occupational noise control are not applicable to planning efforts nor are these areas typically subject to CEQA analysis.

Vibration

There are no adopted state vibration standards.

Desert Renewable Energy Conservation Plan Land Use Plan Amendment of 2016

The DRECP LUPA, approved by BLM in September 2016, is an amendment to the CDCA Plan. The key objectives of the DRECP are to streamline renewable energy development and to provide for long-term conservation and management of special-status species, vegetation, and other resources within the DRECP Plan area. The DRECP identifies Development Focus Areas and Variance Process Lands where renewable energy development is more streamlined, as well as conservation areas, and several other land uses. The DRECP LUPA implements its objectives through specific CMAs. Some CMAs apply across the entirety of the DRECP Plan area, while others apply only to specific land uses. The DRECP LUPA contains only one CMA related to noise: LUPA-BIO-12, which addresses activities for which noise may impact Focus or BLM Special Status species. The consistency of the Proposed Project with the DRECP CMAs is provided in Appendix B of this Draft EIR/EA.

Local

Inyo County General Plan

Inyo County is in the process of updating the General Plan. The May 2013 Draft Zoning Code and General Plan Update does not have a noise element. Instead, noise is referenced in the Public Safety Element and the goal is to maintain a rural atmosphere in the County by protecting local residents and visitors from exposure to excessive noise related to highways and roadways, large mining or industrial facilities, and airports. Goals and policies in the Draft Zoning Code and General Plan Update related to noise and vibration and applicable to the construction of the Proposed Project are identified in Table 3.13-1. Land use compatibility guidelines have not been summarized as these relate to permanent noise and the Proposed Project would not generate operational noise or vibration. Inyo County has not established vibration standards relevant to the Proposed Project.

3.13.3 Affected Environment

Sensitive Receptors

Noise- and vibration-sensitive land uses are locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Residences, schools, hospitals, guest lodging, libraries, and some passive recreation areas are considered noise- and vibration-sensitive and may warrant unique measures for protection from intruding noise. As discussed above, ranch houses are located west and north of the Project Site. In addition, residences and motels are located at various places along the US-395, SR-136, and SR-190. Sensitive receptors near the Project Site and haul routes are identified in Figure 3.13-2.

TABLE 3.13-1
APPLICABLE INYO COUNTY GENERAL PLAN NOISE GOALS AND POLICIES

Goal	Policy
NOI-1. Prevent incompatible land uses, by reason of excessive noise levels, from occurring in the future. This includes protecting sensitive land uses from exposure to excessive noise and to protect the economic base of the County by preventing the encroachment of incompatible land uses within areas affected by existing or planned noise-producing uses.	NOI-1.5. Require that proponents of new projects provide or fund the implementation of noise-reducing mitigation measures to reduce noise to required levels.
	NOI-1.7.Construction contractors shall be required to implement noise-reducing mitigation measures during construction when residential uses or other sensitive receptors are located within 500 feet.
	NOI-1.8. The County will encourage other government agencies to implement noise-reducing measures when impacts to receptors within the County's jurisdiction occur.
NOI-2. Preserve and maintain a quiet rural environmental character.	NOI-2.2. Discourage the use of sound walls along roadway facilities. Non-structural mitigation is preferred, such as soft berms, provision of landscaping, buffer distances, and elevated or depressed roadways or structures.

Note: NOI = Noise
Source: Inyo County, Draft Zoning Code and General Plan Update, May 2013.

Project Site

The Project Site is developed with few sources of noise. Noise generation is limited to occasional automobile trips on North Haiwee Road and Cactus Flats Road, farm equipment associated with Butterworth Ranch and related agricultural activities, and common noise from the reservoir keeper's residence (e.g., barking dogs and household equipment) adjacent to the existing Dam. These noise sources are typical for the agricultural and residential land uses. The Project Site is approximately 0.6 miles east of US-395, and highway noise is not audible at the Project Site. Sound measurements were taken using a SoundPro DL Sound Level Meter between 9:00 a.m. and 12:30 p.m. on July 29, 2015 to determine existing ambient daytime noise levels. Noise monitoring locations are shown in Figure 3.13-2. As shown in Table 3.13-2, existing noise levels at the Project Site range from 36.9 to 52.5 dBA L_{eq}. Field observations indicate that vibration is not typically perceptible at the Project Site from any sources, including traffic.

TABLE 3.13-2
EXISTING NOISE LEVELS

Key To Figure 3.13-2	General Location Relevant to Project Components	Specific Location	Sound Level (dBA, L_{eq})
1	Existing Mine in Keeler	Residence on SR-136	61.6
2	Haul Route	Ranch Motel on US-395	68.7
3	Project Site	Residence on Cactus Flats Rd.	52.5
4	Project Site	Reservoir Keeper's Residence on North Haiwee Rd.	36.9

Notes: SR-136 = State Route 136; US-395 = U.S. Highway 395
Source: Terry A. Hayes Associates Inc., 2015.

The LAA Excavation Area is located within the Project Site, west of the LAA and adjacent to the site of NHD2. A portion of the LAA Excavation Area is within the footprint for the LAA Realignment. There are no existing noise sources near the LAA Excavation Area and it is anticipated that the noise level would be similar to the 36.9 to 52.5 dBA L_{eq} range recorded at the Project Site. There are no existing sources of vibration at the LAA Excavation Area.

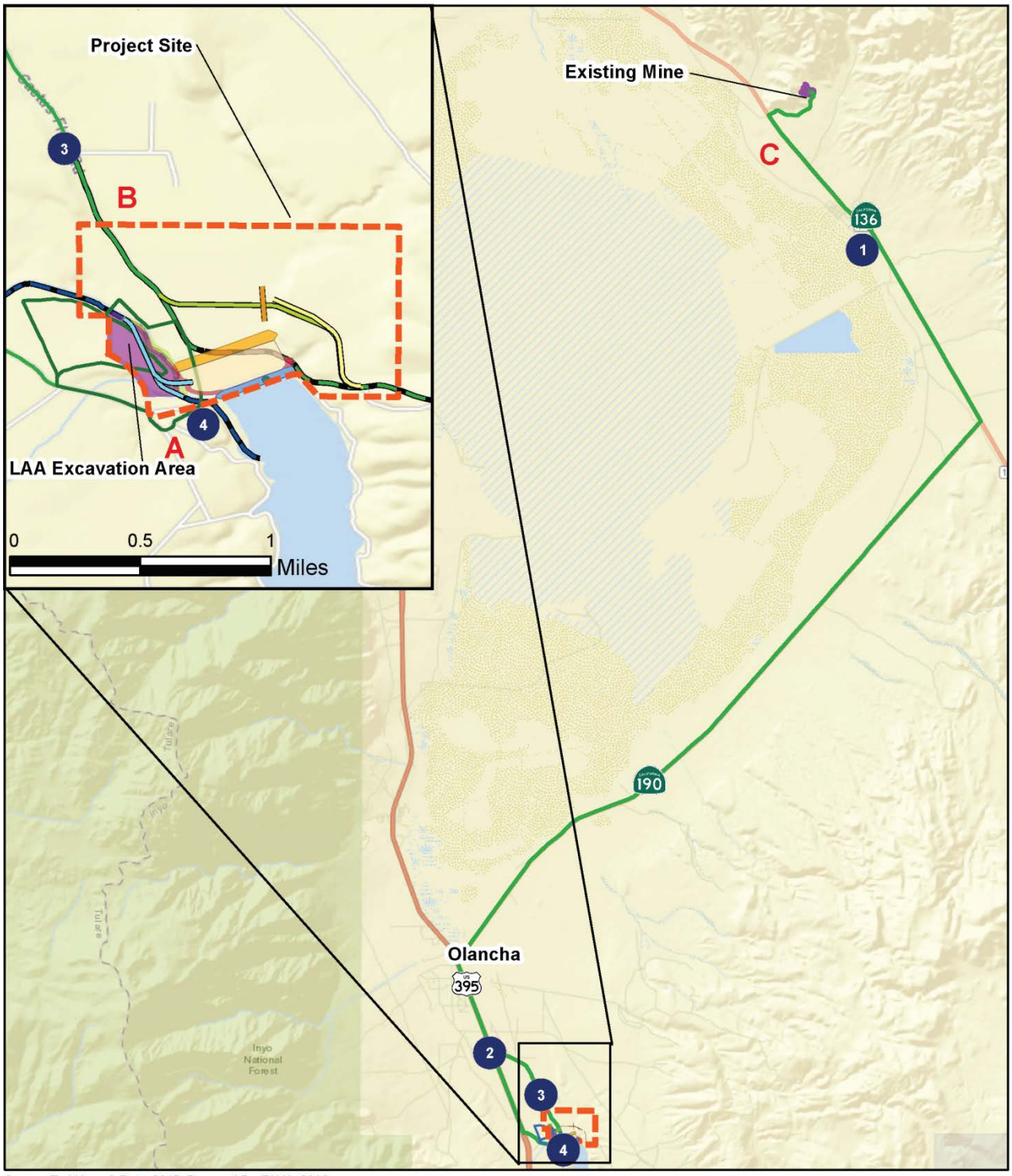


Figure 3.13-2
Noise Measurements and Sensitive Receptors

The existing mine in Keeler is located east of SR-136 in the foothills of the mountains that form the western boundary of Death Valley National Park. The existing mine is an active mine site and there exists noise and vibration generated by equipment and trucks typical of mine operations. Noise levels associated with operation of the mine were monitored at a residence in Keeler. The monitored noise level was 61.6 dBA L_{eq}.

3.13.4 Methodology for Analysis

The noise and vibration analyses consider construction activities on the Project Site and related activity on the roadway network. On-site sources of noise and vibration include heavy-duty equipment and trucks. Reference noise levels were obtained from USEPA guidance related to phased equipment activities (USEPA, 1971). Although published in 1971, this source is the industry standard for obtaining phased construction noise levels. For example, this source is used in the City of Los Angeles Draft CEQA Thresholds Guide as guidance for assessing construction noise levels (City of Los Angeles, 2006). The estimate of construction noise at specific land uses was calculated by adjusting the reference noise levels based on noise attenuation from ground absorption. The Project Site was considered to be a soft site for ground absorption due to the undeveloped nature of the land. Using guidance published in the Caltrans Technical Noise Supplement, the following formula was used to estimate noise levels (Caltrans, 2009):

$$dBA_2 = dBA_1 + 10\log_{10}(D_1/D_2)^{2.5}$$

Where: dBA_1 = Reference Noise Level

dBA_2 = New Noise Level at Land Use

D_1 = Distance for the Reference Noise Level

D_2 = Distance to Land Use

Roadway noise was estimated using the Federal Highway Administration's (FHWA) Traffic Noise Model (TNM). TNM is the current Caltrans standard computer noise model for traffic noise analysis. The model allows for the input of roadway parameters, noise receivers, and sound barriers if applicable. Existing and Project-related traffic volumes are presented in Appendix M.

Vibration levels generated by construction equipment were estimated using example vibration levels and formulas provided by Federal Transit Administration (FTA) (FTA, 2006). The analysis included damage and annoyance assessments. The potential for damage was assessed using the following formula:

$$PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$$

Where: PPV_{equip} = the vibration level adjusted for distance

PPV_{ref} = the reference vibration level at 25 feet

D = the distance from the equipment to the receiver

The potential for damage was assessed using the following formula:

Vibration Level (D) = Reference Vibration Level (25 feet) - 30log(D/25)

Where: Vibration Level (D) = the vibration level adjusted for distance

Reference Vibration Level (25 feet) = the reference vibration level at 25 feet

D = the distance from the equipment to the receiver

CEQA Significance Criteria

The thresholds of significance for the Proposed Project's potential to impact noise and vibration are based on Appendix G of the State CEQA Guidelines. The following thresholds of significance were analyzed:

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

- Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?
- Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?
- Would the project result in substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

The Appendix G significance criteria listed below were scoped out of the analysis for further consideration in the IS (Appendix A), and are discussed in Chapter 4, Other CEQA and NEPA Considerations, of this Draft EIR/EA.

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

Noise

Inyo County has not established quantitative significance thresholds to determine construction and operational noise impacts related to the Proposed Project. However, based on typical community response to increased noise levels and Caltrans guidance, the Proposed Project would have a significant impact related to noise if:

- Construction equipment activity results in a temporary noise level increase of 5 dBA L_{eq} or more at a noise-sensitive use;
- Construction-related roadway noise levels exceed 66 dBA L_{eq} at residences, schools, and parks, 72 dBA L_{eq} at motels, or result in any 12 dBA increase from existing conditions; and/or
- Operational activity results in a permanent noise level 5 dBA CNEL or more at a noise-sensitive use.

Haul Route Noise Assumptions

Traffic volumes were assessed for each alternative and construction year on three road segments: SR-136 north of SR-190, SR-190 between US-395 and SR-136, and US-395 south of SR-190 (Figure 3.13-3). The mobile noise analysis for each alternative focused on the year with the highest truck volumes as an indicator of a potential impact. Mobile noise levels were assessed based on peak hour traffic as opposed to average daily traffic. Per industry standard, the peak hour was assumed to be 10 percent of average daily traffic. The number of haul trucks per hour was calculated by dividing total daily truck traffic by an 8-hour work day. Total daily haul truck trips for each segment and alternative are shown in Table 3.13-3.

Vibration

Construction activity can generate varying degrees of vibration, depending on the construction procedure and the construction equipment used. Operation of construction equipment generates vibrations that spread through the ground and diminish in amplitude with distance from the source. The effect on buildings located in the vicinity of a construction site often varies depending on soil type, ground strata, and construction characteristics of the receiver building(s). The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibration at moderate levels, to slight damage at the highest levels.

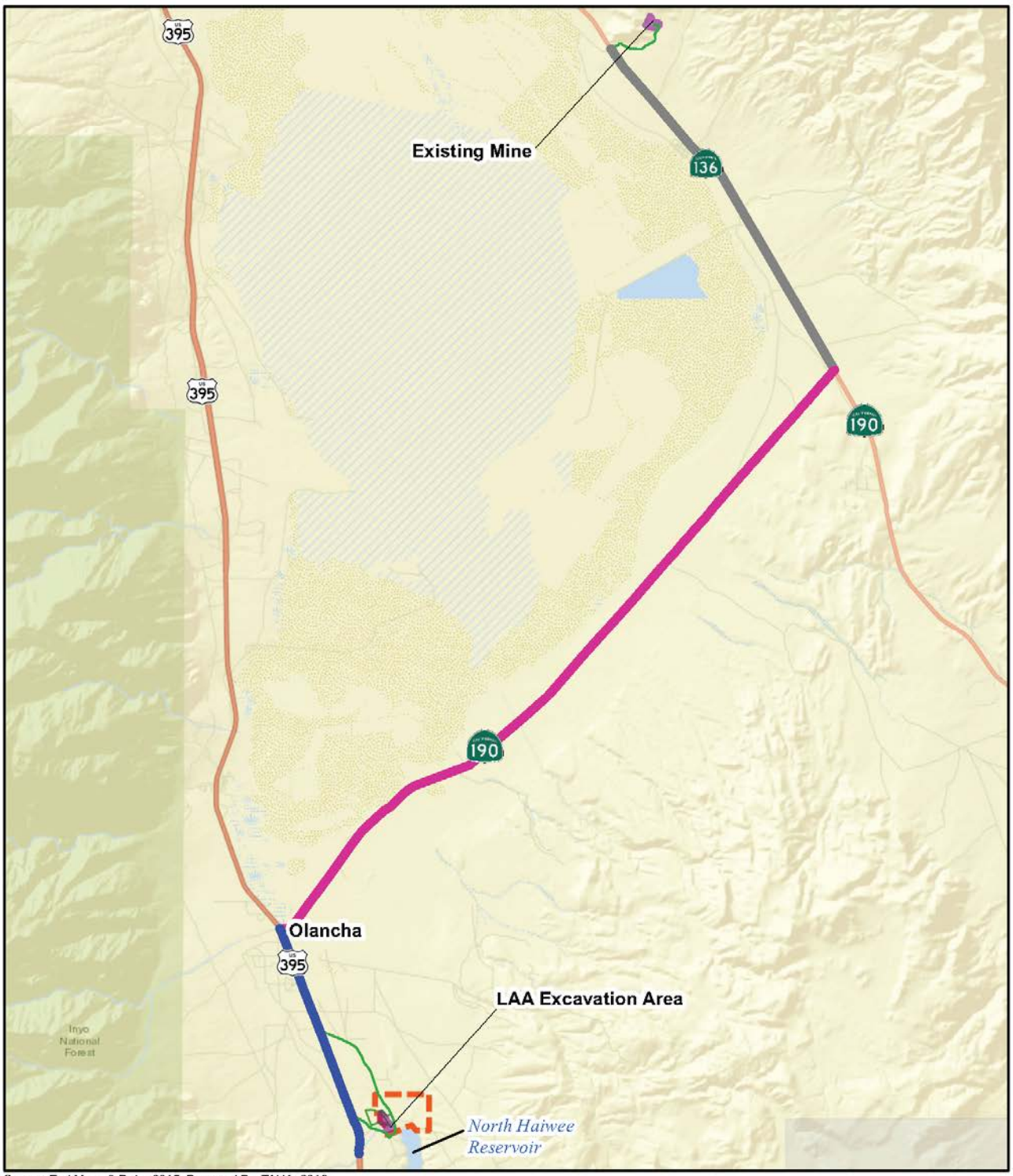


Figure 3.13-3
Truck Noise Roadway Segments

TABLE 3.13-3
TOTAL DAILY HAUL TRUCK TRIPS

Alternative and Segment	2018	2019	2020	2021	2022	2023	2024
CDSM Alternative							
Segment 1 - SR-136 north of SR-190	0	176	90	90	0	0	0
Segment 2 - SR-190 between US-395 and SR-136	0	176	90	90	0	0	0
Segment 3 - US-395 south of SR-190	2	58	350	90	0	0	0
Excavate and Recompact Alternative							
Segment 1 - SR-136 north of SR-190	0	114	90	90	0	0	0
Segment 2 - SR-190 between US-395 and SR-136	0	114	90	90	0	0	0
Segment 3 - US-395 south of SR-190	3	114	122	122	24	10	14

Source: Appendix M, *Transportation/Technical Report*, *North Haiwee Dam No.2 Project*, April 2017.

In most cases, the primary concern regarding construction vibration relates to damage. Activities that can result in damage include demolition and drilling in close proximity to sensitive structures. Typical vibration levels associated with construction equipment are provided in Table 3.13-4. Heavy equipment (e.g., large bulldozer) generates vibration levels of 0.089 inches per second at a distance of 25 feet. This reference vibration level would be 0.191 inches per second at 15 feet, which would be below the 0.2 inches per second significance threshold. Vibration dissipates rapidly with distance (e.g., the vibration level at 15 feet is more than 1.5 times greater in comparison to vibration level at 20 feet).

TABLE 3.13-4
VIBRATION VELOCITIES FOR CONSTRUCTION EQUIPMENT

Equipment	Peak Particle Velocity At 25 Feet (inches/second)	Peak Particle Velocity At 15 Feet (inches/second)
Large Bulldozer	0.089	0.191
Caisson Drill	0.089	0.191
Loaded Truck	0.076	0.163
Jackhammer	0.035	0.075
Small Bulldozer	0.003	0.006

Source: FTA, Transit Noise and Vibration Impact Assessment, May 2006.

The FTA has published guidance for assessing building damage impacts from vibration. TABLE 3.13-5 shows the FTA building damage criteria for vibration. It is assumed that the rural residential structures near construction activity are non-engineering timber and masonry buildings (Category III).

TABLE 3.13-5
CONSTRUCTION VIBRATION DAMAGE CRITERIA

Building Category	Peak Particle Velocity (Inches Per Second)
I. Reinforced-concrete, steel or timber (no plaster)	0.5
II. Engineered concrete and masonry (no plaster)	0.3
III. Non-engineered timber and masonry buildings	0.2
IV. Buildings extremely susceptible to vibration damage	0.12

Source: FTA, Transit Noise and Vibration Impact Assessment, May 2006.

Based on Federal guidelines, the Proposed Project would have a significant impact related to vibration if:

- Construction or operational activities would expose buildings to vibration levels that exceed 0.2 inches per second.

NEPA Requirements

The term "significantly" as used in NEPA requires considerations of both context and intensity (40 CFR 1508.27). Therefore, thresholds serve as a benchmark for determining if a project action would result in a significant adverse environmental impact when evaluated against the baseline. The environmental effects analysis of the Proposed Project related to noise and vibration includes an assessment of the context and intensity of the impacts as defined in the NEPA implementing regulations, 40 CFR-1508.27, and the BLM *NEPA Handbook H-1790-1* of 2008. The BLM *NEPA Handbook H-1790-1* requires that duration be considered and that both short- and long-term adverse and beneficial impacts be disclosed in the NEPA analysis. The effects analysis must demonstrate that BLM took a "hard look" at the impacts of the action. The level of detail must be sufficient to support reasoned conclusions by comparing the amount and the degree of change (impact) caused by the proposed action and alternatives (BLM *NEPA Handbook H-1790-1*, 2008, p. 55). Additionally, direct, indirect, residual, and cumulative impacts for the Proposed Project must be considered. BLM, the federal lead agency, has not adopted noise impact criteria directly relevant to the Proposed Project. Additionally, BLM does not provide a determination on the level of significance in a NEPA document. Rather, BLM leaves that determination to the FONSI which will be completed prior to the signing of a Decision Record. Any characterization of significance in this Draft EIR/EA applies only to the CEQA determination.

3.13.5 Environmental Consequences

NV-1: *Would the project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies, or would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?*

No Project Alternative

Under the No Project Alternative, the existing Dam, existing Cactus Flats Road, and existing LAA would remain on the Project Site as under existing conditions. Typical maintenance activities would occur similar to existing conditions. No excavation activity would occur under this alternative. Consequently, noise levels would remain the same as under existing conditions. Therefore, no impact would occur under the No Project Alternative.

Build Alternatives - Construction: Equipment Noise

Construction noise at the Project Site would be generated by heavy-duty equipment and trucks. Increased noise levels would be a function of location of the equipment, the timing and duration of the noise-generating construction activities, and the distance to noise-sensitive receptors. Typical noise levels from various types of equipment that may be used during construction are listed in Table 3.13-6. The noise levels are presented as if the equipment would operate under full power conditions. However, equipment used on construction sites often operates at less than full power. The USEPA has identified a reference noise level for multiple pieces of equipment operating during different phases of construction. Based on the scheduled mix of equipment by construction phase, the structural construction phase of the Project components is anticipated to have the highest number of equipment operating at the same time. The USEPA reference level for site preparation activity is 89 dBA L_{eq} at 50 feet. This reference noise level is an accurate representation of multiple pieces of equipment operating at the same time and, thus, also represents overlapping construction activities.

TABLE 3.13-6
CONSTRUCTION EQUIPMENT NOISE LEVEL RANGES

Construction Equipment	Noise Level at 50 Feet (dBA, L_{eq})
Backhoe	84
Front Loader	80
Trucks	89
Generators	76
Scraper/Grader	87
Cranes	88
Concrete Mixers	82
Compressors	81
Auger Drilling	77

Notes: dBA = A-weighted dB scale; Leq = Equivalent Noise Level
Source: USEPA. Noise from Construction Equipment and Operations, Building Equipment and Home Appliances, PB 206717, 1971.

CDSM Alternative

The CDSM Alternative would require portable batch plants, drill rigs with multi-axis augers, articulated end dump trucks, a track-mounted drill rig for coring, cement delivery trucks, track-mounted backhoes, and loaders. As discussed above, the USEPA reference level for site preparation activity is 89 dBA L_{eq} at 50 feet. This reference noise level is an accurate representation of multiple pieces of equipment operating at the same time and, thus, also represents overlapping construction activities.

NHD2 Components

Equipment associated with the construction of NHD2 would be located approximately 600 feet east of the reservoir keeper's residence on North Haiwee Road and 2,700 feet south of Butterworth Ranch, as shown in Figure 3.13-2. As shown in Table 3.13-7, equipment-related noise levels would exceed existing noise levels by more than 5 dBA L_{eq} at both receptors during all construction activities. Implementation of Mitigation Measures NV-A through NV-F would reduce equipment noise impacts associated with NHD2 construction to the greatest extent feasible, but would not reduce the impact to a less than significant level.

The basin and east and west berms construction equipment would be located within approximately 200 feet of the reservoir keeper's residence on North Haiwee Road and 2,930 feet of the Butterworth Ranch. As shown in Table 3.13-7, equipment-related noise levels would exceed existing noise levels by more than 5 dBA L_{eq} at both receptors during all construction activities. Implementation of Mitigation Measures NV-A through NV-F would reduce equipment noise impacts associated with the construction of the basin and berms to the greatest extent feasible, but would not reduce the impact to a less than significant level.

Therefore, construction of the NHD2 components would generate noise levels in excess of established applicable standards, and the impact due to construction equipment noise would remain significant and unavoidable under the CDSM Alternative.

Cactus Flats Road Realignment

The Cactus Flats Road Realignment construction equipment would be located within approximately 1,800 feet of the reservoir keeper's residence on North Haiwee Road and Butterworth Ranch. As shown in Table 3.13-7, equipment-related noise levels would exceed existing noise levels by more than 5 dBA L_{eq} at both receptors during all construction activities. Implementation of Mitigation Measures NV-A through NV-F would reduce equipment noise impacts associated with the construction of the Cactus Flats Road Realignment to the greatest extent feasible, but would not reduce the impact to a less than

TABLE 3.13-7
CDSM ALTERNATIVE – EQUIPMENT NOISE LEVELS - UNMITIGATED

Components and Sensitive Receptors	Distance (Feet)	Estimated dBA, L_{eq}			
		Equipment Noise Level	Existing Noise Level	New Ambient Noise Level	Noise Increase[a]
NHD2					
Reservoir Keeper's Residence	600	62.0	36.9	62.0	**25.1**
Butterworth Ranch Residence	2,700	45.7	36.9	46.2	**9.3**
BASIN AND BERMS					
Reservoir Keeper's Residence	200	73.9	36.9	73.9	**37.0**
Butterworth Ranch Residence	2,930	44.8	36.9	45.5	**8.6**
CACTUS FLATS ROAD REALIGNMENT					
Reservoir Keeper's Residence	1,800	50.1	36.9	50.3	**13.4**
Butterworth Ranch Residence	1,800	50.1	36.9	50.3	**13.4**
LAA REALIGNMENT					
Reservoir Keeper's Residence	Adjacent	89.0	36.9	89.0	**52.1**
Butterworth Ranch Residence	2,000	48.9	36.9	49.2	**12.3**
LAA EXCAVATION AREA					
Reservoir Keeper's Residence	50	89.0	36.9	89.0	**52.1**
Butterworth Ranch Residence	1,700	50.7	36.9	50.9	**14.0**
NOTCH					
Reservoir Keeper's Residence	1,450	52.4	36.9	52.6	**15.7**
Butterworth Ranch Residence	4,000	41.4	36.9	42.7	**5.8**
DIVERSION CHANNEL					
Reservoir Keeper's Residence	450	65.1	36.9	65.2	**28.3**
Butterworth Ranch Residence	3,000	44.5	36.9	45.2	**8.3**

Notes: dBA = A-weighted dB scale; Leq = Equivalent Noise Level; NHD2 = North Haiwee Dam No. 2
[a]**Bold** = 5.0 dBa or greater increase
Source: Terry A. Hayes Associates Inc., 2015.

significant level. Therefore, construction of the Cactus Flats Road Realignment would generate noise levels in excess of established applicable standards, and the impact due to construction equipment noise would remain significant and unavoidable under the CDSM Alternative.

LAA Realignment

The construction equipment associated with the LAA Realignment would be located adjacent to the reservoir keeper's residence on North Haiwee Road and within 2,000 feet of Butterworth Ranch. As shown in Table 3.13-7, equipment-related noise levels for the LAA Realignment would exceed existing noise levels by more than 5 dBA L_{eq} at both receptors during all construction activities. Implementation of Mitigation Measures NV-A through NV-F would reduce equipment noise impacts associated with the construction of the LAA Realignment to the greatest extent feasible, but would not reduce the impact to a less than significant level. Therefore, construction of the proposed LAA Realignment would generate noise levels in excess of established applicable standards, and the impact due to construction equipment noise would remain significant and unavoidable under the CDSM Alternative.

Construction equipment for the LAA Excavation Area would be located approximately 50 feet north of the reservoir keeper's residence on North Haiwee Road and 1,700 feet of Butterworth Ranch. As shown in Table 3.13-7, equipment-related noise levels would exceed existing noise levels by more than 5 dBA L_{eq} at both receptors. Implementation of Mitigation Measures NV-A through NV-F would reduce equipment noise impacts associated with the LAA Excavation Area construction activity to the greatest extent feasible, but would not reduce the impact to a less than significant level. Therefore, construction activities at the LAA Excavation Area would generate noise levels in excess of established applicable standards, and the impact due to construction equipment noise would remain significant and unavoidable for the LAA Excavation Area under the CDSM Alternative.

Diversion Channel and NHD Modifications

The diversion channel construction equipment would be located within approximately 450 feet of the reservoir keeper's residence on North Haiwee Road and 3,000 feet of the Butterworth Ranch. As shown in Table 3.13-7, equipment-related noise levels would exceed existing noise levels by more than 5 dBA L_{eq} at both receptors during all construction activities. Implementation of Mitigation Measures NV-A through NV-F would reduce equipment noise impacts associated with the construction of the diversion channel to the greatest extent feasible, but would not reduce the impact to a less than significant level.

The notch construction equipment would be located within approximately 1,450 feet of the reservoir keeper's residence on North Haiwee Road and 4,000 feet of the Butterworth Ranch. As shown in Table 3.13-7, equipment-related noise levels would exceed existing noise levels by more than 5 dBA L_{eq} at both receptors during all construction activities. Implementation of Mitigation Measures NV-A through NV-F would reduce equipment noise impacts associated with the construction of the notch to the greatest extent feasible, but would not reduce the impact to a less than significant level.

Therefore, construction of the diversion channel and NHD modifications would generate noise levels in excess of established applicable standards, and the impact due to construction equipment noise would remain significant and unavoidable under the CDSM Alternative.

Excavate and Recompact Alternative

The Excavate and Recompact Alternative would require less equipment than the CDSM Alternative. As discussed above, the USEPA reference level for site preparation activity is 89 dBA L_{eq} at 50 feet. This reference noise level is an accurate representation of multiple pieces of equipment operating at the same time and, thus, also represents overlapping construction activities.

Similar to the CDSM Alternative, construction activity would result in significant and unavoidable noise impacts for the NHD2 components, Cactus Flats Road Realignment, LAA Realignment, LAA Excavation Area, and diversion channel and NHD modifications (Table 3.13-8). Overall, implementation of Mitigation Measures NV-A through NV-F would reduce equipment noise levels to the greatest extent feasible, but would not reduce the impacts to less than significant level under the Excavate and Recompact Alternative. Therefore, construction activities under the Excavate and Recompact Alternative would generate noise levels in excess of established applicable standards, and the impact due to construction equipment noise would remain significant and unavoidable under the Excavate and Recompact Alternative.

Build Alternatives – Construction: Haul Route Traffic Noise

The Proposed Project would generate truck and worker vehicle trips that would have the potential to increase noise on the roadway network. Roadway noise levels are shown in Table 3.13-9.

CDSM Alternative

The CDSM Alternative would require truck trips from the LAA Excavation Area and existing mine in Keeler. Truck trips associated with the LAA Excavation Area would occur near the Project Site and would not utilize highways. Under the CDSM Alternative, activity associated with the existing mine in Keeler would add the maximum truck traffic to the roadway network in the year 2020. There would be approximately 22 haul trucks per hour on SR-136 and SR-190. Approximately 44 haul trucks per hour would traverse US-395. As shown in Table 3.13-9, roadway noise levels under the CDSM Alternative would not exceed the 67 or 72 dBA threshold described above along any roadway segment, or increase noise levels by 12 dBA or more. Therefore, construction noise impacts due to haul route traffic would be less than significant under the CDSM Alternative.

TABLE 3.13-8
EXCAVATE AND RECOMPACT ALTERNATIVE – EQUIPMENT NOISE LEVELS - UNMITIGATED

Components and Sensitive Receptors	Distance (Feet)	Estimated dBA, L_{eq}			
		Equipment Noise Level	Existing Noise Level	New Ambient Noise Level	Noise Increase[a]
NHD2					
Reservoir Keeper's Residence	600	62.0	36.9	62.0	**25.1**
Butterworth Ranch Residence	2,700	45.7	36.9	46.2	**9.3**
BASIN AND BERMS					
Reservoir Keeper's Residence	200	73.9	36.9	73.9	**37.0**
Butterworth Ranch Residence	2,930	44.8	36.9	45.5	**8.6**
CACTUS FLATS ROAD REALIGNMENT					
Reservoir Keeper's Residence	1,800	50.1	36.9	50.3	**13.4**
Butterworth Ranch Residence	1,800	50.1	36.9	50.3	**13.4**
LAA REALIGNMENT					
Reservoir Keeper's Residence	Adjacent	89.0	36.9	89.0	**52.1**
Butterworth Ranch Residence	2,000	48.9	36.9	49.2	**12.3**
LAA EXCAVATION AREA					
Reservoir Keeper's Residence	50	89.0	36.9	89.0	**52.1**
Butterworth Ranch Residence	1,700	50.7	36.9	50.9	**14.0**
NOTCH					
Reservoir Keeper's Residence	1,450	52.4	36.9	52.6	**15.7**
Butterworth Ranch Residence	4,000	41.4	36.9	42.7	**5.8**
DIVERSION CHANNEL					
Reservoir Keeper's Residence	450	65.1	36.9	65.2	**28.3**
Butterworth Ranch Residence	3,000	44.5	36.9	45.2	**8.3**

Notes: dBA = A-weighted dB scale; Leq = Equivalent Noise Level; NHD2 = North Haiwee Dam No. 2
[a]**Bold** = 5.0 dBA or greater increase
Source: Terry A. Hayes Associates Inc., 2016.

TABLE 3.13-9
PROJECTED ROADWAY NOISE

Alternative And Segment	Noise Levels (dBA, L_{eq})					
	Existing Condition	Future With Project	Change	Future No Project	Future With Project	Change
CDSM ALTERNATIVE						
Segment 1 - SR-136 N of SR-190	49	56	7	49	56	7
Segment 2 - SR-190 btwn US-395 & SR-136	41	48	7	41	48	7
Segment 3 - US-395 S of SR-190	63	65	2	64	65	1
EXCAVATE AND RECOMPACT ALTERNATIVE						
Segment 1 - SR-136 N of SR-190	49	55	6	49	55	6
Segment 2 - SR-190 btwn US-395 & SR-136	41	47	6	41	47	6
Segment 3 - US-395 S of SR-190	63	64	1	64	64	0

Notes: dBA = A-weighted dB scale; Leq = Equivalent Noise Level; NHD2 = North Haiwee Dam No. 2; N=north; S=south; btwn=between
Source: FHWA, Traffic Noise Model.

Excavate and Recompact Alternative

Under the Excavate and Recompact Alternative, the maximum truck traffic would be added to the roadway network in year 2019 for SR-136 and SR-190. US-395 would experience the most truck traffic in the years 2020 and 2021. There would be approximately 15 haul trucks per hour on SR-136 and SR-190. Approximately 16 haul trucks per hour would traverse US-395. As shown in Table 3.13-9, roadway noise levels would not exceed the 67 or 72 dBA along any roadway segment, or increase noise

levels by 12 dBA. Therefore, construction noise impacts due to haul route traffic would be less than significant under the Excavate and Recompact Alternative.

NV-2: *Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?*

No Project Alternative

Under the No Project Alternative, the existing Dam, existing Cactus Flats Road, and existing LAA would remain on the Project Site as under existing conditions. Typical maintenance activities would occur similar to existing conditions. No excavation activity would occur under this alternative. Consequently, groundborne vibration or groundborne noise levels would remain the same as under existing conditions. Therefore, no impact would occur under the No Project Alternative.

Build Alternatives - Construction

CDSM Alternative

NHD2 Components

During construction of NHD2, trucks would generally travel on unpaved roads or roadways that are not regularly maintained. As shown in Table 3.13-4, trucks would generate a vibration level of 0.163 inches per second, which is less than the 0.2 inches-per-second significance threshold when located 15 feet away from buildings. It is not anticipated that trucks would travel within 15 feet of the reservoir keeper's residence on North Haiwee Road or Butterworth Ranch, which is where the only sensitive receptors to vibration are present. During construction of the basin and east and west berms, it is not anticipated that equipment would travel within 15 feet of the reservoir keeper's residence on North Haiwee Road or Butterworth Ranch, which is where the only sensitive receptors to vibration are present. Therefore, construction vibration impacts would be less than significant for the NHD2 components under the CDSM Alternative.

Cactus Flats Road and LAA Realignments

During construction of the Cactus Flats Road Realignment and the LAA Realignment, including excavation at the LAA Excavation Area, it is not anticipated that equipment would travel within 15 feet of the reservoir keeper's residence on North Haiwee Road or Butterworth Ranch, which is where the only sensitive receptors to vibration are present. Therefore, no construction vibration impacts would occur for the Cactus Flats Road Realignment or LAA Realignment under the CDSM Alternative.

Diversion Channel and NHD Modifications

During construction of the diversion channel and NHD modifications, it is not anticipated that equipment would travel within 15 feet of the reservoir keeper's residence on North Haiwee Road or Butterworth Ranch, which is where the only sensitive receptors to vibration are present. Therefore, construction activity associated with the diversion channel and NHD modifications would result in a less than significant impact related to equipment vibration under the CDSM Alternative.

Excavate and Recompact Alternative

Similar to the CDSM Alternative, construction activity would result in less than significant impacts for the NHD2 components, Cactus Flats Road Realignment, LAA Realignment, LAA Excavation Area, and diversion channel and NHD modifications.

Build Alternatives - Operation

NHD2 Components

The NHD2 components do not include sources of operational vibration. Therefore, no operational impacts would occur for the NHD2 components under the Build Alternatives.

Cactus Flats Road Realignment

The Cactus Flats Road Realignment does not include significant sources of operational vibration. Traffic on Cactus Flats Road is infrequent and not a significant source of vibration to the reservoir keeper's residence on North Haiwee Road or Butterworth Ranch. In addition, the location with the shortest distance between Cactus Flats Road and the residences would not change with the Proposed Project. There would be no change to traffic-related vibration levels at receptors as a result of the Cactus Flats Road Realignment. Therefore, operational vibration impacts would be less than significant for the Cactus Flats Road Realignment for the Build Alternatives.

LAA Realignment and Diversion Channel and NHD Modifications

The LAA Realignment and diversion channel and NHD modifications do not include significant sources of operational vibration. Water rushing through the LAA and diversion channel would generate low levels of vibration. However, based on field visits, the vibration is not perceptible adjacent to the existing LAA channel. The LAA Realignment and diversion channel and NHD modifications would not generate perceptible vibration at a new location beyond the existing vibration conditions. Additionally, no operational activities would occur on the LAA Excavation Area. Therefore, operational vibration impacts would be less than significant for the LAA Realignment and diversion channel and NHD modifications for the Build Alternatives.

NV-3: *Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?*

No Project Alternative

Under the No Project Alternative, the existing Dam, existing Cactus Flats Road, and existing LAA would remain on the Project Site as under existing conditions. Typical maintenance activities would occur similar to existing conditions. No excavation activity would occur under this alternative. Consequently, noise levels would remain the same as under existing conditions. Therefore, no impact would occur under the No Project Alternative.

Build Alternatives - Operation

NHD2 Components

The NHD2 components, including the basin and east and west berms, do not include significant sources of operational noise. Maintenance activity would generally be limited to site visits from the reservoir keeper employee, which would not include the operation of heavy equipment. There is no potential for a permanent increase in existing noise levels above the 5-dBA CNEL significance threshold. Therefore, the NHD2 components would result in a less than significant impact related to operational noise under the Build Alternatives.

Cactus Flats Road Realignment

The Cactus Flats Road Realignment does not include significant sources of operational noise. Traffic on Cactus Flats Road is infrequent and not a significant source of noise to the reservoir keeper's residence on North Haiwee Road or Butterworth Ranch. The Proposed Project would not generate new traffic on Cactus Flats Road, and future noise levels would be similar to existing noise levels. There is no potential for a permanent increase in existing noise levels above the 5-dBA CNEL significance threshold.

Therefore, the Cactus Flats Road Realignment would result in a less than significant impact related to operational noise under the Build Alternatives.

LAA Realignment

The LAA Realignment does not include significant sources of new operational noise, such as mechanical equipment. Running water would produce low levels of operational noise which would be similar to existing conditions. There is no potential for a permanent increase in existing noise levels above the 5-dBA CNEL significance threshold. Additionally, no operational activities would occur on the LAA Excavation Area. Therefore, the LAA Realignment would result in a less than significant impact related to operational noise under the Build Alternatives.

Diversion Channel and NHD Modifications

The diversion channel and NHD modifications do not include significant sources of new operational noise, such as continuously operating mechanical equipment. Running water would produce low levels of operational noise which would be similar to existing conditions. There is no potential for a permanent increase in existing noise levels above the 5-dBA CNEL significance threshold. Therefore, impacts would be less than significant for the diversion channel and NHD modifications under the Build Alternatives.

3.13.6 Mitigation Measures

Mitigation Measures Common to All Alternatives

The following mitigation measures apply to construction activities associated with the NHD2 components, Cactus Flats Road Realignment, LAA Realignment, LAA Excavation Area, and diversion channel and NHD modifications.

NV-A Construction equipment shall be properly maintained and equipped with mufflers.

NV-B Rubber-tired equipment rather than tracked equipment shall be used when operating on flat terrain.

NV-C Equipment shall be turned off when not in use for an excess of five minutes, except for equipment that requires idling to maintain performance.

NV-D The construction contractor shall locate construction staging areas away from sensitive uses.

NV-E LADWP or their contractor shall designate a public liaison for Proposed Project construction. The public liaison will be responsible for addressing public concerns about construction activities, including excessive noise. As needed, the liaison shall determine the cause of the concern (e.g., starting too early, bad muffler) and implement measures to address the concern.

NV-F LADWP shall provide ear protection to sensitive receptors which would experience noise increases greater than 5 dBA after implementation of mitigation measures NV-A through NV-E.

3.13.7 Residual Impacts After Mitigation

As described in Section 3.13.5, the Proposed Project would result in significant impacts related to construction equipment noise. The Proposed Project would not result in significant impacts related to construction haul truck noise, construction vibration, operational vibration, or operational noise. However, unmitigated construction equipment noise associated with the NHD2 components, Cactus Flats Road Realignment, LAA Realignment, LAA Excavation Area, and diversion channel and NHD modifications would exceed the 5-dBA L_{eq} significance threshold. Mitigation Measures NV-A through NV-F are designed to reduce construction noise levels. The equipment mufflers associated with

Mitigation Measure NV-A would reduce construction noise levels by approximately 3 dBA. Mitigation Measures NV-B through NV-F, although difficult to quantify, would also reduce and/or control construction noise levels. Other measures were considered, such as electric equipment. While electric equipment would generate less noise than diesel equipment, it is not widely available, and the horsepower associated with electric equipment would not meet Project requirements. As shown in Table 3.13-10, equipment noise levels would still exceed the 5-dBA L_{eq} significance threshold at sensitive receptors (reservoir keeper's residence adjacent to NHD and Butterworth Ranch) near the Project Site. Therefore, construction equipment noise related to the NHD2 components, Cactus Flats Road Realignment, LAA Realignment, diversion channel and NHD modifications would result in significant and unavoidable impacts to the reservoir keeper's residence adjacent to NHD and Butterworth Ranch under the Build Alternatives. With implementation of mitigation measures, construction equipment noise related to the notch would result in less than significant impacts to Butterworth Ranch, but would result in significant and unavoidable impacts to the reservoir keeper's residence adjacent to NHD under CEQA.

3.13.8 NEPA Conclusions

No Project Alternative

Under the No Project Alternative, the existing Dam, existing Cactus Flats Road, and existing LAA would remain on the Project Site as under existing conditions. Typical maintenance activities would occur similar to existing conditions. No excavation activity would occur at the LAA Excavation Area. Consequently, temporary and permanent noise levels and groundborne noise and vibration, would remain the same as under existing conditions.

Build Alternatives

Construction noise would be audible at the nearby land uses, but would be intermittent and variable depending on the location and intensity of activity. Refer to the above analysis for the quantification of noise and vibration levels. Mitigation Measures NV-A through NV-F would be implemented to control temporary construction noise. The Proposed Project would be consistent with CMA LUPA-BIO-12 under DRECP LUPA. Noise-related impacts to wildlife are assessed in BIO-1, BIO-2, and BIO-5 in Section 3.4.4 Environmental Consequences, and mitigation measures related to this CMA are provided above in Section 3.13.6 Mitigation Measures. The Proposed Project does not include significant sources of new operational noise.

TABLE 3.13-10
BUILD ALTERNATIVES – EQUIPMENT NOISE LEVELS - UNMITIGATED VS MITIGATED

Components & Sensitive Receptors	Distance (Feet)	Estimated dBA, L_{eq}						
		Existing Noise Level	Equipment Noise Level		New Ambient Noise Level		Noise Increase[a]	
			Unmitigated	Mitigated	Unmitigated	Mitigated	Unmitigated	Mitigated
NHD2								
Reservoir Keeper's Residence	600	36.9	62.0	59.0	62.0	59.0	**25.1**	**22.1**
Butterworth Ranch Residence	2,700	36.9	45.7	42.7	46.2	43.7	**9.3**	**6.8**
BASIN AND BERMS								
Reservoir Keeper's Residence	200	36.9	73.9	70.9	73.9	71.0	**37.0**	**34.1**
Butterworth Ranch Residence	2,930	36.9	44.8	41.8	45.5	43.0	**8.6**	**6.1**
CACTUS FLATS ROAD REALIGNMENT								
Reservoir Keeper's Residence	1,800	36.9	50.1	47.1	50.3	47.5	**13.4**	**10.6**
Butterworth Ranch Residence	1,800	36.9	50.1	47.1	50.3	47.5	**13.4**	**10.6**
LAA REALIGNMENT								
Reservoir Keeper's Residence	Adjacent	36.9	89.0	86.0	89.0	86.0	**52.1**	**49.1**
Butterworth Ranch Residence	2,000	36.9	48.9	45.9	49.2	46.5	**12.3**	**9.6**
LAA EXCAVATION AREA								
Reservoir Keeper's Residence	50	36.9	89.0	86.0	89.0	86.0	**52.1**	**49.1**
Butterworth Ranch Residence	1,700	36.9	50.7	47.7	50.9	48.1	**14.0**	**11.2**
NOTCH								
Reservoir Keeper's Residence	1,450	36.9	52.4	49.4	52.6	49.7	**15.7**	**12.8**
Butterworth Ranch Residence	4,000	36.9	41.4	38.4	42.7	40.7	**5.8**	3.8
DIVERSION CHANNEL								
Reservoir Keeper's Residence	450	36.9	65.1	62.1	65.2	62.2	**28.3**	**25.3**
Butterworth Ranch Residence	3,000	36.9	44.5	41.5	45.2	42.8	**8.3**	**5.9**

Notes: dBA = A-weighted dB scale; Leq = Equivalent Noise Level; NHD2 = North Haiwee Dam No. 2
[a]**Bold** = 5.0 dBa or greater increase
Source: Terry A. Hayes Associates Inc., 2015.

3.14 Population and Housing

This section analyzes the potential impacts of the Proposed Project as it relates to population and housing. The applicable laws, regulations, and methods used to determine the effects of the Proposed Project are described herein. The section describes the affected environment and analyzes the environmental consequences of the Proposed Project and, if applicable, provides mitigation measures.

3.14.1 Regulatory Setting

Local

Inyo County Housing Element, updated 2014

The Inyo County Housing Element (Housing Element) was originally adopted in July 1992. The Housing Element was most recently updated in 2014 and addresses the housing needs of the County in accordance with the State of California housing element law and requirements. The Housing Element, as required by State law, requires local governments to meet existing and projected housing needs, and provide adequate, safe, and affordable housing. The Housing Element addresses housing needs based on the existing housing stock, population, resources, and constraints, and presents goals and policies for the County.

3.14.2 3.14.2 Affected Environment

Population

According to the 2010 U.S. Census, the population of Inyo County was 18,456. As of 2013, the population estimate for Inyo County was 18,573 (California Department of Finance, 2013). Approximately 21 percent (3,877) of the population resides in the City of Bishop, which is the only incorporated city in the County. Other communities are dispersed throughout Inyo County, with many located along US-395. Table 3.14-1 provides the populations of the County as a whole and communities within the Project vicinity. The communities of Olancha and Cartago are located approximately four miles northeast of the Project Site along US-395; the community of Haiwee is located adjacent to the Project Site; and Lone Pine is located approximately 26 miles north of the Project Site.

TABLE 3.14-1
POPULATION OF COMMUNITIES WITHIN PROJECT VICINITY

Location	Population
Inyo County	18,456
Cartago	92
Haiwee	20
Olancha	192
Lone Pine	2,035

Sources: U.S. Census, 2010; Inyo County General Plan, Chapter 2, 2001

Housing

In 2010, there were 9,478 housing units in Inyo County with 1,429 vacant units (Table 3.14-2). The vacancy rate was approximately 15 percent. Of the 1,429 vacant units, 716 units were reported vacant for seasonal, recreational, or occasional use. Olancha had 12 vacant units reported for seasonal, recreational, or occasional use and Lone Pine had 78 vacant units (U.S. Census, 2010).

TABLE 3.14-2
HOUSING STOCK BY TYPE OF VACANCY

Location	Total Housing Units	Vacant Units		
		Total[a]	For Seasonal, Recreational, or Occasional Use	For Rent
Inyo County	9,478	1,429	716	182
Cartago CDP	55	11	7	0
Independence CDP	389	88	33	6
Keeler CDP	67	27	9	2
Lone Pine CDP	1,004	173	78	29
Olancha CDP	97	19	12	1

Notes: CDP = Census Designated Place
[a] Includes vacant units designated as For Seasonal, Recreational, or Occasional Use and For Rent
Source: U.S. Census, 2010 Demographic Profile Summary

Available Temporary Housing

Table 3.14-3 lists the locations of temporary housing in the Project vicinity. The community of Olancha has three motels with a total of 25 rooms. The community of Lone Pine has 10 motels and hotels with a total of 359 rooms. The community of Independence, located approximately 41 miles north of the Project Site, has five hotels and motels with a total of 55 rooms. There are seasonal fluctuations in the demand for temporary housing.

TABLE 3.14-3
TEMPORARY HOUSING WITHIN PROJECT VICINITY

Name	Location	Approximate Distance from Project Site (in miles)	Number of Rooms
Rustic Oasis Motel	2055 US-395 Olancha, CA 93549	1	8
Ranch Motel	1995 US-395 Olancha, CA 93549	1	12
Olancha RV Park & Motel	1075 US-395 Olancha, CA 93549	1	5[a]
Boulder Creek RV Resort	2550 US-395 Lone Pine, CA 93545	21	80[a]
Comfort Inn	1920 S Main Street Lone Pine, CA 93545	24	58
Dow Villa Motel	310 S Main Street Lone Pine, CA 93545	25	42
Whitney Portal Hostel	238 S Main Street Lone Pine, CA 93545	25	15
Portal Motel	425 S Main Street Lone Pine, CA 93545	25	17
National 9 Trails Motel	633 S Main Street Lone Pine, CA 93545	25	17
Timberline Motel	215 E Post Street Lone Pine, CA 93545	25	8
Best Western Plus Frontier Motel	1008 S Main Street Lone Pine, CA 93545	25	73
Lone Pine Budget Inn	138 W Willow Street Lone Pine, CA 93545	26	16
Mount Whitney Motel	305 N Main Street Lone Pine, CA 93545	26	33
Mt. Williamson Motel	515 S Edwards Street Independence, CA 93526	41	8
Ray's Den Motel	405 N Edwards Street Independence, CA 93526	41	8

TABLE 3.14-3
TEMPORARY HOUSING WITHIN PROJECT VICINITY

Name	Location	Approximate Distance from Project Site (in miles)	Number of Rooms
Independence Courthouse Motel	157 N Edwards, Independence, CA 93526	41	5
Independence Inn Motel	440 S Edwards Street Independence, CA 93526	41	6
Winnedumah Hotel	211 North Edwards Street Independence, CA 93526	41	28
		Total Number of Rooms	439

Note: [a] Number of Rooms does not include RV spaces
Source: Google Earth, 2015; TripAdvisor, 2015

3.14.3 Methodology for Analysis

Population and housing is evaluated on the potential for the Proposed Project to permanently affect housing availability in Inyo County or induce population growth such that construction of new housing would be necessary. In order to establish an existing baseline and evaluate the impacts of the Proposed Project, the agency websites for the Inyo County Planning Department and the United States Census Bureau were consulted. The 2014 Housing Element of the ICGP was reviewed for relevant policies and existing population and housing estimates. Internet searches for existing temporary housing in the Proposed Project vicinity were also conducted.

CEQA Significance Criteria

The thresholds of significance for the Proposed Project's potential to impact population and housing are based on Appendix G of the State CEQA Guidelines. The following threshold of significance was analyzed:

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

The Appendix G significance criteria listed below were scoped out of the analysis for further consideration in the IS (Appendix A), and are discussed in Chapter 4, Other CEQA and NEPA Considerations, of this Draft EIR/EA.

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

NEPA Requirements

The term "significantly" as used in NEPA requires considerations of both context and intensity (40 CFR 1508.27). Therefore, thresholds serve as a benchmark for determining if a project action would result in a significant adverse environmental impact when evaluated against the baseline. The environmental effects analysis of the Proposed Project related to population and housing includes an assessment of the context and intensity of the impacts as defined in the NEPA implementing regulations, 40 CFR 1508.27, and the BLM *NEPA Handbook H-1790-1* of 2008. The BLM *NEPA Handbook H-1790-1* requires that duration be considered and that both short- and long-term adverse and beneficial impacts be disclosed in the NEPA analysis. The effects analysis must demonstrate that BLM took a "hard look" at the impacts of the action. The level of detail must be sufficient to support reasoned conclusions

by comparing the amount and the degree of change (impact) caused by the proposed action and alternatives (BLM *NEPA Handbook H-1790-1*, 2008, p. 55). Additionally, direct, indirect, residual, and cumulative impacts for the Proposed Project must be considered. BLM does not provide a determination on the level of significance in a NEPA document. Rather, BLM leaves that determination to the FONSI which will be completed prior to the signing of a Decision Record. Any characterization of significance in this Draft EIR/EA applies only to the CEQA determination.

3.14.4 Environmental Consequences

POP-1: *Would the project induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?*

No Project Alternative

Under the No Project Alternative, the existing Dam, existing Cactus Flats Road, and existing LAA would remain on the Project Site as under existing conditions. Typical maintenance activities would occur as they do under existing conditions. No earthen materials would be utilized. No construction workforce would be required as there would be no construction activities. Therefore, impacts related to population and housing would not occur under the No Project Alternative.

Build Alternatives - Construction

CDSM Alternative

Construction of the CDSM Alternative would require approximately 111 daily personnel at the peak of construction as construction of the LAA Realignment and NHD2 components would be occurring at the same time (Table 3.14-4). Construction of the Cactus Flats Road Realignment would last approximately ten months and require a temporary workforce of approximately 30 daily personnel at the peak of its construction. Construction of the LAA Realignment would last approximately 22 months and require a construction workforce of approximately 38 daily personnel at the peak of its construction. Excavation of the LAA Excavation Area would last approximately nine months during the LAA Realignment phase and require approximately 33 daily personnel. Construction of the NHD2 components would last approximately 37 months and require a construction workforce of approximately 73 daily personnel at the peak of its construction. Activities for the existing mine in Keeler would last approximately nine months during construction of the NHD2 components and require approximately 8 daily personnel. As the existing mine in Keeler is an active privately-owned mine, the Project's workforce associated with the existing mine is related to truck hauling only. Construction of the diversion channel and NHD modifications would last approximately five months and require a construction workforce of approximately 38 daily personnel at the peak of its construction.

TABLE 3.14-4
CDSM ALTERNATIVE CONSTRUCTION PERSONNEL

Project Component	Maximum Daily Personnel at Peak of Construction	Construction Duration (Months)
CDSM Alternative	111[a]	61
Cactus Flats Road Realignment	30	10
LAA Realignment	38	22
LAA Excavation Area	33	9
NHD2	73	37
Existing Mine in Keeler	8	9
Diversion Channel and NHD Modifications	38	5

Note:[a] The calculation for the maximum daily personnel reflects the overlap in construction months for the LAA Realignment and the NHD components.

The workforce personnel would be considered "people in transitory locations" according to U.S. Census residence rules as they would be expected to leave when construction is completed. The workforce population is expected to utilize existing hotels, motels, RV parks, and other seasonal accommodations located in the vicinity of the Project Site. As discussed above, there are a total of 439 rooms in the motels and hotels located within 45 miles of the Project Site that would sufficiently accommodate the construction workforce required for implementation of the CDSM Alternative. There would be no permanent population growth given the temporary nature of construction. The construction of the Proposed Project under the CDSM Alternative would not directly or indirectly induce population growth as the workforce would be temporary and would leave when construction is completed. Therefore, impacts related to induced population growth during the construction of the CDSM Alternative would be less than significant.

Excavate and Recompact Alternative

Construction of the Excavate and Recompact Alternative would require approximately 86 daily personnel at the peak of construction as construction of the LAA Realignment and NHD2 components would be occurring at the same time (Table 3.14-5). Construction of the Cactus Flats Road Realignment would last approximately ten months and require a temporary workforce of approximately 30 daily personnel at the peak of its construction. Construction of the LAA Realignment would last approximately 22 months and require a construction workforce of approximately 38 daily personnel at the peak of its construction. Excavation of the LAA Excavation Area would last approximately 10 months during the LAA Realignment phase and require approximately 33 daily personnel. Construction of the NHD2 components would last approximately 43 months and require a construction workforce of approximately 47 daily personnel at the peak of its construction. Activities for the existing mine in Keeler would last approximately nine months during construction of the NHD2 components and require approximately 8 daily personnel. As the existing mine in Keeler is an active privately-owned mine, the Project's workforce associated with the existing mine is related to truck hauling only. Construction of the diversion channel and NHD modifications would last approximately five months and require a construction workforce of approximately 38 daily personnel at the peak of its construction.

TABLE 3.14-5
EXCAVATE AND RECOMPACT ALTERNATIVE CONSTRUCTION PERSONNEL

Project Component	Maximum Daily Personnel at Peak of Construction	Construction Duration (Months)
Excavate and Recompact Alternative	86[a]	67
Cactus Flats Road Realignment	30	10
LAA Realignment	38	22
LAA Excavation Area	33	10
NHD2	47	43
Existing Mine in Keeler	8	9
Diversion Channel and NHD Modifications	38	5

Note:[a] The calculation for the maximum daily personnel reflects the overlap in construction months for the LAA Realignment and the NHD components.

Similar to the CDSM Alternative, the workforce personnel would be considered "people in transitory locations" according to U.S. Census residence rules as they would be expected to leave when construction is completed. The workforce population is expected to utilize existing hotels, motels, RV parks, and other seasonal accommodations located in the vicinity of the Project Site. As discussed above, there are a total of 439 rooms in the motels and hotels located within 45 miles of the Project Site that would sufficiently accommodate the construction workforce required for implementation of the Excavate and Recompact Alternative. There would be no permanent population growth given the temporary nature of construction.

The construction of the Proposed Project under the Excavate and Recompact Alternative would not directly or indirectly induce population growth as the workforce would be temporary and would leave when construction is completed. Therefore, impacts related to induced population growth during the construction of the Excavate and Recompact Alternative would be less than significant.

Build Alternatives - Operation

The Proposed Project is an infrastructure improvement project and does not propose any housing, commercial, office, or infrastructure uses that would induce population growth. Dams are not considered a type of infrastructure that would induce residential development in its surroundings due to the potential hazards of inundation. Maintenance and operation of the facilities would be conducted by existing LADWP personnel, including LADWP's NHR reservoir keeper. Therefore, the operational phase of the NHD2 components would not induce population growth either directly or indirectly.

The Cactus Flats Road Realignment would be a new segment of road which connects to the existing Cactus Flats Road. Its operational function would be to provide the same access to the public and motorists as the existing segment of road, but in another location in the vicinity. No new access to developable land would be created, and new residences or businesses would not be established because of this new infrastructure. Cactus Flats Road, including the realigned segment, would be maintained by existing Inyo County staff. Therefore, the operational phase of the Cactus Flats Road Realignment would not induce population growth either directly or indirectly.

Although the section of the LAA that would be realigned would be slightly longer than the existing LAA section it is replacing and include a diversion structure, it would not introduce a resource that could be used for residential development. As under existing conditions, the primary purpose of the LAA Realignment would be to continue to provide water to Southern California. Maintenance and monitoring of the LAA Realignment would be the responsibility of existing LADWP staff. In addition, the LAA Excavation Area would be restored following completion of construction activities and would no longer be active. Therefore, the operational phase of the LAA Realignment would not induce population growth either directly or indirectly.

3.14.5 Mitigation Measures

The Proposed Project would result in less than significant impacts to population and housing. No mitigation measures are required.

3.14.6 Residual Impacts After Mitigation

The Proposed Project would result in less than significant impacts to population and housing under CEQA.

3.14.7 NEPA Conclusions

No Project Alternative

The No Project Alternative would not change the existing conditions of the Project Site and would not utilize any earthen material.

Build Alternatives

The Build Alternatives would result in the impacts described in Section 3.14.3. The work population would temporarily increase the local population by 111 people at the peak of construction in the areas where they would reside for the duration of construction. Workers are expected to utilize existing motels, hotels, and other seasonal accommodations. In addition, construction is temporary in nature and construction activities would not result in permanent population growth. Operation of the Proposed Project would not include the construction of new housing, businesses, or infrastructure that would induce

population growth, and would result in similar conditions to the existing setting as no additional staff would be required for operation and maintenance of the Project components.

The DRECP LUPA does not contain any CMAs related to population and housing (refer to Appendix B of this Draft EIR/EA).

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3.15 Public Services and Recreation

This section analyzes the potential impacts of the Proposed Project as it relates to public services and recreation. The applicable laws, regulations, and methods used to determine the effects of the Proposed Project are described herein. The section describes the affected environment and analyzes the environmental consequences of the Proposed Project and, if applicable, provides mitigation measures. The potential for impacts of the Proposed Project to fire and police protection services is discussed in Section 3.16, Safety and Security.

3.15.1 Regulatory Setting

Federal

Federal Land Policy and Management Act, 1976

The FLMPA is administered by BLM and declares that the public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archaeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use.

Desert Renewable Energy Conservation Plan Land Use Plan Amendment of 2016

The DRECP LUPA, approved by BLM in September 2016, is an amendment to the CDCA Plan. The key objectives of the DRECP are to streamline renewable energy development and to provide for long-term conservation and management of special-status species, vegetation, and other resources within the DRECP Plan area. The DRECP identifies Development Focus Areas and Variance Process Lands where renewable energy development is more streamlined, as well as conservation areas, and several other land uses. The DRECP LUPA implements its objectives through specific CMAs. Some CMAs apply across the entirety of the DRECP Plan area, while others apply only to specific land uses. The DRECP LUPA does not contain CMAs related to public services but does contain several CMAs related to recreation, including: LUPA-CTTM-1, which requires maintenance and management of adequate road access to and within Special Recreation Management Areas (SRMAs); LUPA-CTTM-5, which manages off-highway vehicle (OHV) use per the SRMA objectives; LUPA-REC-1, which maintains and where possible enhances recreation setting characteristics; LUPA-REC-4, which prohibits activities that have a significant adverse impact and do not enhance conservation or recreation values within one mile of Level 1 and Level 2 recreation facilities; LUPA-REC-5, which requires avoidance of activities' with a significant adverse impact that do not enhance conservation or recreation values within one-half mile of a Level 3 Recreation facility, including route access and staging areas; CONS-CTTM-1, which requires management of roads and trails consistent with CDNCL and ACEC goals and objectives; CONS-REC-1 and SRMA-REC-2, which address potential conflict between recreation and conservation designations; NLCS-CTTM-1, which requires comprehensive trails management in accordance with applicable transportation management plans; SRMA-CTTM-1, which incorporates individual SRMA objectives, management actions, and allowable uses; SRMA-REC-1, which manages SRMAs for their targeted recreation activities, experiences, and benefits; and SRMA-REC-3, which allows for refinement and/or activity-level zoning of SRMA objectives and desired recreation setting characteristics.

CMAs not applicable to public services and recreation include: LUPA-CTTM-2, 3, 4, 6, 7; LUPA-NRT-1, 2; LUPA-REC-2, 3, 6, 7, 8; CONS-REC-2, 3; NLCS-NSHT-1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15; NLCS-REC-1; SRMA-LANDS-3; ERMA-REC-1; DFA-VPL-CTTM-1, 2; DFA-REC-1, 2, 3, 4, 5, 6, 7, 8, 9, 10; GPL-2; and GPL-CTTM-1, 2; GPL-REC-1, 2, 3, 4, 5, 6, 7, 8, 9. The consistency of the Proposed Project with the DRECP CMAs is provided in Appendix B of this Draft EIR/EA.

Olancha Dunes Special Management Recreation Area

The Olancha Dunes SRMA is designated by the DRECP LUPA. The Olancha Dunes SRMA is approximately 400 acres, and is located east of Olancha. Actions include management of the area as an Open off highway vehicle (OHV) travel riding area per the CDCA plan, as amended, improving visitor services, and maintaining and improving signage, campsites, and access roads.

The northeastern portion of the Project Site is located within the southwest part of the Olancha Dunes SRMA. A portion of the LAA Realignment, including the LAA Excavation Area is within the jurisdiction of the SRMA as those components are located on BLM-managed land. North Haiwee Road, a road which travels east-west to the Project Site from US-395, is a Full Size OHV route; however, the OHV open area is located north of the Project Site in the northeastern portion of the Olancha Dunes SRMA. North Haiwee Road is not considered a Tier 1, 2, or 3 road, as categorized by the DRECP LUPA.

National Park Service Management Policies, 2006

The National Park Service Management Policies provide key principles that NPS must abide by, including complying with current laws, regulations, and executive orders; preventing impairment of park resources and values; and, emphasizing consultation and cooperation with local/state/tribal/federal entities. NPS was created to conserve natural and cultural resources and values of the national park system for the enjoyment, education, and inspiration of present and future generations.

Omnibus Public Federal Land Management Act, 2009

The Omnibus Public Federal Land Management Act of 2009 (H.R. 146) designates certain land as components of the National Wilderness Preservation System. The Act designates two millions acres of wilderness for protection across nine states. Portions of the Eastern Sierra Wilderness and the Inyo National Forest located in Inyo County have been designated as wilderness under the Act, including the Coso Range Wilderness, South Sierra Wilderness, Golden Trout Wilderness, Malpais Mesa Wilderness, and Inyo Mountains Wilderness.

Local

Owens Valley Land Management Plan

The Owens Valley Land Management Plan provides a framework for City of Los Angeles-owned lands in Inyo County. Resource management priorities, including management of recreation resources and fire, are derived from the 1997 Memorandum of Understanding between LADWP, Inyo County, and several other agencies. The Plan is intended to build analytical, institutional, and empirical understanding about resources and how they will be managed in the future.

Inyo County General Plan

The ICGP guides future development in Inyo County. It identifies goals and policies for long-term growth, including applicable goals and policies related to public services and recreation, as listed in Table 3.15-1.

TABLE 3.15-1
INYO COUNTY GENERAL PLAN GOALS AND POLICIES FOR PUBLIC SERVICES AND RECREATION

Goal	Policy
Recreation	
REC-1. Develop a public parks, recreation, and open space system that provides adequate space and facilities to meet the varied needs of County residents and visitors.	REC-1.1. Natural Environment as Recreation: Encourage the use of the natural environment for passive recreational opportunities.
	REC-1.2. Recreational Opportunities on Federal, State, and LADWP Lands: Encourage the continued management of existing recreational areas and open space, and appropriate expansion of new recreational opportunities on federal, state, and LADWP lands.
	REC-1.3. Existing Park Facilities: Enhance existing County recreational parks and campground sites.
	REC-1.4. Adequate Parkland: The County shall provide adequate parkland throughout the County. The County shall require parkland dedication and/or developer impact fees for new subdivisions within the County to provide adequate recreation space for residents.

Note: REC=Recreation
Source: Inyo County General Plan, 2001, Website http://inyoplanning.org/general_plan/goals.htm, accessed January 2016.

3.15.2 Affected Environment

Schools

Inyo County has six unified school districts (USD), including Big Pine USD, Bishop USD, Death Valley USD, Lone Pine USD, Owens Valley USD, and Round Valley USD. The total student enrollment for kindergarten through 12th grade for the six school districts is 2,754 students. In addition, Inyo County offers alternative education through two public charter high schools that have a total enrollment of 1,812 students (California Department of Education, 2013). The Project Site is located within the Lone Pine USD boundary, with a total enrollment of 374 students. The nearest schools to the Project Site are located approximately 27 miles to the north (refer to Table 3.15-2 and Figure 3.15-1).

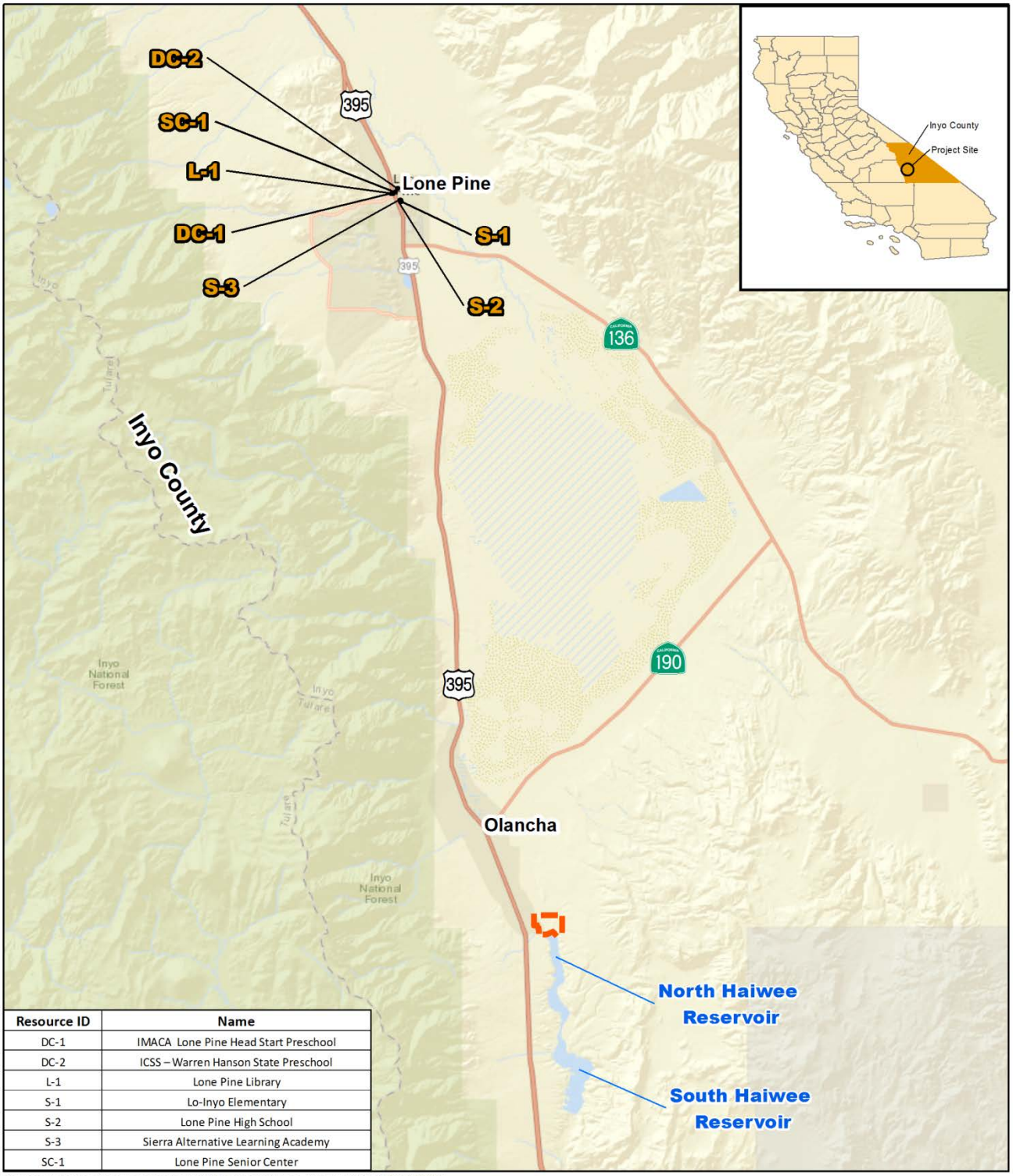
TABLE 3.15-2
NEAREST SCHOOLS TO THE PROJECT SITE

Figure 3.15-1 ID	Unified School District	Schools	Jurisdiction	Approximate Distance to Project Site (miles)
S-1	Lone Pine	Lo-Inyo Elementary	Lone Pine	27
S-2	Lone Pine	Lone Pine High School	Lone Pine	27
S-3	Lone Pine	Sierra Alternative Learning Academy	Lone Pine	27

Source: California Department of Education, DataQuest. Website http://dq.cde.ca.gov/dataquest/dataquest.asp, accessed August 2015; Inyo County Office of Education, School Districts. Website http://www.inyo.k12.ca.us/home.aspx, accessed August 2015

Day Care Centers

The Inyo County Superintendent of Schools (ICSS) operates five day care centers that offer early education, care, and support services to children, families, and care providers (ICSS, 2015a). Inyo Mono Advocates for Community Action (IMACA) operates three "Head Start" day care centers that partner with state preschools at several locations to extend the school day from a 3.5 hour day to 6.5 hours (IMACA, 2001). Day cares in Inyo County partner with the California State Preschool Program and the CalWorks Child Care Program. The closest day care centers are located in Lone Pine, approximately 27 miles to the north of the Project Site (see Table 3.15-3 and Figure 3.15-1).



Resource ID	Name
DC-1	IMACA Lone Pine Head Start Preschool
DC-2	ICSS – Warren Hanson State Preschool
L-1	Lone Pine Library
S-1	Lo-Inyo Elementary
S-2	Lone Pine High School
S-3	Sierra Alternative Learning Academy
SC-1	Lone Pine Senior Center

Sources: Inyo County Superintendent of Schools, 2016; Inyo County, 2016; IMACA, 2001; Esri Maps & Data, 2015; Prepared By: AECOM, 2017.

Figure 3.15-1

Existing Public Facilities within Project Vicinity

TABLE 3.15-3
NEAREST EXISTING DAY CARE CENTERS TO THE PROJECT SITE

Figure 3.15-1 ID	Name	Address	Capacity	Approximate Distance to Project Site (miles)
DC-1	IMACA Lone Pine Head Start Preschool	227 N. Washington Street Lone Pine, CA 93545	15	27
DC-2	ICSS – Warren Hanson State Preschool	283 East Locust Street Lone Pine, CA 93545	24	27

Notes: ICSS = Inyo County Superintendent of Schools
IMACA = Inyo Mono Advocates for Community Action, Inc.
Source: ICSS, 2015b. Website http://www.inyo.k12.ca.us/content.aspx?ID=606&title=Child%20Development, accessed September, 2015; IMACA, 2001. Website http://imaca.net/people-helping-people/headstart/, accessed September 2015.

Libraries

The Inyo County Free Library has six branches that serve the population of Inyo County (Inyo County, 2015a). The Central Library, located at 168 North Edwards Street in Independence, is approximately 42 miles north of the Project Site, and has a collection of local historic materials. The Lone Pine Library, located approximately 27 miles to the north at the intersection of Washington Street and Bush Street, in Lone Pine, is the closest library to the Project Site, and serves a population of approximately 2,600 residents (Figure 3.15-1).

Senior Centers

Inyo County Aging Services is responsible for planning, delivering, and administering aging program services in Planning and Service Area 16, which includes Inyo and Mono Counties. The Inyo County-Growing Older, Living with Dignity program supports five senior centers in Inyo County, which provide varying levels of activities. The facilities provide meals, senior activities, and access to a wide range of information and services (Inyo County, 2015b). Lone Pine Senior Center is located at 138 Jackson Street in Lone Pine, approximately 27 miles north of the Project Site (Figure 3.15-1).

Parks and Recreation

The Inyo County Parks and Recreation department maintains 11 campgrounds and seven parks (Inyo County, 2012). Campgrounds are located in and around Lone Pine, Independence, Big Pine, Bishop, and Shoshone. Recreational opportunities on the campgrounds include: fishing, swimming, camping, and grilling. The parks and campgrounds located in Lone Pine, such as Diaz Lake Campground, Portagee Joe Campground, and Spainhower Park, are located nearest to the Project Site. Table 3.15-4 lists the campgrounds and parks operated by Inyo County's Parks and Recreation Department nearest to the Project Site, and Figure 3.15-2 shows their locations.

NHR, NHD, LAA, and Cactus Flats Road are not used for recreational purposes[7]. The Project Site does not fall under the Inyo County OSR land use designation. As previously discussed, a portion of the Project Site falls under the Olancha Dunes SRMA.

[7] LADWP closed public access to Haiwee Reservoirs in August 2005 to ensure safety and security of the water supply against potential threats.

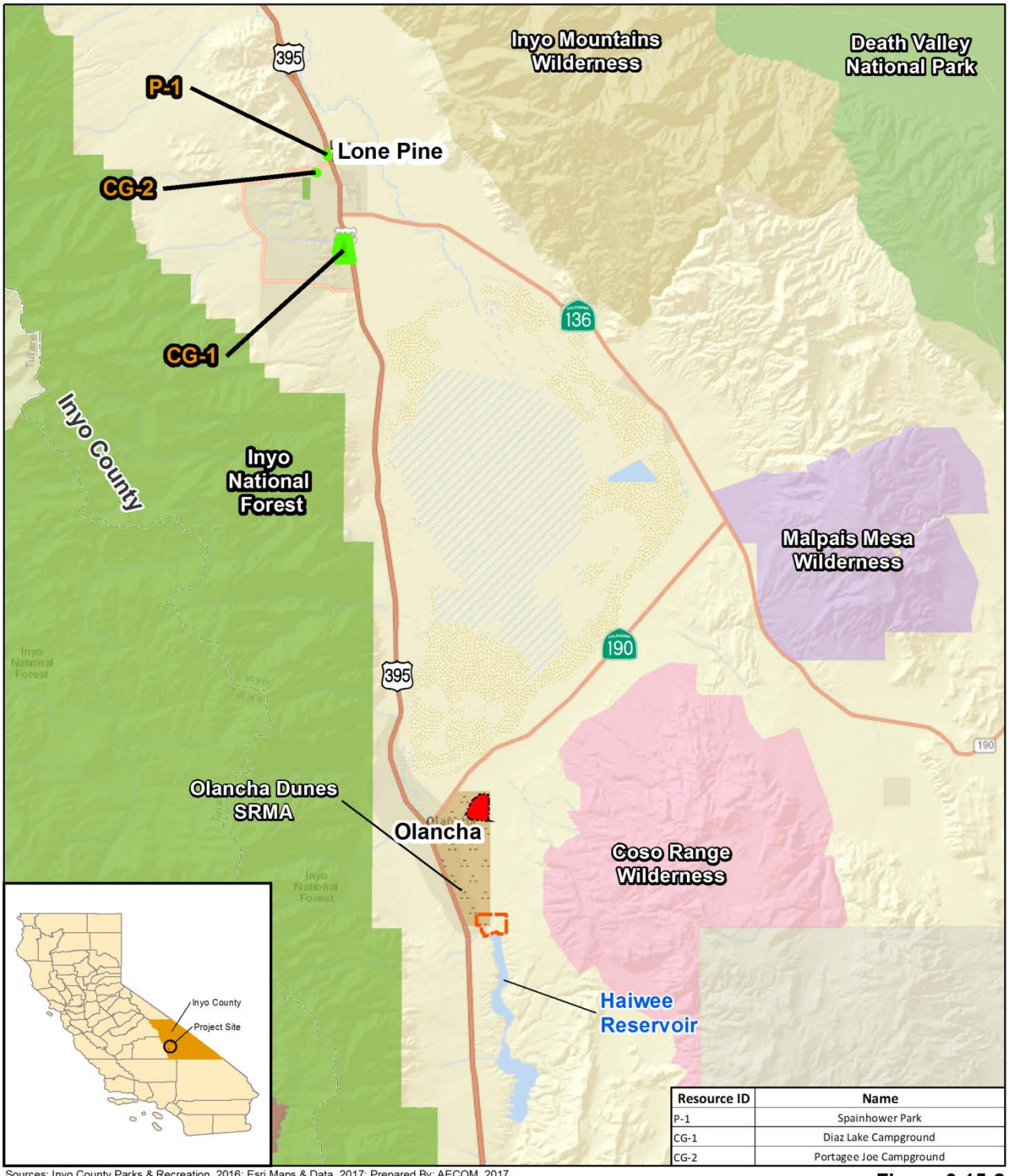


Figure 3.15-2
Existing Parks within Inyo County

TABLE 3.15-4
NEAREST EXISTING CAMPGROUNDS, PARKS, AND REGIONAL RECREATIONAL AREAS TO THE PROJECT SITE

Figure 3.15-2 ID	Name	Jurisdiction	Approximate Distance to Project Site[a]
Parks			
P-1	Spainhower Park	Lone Pine	27 miles to Project Site
Campgrounds			
CG-1	Diaz Lake	Lone Pine	27 miles to Project Site
CG-2	Portagee Joe	Lone Pine	27 miles to Project Site
Regional Recreational Areas			
Name Shown	Olancha Dunes SRMA	County	Within Project Site
Name Shown	Inyo National Forest	County	5 miles to Project Site
Name Shown	Coso Range Wilderness	County	2 miles to Project Site
Name Shown	Malpais Mesa Wilderness	County	13 miles to Project Site
Name Shown	Death Valley National Park	County	40 miles to Project Site

Note: [a] Based on the recreational area's boundary that is closest to Project feature boundary
Source: Inyo County Parks & Recreation. Website http://www.inyocountycamping.com/, accessed August 2015.

In addition to County-owned parks and campgrounds, there are several federally-owned recreation areas in the Project vicinity, including Inyo National Forest to the west, BLM-managed lands such as Coso Range Wilderness and Malpais Mesa Wilderness to the east, as well as Death Valley National Park to the east (Figure 3.15-2).

Inyo National Forest

Inyo National Forest spans over 2 million acres with more than 800,000 acres in nine Congressionally-designated Wilderness Areas, including South Sierra Wilderness, Golden Trout Wilderness, and Inyo Mountains Wilderness (USFS, 2015a). South Sierra Wilderness is located 10 miles to the southeast of the existing Dam and has approximately 30 miles of trails. Inyo National Forest manages approximately half of the 62,700 acres of South Sierra Wilderness and the rest is managed by Sequoia National Forest (USFS, 2015c). Golden Trout Wilderness, located approximately 21 miles northeast of the existing Dam, encompasses 304,000 acres managed entirely by USFS. It is traversed by several hundred miles of scenic trails and two wild and scenic rivers. Inyo Mountains Wilderness, located approximately five miles east of Lone Pine and 40 miles northeast of the existing Dam, encompasses over 200,000 acres of land with approximately 125,610 acres administered by BLM, 74,011 acres administered by USFS, and 7,600 administered by NPS (BLM, 2013).

BLM-Managed Lands

The Coso Range Wilderness is located seven miles northeast of the Project Site, and is approximately 49,296 acres. It encompasses the northern section of the Coso Mountain Range, which has numerous valleys and washes, and Joshua Flats and Vermillion Canyon, two scenic areas. Activities include camping, hunting, fishing, and horseback riding. The Coso Range Wilderness is accessible by several routes, including routes that utilize US-395 to Cactus Flats Road on the west and SR-190 on the north (BLM, 2014).

Malpais Mesa Wilderness is located approximately 18 miles northeast of the existing Dam, and encompasses 31,906 acres of land. Activities include camping, hunting, fishing, and horseback riding. Access to Malpais Mesa Wilderness is via SR-190 (BLM, 2014).

Olancha Dunes SRMA spans 400 acres and is generally surrounded by SR-190 to the north, US-395 to the west, Haiwee Reservoir to the south, and Coso Range Wilderness to the east. The open area for OHV lies in the northeastern corner of the Olancha Dunes SRMA, approximately 3.5 miles north of the Project

Site. Activities allowed within the Olancha Dunes SRMA include OHV, camping, and commercial filming and photography (BLM, 2016).

Death Valley National Park

Death Valley National Park is located approximately 50 miles east of the existing Dam. Encompassing approximately 3.4 million acres with over 3 million acres designated as Wilderness, it is the largest national park south of Alaska. Activities include hiking, backpacking, mountain biking, birdwatching, and visiting historic places such as Scotty's Castle and a former borax plant (NPS, 2016).

3.15.3 Methodology for Analysis

Impacts to public services and recreation are evaluated on the potential of the Proposed Project to affect the existing operations of public services and recreation provided by Inyo County. Impacts to public services and recreational facilities that would necessitate new or expanded facilities are generally associated with an increased permanent population. During the peak of construction, there would be a peak workforce of approximately 111 daily personnel (under the CDSM Alternative) that would temporarily reside in communities near the Project Site. In order to establish an existing baseline and evaluate the impacts of the Proposed Project, the following agency websites were consulted for locations and general information: Inyo County Office of Education, Inyo County Department of Parks and Recreation, Inyo County Free Library, Inyo County Department of Aging Services, USFS, NPS, and BLM. Planning documents including the ICGP and *Inyo County Renewable Energy General Plan Amendment Draft Program EIR* (Inyo County, 2014) and *Desert Renewable Energy Conservation Plan Land Use Plan Amendment* were reviewed for relevant plans, goals, and policies.

CEQA Significance Criteria

The thresholds of significance for the Proposed Project's potential to impact public services and recreation are based on Appendix G of the State CEQA Guidelines. The following thresholds of significance were analyzed:

- Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental 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:
  - Schools?
  - Parks?
  - Other Public Facilities?
- 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?
- Would the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

NEPA Requirements

The term "significantly" as used in NEPA requires considerations of both context and intensity (40 CFR 1508.27). Therefore, thresholds serve as a benchmark for determining if a project action would result in a significant adverse environmental impact when evaluated against the baseline. The environmental effects analysis of the Proposed Project related to public services and recreation includes an assessment of the context and intensity of the impacts as defined in the NEPA implementing regulations, 40 CFR 1508.27, and the BLM *NEPA Handbook H-1790-1* of 2008. The BLM *NEPA Handbook H-1790-1* requires that duration be considered and that both short- and long-term adverse and

beneficial impacts be disclosed in the NEPA analysis. The effects analysis must demonstrate that BLM took a "hard look" at the impacts of the action. The level of detail must be sufficient to support reasoned conclusions by comparing the amount and the degree of change (impact) caused by the proposed action and alternatives (BLM *NEPA Handbook H-1790-1*, 2008, p. 55). Additionally, direct, indirect, residual, and cumulative impacts for the Proposed Project must be considered. BLM does not provide a determination on the level of significance in a NEPA document. Rather, BLM leaves that determination to the FONSI which will be completed prior to the signing of a Decision Record. Any characterization of significance in this Draft EIR/EA applies only to the CEQA determination.

3.15.4 Environmental Consequences

Schools, Day Care Centers, Libraries, and Senior Centers

PSR-1: *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental 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 schools, day care centers, libraries, and senior centers?*

No Project Alternative

Under the No Project Alternative, the existing Dam, existing Cactus Flats Road, and existing LAA would remain on the Project Site as under existing conditions. Typical maintenance activities would occur as they do under existing conditions. No excavation for or purchase of earthen material would be required. No construction workforce would be required as there would be no construction activities. Therefore, no impacts related to schools, day care centers, libraries, or senior centers would occur under the No Project Alternative.

Build Alternatives - Construction

CDSM Alternative

The demand for new and/or expanded school facilities, day care centers, libraries, or senior centers is directly associated with permanent increases in the local population. As discussed in Section 3.14, Population and Housing, construction workers would temporarily reside in existing hotels, motels, and seasonal accommodations in neighboring communities, such as Lone Pine, Olancha, and Independence. The construction workforce would temporarily increase the local population by at most 111 people at the peak of construction under the CDSM Alternative. The local stock of seasonal housing would be able to accommodate this temporary increase such that new housing would not be required. Furthermore, given the temporary nature of construction activities, it is not anticipated that construction personnel would relocate their families during construction of the Proposed Project. In addition, the Proposed Project would not induce permanent population growth as no new permanent employment or housing is planned. As a result, no impacts are expected with regard to increased demand for libraries. Similarly, there is no anticipated increase of the population of preschool or school-aged children due to the Proposed Project, and there would not be an increase in the demand on day care centers or schools. Since only temporary workers are expected during the construction of the Proposed Project, these workers are not expected to cause an increased demand for senior centers since they are, by their very presence, part of the workforce and of a separate demographic than the typical patrons of senior centers. Therefore, no construction impacts related to the provision or need for new or physically altered school facilities, day care centers, libraries, or senior centers would occur under the CDSM Alternative.

Excavate and Recompact Alternative

The construction workforce would temporarily increase the local population by at most 86 people at the peak of construction under the Excavate and Recompact Alternative. Similar to the CDSM Alternative,

implementation of the Excavate and Recompact Alternative would not induce permanent population growth, as no new permanent employment or housing is planned. As a result, no impacts are expected with regard to increased demand for libraries. Similarly, there is no anticipated increase of the population of preschool or school-aged children due to the Proposed Project, and there would not be an increase in the demand on day care centers or schools. Since only temporary workers are expected during the construction of the Proposed Project, these workers are not expected to cause an increased demand for senior centers since they are, by their very presence, part of the workforce and of a separate demographic than the typical patrons of senior centers. Therefore, no construction impacts would occur related to the provision or need for new or physically altered school facilities, day care centers, libraries, or senior centers under the Excavate and Recompact Alternative.

Operation

Operation of the Proposed Project would not result in permanent employee growth during operation and would not indirectly induce population growth, which would increase demand for schools, day care centers, libraries, or senior centers. The Proposed Project components would be inspected and maintained by existing staff. In addition, no new housing is required for operation of the Proposed Project. Therefore, no operational impacts related to the provision or need for new or physically altered school facilities, day care centers, libraries, or senior centers would occur under any of the Build Alternatives.

Parks and Recreation

PSR-2: *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental 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 parks?*

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?

Would 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 Project Alternative

Under the No Project Alternative, the existing Dam, existing Cactus Flats Road, and existing LAA would remain on the Project Site as under existing conditions. Typical maintenance activities would occur as they do under existing conditions. No excavation for or purchase of earthen material would be required. No construction workforce would be required as there would be no construction activities. Therefore, no impacts related to parks and recreation would occur under the No Project Alternative.

Build Alternatives - Construction

CDSM Alternative

The demand for new and/or expanded parks or recreational facilities is directly associated with permanent increases in the local population. As discussed in Section 3.14, Population and Housing, construction workers would temporarily reside in existing hotels, motels, and seasonal accommodations in neighboring communities, such as Lone Pine, Olancha, and Independence. The construction workforce would temporarily increase the local population by at most 111 people at the peak of construction under the CDSM Alternative, and the local stock of seasonal housing would be able to accommodate this temporary increase, so no new housing would be required. Furthermore, given the temporary nature of construction activities, it is not anticipated that construction personnel would relocate their families during

construction of the Proposed Project. In addition, the Proposed Project would not induce permanent population growth, as no new permanent employment or housing is planned. Thus, no increase in the demand on parks and recreational facilities would be created and no new or expanded recreational facilities would be required. Therefore, no construction impacts related to the provision or need for new or physically altered parks or recreational facilities would occur under the CDSM Alternative.

Excavate and Recompact Alternative

The construction workforce would temporarily increase the local population by at most 86 people at the peak of construction under the Excavate and Recompact Alternative. Similar to the CDSM Alternative, implementation of Excavate and Recompact Alternative would not induce permanent population growth, and there would not be an increase in the demand on parks and recreational facilities. Therefore, no construction impacts related to the provision or need for new or physically altered parks or recreational facilities would occur under the Excavate and Recompact Alternative.

Build Alternatives - Operation

Operation of the Proposed Project would not result in permanent employee growth during operation and would not indirectly induce population growth, which would increase demand for parks and recreational facilities. The Proposed Project components would be inspected and maintained by existing staff. Therefore, no operational impacts related to the provision or need for new or physically altered parks or recreational facilities would occur under any of the Build Alternatives.

3.15.5 Mitigation Measures

The Proposed Project would have no impacts related to public services and recreation, and therefore, no mitigation measures are required.

3.15.6 Residual Impacts After Mitigation

The Proposed Project would result in no impacts to public services and recreation under CEQA.

3.15.7 NEPA Conclusions

No Project Alternative

The No Project Alternative would not change the existing conditions of the Project Site and would not utilize any earthen material.

Build Alternatives

The Build Alternatives for the Proposed Project would not result in the displacement of any public service facilities, such as schools, libraries, senior centers, day care centers, or parks and recreational facilities. Operation of the Proposed Project would not induce permanent population growth that would require new or altered facilities for schools, parks, other public facilities, or recreational facilities. The Proposed Project would be consistent with the DRECP LUPA, and would be consistent with LUPA-CTTM-1 because the Proposed Project would not affect the Open Area of the Olancha Dunes SRMA, and existing dirt roads would be maintained and improved, with no new access restrictions put into place (except for closure of a portion of Cactus Flats Road, which is replaced by the Cactus Flats Road Realignment). The Proposed Project is consistent with LUPA-CTTM-5 because it does not change the ability of OHVs to use the Project Site consistent with the Limited OHV designation. The Proposed Project is consistent with LUPA-REC-1, LUPA-REC-4, LUPA-REC-5, SRMA-CTTM-1, and SRMA-REC-1 because the portion of the Project Site within the Olancha Dunes SRMA is not designated as Open Area, and North Haiwee Road would remain a designated Full Size OHV route. The Cactus Flats Road Realignment would replace the function of the portion of Cactus Flats Road to be taken out of service, and other roads would remain closed to public use as under existing conditions. The Proposed Project would be consistent with

CONS-CTTM-1, CONS-REC-1, and SRMA-REC-2 because it would not be used for recreational purposes and roads would serve the same function during operation as under existing conditions. The Proposed Project would be consistent with the CDNCL and ACEC designations, and no conflicts between these designations and the SRMA have been identified. The Proposed Project would be consistent with SRMA-REC-3 through refining or zoned through activity-level planning for the Project Site where necessary.

3.16 Safety and Security

This section analyzes the potential impacts of the Proposed Project as it relates to safety and security. The applicable laws, regulations, and methods used to determine the effects of the Proposed Project are described herein. The section describes the affected environment and analyzes the environmental consequences of the Proposed Project and, if applicable, provides mitigation measures.

3.16.1 Regulatory Setting

Federal

Homeland Security Act, 2002

The Homeland Security Act of 2002 delegates responsibilities to the Department of Homeland Security which is responsible for the Dams Sector, a division of the Office of Infrastructure Protection under the Department of Homeland Security. The Dams Sector comprises the assets, systems, networks, and functions related to dam projects, which are complex facilities that typically include water impoundment or control structures, reservoirs, spillways, outlet works, powerhouses, and canals or aqueducts. The Dams Sector partners with federal, state, regional, local, and private entities to address security issues and protect the Nation's critical infrastructure and key resources.

Federal Wildland Fire Management Policy

The 2009 *Guidance for Implementation of Federal Wildland Fire Management Policy* is the most recent guiding principle for the Federal Wildland Fire Management Policy, which was approved in 1995 and revised in 2001. Policies in the 2009 update include using common standards for fire management programs to facilitate effective collaboration among cooperating agencies; clarifying the jurisdictional inter-relationships and defining responsibilities among local, state, tribal, and federal protection entities; coordinating responses to wildland fire across all levels of government regardless of jurisdiction at the ignition source; and planning for fire management at an intergovernmental level.

Bureau of Land Management Fire Planning Manual, 2012

The BLM *Fire Planning Manual (H-9211-1)* provides objectives, authorities, responsibilities, and policies for fire management planning for BLM-managed lands. The objective of the manual is to ensure that BLM fire planning processes comply with the Federal Wildland Fire Management Policy. The manual provides guidance for fire management documents, including fire management plans which defines programs that include preparedness plans, preplanned dispatch plans, and prevention plans. Fire management plans assure that wildland fire management goals and components are coordinated.

State

California Fire Code

The 2013 California Fire Code, Title 24, Part 9 of the CCR establishes minimum requirements and regulations for safety and general welfare regarding the hazards of fire, explosions, or dangerous conditions in new and existing premises, and provides safety and assistance to firefighters and emergency responders during emergency operations. The California Fire Code is based on the 2012 International Fire Code and is consistent with nationally recognized good practices.

Local

Inyo County General Plan

The ICGP identifies goals and policies for long-term growth in Inyo County, including goals and policies related to safety and security, which are listed in Table 3.16-1.

TABLE 3.16-1
INYO COUNTY GENERAL PLAN GOALS AND POLICIES FOR SAFETY AND SECURITY

Goal	Policy
General	
PSU-1. To ensure the timely development of public facilities and the maintenance of adequate service levels for these facilities to meet the needs of existing and future County residents.	PSU-1.1. Facilities and Services for New Development: The County shall ensure through the development review process that public facilities and services will be developed, operational, and available to serve new development. The County shall not approve new development where existing facilities are inadequate unless the applicant can demonstrate that all necessary public facilities will be installed or adequately financed and maintained (through fees or other means).
	PSU-1.2. On-Site Infrastructure: The County shall require all new development, including major modifications to existing development, to construct necessary on-site infrastructure to serve the project in accordance with County standards.
Fire Protection	
PSU-8. To protect the residents of and visitors to Inyo County from injury and loss of life and to protect property from fires.	PSU-8.1. Fire Protection for New Development: Prior to the approval of development projects, the County shall determine the need for fire protection services. New development in unincorporated areas of the County shall not be approved unless adequate fire protection facilities can be provided.
WF-1. Prevent wildfires and provide public safety from wildfire hazards	WF-1.1. Fire Protection Agencies: Support expansion of fire protection agencies and volunteer fire departments, and continue to cooperate with federal, state, local agencies and private landowners to provide greater fire protection for the County.
	WF-1.3. Fuel Modification: Require fuel modification for structures within fire hazard zones
	WF-1.4. Public Education/Notification of Increased Risks: Educate the public about the increased hazards of wildfires due to changing climatic conditions, highlighting strategies such as fuel modification and fire breaks, which reduce the potential for wildfires to occur.
	WF-1.5. Emergency Access: All County public roads shall be developed and maintained at adequate standards to provide safe circulation for emergency equipment.

TABLE 3.16-1
INYO COUNTY GENERAL PLAN GOALS AND POLICIES FOR SAFETY AND SECURITY

Goal	Policy
Law Enforcement	
PSU-9. To provide adequate law enforcement services to deter crime and to meet the growing demand for services associated with increasing populations and commercial/industrial development in the County.	PSU-9.1. Law Enforcement Facilities: Within the County's overall budgetary constraints, the County shall provide law enforcement facilities (including substation space, patrol, and other vehicles, necessary equipment, and support personnel) sufficient to maintain service standards.
	PSU-9.3. Law Enforcement Support: The County shall work with federal law enforcement agencies to ensure appropriate coordination and maximum use of available resources for the protection of public safety in the County.

Note: PSU=Public Services and Utilities; WF=Wildfire
Source: Inyo County General Plan, 2001 Website http://inyoplanning.org/general_plan/goals/ch4.pdf; http://inyoplanning.org/general_plan/goals/ch9.pdf, accessed January 2016.

3.16.2 Affected Environment

Safety and Security

Safety and security is addressed in this section by evaluating the security of the LAA infrastructure (deliberate acts against the LAA system, including the existing dam) and the need for emergency response (fire, police, and medical). This section describes the existing safety and security setting for Inyo County as it relates to the Proposed Project. Other safety and security topics are described and evaluated in the following sections of this Draft EIR/EA:

- Section 3.7, Geology, Seismicity, and Soils, evaluates safety and security topics related to seismicity, liquefaction, and soil stability.
- Section 3.9, Hazards and Hazardous Materials, evaluates safety and security topics related to exposure of hazardous materials to the public and wildfire risk.
- Section 3.10, Hydrology, Water Quality, and Groundwater evaluates safety and security topics related to water quality and flooding.

LAA Infrastructure

The LAA is a critical infrastructure system for Southern California that provides water to the City of Los Angeles from the Owens Valley. Chapter 1, Introduction provides an overview of the LAA system and its role in the City of Los Angeles' water supply system. The 340-mile LAA system includes tunnels, pipelines, ditches, dams, and reservoirs which may be targeted by threats. Since the terrorist attacks of September 11, 2001, LADWP has increased security of the City of Los Angeles' water systems by increasing water quality testing by 50 percent from 150,000 tests per year to 225,000 tests; increasing the LADWP security force by nearly double; adding two new helicopters for increased aerial security patrols for the LAA, reservoirs, and facilities; and working with federal and local government agencies to coordinate response to terrorist threats (LADWP, 2007). In addition, the Haiwee Reservoirs were closed to public access in August 2005 to prevent potential water contamination.

Fire Protection

Inyo County contains and is surrounded by a rural and natural landscape that is vulnerable to wildfire, both naturally occurring and human-induced. Most of the populated areas of the southern and eastern portions of the County are at a moderate risk for fires (Inyo County, 2009). Fire protection in Inyo County is provided by Special Fire Districts, created and financed by local unincorporated communities, town and

city fire departments, CAL FIRE, BLM, USFS, and NPS. Interagency organization is managed by the BLM Bishop Field Office and Inyo National Forest (managed by NPS), which coordinate with CAL FIRE, local and volunteer fire departments, and other government entities to respond to fires.

Fire protection for the Project Site falls under local and federal jurisdiction, except for the LAA Excavation Area which falls under federal jurisdiction as it is located on BLM-managed land. Fire Protection Districts (FPDs) in Inyo County include the Independence FPD, Lone Pine FPD, Big Pine FPD, Bishop FPD, Olancha FPD, and Southern Inyo FPD. There is at least one fire station within each of the FPDs, which have a combined total of 127 active volunteers; however, up to 170 are needed to effectively respond to the number of calls received (Inyo County, 2014). The nearest fire stations to the Project Site are the Olancha Cartago Fire Department and the BLM Olancha Station, located on US-395 in Olancha, California, approximately four miles to the northwest (Figure 3.16-1). The Olancha Cartago Fire Department provides services to the communities of Olancha, Cartago, and Grant to the north of the Project Site, and Pearsonville, Coso, and Little Lake to the south of the Project Site. Services provided include: structure fire suppression, wildland fire suppression, emergency medical services, hazardous condition mitigation, hazardous materials first responder operations, fire/life safety inspections, ambulance response and transport, and public service response (Olancha Cartago Fire Department, 2014). Lone Pine Volunteer Fire Department, located approximately 27 miles north of the Project Site, has 35 firefighters and 13 fire engines (Inyo County, 2014). Ambulance service is also provided by the Lone Pine Volunteer Fire Department, which operates three ambulances staffed by volunteer EMTs and a paramedic on an on-call basis. Patients who require transfers are transported by ambulance, fixed-wing plane, or helicopter to the nearest and most medically appropriate facility, the Southern Inyo Hospital in Lone Pine, CA, located approximately 27 miles north of the Project Site, or the Northern Inyo Hospital in Bishop, CA located approximately 80 miles north of the Project Site.

Table 3.16-2 lists the fire departments within 30 miles of the Project Site, and Figure 3.16-1 shows the locations.

TABLE 3.16-2
EXISTING FIRE PROTECTION SERVICES IN INYO COUNTY

Figure 3.16-ID	Department	Jurisdiction	Approximate Distance to Project Site (miles)
F-1	Lone Pine FPD	Lone Pine	27
F-2	Olancha CSD FPD	Olancha	4
F-3	BLM Olancha	BLM Olancha	4

Notes:
CSD = Community Service District
FPD = Fire Protection District
BLM = Bureau of Land Management
Sources: Inyo County, 2014. Website http://www.inyoplanning.org/projects/documents/ 4.14.PublicServices_05NOV14.pdf, accessed September 2015; Google Earth, 2015.

Police Protection

Inyo County Sheriff's Department

The ICSD provides police protection for Inyo County that spans 10,200 square miles and includes the Project Site. The ICSD provides services including: dispatch, veteran services, bicycle registration, civil, Live Scan fingerprint services, notary services, and search and rescue (ICSD, 2014). In addition to a patrol unit, there are three special units within the ICSD: Boat Patrol, Off Highway Vehicle Detail, and Mounted Patrol. There are two patrol operation headquarters, located in Bishop and Lone Pine, with additional substations located in Independence, Shoshone, and Death Valley. The ICSD is designated by the Inyo County Board of Supervisors to coordinate emergency services for the County, and protect,

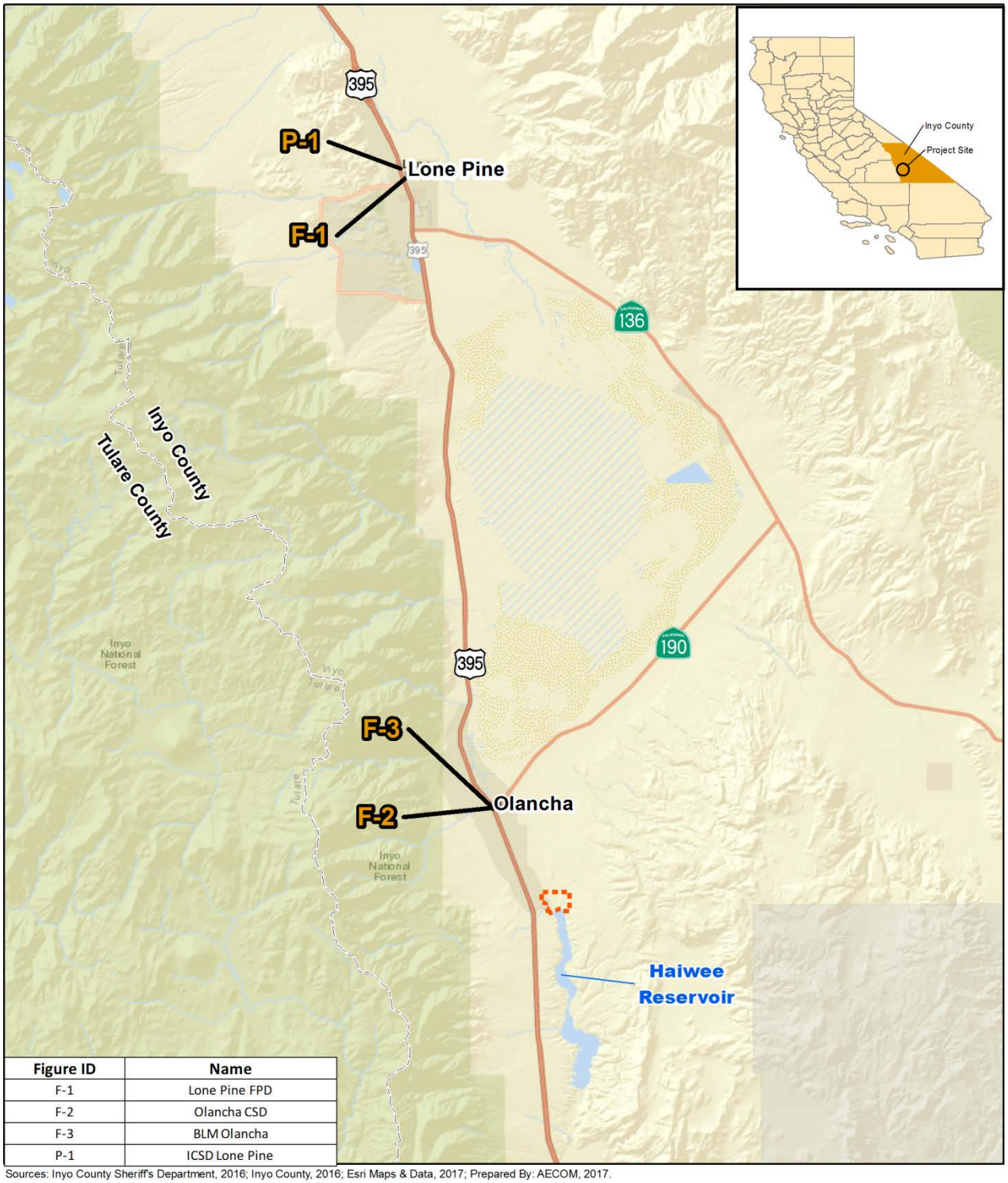


Figure 3.16-1
Existing Fire Protection and Police Protection within Project Vicinity

respond and educate the public before and during a natural or man-made disaster. The ICSD has approximately 96 personnel, including 24 officers, 12 officers that work at the County jail, 22 staff that include correction officers, and other administrative staff. The nearest ICSD station to the Project Site is the Lone Pine Sheriff's Department located at 726 North Main Street in Lone Pine, approximately 27 miles to the north.

California Highway Patrol

The California Highway Patrol (CHP) is responsible for traffic enforcement along all state and federal routes in California, including the highways near the Project Site, US-395, SR-190, and SR-136. CHP may provide additional support to the unincorporated rural communities throughout Inyo County. The closest CHP office is located approximately 80 miles north of the Project Site in Bishop, California. The CHP Bishop Office patrols approximately 12,000 square miles and serves residents, commuters, and tourists throughout nearly all of Inyo County, and is equipped with 17 patrol cars (CHP, 2016).

3.16.3 Methodology for Analysis

Safety and security are evaluated based on the potential of the Proposed Project to increase the risk or severity of threats to the LAA system or to adversely impact service ratios and response times for existing fire and police emergency services. For the purposes of this section, threats to the LAA system are defined as intentional acts to damage the infrastructure or water quality which include water contamination, terrorism, and vandalism. The existing baseline was established by consulting the following agency websites and planning documents: Inyo County, ICSD, BLM, CHP, LADWP, CAL FIRE, Southern Inyo Healthcare District, and the *Inyo County Renewable Energy General Plan Amendment Draft Program EIR* (Inyo County, 2014).

CEQA Significance Criteria

The thresholds of significance for the Proposed Project's potential to impact safety and security are based on Appendix G of the State CEQA Guidelines. The following thresholds of significance were analyzed:

- Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental 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?

NEPA Requirements

The term "significantly" as used in NEPA requires considerations of both context and intensity (40 CFR 1508.27). Therefore, thresholds serve as a benchmark for determining if a project action would result in a significant adverse environmental impact when evaluated against the baseline. The environmental effects analysis of the Proposed Project related to safety and security includes an assessment of the context and intensity of the impacts as defined in the NEPA implementing regulations, 40 CFR 1508.27, and the BLM *NEPA Handbook H-1790-1* of 2008. The BLM *NEPA Handbook H-1790-1* requires that duration be considered and that both short- and long-term adverse and beneficial impacts be disclosed in the NEPA analysis. The effects analysis must demonstrate that BLM took a "hard look" at the impacts of the action. The level of detail must be sufficient to support reasoned conclusions by comparing the amount and the degree of change (impact) caused by the proposed action and alternatives (BLM *NEPA Handbook H-1790-1*, 2008, p. 55). Additionally, direct, indirect, residual, and cumulative impacts for the Proposed Project must be considered. BLM does not provide a determination on the level of significance in a NEPA document. Rather, BLM leaves that determination

to the FONSI which will be completed prior to the signing of a Decision Record. Any characterization of significance in this Draft EIR/EA applies only to the CEQA determination.

Applicable Best Management Practices

The following applicable BMPs would minimize the impacts to safety and security.

- Fire Management and Protection Plan (FMPP): As required by the Federal Wildland Fire Management Policy, associated BLM regulations and policies, and Title 8 CCR Section 3221, an FMPP will be prepared by LADWP for Project-specific construction activities that pose potential fire hazards. The FMPP will identify and address potential fire incidents requiring emergency response or evacuation. The FMPP will include the identification of the following: potential fire hazards and ignition sources; proper handling and storage of heavy equipment; persons responsible for equipment and systems maintenance; location of portable fire extinguishers; and coordination with local fire protection agencies. The FMPP will reference jurisdictional policies regarding fire protection services, describe steps for responding to unplanned ignitions, and plan evacuation routes and other actions to be taken in the event of an emergency. On-site fire suppression equipment, which includes but is not limited to: fire extinguishers, shovels, one water truck for each Project-component site with sufficient water volume and pressure pump with an adjustable nozzle and fire hose, and a back-up water storage tank, will be provided on-site. Additionally, each construction truck would be equipped with a fire extinguisher and shovel. (BLM Fire Planning Handbook, 2012 and Title 8 CCR Section 3221).
- Site Security Plan (SSP): An SSP will be prepared by LADWP for Project-site specific construction activities which protect the Project Site from vandalism, theft, and threats to the LAA System, as well as preventing injury to the public. The SSP would include security systems, such as temporary construction fencing and gates, warning signs that restrict public access, and security guards, and would be coordinated with local law enforcement agencies (Federal Energy Regulatory Commission, 2010).
- A Health and Safety Plan will be prepared by LADWP and submitted as part of the Plan of Development for the Proposed Project to BLM for review and approval. The Health and Safety Plan will address safety situations for Project-site construction activities, and include safety training, emergency evacuation plans, potential accidents that could arise from construction activities, identification of hazards/risks, and recordkeeping procedures. The Health and Safety Plan will also include an emergency response plan and spill prevention plan to be approved by a BLM contaminant remediation specialist, which includes the protocols for emergency response to spills of toxic contaminants among other emergency procedures.

3.16.4 Environmental Consequences

SS-1: *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental 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 fire protection?*

No Project Alternative

Under the No Project Alternative, NHR would continue to operate at a restricted level. The existing Dam, existing Cactus Flats Road, and existing LAA would remain on the Project Site as under existing conditions. Typical maintenance activities which may utilize equipment or machinery would occur similar to existing conditions. No excavation for or purchase of earthen material would be required and no construction workforce would be required as there would be no construction activities. Thus, the demand for fire protection would remain the same as under existing conditions. Therefore, no impact related to the

provision of new or physically altered governmental facilities, need for new or physically altered government facilities in order to maintain acceptable service ratios, response times or other performance objectives for fire protection would occur under the No Project Alternative.

Build Alternatives - Construction

CDSM Alternative

The Project Site is susceptible to wildfire due to the site conditions, which is predominantly comprised of dry vegetation whose flammability has been exacerbated by the current severe drought conditions. Wildfire could potentially occur from construction activities given that equipment and machinery would be utilized and these could accidentally spark a fire. In addition, the Proposed Project would introduce a work population to the Project Site located in a moderate wildfire risk area which currently does not have a work population, and this could result in an increased demand for local fire protection services. As discussed above, there is currently a shortage of fire services for Inyo County. Based on the *Inyo County Renewable Energy General Plan Amendment Draft Program EIR*, the six FPDs in Inyo County combined have an inadequate quantity of personnel for the amount of calls received (127 active volunteers but up to 170 are needed). State and federal land management agencies would assist with fire protection services, but they are located in northern Inyo County, over an hour away from the Project Site. The nearest fire department is in Olancha and is located approximately four miles northeast of the Project Site. The nearest FPD outside of Olancha is approximately 27 miles away in Lone Pine. The Lone Pine Volunteer Fire Department has 35 volunteer firefighters and 13 fire engines to handle fire incidents. Lone Pine Volunteer Fire Department also has three ambulances and medical personnel available on an on-call basis, and could respond to potential injuries related to construction the Proposed Project. The implementation of the FMPP would minimize the potential for increased demand on fire services during the construction of the CDSM Alternative. Thus, the impact related to the provision or need for new or physically altered fire protection facilities in order to maintain acceptable services ratios, response times, or other performance objectives for fire protection for on-site construction would be less than significant.

Haul trucks delivering earthen material from the existing mine in Keeler to the Project Site could potentially cause minor traffic delays resulting from the lower speeds, acceleration, and deceleration required by these haul trucks. However, the haul routes would not be expected to impact emergency access for fire protection personnel on public roads, or private roads leading to and from the Project Site as emergency vehicles, including fire trucks and ambulances, have sirens that will alert haul truck drivers to yield right-of-way to emergency vehicles, as required under the California Vehicle Code (§21806(a)(1)).

During construction, the workforce would increase the local population for approximately five years. Construction of the Proposed Project would require approximately 111 daily personnel at the peak of construction under the CDSM Alternative. Construction workers would reside in existing hotels, motels, and seasonal accommodations in neighboring communities, such as Lone Pine, Olancha, and Independence, and would not require the construction of any new housing. The increase in local population would not increase the demand for fire services as the hotels and motels in which the construction workers would reside have fire safety standards and have been permitted to operate at their existing capacities. As discussed in Section 3.14, Population and Housing, there exists sufficient hotel/motel capacity for the temporary workforce population. Therefore, construction impacts related to the provision or need for new or physically altered fire protection facilities in order to maintain acceptable services ratios, response times, or other performance objectives for fire protection would be less than significant under the CDSM Alternative.

Excavate and Recompact Alternative

The construction impacts related to fire protection services of the Proposed Project would be the same as under the CDSM Alternative. Additionally, this alternative would utilize the same haul routes for the

existing mine in Keeler as under the CDSM Alternative. Thus, impacts related to haul routes for the existing mine would be similar to those under the CDSM Alternative. Therefore, impacts would be less than significant under the Excavate and Recompact Alternative.

During construction of the Excavate and Recompact Alternative, the workforce would increase the local population for approximately six years, and the peak quantity of construction workers would be approximately 86 daily personnel. Similar to the CDSM Alternative, the increase in workforce would not exceed the existing capacity at hotels/motels and would not require additional residential construction. Consequently, the demand on fire services for hotel/motel residents would have been already taken into consideration in the planning of these land uses. Therefore, construction impacts related to the provision or need for new or physically altered fire protection facilities in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection would be less than significant under the Excavate and Recompact Alternative.

Build Alternatives - Operation

Demand for fire protection for the operation of the NHD2 components, Cactus Flats Road Realignment, LAA Realignment, and diversion channel and NHD modifications would be similar to existing demand for fire protection services. The LAA Excavation Area would be restored following completion of construction activities and would no longer be active. No additional staff would be required for the operation of the Proposed Project as the Project components would be inspected and maintained by existing staff. Generally, the provision of new or physically altered fire facilities is associated with population growth that would require the construction of new housing; however, there would be no new habitable structures associated with operation of the Proposed Project. The existing reservoir keeper's home would remain in its current location. Therefore, operational impacts related the provision of new or physically altered governmental 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 fire protection services would not occur under any Build Alternative.

SS-2: *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental 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 police protection?*

No Project Alternative

Under the No Project Alternative, NHR would continue to operate at a restricted level. The existing Dam, existing Cactus Flats Road, and existing LAA would remain on the Project Site as under existing conditions. Construction of the Proposed Project would not occur and thus, equipment and personnel would not be introduced to the area. LADWP would maintain security of the LAA System as it does under existing conditions. No excavation for or purchase of earthen material would be required and no construction workforce would be required. Thus, the demand for police protection would remain the same as under existing conditions. Therefore, no impact related to the provision of new or physically altered governmental facilities, need for new or physically altered government facilities in order to maintain acceptable service ratios, response times or other performance objectives for police protection would occur under the No Project Alternative.

Build Alternatives - Construction

CDSM Alternative

The construction of the Proposed Project would introduce equipment, machinery, and work personnel to a primarily vacant site, located in a remote and sparsely-populated area of Inyo County. Although the

Project work areas are in remote areas, there still exists the potential for trespassing and theft of construction-related machinery and equipment. As discussed above, LADWP has already increased security for the entire LAA system, which includes the existing Dam and proposed location of NHD2. Consequently, the NHD2 components and LAA Realignment would require security from acts of terrorism or vandalism while it is being constructed. The SSP, a BMP for the Proposed Project, includes protocols and other BMPs such as fences and security personnel that would deter theft and vandalism during the construction of the NHD2 components, Cactus Flats Road Realignment, LAA Realignment, and diversion channel and NHD modifications. Implementation of the SSP would minimize any increased demand on local or regional police services, and impacts would be less than significant.

During construction of the Cactus Flats Road Realignment, public access to the segment of the Cactus Flats Road Realignment would not be allowed. As discussed in Chapter 2, Project Description and Alternatives, the existing portion of Cactus Flats Road would not be demolished until the realigned portion is built. Therefore, there would be continued access of Cactus Flats Road throughout construction of the Proposed Project, and no impact to emergency access for law enforcement would occur.

Haul truck related impacts for the LAA Excavation Area would not be expected to cause traffic delays as the trips would be confined to the Project Site. Haul trucks delivering earthen material from the existing mine in Keeler to the Project Site could potentially cause traffic delays resulting from the lower speeds, acceleration, and deceleration required by haul trucks. However, the haul routes would not be expected to impact emergency access for law enforcement personnel on public roads, or private roads leading to and from the Project Site as emergency vehicles, including police cars, have sirens that will alert haul truck drivers to yield right-of-way to emergency vehicles, as required under the California Vehicle Code (§21806(a)(1)).

The construction workforce of the Proposed Project would increase the local population for approximately five years during the construction. Construction personnel would temporarily increase the local population by approximately 111 people daily at the peak of construction under the CDSM Alternative. The construction workforce is expected to reside in temporary housing in neighboring communities or population centers such as Lone Pine, Olancha, and Independence, and would not require the construction of new housing. Although the temporary workforce would physically increase the population in the area for a few years, the hotel/motel capacity would accommodate this increase. Therefore, the allocation of police service resources for these existing land uses would not be exceeded. As discussed in Section 3.14, Population and Housing, there exists sufficient hotel/motel capacity for the workforce population. Therefore, construction impacts related to the provision or need for new or physically altered police protection facilities would be less than significant under the CDSM Alternative.

Excavate and Recompact Alternative

The impacts of construction of the Proposed Project would be the same as under the CDSM Alternative. Additionally, this alternative would utilize the same haul routes for the existing mine in Keeler as under the CDSM Alternative. Thus, impacts related to haul routes for the existing mine would be similar to those under the CDSM Alternative. Therefore, impacts would be less than significant under the Excavate and Recompact Alternative.

Under the Excavate and Recompact Alternative, the construction workforce of the Proposed Project would increase the local population for approximately six years during the construction, and the peak quantity of construction workers would be approximately 86 daily personnel. Similar to the CDSM Alternative, the increase in workforce would not exceed the existing capacity at hotels/motels and would not require additional residential construction. Consequently, the demand on police protection services for hotel/motel residents would have been already taken into consideration in the planning of these land uses. Therefore, construction impacts related to the provision or need for new or physically altered police protection facilities in order to maintain acceptable services ratios, response times, or other performance

objectives for police protection would be less than significant under the Excavate and Recompact Alternative.

Build Alternatives - Operation

Demand for police protection services for the operation of the NHD2 components, Cactus Flats Road Realignment, LAA Realignment, and diversion channel and NHD modifications would be similar to existing demand for police protection services, as the facilities are passive facilities that would not require additional staff for operations. The LAA Excavation Area would be restored following completion of construction activities and would no longer be active, and the eastern portion of this site would function as the realigned portion of the LAA. The Proposed Project would be inspected and maintained by existing staff and LADWP security for the LAA System would remain in place. Generally, the provision of new or physically altered police facilities is associated with permanent population growth; however, there would be no new habitable structures associated with operation of the Proposed Project. The existing reservoir keeper's home would remain in its current location. Therefore, operational impacts related the provision of new or physically altered governmental 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 police protection services would not occur under any Build Alternative.

3.16.5 Mitigation Measures

The Proposed Project would result in less than significant impacts related to safety and security. No mitigation measures are required.

3.16.6 Residual Impacts After Mitigation

The Proposed Project would result in less than significant impacts related to safety and security under CEQA.

3.16.7 NEPA Conclusions

No Project Alternative

The No Project Alternative would not change the existing conditions of the Project Site and would not utilize any earthen material.

Build Alternatives

The Build Alternatives of the Proposed Project would comply with all federal, state, and local requirements for fire safety and law enforcement. While construction would contribute to a temporary additional demand for fire and police protection services, the BMPs relating to safety and security described above would minimize the construction impacts of the Proposed Project. The Proposed Project would not induce permanent population growth that would require additional fire or police resources for safety and security, and operation of the Project would result in similar conditions to the existing setting. Furthermore, the Proposed Project would not result in increased danger or threats to life or to property, and would maintain the existing security level of the LAA System during construction and operation. The DRECP LUPA does not contain any applicable CMAs related to safety and security. One CMA, DFA-RE-1, is not applicable to safety and security (refer to Appendix B of this Draft EIR/EA).

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3.17 Transportation/Traffic

This section analyzes the potential impacts of the Proposed Project as it relates to transportation and traffic. The applicable laws, regulations, and methods used to determine the effects of the Proposed Project are described herein. The section describes the affected environment and analyzes the environmental consequences of the Proposed Project and, if applicable, provides mitigation measures. The analysis in the section is based on the Transportation/Traffic Technical Report in Appendix M of this Draft EIR/EA.

3.17.1 Regulatory Setting

Federal

Desert Renewable Energy Conservation Plan Land Use Plan Amendment of 2016

The DRECP LUPA, approved by BLM in September 2016, is an amendment to the BLM CDCA Plan. The key objectives of the DRECP are to streamline renewable energy development and to provide for long-term conservation and management of special-status species, vegetation, and other resources within the DRECP Plan area. The DRECP identifies Development Focus Areas and Variance Process Lands where renewable energy development is more streamlined, as well as conservation areas, and several other land uses. The DRECP LUPA implements its objectives through specific CMAs. Some CMAs apply across the entirety of the DRECP Plan area, while others apply only to specific land uses. The DRECP LUPA contains several CMAs related to comprehensive trail and travel management. These include: LUPA-CTTM-1, which requires maintenance and management of adequate road access to and within SRMAs; LUPA-CTTM-5, which manages OHV use per the SRMA objectives; CONS-CTTM-1, which requires management of roads and trails consistent with CDNCL and ACEC goals and objectives; NLCS-CTTM-1, which requires comprehensive trails management in accordance with applicable transportation management plans; and SRMA-CTTM-1, which incorporates individual SRMA objectives, management actions, and allowable uses. CMAs not applicable to transportation and traffic include: LUPA-CTTM-6 and LUPA-WC-4. The consistency of the Proposed Project with the DRECP CMAs is provided in Appendix B of this Draft EIR/EA.

State

California Vehicle Code Section 35550

This regulation pertains to the gross weight on any one axle and is intended to restrict damage to roadway pavement by vehicles carrying overweight loads. Based on the regulation, the gross weight on any one axle shall not exceed 20,000 pounds, and the gross weight upon any one wheel, or wheels, supporting one end of an axle, shall not exceed 10,500 pounds. Caltrans has stated that any use of overweight loads will need to be permitted. Should the Proposed Project require vehicles carrying overweight loads, a permit with Caltrans would be obtained by LADWP.

Caltrans Guide for the Preparation of Traffic Impact Studies

According to the *Caltrans Guide for the Preparation of Traffic Impact Studies*, Caltrans endeavors to maintain a target Level of Service (LOS) at the transition between LOS C and LOS D on state highway facilities. However, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. If an existing state highway facility is operating at less than the appropriate target LOS, the existing measures of effectiveness (MOE) should be maintained.

Regional and Local

Inyo County Regional Transportation Plan

On September 16, 2015, the Inyo County Local Transportation Commission approved the 2015 Inyo County Regional Transportation Plan (RTP). The RTP acknowledges that Caltrans has designated LOS C as the concept LOS for state highways in Inyo County. The following goals and policies from the RTP are relevant to the Proposed Project:

TABLE 3.17-1
INYO COUNTY REGIONAL TRANSPORTATION PLAN GOALS, OBJECTIVES, AND POLICIES

Objective	Policy
Goal 1: Streets, Roads, and Highways Maintained at a Safe and Acceptable Level	
Objective 1.1: Adequate Road Maintenance. Provide proper levels of road maintenance to avoid unnecessary vehicle wear.	Policy 1.1.1: Priority List for Maintenance, Rehabilitation, and Reconstruction. Establish a priority list based on the premise that maintenance, rehabilitation, and reconstruction of the existing regionally significant roads have the highest consideration for available funds.
Goal 2: A Transportation System Which Is Safe, Efficient, and Comfortable, Which Meets the Needs of People and Goods, and Enhances the Lifestyle of the County's Residents	
Objective 2.2: Review of Projects. Consider transportation issues during the review of projects.	Policy 2.2.1: Proper Access. Provide proper access to residential, commercial, and industrial areas.
	Policy 2.2.5: If transportation improvements are required as part of a new development, require the developer to share the cost of the improvements.
Goal 3: Maintain Adequate Capacity on State Routes (SRs) and Local Routes in and Surrounding Inyo County and City of Bishop	
Objective 3.1: Widen U.S. 395 to 4-lanes. Provide a 4-lane facility for U.S. 395 in Inyo County by the year 2020.*	Policy 3.1.1: Improve U.S. 395 in Sections. Widen U.S. 395 as funding allows.
Objective 3.2: Improve State Routes. Add additional capacity to other routes as needed to maintain concept LOS.	Policy 3.2.1: Improve State Routes as Necessary. Improve State Routes through maintenance, widening, bicycle/pedestrian improvements and landscaping as funding allows.
Objective 3.3: Improve County Routes.	Policy 3.3.1: Support Roadway Improvements to Optimize Public Safety. Improve county roads through specific safety improvements and maintenance.
	Policy 3.3.2: Improve County Routes as Necessary. Improve county roads through maintenance and capacity enhancements, as funding and need are identified.

* The Caltrans US-395 Olancha/Cartago Four-Lane and Haiwee Creek Southbound Shoulder Widening Projects are discussed in Chapter 4, Other CEQA and NEPA Considerations of this Draft EIR/EA
Source: 2015 Inyo County Regional Transportation Plan

Inyo County General Plan

The ICGP forms the framework for land use decisions in the County. The Circulation Element covers the movement of people, products, and materials using a variety of conveyances, from roads to railroads, bicycle paths to transmission lines. The following goals and policies are relevant to the Proposed Project:

TABLE 3.17-2
INYO COUNTY GENERAL PLAN GOALS AND POLICIES

Goal	Policy
Roadways and Highways	
Goal RH-1. A transportation system that is safe, efficient, and comfortable, which meets the needs of people and goods and enhances the lifestyle of the County's residents.	Policy RH-1.1. Prioritize Maintenance, Rehabilitation, and Reconstruction: Prioritize improvements based on the premise that maintenance, rehabilitation, and reconstruction of the existing highway and roadway system to protect public safety has the highest consideration on available funds.
	Policy RH-1: Level of Service: Maintain a minimum level of service (LOS) C on all roadways in the County. For highways within the County, LOS C should be maintained except where roadways expansions or reconfigurations will adversely impact the small community character and economic viability of designated Central Business Districts.
	Policy RH-1.6: Minimize Environmental Impacts. Insure that all transportation projects minimize adverse effects on the environment of the County, to include the evaluation of impacts from emissions and the reduction of emissions through efficient design and the incorporation of innovative transit solutions such a public transit, shared transit, alternative transit, multi-modal transit and other such options.
Goal RH-2. Improved capacity on state highways and routes within and surrounding Inyo County.	Policy RH-2.1. Improve U.S. 395 in Sections: Support improvements to U.S. 395 as funding allows.
	Policy RH-2.2. Protect County Roads: The County shall protect existing County roads from impacts from new development by requiring such new development to either subsidize their impacts or contract for repair/reconstruction of impacts.

Note: RH=Roadways and Highways
Source: 2001 Inyo County General Plan, Goals and Policies Report, Chapter 7 Circulation Element website: http://inyoplanning.org/general_plan/goals/ch7.pdf, accessed February 15, 2016.

3.17.2 Affected Environment

The Project Site is located to the east of US-395 in Owens Valley in unincorporated areas of Inyo County, California. The site is approximately 0.5 miles southeast of the community of Olancha, and approximately 0.75 miles north of the community of Haiwee.

Roadway Facilities

Regional Roadway Facilities

US-395: US-395 is one of the four major north-south corridors serving California. Within Caltrans District 9, US-395 varies in design, from an undivided, two-lane conventional highway to a divided, four-lane conventional highway; an undivided, two-lane expressway; and a divided, four-lane expressway. US-395 enters District 9 in eastern Kern County at the San Bernardino County Line, northeast of the community of Johannesburg and continues north through Kern County into Inyo County up the Owens Valley along the Eastern Sierra. It then continues through Mono County where it exits into Nevada near Topaz Lake. In the vicinity of the Project Site, US-395 is a two-lane undivided highway north of North Haiwee Road and a four lane divided highway south of North Haiwee Road. The two-lane segments of US-395 are planned to be widened to four lanes in the Caltrans US-395 Olancha/Cartago Four-Lane Project. The preliminary engineering for the project has been completed and construction is anticipated to start in 2018.

SR-190: SR-190 begins at its junction with SR-99 at Tipton in Tulare County in Caltrans District 6. The route extends east to where the existing alignment terminates on the western slope of the Sierra Nevada mountains at the entrance to Quaking Aspen Campground. East of Quaking Aspen Campground and over the Sierra Crest to US-395 in Olancha, the California Transportation Commission adopted 43 miles of the legislatively designated but unconstructed alignment of SR-190. The entire length is functionally classified by the FHWA as a Minor Arterial. SR-190 is part of the Interregional Road System that

connects US-395 at the eastern flank of the Sierra Nevada Range to SR-127 at Death Valley Junction near the California/Nevada border. In the vicinity of the Project Site, SR-190 is a two-lane undivided highway.

SR-136: SR-136 travels along the corridor formed between the northeastern shore of Owens Lake and the western base of the Inyo Mountains. This 18-mile stretch of highway connects US-395, from approximately one-mile south of the community of Lone Pine, with SR-190, approximately 18 miles west of Death Valley National Park. SR-136 is an undivided, two-lane highway which connects Owens Valley with Death Valley. The highway accesses the Eastern Sierra Interagency Visitor Center at the US-395 junction, the community of Keeler, and the towns of Dolomite and Swansea. In the vicinity of the Project Site, SR-136 is a two-lane undivided highway.

Local Roadway Facilities

Cactus Flats Road: Cactus Flats Road is a County designated road that provides access to the Project Site from US-395. It includes paved and unpaved segments. The Proposed Project would realign Cactus Flats Road within the Project Site.

North Haiwee Road: North Haiwee Road is a road that provides access to the Project Site from US-395. It includes paved and unpaved segments.

Existing Traffic Conditions

Table 3.17-3 shows traffic volumes for the analysis roadways under existing (2015) conditions and, as shown, all roadways operate at satisfactory LOS based on Caltrans and Inyo County Guidelines with the exception of US-395 between SR-190 and North Haiwee Road, which operates at LOS D. Traffic volumes are given in Passenger Car Equivalents (PCE), which converts the mixture of vehicles on the road to their equivalent value in passenger car trips.

TABLE 3.17-3
EXISTING (2015) TRAFFIC VOLUMES AND LOS

	Lanes	PCE Volume	LOS
SR-136 North of SR-190	2	528	B
SR-190 Between US-395 and SR-136	2	352	B
US-395 Between SR-190 and North Haiwee Road	2	7,418	D
US-395 South of North Haiwee Road	4	7,418	B

Notes:
LOS is based on HCM2010. Thresholds for LOS A are not available in the Service Volume Tables.
Shaded = Unsatisfactory LOS
PCE = Passenger Car Equivalents
LOS = Level of Service
Source: Translutions, Inc., 2017

Existing Pedestrian and Bicycle Facilities

Pedestrian facilities currently do not exist in the Project area. There are no sidewalks, crosswalks, or related pedestrian facilities along the roadways adjacent to the Project area. US-395 is recognized as a Class III Bike Route in the Inyo County Bikeways Master Plan.

Existing Public Transportation

No passenger or freight rail service currently exists in Inyo County. Eastern Sierra Transit Authority offers deviated fixed route and dial-a-ride bus service in and between the populated areas of Inyo and Mono counties in addition to an inter-regional route between Reno, Nevada, and Palmdale, California. The nearest stop is near the Mobil Station in Olancha, approximately four miles northwest of the Project Site.

3.17.3 Methodology for Analysis

LOS is a measure of the quality of operational conditions within a traffic stream, and is generally expressed in terms of such measures as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. Levels range from A to F, with LOS A representing excellent (free-flow) conditions and LOS F representing extreme congestion. Detailed descriptions of LOS A through F are provided below.

Level of Service A represents free-flow. Individual users are unaffected by the presence of others in the traffic stream. The freedom to select desired speeds and to maneuver within the traffic stream is extremely high. The general level of comfort and convenience provided to the motorist, passenger, or pedestrian is excellent. The control delays at boundary intersections are minimal. The travel speed exceeds 85 percent of the base free-flow speed, and the volume-to-capacity ratio is no greater than 1.0.

Level of Service B is in the range of stable flow, but the presence of other users in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver within the traffic stream from LOS A. The level of comfort and convenience provided is somewhat less than at LOS A because the presence of others in the traffic stream begins to affect individual behavior. The control delays at the boundary intersections are not significant. The travel speed is between 67 percent and 85 percent of the base free-flow speed, and the volume-to-capacity ratio is no greater than 1.0.

Level of Service C is in the range of stable flow, but marks the beginning of the range of flow in which the operation of individual users becomes significantly affected by interactions with others in the traffic stream. The selection of speed is now affected by the presence of others, and maneuvering within the traffic stream requires substantial vigilance on the part of the user. The general level of comfort and convenience declines noticeably at this level. Longer queues at the boundary intersections may contribute to lower travel speeds. The travel speed is between 50 percent and 67 percent of the base free-flow speed, and the volume-to-capacity ratio is no greater than 1.0.

Level of Service D represents high-density, but stable flow. Speed and freedom to maneuver are severely restricted, and the driver or pedestrian experiences a generally poor level of comfort and convenience. This indicates a less stable condition in which small increases in flow may cause substantial increases in delay and decreases in travel speed. This operation may be due to adverse signal progression, high volume, or inappropriate signal timing at the boundary intersections. The travel speed is between 40 percent and 50 percent of the base free-flow speed, and the volume-to-capacity ratio is no greater than 1.0.

Level of Service E represents operating conditions at or near the capacity level. All speeds are reduced to a low, but relatively uniform value. Freedom to maneuver within the traffic stream is extremely difficult, and it is generally accomplished by forcing a vehicle or pedestrian to "give way" to accommodate such maneuvers. Comfort and convenience levels are extremely poor, and driver or pedestrian frustration is generally high. Operations at this level are usually unstable, because small increases in flow or minor perturbations within the traffic stream will cause breakdowns. The travel speed is between 30 percent and 40 percent of the base free-flow speed, and the volume-to-capacity ratio is no greater than 1.0.

Level of Service F is used to define forced or breakdown flow. This condition exists wherever the amount of traffic approaching a point exceeds the capacity of the facility at that location. Queues form behind such locations, and operations within the queue are extremely unstable. Vehicles may progress at reasonable speeds and then then be required to stop. It is likely that congestion is occurring at the boundary intersections, as indicated by high delay and extensive queuing. The travel speed is 30 percent or less of the base free-flow speed and the volume-to-capacity ratio is greater than 1.0.

The Transportation/Traffic Technical Report (Appendix M) was conducted based on the Generalized Daily Service Volumes for Two-Lane Highways from the Highway Capacity Manual (HCM) 2010. Table 3.17-4 shows the generalized capacities of two-lane and four-lane highways.

TABLE 3.17-4
GENERALIZED DAILY SERVICE VOLUMES

Maximum Roadway Capacity (Vehicles per Day)				
	LOS B	**LOS C**	**LOS D**	**LOS E**
Two-Lane Highway	2,600	5,100	8,200	16,400
Four-Lane Highway	17,200	24,900	32,700	38,200

Note: LOS=Level of Service
Source: HCM 2010

CEQA Significance Criteria

The thresholds of significance for the Proposed Project's potential to impact transportation and traffic are based on Appendix G of the State CEQA Guidelines. The following thresholds of significance were analyzed:

- Would the project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?
- Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?
- Would the project conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

The Appendix G significance criteria listed below were scoped out of the analysis for further consideration in the IS (Appendix A), and are discussed in Chapter 4, Other CEQA and NEPA Considerations, of this Draft EIR/EA.

- Would the project conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?;
- Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?
- Would the project result in inadequate emergency access?

NEPA Requirements

The term "significantly" as used in NEPA requires considerations of both context and intensity (40 CFR 1508.27). Therefore, thresholds serve as a benchmark for determining if a project action would result in a significant adverse environmental impact when evaluated against the baseline. The environmental effects analysis of the Proposed Project related to transportation and traffic includes an assessment of the context and intensity of the impacts as defined in the NEPA implementing regulations, 40 CFR 1508.27, and the BLM *NEPA Handbook H-1790-1* of 2008. The BLM *NEPA Handbook H-1790-1* requires that duration be considered and that both short- and long-term adverse and beneficial impacts be disclosed in the NEPA analysis. The effects analysis must demonstrate that BLM took a "hard look" at the impacts of the action. The level of detail must be sufficient to support reasoned

conclusions by comparing the amount and the degree of change (impact) caused by the proposed action and alternatives (BLM *NEPA Handbook H-1790-1*, 2008, p. 55). Additionally, direct, indirect, residual, and cumulative impacts for the Proposed Project must be considered. BLM does not provide a determination on the level of significance in a NEPA document. Rather, BLM leaves that determination to the FONSI which will be completed prior to the signing of a Decision Record. Any characterization of significance in this Draft EIR/EA applies only to the CEQA determination.

NEPA generally does not have transportation thresholds for non-transportation projects. However, NEPA requires the disclosure of permanent and temporary construction impacts related to transportation for any kind of project. This analysis compares the No Project and Build Alternatives.

Applicable Best Management Practices

The following Best Management Practices are recommended during construction of the Proposed Project:

- **Sight Distances:** During construction, LADWP shall ensure that debris, vehicles, or other objects that could obstruct line of sight will not be placed adjacent to the Project Site access locations. In addition, LADWP will ensure that, should shrubs and other vegetation grow within the sight triangles, they would be removed.
- **Turning Radii:** During construction, LADWP would ensure that all driveways constructed for the Project would provide safe turning radii. If single unit three-axle trucks are used during construction, a Caltrans-standard minimum design turning radius of 51.5 feet shall be provided. Trucks entering. US-395 would yield the right-of-way to through traffic per California Motor Vehicle Code.

3.17.4 Environmental Consequences

TT-1: *Would the project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?*

No Project Alternative

Under the No Project Alternative, traffic volumes are anticipated to grow at the ambient growth rate of one percent per year based on the forecasts included in the RTP. Table 3.17-5 shows the traffic volumes and levels of service at study area roadways for the analysis years. As shown in Table 3.17-5, all roadways are forecast to operate at the prescribed measure of effectiveness (i.e. level of service) under the RTP, with the exception of US-395 between SR-190 and North Haiwee Road. It should be noted that the RTP acknowledges that this segment of US-395 operates at below acceptable LOS under existing conditions. Therefore, the No Project Alternative would not conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system. No impact would occur.

TABLE 3.17-5
GENERALIZED DAILY SERVICE VOLUMES

		2018		2019		2020		2021		2022		2023		2024	
		PCE Vol.	LOS	PCE Vol.	LOS	PCE Vol.	LOS	PCE Vol.	LOS	PCE Vol.	LOS	PCE Vol.	LOS	PCE Vol.	LOS
1	SR-136 North of SR-190	545	B	550	B	556	B	561	B	566	B	571	B	576	B
2	SR-190 Between US-395 and SR-136	363	B	367	B	369	B	372	B	377	B	3380	B	384	B
3	US-395 between SR-190 & North Haiwee Road	7,640	D	7,713	D	7,789	D	7,863	D	7,936	D	8,011	D	8,085	D
4	US- 395 South of North Haiwee Road	7,640	B	7,713	B	7,789	B	7,863	B	7,936	B	8,011	B	8,085	B

Note: PCE Vol. = Passenger Car Equivalent Volume
Shaded = Unsatisfactory LOS
Source: Translutions, Inc. 2017

Build Alternatives - Construction

CDSM Alternative

Under the CDSM Alternative, traffic volumes are anticipated to equal the sum of the No Project Alternative traffic volumes (Table 3.17-5) plus construction traffic associated with the CDSM Alternative. Table 3.17-6 shows the projected traffic volumes and levels of service at study area roadways for the analysis years under the CDSM Alternative. As shown, the CDSM Alternative would not degrade traffic operations below the target LOS established by Caltrans or Inyo County for roadway segments 1, 2, and 4.

Roadway segment 3 would experience an increase in PCE volume higher than the No Project Alternative, but would not degrade the existing MOE (LOS D). This segment of US-395 also operates at LOS D both under existing and No Project conditions. As described above, where an existing state highway facility operates below the target LOS, the existing MOE should be maintained, and the CDSM Alternative maintains the existing LOS D for this segment. In addition, all portions of the Project area that intersect with US-395 are located within segments 5 and 6 in the Caltrans US-395 Transportation Concept Report (TCR). Traffic data discussed in Table 3.17-5 and Table 3.17- 6 show that the anticipated peak highway traffic levels during the horizon year are far below the traffic volumes anticipated in the TCR, and will have no impact on the condition of the highway. Therefore, construction-related impacts to consistency with adopted plans and policies establishing measures of effectiveness for the performance of the circulation system would be less than significant under the CDSM Alternative.

TABLE 3.17-6
CDSM ALTERNATIVE TRAFFIC VOLUMES AND LOS

		2018		2019		2020		2021		2022		2023		2024*	
		PCE Vol.	LOS	PCE Vol.	LOS	PCE Vol.	LOS	PCE Vol.	LOS	PCE Vol.	LOS	PCE Vol.	LOS	PCE Vol.	LOS
1	SR-136 North of SR-190	545	B	550	B	996	B	786	B	791	B	571	B	576	B
2	SR-190 Between US-395 and SR-136	363	B	367	B	809	B	597	B	602	B	380	B	384	B
3	US-395 Between SR-190 and North Haiwee Road	7,675	D	7,928	D	8760	D	8,132	D	8,205	D	8,067	D	8,085	D
4	US-395 South of North Haiwee Road	7,680	B	7,783	B	8,105	B	7,907	B	7,980	B	8,067	B	8,085	B

Note: PCE Vol. = Passenger Car Equivalent Volume
Shaded = Unsatisfactory LOS
*Under the CDSM Alternative, construction occurs during 2018 to 2023. The reported 2024 volumes are the same as baseline conditions.
Source: Translutions, Inc. 2017

Excavate and Recompact Alternative

Under the Excavate and Recompact Alternative, traffic volumes are anticipated to equal the sum of the No Project Alternative traffic volumes (Table 3.17-5) plus construction traffic associated with the Excavate and Recompact Alternative. Table 3.17-7 shows the projected traffic volumes and levels of service at study area roadways for the analysis years under the Excavate and Recompact Alternative. As shown, the Excavate and Recompact Alternative would not degrade traffic operations below the target LOS established by Caltrans or Inyo County for roadway segments 1, 2, and 4.

TABLE 3.17-7
EXCAVATE AND RECOMPACT ALTERNATIVE TRAFFIC VOLUMES AND LOS

		2018		2019		2020		2021		2022		2023		2024	
		PCE Vol.	LOS	PCE Vol.	LOS	PCE Vol.	LOS	PCE Vol.	LOS	PCE Vol.	LOS	PCE Vol.	LOS	PCE Vol.	LOS
1	SR-136 North of SR-190	545	B	835	B	781	B	786	B	566	B	571	B	576	B
2	SR-190 Between US-395 and SR-136	363	B	652	B	594	B	597	B	377	B	380	B	384	B
3	US-395 Between SR-190 and North Haiwee Road	7,678	D	8,068	D	8,178	D	8,252	D	8,042	D	8,074	D	8,185	D
4	US-395 South of North Haiwee Road	7,685	B	7,783	B	7,913	B	7,987	B	8,012	B	8,064	B	8,143	B

Note: PCE Vol. = Passenger Car Equivalent Volume
Shaded = Unsatisfactory LOS
Source: Translutions, Inc. 2017

Under the Excavate and Recompact Alternative, roadway segment 3 would experience an increase in PCE volume higher than the No Project Alternative, but would not degrade the existing MOE (LOS D). This segment of US-395 also operates at LOS D both under existing and No Project conditions. As described above, where an existing state highway facility operates below the target LOS, the existing MOE should

be maintained, and the Excavate and Recompact Alternative maintains the existing LOS D for this segment. Similar to the CDSM Alternative, all portions of the Project area that intersect with US-395 are located within segments 5 and 6 in the Caltrans US-395 Transportation Concept Report (TCR). Traffic data discussed in Table 3.17-5 and Table 3.17- 6 show that the anticipated peak highway traffic levels during the horizon year are far below the traffic volumes anticipated in the TCR, and will have no impact on the condition of the highway. Therefore, construction-related impacts to consistency with adopted plans and policies establishing measures of effectiveness for the performance of the circulation system would be less than significant under the Excavate and Recompact Alternative.

Build Alternatives - Operation

The Proposed Project is anticipated to operate similarly to the existing Dam, existing LAA, and existing Cactus Flats Road under all Build Alternatives. The number of employees (reservoir keeper, maintenance personnel, etc.) is anticipated to remain the same as under existing conditions. Consequently, the Proposed Project is not anticipated to generate new vehicle trips during operation under any of the Build Alternatives. Lastly, no excavation or other activities would occur at the LAA Excavation Area during operation of the Proposed Project and this site would generate no new vehicle trips. Therefore, no operational impacts that conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system would occur.

TT-2: *Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?*

No Project Alternative

Under the No Project Alternative, highways and local roadways in the Project area would operate as they do under existing conditions. No construction activities would occur, and no hazardous design features or incompatible uses would be implemented. Therefore, no impacts related to substantially increasing hazards due to a design feature or incompatible uses would occur under the No Project Alternative.

Build Alternatives - Construction

Access to the Project Site is generally provided via unpaved roads. At locations where access will be provided to and from Caltrans facilities, the Proposed Project would construct paved aprons and driveways, in accordance with Caltrans safety and design standards. The Proposed Project would construct no other design features on highways which could potentially increase hazards.

The Cactus Flats Road Realignment would create a new segment of roadway to replace a portion of the existing road. An existing north-south dirt access road that intersects a portion of the Cactus Flats Road Realignment would be graded to avoid creating hazards. The Cactus Flats Road Realignment would be constructed in coordination with Inyo County and in compliance with all state and local regulations regarding roadway design to avoid creating hazards due to design features.

The LAA Realignment would require the creation and widening of new and existing roads. As discussed in Chapter 2, two unpaved access roads would be constructed to the north and northeast of the LAA Realignment, and one existing access road would be extended and widened to connect with the unpaved access road to be constructed north of the LAA Realignment (refer to Figure 2-4, LAA Realignment Detail). The access road to be constructed north of the LAA Realignment would be located on LADWP-owned property and would have a gate that makes it inaccessible to the general public for security purposes. The portion of the access road from US-395 to the gate would be open for public use. The access roads would be constructed in compliance with all state and local regulations regarding roadway design to avoid creating hazards due to design features.

Haul trucks traveling to and from the Project Site, as well as other construction-related trucks traveling to and from the Project Site would add new vehicles to roadways. Heavy trucks could pose a hazard where decelerating to exit a roadway, or turning onto a roadway at an intersection. Generally, in the Project area,

there is sufficient intersection sight distance and stopping sight distance such that trucks would not pose a substantial hazard to other traffic traveling on roadways. In addition, BMPs in compliance with the Caltrans Manual on Uniform Traffic Control Devices would be implemented to ensure safety at intersections where Proposed Project vehicles would travel. Sufficient site distance, availability of lower-speed local roadways, dedicated turn lanes, and traffic controls would be sufficient to prevent substantial new hazards related to the speed differentials between heavy trucks and other traffic.

However, where southbound trucks would turn left from US-395 onto Cactus Flats Road, a hazard may be created due to speed differentials. No dedicated left turn lane is available at this location, and trucks would be required to slow and potentially stop while waiting to turn in the normal travel lanes. This would create a potential hazard to vehicles traveling behind trucks. As such, Mitigation Measure TT-A, which includes the provision of a flagman located at the intersection of US-395 and Cactus Flats Road to control traffic flows, would be required to reduce potential construction impacts. With implementation of Mitigation Measure TT-A, construction impacts resulting from increased hazards due to a design feature or incompatible uses would be less than significant under the Build Alternatives.

Build Alternatives - Operation

During operation of the Proposed Project under all Build Alternatives, vehicle trips related to the NHD2 components, the Cactus Flats Road Realignment, the LAA Realignment, and diversion channel and NHD modifications would be similar to existing conditions, as described above. The LAA Excavation Area and existing mine in Keeler would not generate any vehicle traffic as the LAA Excavation Area would not be operational, and LADWP would no longer be purchasing materials from the existing mine, an existing active mine. No hazards related to sight distances, stopping distances, or speed differentials would occur. Any road improvements implemented during construction would likely remain during operation of the Proposed Project, and would serve to reduce, not increase, hazards. Therefore, operational impacts related to substantially increasing hazards due to a design feature or incompatible uses would be less than significant under the Build Alternatives.

TT-3: *Would the project conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?*

No Project Alternative

Under the No Project Alternative, no construction would occur and no new vehicle trips or design elements would be introduced on state or local roadways. Existing transit service and the designated US-395 bikeway would continue to operate as under existing conditions. Therefore, no impacts related to conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decreasing the performance or safety of such facilities would occur under the No Project Alternative.

Build Alternatives - Construction

Eastern Sierra Transit Authority offers deviated fixed route and dial-a-ride bus service in and between the populated areas of Inyo and Mono counties in addition to an inter-regional route between Reno, Nevada, and Palmdale, California. As described above, the nearest transit stop to the Project Site is in Olancha. No alternative transportation programs exist associated with LADWP's use of NHR or the LAA since these sites are generally unmanned and are located in a rural and relatively isolated portion of Inyo County. Cactus Flats Road and North Haiwee Road are partially-paved roadways in a rural portion of Inyo County and do not presently contain any alternative transportation features, such as bus turnouts, or pedestrian and bike facilities. Under the BMPs described above, all Proposed Project access locations would be constructed to accommodate safe ingress/egress and sight distances. The Proposed Project under the Build Alternatives would not construct new hazards or create closures on roadways. In addition, although the

number of truck trips would increase during construction under the Build Alternatives, trucks would not inhibit normal transit service from the Eastern Sierra Transit Authority.

Pedestrian and bicycle facilities do not exist in the Project area. However, US-395 is recognized as a Class III Bike Route in the Inyo County Bikeways Master Plan. Although the Proposed Project would add construction related traffic on US-395, the Proposed Project related traffic volumes do not significantly impact levels of service and, therefore, would not change existing bicycle usage.

Cactus Flats Road is not identified as an existing or proposed bicycle facility, but it may be used as one. Construction of the Cactus Flats Road Realignment has the potential to disrupt the performance of this road as a potential bicycle path. However, based on the Proposed Project schedule, demolition and closure of the existing Cactus Flats Road would not occur until the Cactus Flats Road Realignment is opened for public use. Thus, vehicular and bicycle access along this roadway would be maintained during construction.

Therefore, construction impacts related to conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decreasing the performance or safety of such facilities would be less than significant under the Build Alternatives.

Build Alternatives - Operation

As described above, during operation of the Proposed Project, vehicle trips associated with the NHD2 components, the Cactus Flats Road Realignment, the LAA Realignment, and diversion channel and NHD modifications would be similar to existing conditions. The LAA Excavation Area would generate no vehicle trips as the site would be restored following completion of construction activities and would have no operational activity, and LADWP would no longer be purchasing materials from the existing mine in Keeler. Therefore, no operational impacts related to conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decreasing the performance or safety of such facilities would occur under the Build Alternatives.

3.17.5 Mitigation Measures

TT-A In order to prevent safety hazards created by speed differentials from southbound trucks turning left from US-395 to Cactus Flats Road, LADWP shall place a flagman at the intersection of US-395 and Cactus Flats Road to control the flow of existing trucks as well as to control traffic to allow southbound trucks to make left turns onto Cactus Flats Road. The flagman shall be placed for a duration of nine months during the hauling of materials from the existing mine in Keeler.

3.17.6 Residual Impacts After Mitigation

Speed differentials would be created during construction where southbound trucks would need to slow down to turn left from US-395 onto Cactus Flats Road, resulting in potential hazards to vehicles traveling behind trucks. Mitigation Measure TT-A would include the provision of a flagman located at the intersection of US-395 and Cactus Flats Road to control traffic flows. This provision would minimize the potential hazards resulting from speed differentials from southbound trucks needing to turn left from US-395 to access the Project Site. With implementation of Mitigation Measure TT-A, the Proposed Project would result in less than significant impacts to transportation and traffic for the Build Alternatives under CEQA.

3.17.7 NEPA Conclusions

No Project Alternatives

Under the No Project Alternative, traffic volumes are anticipated to grow at the ambient growth rate of one percent per year based on the forecasts included in the RTP, as discussed in Section 3.17.4. All

roadways are forecast to operate at the prescribed measure of effectiveness (i.e. LOS) under the RTP, with the exception of US-395 between SR-190 and North Haiwee Road, which is acknowledged as operating at below acceptable LOS under existing conditions. No construction activities would occur, and no hazardous design features or incompatible uses would be implemented. No new vehicle trips or design elements would be introduced on state or local roadways. Existing transit service and the designated US-395 bikeway would continue to operate as under existing conditions.

Build Alternatives

As described in Section 3.17.3, NEPA does not provide thresholds for evaluating traffic impacts of non-transportation projects, but does require disclosure of temporary and permanent impacts. As described in Section 3.17.4, the Proposed Project would add construction traffic to the adjacent circulation system. The Proposed Project would not adversely increase traffic operation on SR-190, SR-136, and US-395 south of North Haiwee Road. US-395 between SR-190 and North Haiwee Road currently operates at less than the target LOS, and the Proposed Project would add traffic to this unsatisfactory condition. However, the Proposed Project would not degrade traffic operation relative to the existing MOE, and would not degrade road conditions of US-395. The Proposed Project would create a potential safety hazard on southbound US-395 where trucks would turn left onto Cactus Flats Road; however, implementation of Mitigation Measure TT-A would minimize this safety hazard. The Proposed Project is not anticipated to generate additional trips compared to existing levels during operation.

The Proposed Project would be consistent with the DRECP LUPA, and would be consistent with LUPA-CTTM-1 because the Proposed Project would not affect the Open Area of the Olancha Dunes SRMA, and existing dirt roads would be maintained and improved, with no new access restrictions put into place (except for closure of a portion of Cactus Flats Road, which is replaced by the Cactus Flats Road Realignment). The Proposed Project is consistent with LUPA-CTTM-5 because it does not change the ability of OHVs to use the Project Site consistent with the Limited OHV designation. The Proposed Project is consistent with SRMA-CTTM-1 because the portion of the Project Site within the Olancha Dunes SRMA is not designated as Open Area, and North Haiwee Road would remain a designated Full Size OHV route. The Cactus Flats Road Realignment would replace the function of the portion of Cactus Flats Road to be taken out of service, and other roads would remain closed to public use as under existing conditions. The Proposed Project would be consistent with CONS-CTTM-1 because it would not be used for recreational purposes and roads would serve the same function during operation as under existing conditions. The Proposed Project would be consistent with the CDNCL and ACEC designations, and no conflicts between these designations and the SRMA have been identified.

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3.18 Tribal Cultural Resources

This section analyzes the potential impacts of the Proposed Project as it relates to tribal cultural resources. The applicable laws, regulations, and methods used to determine the effects of the Proposed Project on Tribal Cultural Resources are largely the same as those applied to historic and archaeological resources, as described in Section 3.5, Cultural Resources. In addition, impacts to Tribal Cultural Resources are called out separately in State Assembly Bill 52 (AB 52). Because the Proposed Project was initiated prior to July 1, 2015 (NOP was released on October 30, 2014), the requirements of AB52 do not apply to this Project. Efforts to identify impacts to tribal resources, however, will comply with the intent of this bill. This section describes the affected environment and analyzes the environmental consequences of the Proposed Project and, if applicable, provides mitigation measures. The analysis in the section is based in part on information from collaboration efforts between BLM and Tribes in the Project area, as well as from the Cultural Resources Inventory Report for the North Haiwee Dam No. 2 Project in Appendix F1 of this Draft EIR/EA.

3.18.1 Regulatory Setting

Federal

National Historic Preservation Act of 1966

National Register of Historic Places

In federal law, historic property means any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the NRHP maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. In addition, the term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization, and that meet the National Register criteria [36 CFR § 800.16(l)(1)]. A NRHP eligible resource is a historic resource which meets the criteria of a historical resource but is not listed on the NRHP.

Section 101

Section 101(d)(6)(A) of the NHPA allows properties of traditional religious and cultural importance to a tribe to be determined eligible for inclusion in the NRHP. Cultural institutions, lifeways, culturally valued viewsheds, places of cultural association, and other valued places and social institutions must also be considered under NEPA, EO 12898, and sometimes other authorities (EO 13006, EO 13007).

American Indian Religious Freedom Act of 1978

The American Indian Religious Freedom Act of 1978 allows access to sites of religious importance to Native Americans. On federal land, the ARPA and NAGPRA apply. ARPA assigns penalties for vandalism and the unauthorized collection of archaeological resources on federal land, and provides for federal agencies to issue permits for scientific excavation by qualified archaeologists. NAGPRA assigns ownership of Native American graves found on federal land to their direct descendants or to a culturally affiliated tribe or organization, and provides for repatriation of human remains and funerary items to identified Native American descendants.

Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act (Public Law 101-601; 25 U.S.C. 3001-3013) describes the rights of Native American lineal descendants, Indian tribes, and Native Hawaiian organizations with respect to the treatment, repatriation, and disposition of Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony, referred to collectively in the statute as cultural items, with which they can show a relationship of lineal descent or cultural affiliation. One major purpose of this statute (Sections 5-7) is to require that Federal agencies and

museums receiving Federal funds inventory holdings of Native American human remains and funerary objects and provide written summaries of other cultural items. The agencies and museums must consult with Indian Tribes and Native Hawaiian organizations to attempt to reach agreements on the repatriation or other disposition of these remains and objects. Once lineal descent or cultural affiliation has been established, and in some cases the right of possession also has been demonstrated, lineal descendants, affiliated Indian Tribes, or affiliated Native Hawaiian organizations normally make the final determination about the disposition of cultural items. Disposition may take many forms from reburial to long term curation, according to the wishes of the lineal descendent(s) or culturally affiliated Tribe(s).

The second major purpose of the statute is to provide greater protection for Native American burial sites and more careful control over the removal of Native American human remains, funerary objects, sacred objects, and items of cultural patrimony on Federal and tribal lands. NAGPRA requires that Indian tribes or Native Hawaiian organizations be consulted whenever archaeological investigations encounter, or are expected to encounter, Native American cultural items or when such items are unexpectedly discovered on Federal or tribal lands (Section 3). Excavation or removal of any such items also must be done under procedures required by the Archaeological Resources Protection Act (Sec. 3 (c)(1)). This NAGPRA requirement is likely to encourage the in situ preservation of archaeological sites, or at least the portions of them that contain burials or other kinds of cultural items. In many situations, it will be advantageous for Federal agencies and Tribes undertaking land-modifying activities on their lands to undertake careful consultations with traditional users of the land and intensive archaeological surveys to locate and then protect unmarked Native American graves, cemeteries, or other places where cultural items might be located.

Desert Renewable Energy Conservation Plan of 2016

The DRECP LUPA, approved by BLM in September 2016, is an amendment to the BLM CDCA Plan. The key objectives of the DRECP are to streamline renewable energy development and to provide for long-term conservation and management of special-status species, vegetation, and other resources within the DRECP Plan area. The DRECP identifies Development Focus Areas and Variance Process Lands where renewable energy development is more streamlined, as well as conservation areas, and several other land uses. The DRECP LUPA implements its objectives through specific Conservation and Management Actions (CMAs). Some CMAs apply across the entirety of the DRECP Plan area, while others apply only to specific land uses.

The DRECP LUPA contains several LUPA-wide CMAs related to tribal cultural resources. These include: LUPA-CUL-3, which requires identification of and maintenance of access to places of traditional cultural and religious importance to federally recognized Tribes; LUPA-CUL-4, which requires design of activities to minimize impacts on cultural resources, including places of traditional cultural and religious importance to federally recognized Tribes; LUPA-CUL-8, which requires conducting regular contact and consultation with federally recognized Tribes and individuals, consistent with statute, regulation, and policy; and LUPA-CUL-9, which requires promoting DRECP desert vegetation types/communities by avoiding them where possible, then through use of compensatory mitigation, off-site mitigation, and other means to ensure Native American vegetation collection areas and practices are maintained. One CMA, LUPA-CUL-7, is not applicable to tribal cultural resources.

Refer to Section 3.5, Cultural Resources, for a discussion of the CMAs related to cultural resources, and Appendix B of this Draft EIR/EA for the full DRECP CMA Checklist.

State

Assembly Bill 52

The intent of AB52 is to "Set forth a process and scope that clarifies California tribal government involvement in the CEQA process, including specific requirements and timing for lead agencies to consult with tribes on avoiding or mitigating impacts to tribal cultural resources." It applies to projects

with NOPs or Notice of Negative Declaration/Mitigated Negative Declarations released on or after July 1, 2015. The NOP for the Proposed Project was issued on October 30, 2014, and as such, the requirements of AB52 do not apply to this Project.

AB52 defines tribal cultural resources, amends Appendix G of CEQA Guidelines to include a separate section for tribal cultural resources, and created a formal requirement for consultation with California Native American Tribes in the CEQA process. Tribal Governments can request consultation with a lead agency and give input regarding potential impacts to tribal cultural resources before the agency decides what type of environmental review is necessary for a project (PRC Section 21080.3.2.). The Public Resources Code further requires avoiding damage to tribal cultural resources, if feasible. If not, lead agencies must mitigate impacts to tribal cultural resources to the extent feasible

Section 21074 of the Public Resources Code defines "tribal cultural resources" as a resource that is either of the following:

(1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:

(a) Included or determined to be eligible for inclusion in the California Register of Historical Resources.

(b) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.

(2) 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 Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

(b) A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.

(c) A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "nonunique archaeological resource" as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resource if it conforms with the criteria of subdivision (a).

Local

Inyo County General Plan

According to the ICGP's Conservation/Open Space Element (Inyo County, 2001), the focus of cultural resources is to "Preserve and promote the historic and prehistoric cultural heritage of the County." Policy CUL-1.5, Native American Consultation, states that the County and private organizations will work with appropriate Native American groups when potential Native American resources could be affected by development proposals.

3.18.2 Affected Environment

There are five Native American reservations in Inyo County, including the Big Pine Paiute Reservation, Fort Independence Reservation, Lone Pine Paiute-Shoshone Reservation, Timbisha Shoshone Reservation, and Bishop Paiute Reservation. The Project area lies in an interface zone, within the southwest portion of the vast homeland territory ascribed to the Western (Koso) Shoshone, near the southern boundary of the Northern (Owens Valley) Paiute. Ethnographic information places the boundary of these two groups at the community of Olancha, located four miles northwest of the Project area, where a shared village existed, and where Paiute and Shoshone intermarried. The closest Native American Reservation to the Project Site, the Timbisha Shoshone Reservation, is located 13 miles northeast.

3.18.3 Methodology

Consistent with the requirements of Section 106 of the NHPA and CEQA, the following steps have been taken to evaluate the potential for impacts to tribal cultural resources by the Proposed Project: (1) coordination by LADWP on the scope of the assessment with the federal lead agency (BLM); (2) communication with the NAHC and with potentially affected American Indian tribes about resources or values that could be affected; and (3) formal government-to-government consultation by the BLM with American Indian tribes.

Native American Consultation Efforts

As part of initial pre-field research, the NAHC was contacted by letter to obtain information regarding the presence of any known sacred lands or Traditional Cultural Properties in or around the Project APE. Neither sacred lands nor Traditional Cultural Properties were identified by the NAHC.

The BLM Ridgecrest Field Office is responsible for conducting all formal Native American consultation for the Proposed Project. The Ridgecrest Field Office archaeologist is the lead contact for these efforts. The following outlines the Tribal consultation efforts:

- Pursuant to the ARPA, the NAHC and tribes were provided the opportunity to comment on the Research Design for NRHP and CRHR evaluative testing (Phase II) and any subsequent data recovery investigations (Phase III) prior to any Phase II or Phase III actions occurring at affected Project Sites. In September 2015, the BLM Ridgecrest Field Office sent a letter to the Tribal Council Chairs of five local Native American tribes, including Timbisha Shoshone Tribe, Bishop Paiute Tribe, Big Pine Paiute Tribe of the Owens Valley, Fort Independence Paiute Tribe, and Lone Pine Paiute-Shoshone Tribe. Tribal representatives were asked to review the Phase II Research Design (Nilsson, 2015) for adequacy and completeness. The Office Manager of the BLM Ridgecrest Field Office received oral remarks from the Big Pine Paiute Tribe of Owens Valley and Lone Pine Paiute-Shoshone Tribe expressing gratitude for being informed about the Project, and requested continued consultation regarding the Project.
- On January 6 and 7, 2016, LADWP met with members of local Native American tribes and provided a presentation of four upcoming projects, including the Proposed Project (North Haiwee Dam No. 2 Project).
- On May 16, 2017, BLM and LADWP held a Tribal Consultation Meeting and invited these five local Native American tribes to consult on the Proposed Project and provide an overview of the cultural resources studies and findings to date. Tribal attendees included Big Pine Paiute Tribe of the Owens Valley, Fort Independence Paiute Tribe, and Lone Pine Paiute-Shoshone Tribe. In addition, a member from the Mono Lake Kutzadika Tribe was in attendance.
- Based on feedback received from the May 2017 Tribal Consultation Meeting requesting a field tour of the Project Site, BLM sent a letter on June 1, 2017, to the Tribal Council Chairs of the five local Native American tribes and Mono Lake Kutzadika Tribe, requesting attendance at a field tour of the Project Site set for June 13, 2017. BLM and LADWP jointly held a field tour of the Project Site on June 13, 2017, and attendees included members of Big Pine Paiute Tribe of the Owens Valley, Timbisha Shoshone Tribe, and Lone Pine Paiute-Shoshone Tribe.
- Tribal consultation for the project conducted by BLM and LADWP in May and June 2017 noted concerns by the Lone Pine Paiute-Shoshone Tribe and Big Pine Paiute Tribe related to the location of cultural site CA-INY-9347 and its potential for disturbance during Project construction activities. In order to more accurately assess impacts to tribal cultural resources associated with site CA-INY-9347, LADWP and BLM conducted additional shovel testing in the site area to test for the presence of subsurface cultural remains and assess site boundaries. This shovel testing program occurred on July 11, 2017, and was monitored by BLM, LADWP, and monitors from the Big Pine Paiute Tribe

and the Lone Pine Paiute-Shoshone Tribe. No subsurface cultural component was identified within the site area; therefore, the CA-INY-9347 site boundary was modified to more accurately account for tribal cultural resources present in the area.

CEQA Significance Criteria

As defined in PRC Section 21074, a tribal cultural resource is a site, feature, place, cultural landscape, sacred place, or object with cultural value to a "California Native American tribe," that is either on, or eligible for inclusion in, the CRHR or a local historic register, or is a resource that the lead agency, at its discretion and supported by substantial evidence, determines should be treated as a TCR. The CEQA NOP for the Proposed Project was issued on October 30, 2014, before AB52 was enacted. However, the lead agency has included the consideration of tribal cultural resources as a part of this document.

The thresholds of significance for the Proposed Project's potential to impact tribal cultural resources are based on Appendix G of the State CEQA Guidelines. The following thresholds of significance were analyzed:

- 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:
    - 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)?
    - 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 Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?

NEPA Requirements

NEPA establishes national policy for the protection and enhancement of the environment. Part of the function of the federal government in protecting the environment is to preserve important historic, cultural, and natural aspects of our national heritage. Historic property means any prehistoric or historic district, site, building, structure or object included in or eligible for inclusion in the NRHP maintained by the Secretary of the Interior. An impact to a cultural resource under NEPA is considered the same as an adverse effect to a historic property under the NHPA and 36 CFR Part 800. This term includes artifacts, records, and material remains that are related to and located within such properties, and may include Traditional Cultural Properties (TCPs) under the NRHP. Properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization may be determined eligible for inclusion in the NRHP (36 CFR § 800.16(l) (1). The NEPA process for addressing impacts to tribal resources that qualify for inclusion in the NRHP is addressed in Section 3.5.4 of this Draft EIR/EA.

Applicable Best Management Practices

BMPs are practices and procedures that help to avoid, reduce or mitigate any adverse effects to protected resources (inclusive of cultural resources) resulting from project implementation. Should any tribal cultural resources be identified during the consultation process, mitigation measures will be developed consistent with best practices within the professional archaeological and historical resources communities and correspond with mitigation measures for similar scale projects conducted previously in California by LADWP and other proponents.

3.18.4 Environmental Consequences

TCR-1: *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 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)?*

No Project Alternative

Under the No Project Alternative, the Proposed Project would not be constructed and existing land uses would remain as in existing conditions. The No Project Alternative would not contribute to any new tribal cultural resource effects. Therefore, no direct or indirect construction impacts related to tribal cultural resources would occur under the No Project Alternative.

Build Alternatives - Construction

The CDSM Alternative and the Excavate and Recompact Alternative would result in the same impacts to tribal cultural resources as the footprints, staging areas, and haul routes of the Proposed Project components would be the same. The difference between the Build Alternatives would be the method of construction of NHD2; and the construction schedule timeline, including the haul truck trips, personnel, and duration.

Potential impacts to cultural resources that are listed or eligible for listing under the Build Alternatives are discussed in detail in Section 3.5.5. BLM is currently consulting with tribal representatives regarding the presence/absence of tribal cultural resources within the Project Site. If the significance of any identified tribal cultural resources is linked to a particular soundscape or sense of quiet, impacts may occur during construction activities. Should any tribal cultural resources be identified during ongoing consultation efforts, BLM would consult with appropriate tribal representatives and incorporate a monitoring program for the Proposed Project. Therefore, in order to minimize impacts to potential tribal cultural resources in the Project Site, Mitigation Measures TCR-A, TCR-B, TCR-C, and TCR-D would be implemented.

As discussed above, tribal consultation for the Project conducted by BLM and LADWP in May and June 2017 noted concerns by the Lone Pine Paiute-Shoshone Tribe and Big Pine Paiute Tribe related to the location of cultural site CA-INY-9347 and its potential for disturbance during Project construction activities. As currently designed, the Proposed Project would not be able to feasibly avoid impacting a portion of the site during Project grading activities, and therefore impacts would have the potential to be significant. However, the Proposed Project would not adversely affect the majority of the site that contributes to its eligibility. Implementation of Mitigation Measure TCR-D would reduce the impacts to less than significant. In addition, grading activities would be monitored by a Native American monitor as described in Mitigation Measure TCR-C, further ensuring the portions of the site contributing to its eligibility are not impacted.

Ongoing Native American consultation and implementation of Mitigation Measures TCR-A, TCR-B, TCR-C, and TCR-D would ensure that impacts to tribal cultural resources would remain less than significant.

Build Alternatives - Operation

Tribal cultural resources would likely only be subject to adverse effects during construction activities. NHD2 and the LAA Realignment would require similar maintenance as the existing Dam and existing LAA. The new Dam and LAA Realignment would remain in place and no ground disturbing activities would occur. The basin would require dredging every ten to 15 years during operation of the Proposed

Project; however, any sediments would already be disturbed, having been recently deposited in the basin by the LAA system. Maintenance of the basin would be similar to existing maintenance for the LAA and NHR. Once completed, the majority of the existing Cactus Flats Road would remain in place. Upon completion of construction, the LAA Excavation Area would be revegetated. No activities would occur on the site, including ground-disturbing or earthmoving activities. Thus, operational impacts related to tribal cultural resources would not occur.

TCR-2: *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 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 Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.*

No Project Alternative

Under the No Project Alternative, the Proposed Project would not be constructed and existing land uses would remain as in existing conditions. The No Project Alternative would not contribute to any new tribal cultural resource effects. Therefore, no direct or indirect construction impacts related to tribal cultural resources would occur under the No Project Alternative.

Build Alternatives – Construction

Potential impacts to cultural resources under the Build Alternatives are discussed in detail in Section 3.5.5. BLM is currently consulting with appropriate tribal representatives regarding the presence/absence of tribal cultural resources within the Project Site. If the significance of any identified tribal cultural resources is linked to a particular soundscape or sense of quiet, impacts may occur during construction activities. Should any tribal cultural resources be identified during ongoing consultation efforts, BLM would consult with appropriate tribal representatives and incorporate a monitoring program for the Proposed Project. Therefore, in order to minimize impacts to potential tribal cultural resources in the Project Site, Mitigation Measures TCR-A, TCR-B, TCR-C, and TCR-D would be implemented.

As discussed above, cultural site CA-INY-9347 has a potential for disturbance during Project construction activities. As currently designed, the Proposed Project would not be able to feasibly avoid impacting a portion of the site during Project grading activities, and therefore impacts would have the potential to be significant. However, the Proposed Project would not adversely affect the majority of the site that contributes to its eligibility. Implementation of Mitigation Measure TCR-D would reduce the impacts to less than significant. In addition, grading activities would be monitored by a Native American monitor as described in Mitigation Measure TCR-C, further ensuring the portions of the site contributing to its eligibility are not impacted.

Ongoing Native American consultation and implementation of Mitigation Measures TCR-A, TCR-B, TCR-C, and TCR-D would ensure that impacts to tribal cultural resources would remain less than significant.

Build Alternatives - Operation

Tribal cultural resources would likely only be subject to adverse effects during construction activities. NHD2 and the LAA Realignment would require similar maintenance as the existing Dam and existing LAA. The new Dam and LAA Realignment would remain in place and no ground disturbing activities would occur. The basin would require dredging every ten to 15 years during operation of the Proposed Project; however, any sediments would already be disturbed, having been recently deposited in the basin

by the LAA system. Maintenance of the basin would be similar to existing maintenance for the LAA and NHR. Once completed, the majority of the existing Cactus Flats Road would remain in place. Upon completion of construction, the LAA Excavation Area would be revegetated. No activities would occur on the site, including ground-disturbing or earthmoving activities. Thus, operational impacts related to tribal cultural resources would not occur.

3.18.5 Mitigation Measures

If potential tribal cultural resources are identified during consultation efforts, mitigation measures TCR-A, TCR-B, TCR-C, and TCR-D would be implemented to reduce impacts to potential tribal cultural resources.

TRC-A Flagging of Avoidance Areas – The preferred approach to tribal cultural resources within the Project APE is avoidance. The delineation and monitoring of Environmentally Sensitive Areas (ESAs) during construction will ensure that known sites are avoided where possible. Avoidance areas will be flagged or otherwise marked before construction activities by a qualified professional archaeologist who meets the Secretary of the Interior's Standards for Archaeology and a tribal cultural resources monitor. Tribal cultural resources locations and a 15 meter (50 foot) buffer around each location will be included in the ESA. Construction Managers will be informed that disclosure of tribal cultural resource site locations to non-project personnel is prohibited. The workforce training program (AR-A) will include information about ESAs and an advisory that it is illegal to knowingly disturb, vandalize, or loot a tribal cultural resource site. Flagging or other marking will be removed once construction is completed in an area.

TRC-B Conduct Tribal Monitoring in Areas of Sensitivity; Halt Work in the Event of a Discovery - Before ground-disturbing construction, LADWP will include a monitoring plan in their work plan or in the contract conditions of the construction contractor, identifying the following steps to be taken in the event of the inadvertent discovery of tribal cultural resources.

A Native American monitor will be present to observe construction at geographic locations that are sensitive for unidentified tribal cultural resources. Such locations may consist of construction areas near identified tribal cultural resources, or in other areas of identified sensitivity based on previous inventory work.

In the event of a tribal cultural resource discovery, work will cease in the immediate vicinity of the find, based on the direction of the Native American monitor or the apparent location of tribal cultural resources if no monitor is present. A qualified professional archaeologist who meets the Secretary of the Interior's Standards for Archaeology will assess the significance of the find and make recommendations for further evaluation and treatment as necessary in consultation with the tribal cultural resources monitor. These steps will include evaluation for the CRHR and NRHP and necessary treatment to resolve significant effects if the resource is an historical resource or historic property. If the resource is an historical resource (eligible for the CRHR or NRHP), preservation in place will be considered as the first priority. If data recovery is the only feasible mitigation, LADWP will adopt a data recovery plan as required under CEQA Guidelines Section 15126.4(b)(3)(C) and NEPA Guidelines.

TRC-C Inadvertent Discovery – LADWP will develop and implement procedures for their personnel and contractors in the event that tribal cultural resources are discovered or unanticipated effects on tribal cultural resources occur during the Proposed Project's construction or operation. These procedures will be developed prior to the initiation of ground disturbance activities for the Proposed Project in accordance with 36 CFR § 800.13 (a)(2)(b) Post-review

Discoveries. Procedures will address such situations occurring once construction has commenced and throughout operation of the Proposed Project.

TCR-D Phase III Data Recovery to Reduce Adverse Effects – For significant tribal cultural resources that cannot be avoided during construction, mitigative data recovery may be necessary before construction. Planning for data recovery excavation to mitigate the loss of substantial and significant cultural deposits will be based on the site's research potential beyond that realized during site recording and testing. The data gathered during the test investigation and the data recovery research design will guide the planning of full-scale excavation. Data recovery may range from detailed inspection and recordation of the resource, to supplemental historic research, to controlled excavation of construction impact zones. It is anticipated that archaeological data recovery would be the measure of last resort, to be undertaken only on significant resources where the resource cannot be avoided or impacts substantially decreased through other measures. The cultural resources specialist will consult with the BLM and LADWP regarding excavations for mitigation.

A professional archaeologist who meets the Secretary of the Interior's Standards for Archaeology will prepare a Data Recovery Plan for data recovery or additional mitigation of NRHP or CRHR eligible sites that cannot be avoided. The plan will include a site-specific research design and will direct any archaeological data recovery that is proposed. LADWP will submit the proposed research design and scope of work to BLM's archaeologist for review and consultation with SHPO and Native American groups as necessary and appropriate.

Data recovery methods, sample sizes, and procedures will be detailed in the Data Recovery Plan for SHPO review. If data recovery is necessary, sampling for data recovery excavations will follow standard statistical sampling methods, but sampling will be confined, as much as possible, to the direct impact area.

Data recovery on most sites would consist of surface collection and sample excavation. Only on very small sites would complete excavation or collection be considered an appropriate treatment. Other forms of mitigation may also include the collection of oral histories, historical documentation, including architectural and engineering documentation, preparation of a scholarly work, or some form of public awareness or interpretation.

LADWP will ensure that the authorized professional archaeologist performs the data recovery, preparation for analysis, preparation for curation, and delivery for curation of all cultural resource materials. LADWP will provide a copy of a curation agreement from a public repository that meets the requirements set out in 36 CFR 79 for the curation of cultural resources. In addition, LADWP will ensure that all cultural resource materials, maps, and data collected during data recovery and mitigation for the Proposed Project are delivered to the repository following the approval of the Cultural Resources Report. LADWP will pay any fees for curation required by the repository. BLM will retain ownership of artifacts collected from BLM-managed lands.

3.18.6 Residual Impacts After Mitigation

Implementation of Mitigation Measures TCR-A, TCR-B, TCR-C, and TCR-D would ensure that construction impacts to tribal cultural resources would be reduced to a less than significant level.

3.18.7 NEPA Conclusions

Under the No Project Alternative, the Project Site would continue to function as it does today, and no excavation or other construction activities that may affect potential tribal cultural resources would occur. Therefore, the No Project Alternative would not have a substantial adverse effect on tribal cultural

resources. Because efforts to identify tribal cultural resources have not yet been completed, potential impacts from Build Alternatives cannot be identified at this time. The Proposed Project could potentially impact tribal cultural resources as yet unidentified tribal cultural sites may exist within the Proposed Project footprint as well as haul routes, access roads, and staging areas. Implementation of Mitigation Measures TCR-A, TCR-B, TCR-C, and TCR-D would reduce adverse effects to tribal cultural resources to the greatest extent possible.

3.19 Utilities and Service Systems

This section analyzes the potential impacts of the Proposed Project as it relates to utilities, service systems, and energy. The applicable laws, regulations, and methods used to determine the effects of the Proposed Project are described herein. The section describes the affected environment and analyzes the environmental consequences of the Proposed Project and, if applicable, provides mitigation measures.

3.19.1 Regulatory Setting

Federal

National Pollutant Discharge Elimination System, 1972

The NPDES is a permitting system that permits discharge limits and conditions for discharges from municipal wastewater treatment facilities to waters of the United States, as authorized by USEPA.

Resource Conservation and Recovery Act, 1976

The Resource Conservation and Recovery Act gives USEPA the authority to control hazardous waste, which includes generation, transportation, treatment, storage, and disposal of hazardous wastes.

Desert Renewable Energy Conservation Plan Land Use Plan Amendment of 2016

The DRECP LUPA, approved by BLM in September 2016, is an amendment to the BLM CDCA Plan. The key objectives of the DRECP are to streamline renewable energy development and to provide for long-term conservation and management of special-status species, vegetation, and other resources within the DRECP Plan area. The DRECP identifies Development Focus Areas and Variance Process Lands where renewable energy development is more streamlined, as well as conservation areas, and several other land uses. The DRECP LUPA implements its objectives through specific CMAs. Some CMAs apply across the entirety of the DRECP Plan area, while others apply only to specific land uses. The DRECP LUPA contains several CMA related to utilities and service systems. LUPA-SW-30 requires compliance with long term or short term domestic water use and wastewater treatment. LUPA-BIO-6 requires that work areas will be kept free of trash and debris, and that trash will be covered or kept in closed containers and removed at regular intervals. LUPA-BIO-13 and LUPA-BIO-16 requires that long-term nighttime lighting be limited to the minimum necessary for project security, and that lighting is shielded appropriately to avoid attracting wildlife. CMAs not applicable to utilities and service systems include: WILD-LANDS-1, 3; DFA-RE-1; VPL-BIO-RE-3; and GPL-3, 4. The consistency of the Proposed Project with the DRECP CMAs is provided in Appendix B of this Draft EIR/EA.

State

Assembly Bill 54, Drinking Water

AB 54 requires mutual water companies to provide service area maps of the boundaries of the properties that the mutual water company serves and prohibiting expansion without approval from the appropriate local agency formation commission. AB 54 also requires that mutual water companies comply with the California Safe Drinking Water Act and California Water Works standards in construction on public water systems operated by the mutual water company, which include regulations for reservoirs and wells.

California Code of Regulations Title 14, Division 7

Title 14, Division 7 of the CCR is administered by the California Department of Resources Recycling and Recovery (CalRecycle) and regulates nonhazardous waste management in the state through provisions of permits.

California Energy Commission

The California Energy Commission is the state's primary energy policy and planning agency. The Energy Commission sets policy regarding future energy needs, advancing alternative and renewable transportation fuels and technologies, and promoting energy efficiency.

California Environmental Quality Act, 1970

Appendix F of the CEQA Guidelines requires that EIRs include a discussion of the potential energy impacts of proposed projects to avoid inefficient and wasteful consumption of energy. Potentially significant energy implications of a project must be considered in an EIR to the extent relevant and applicable to the project, and include but are not limited to energy consuming equipment, energy conservation equipment and design features, environmental setting, and total estimated daily vehicle trips generated by the project.

California Integrated Waste Management Act, 1989

The California Integrated Waste Management Act (AB 939) was adopted to redefine waste management practices and to minimize the volume and toxicity of solid waste that is disposed at landfill facilities in the state. AB 939 requires that each local jurisdiction prepare a Source Reduction and Recycling Element to show reduction in the amount of solid waste being disposed at landfills, with diversion objectives of 50 percent by the year 2000.

California Urban Water Management Planning Act, 1983

The California Urban Water Management Planning Act is required by the California DWR and requires that every urban water supplier that provides municipal and industrial water to more than 3,000 customers (or supplies more than 3,000 acre-feet per year) prepare and adopt an urban water management plan every five years in accordance with prescribed requirements of the CWC in order to be eligible for state grant funding and/or financial assistance.

California Water Code

The CWC has several laws relating to water, including the acquisition and regulation of water rights, the distribution of water, and the establishment and operation of public districts relating to water.

California Water Plan, 2013

The California Water Plan evaluates and assesses regional and statewide resource management strategies to reduce water demand, increase water supply, reduce flood risk, and improve water quality. Updated every five years, the water plan guides State investments in infrastructure, advances integrated water management outcomes, and attempts to meet the CWC requirements.

Local

Inyo County General Plan

The ICGP provides the goals and policies that guide future development within Inyo County. Table 3.19-1 lists the goals and policies pertaining to utilities and service systems, including those for water, wastewater, stormwater drainage, and solid waste facilities.

TABLE 3.19-1
INYO COUNTY GENERAL PLAN GOALS AND POLICIES

Goal	Policy
General	
PSU-1. To ensure the timely development of public facilities and the maintenance of adequate service levels for these facilities to meet the needs of existing and future County residents.	PSU-1.1. Facilities and Services for New Development: The County shall ensure through the development review process that public facilities and services will be developed, operational, and available to serve new development. The County shall not approve new development where existing facilities are inadequate unless the applicant can demonstrate that all necessary public facilities will be installed or adequately financed and maintained (through fees or other means).
	PSU-1.2. On-Site Infrastructure: The County shall require all new development, including major modifications to existing development, to construct necessary on-site infrastructure to serve the project in accordance with County standards.
	PSU-1.6. Coordination: The County shall require that the provision of streets, sewer, water, drainage, and other needed infrastructure be coordinated in a logical manner between adjacent developments so as to reduce design, construction and maintenance costs.
CPT-1. To ensure that regional conveyance systems are designed and located to serve Inyo County residents while not significantly impacting existing communities or regional viewsheds.	CPT-1.1. Placement of Corridors: The County shall consider the visual and environmental impacts with placement of regional conveyance corridors.
Water	
PSU-3. To ensure that there will be a safe and reliable water supply sufficient to meet the future needs of the County.	PSU-3.1. Efficient Water Use: The County shall promote efficient water use and reduced water demand by: • Requiring water-conserving design and equipment in new construction; • Encouraging water-conserving landscaping and other conservation measures; • Encouraging the retrofitting of existing development with water-conserving devices; • Providing public education programs; • Distributing outdoor lawn watering guidelines; • Promoting water audit and leak detection programs; and • Enforcing water conservation programs;
WR-1. Provide an adequate and high quality water supply to all users within the County.	WR-1. Water Provisions: The County shall review development proposals to ensure adequate water is available to accommodate projected growth.
Wastewater	
PSU-4. To ensure adequate wastewater collection, treatment, and disposal.	PSU-4.4. Permitting Individual On-Site Systems: The County shall permit individual on-site sewage disposal systems on parcels that have the area, soils, and other characteristics that permit installation of such disposal facilities without threatening surface or groundwater quality or posing any other health hazards and where community sewer service is not available and cannot be feasibly provided.
Stormwater Drainage	
PSU-5. To collect and dispose of stormwater in a matter that minimizes inconvenience to the public, minimizes potential water-related damage, and enhances the environment.	PSU-5.1. Project Design: The County shall encourage project designs that minimize drainage concentrations and coverage by impermeable surfaces.
	PSU-5.2. Maintenance: The County shall require the maintenance of all drainage facilities, including detention basins and both natural and manmade channels, to ensure that their full carrying capacity is not impaired.
	PSU-5.3. Natural Systems: The County shall encourage the use of natural stormwater drainage systems in a manner that preserves and enhances natural features.
	PSU-5.5. Drainage Disposal: New development shall have surface drainage disposal accommodated in one of the following ways: • Positive drainage - positive drainage to a County-approved storm drain or retention/detention facility.

TABLE 3.19-1
INYO COUNTY GENERAL PLAN GOALS AND POLICIES

Goal	Policy
	• On-site drainage - drainage retained on-site within the development. Drainage directly to a natural system (i.e., stream, creek) is discouraged and is subject to the Lahontan Regional Water Quality Control Board (LRWQCB) and California Department of Fish and Game provisions.
	PSU-5.6. Drainage System Requirements: Future drainage system requirements shall comply with applicable state and federal non-point source pollutant discharge requirements.
Solid Waste Facilities	
PSU-6. To ensure the safe and efficient disposal or recycling of solid waste generated in Inyo County.	PSU-6.1. Solid Waste Reduction and Recycling: The County shall promote maximum use of solid waste reduction, recycling, composting, and environmentally safe transformation of wastes.
	PSU-6.3. Recycled Products: The County shall encourage businesses to use recycled products in their manufacturing processes and consumers to buy recycled products. The County shall use recycled products or products containing recycled materials when possible.

Note: PSU=Public Services and Utilities; CPT=Canals, Pipelines & Transmission Cables; WR=Water Resources
Source: Inyo County General Plan, 2001. Website http://inyoplanning.org/general_plan/goals/ch4.pdf; http://inyoplanning.org/general_plan/goals/ch8.pdf, accessed August 2015.

Inyo County Municipal Code

The Inyo County Municipal Code has several provisions that govern solid waste.

- Title 7.08, Solid Waste Collection and Disposal: Regulates the collection and disposal of solid waste regarding storage and removal of solid waste, issuance of permits, and equipment standards for vehicles transporting solid waste.
- Title 7.10, Solid Waste Disposal Sites: Regulates solid waste disposal sites regarding locations of public disposal sites, unlawful dumping, and hazardous and liquid wastes.
- Title 7.11, Construction and Debris Ordinance: The Inyo County Waste Management Department (IWM) is responsible for monitoring construction and demolition material which is accepted or diverted at County landfills. IWM coordinates with construction entities regarding daily landfill limits and project schedule, permitting, and BMPs for disposing of or recycling debris.

LADWP Urban Water Management Plan

The LADWP Urban Water Management Plan is required by the California Urban Water Management Planning Act. The plan is consistent with the City's master plan for reliable water supply and resources management and contains the City's long-term water resources management strategy through 2040.

Lahontan Regional Water Quality Control Board

LRWQCB is a regional division of the SWRCB. The Lahontan Region extends from the Oregon border to the northern Mojave Desert. The South Lahontan Basin includes three major surface water systems (the Mono Lake, Owens River, and Mojave River watersheds) and a number of separate, closed groundwater basins. LRWQCB adopts and implements Water Quality Control Plans (Basin Plans), set by the SWRCB, which recognize regional differences in natural water quality, actual and potential beneficial uses, and water quality problems associated with human activities.

Water quality standards and control measures for surface and ground waters of the Lahontan Region are contained in the 1995 Water Quality Control Plan for the Lahontan Region (Basin Plan). The Basin Plan designates beneficial uses for water bodies and establishes water quality objectives, waste discharge prohibitions, and other implementation measures to protect those beneficial uses.

3.19.2 Affected Environment

Water

The Inyo County Water Department and LADWP jointly manage water resources in the Owens Valley under the 1991 Inyo/Los Angeles Long Term Water Agreement.[8] The Inyo County Water Department is responsible for coordinating the implementation and oversight of projects arising from the Inyo/Los Angeles Long-Term Water Agreement and associated agreements, evaluating hydrologic and related environmental impacts of groundwater transfers, and assessing LADWP surface and groundwater management. However, LADWP maintains majority ownership of the land in Owens Valley and the associated water rights.

Inyo County has several water supply purveyors. The Inyo County Environmental Health Services Department regulates 105 active public and state small water systems located throughout Inyo County. These water systems include: 31 community systems; 11 non-transient non-community systems such as schools, institutions, and places of employment; 47 transient non-community systems such as restaurants, campgrounds, and resorts; and 16 state small systems (Inyo County, 2012a).

Community service districts and private systems, including groundwater wells, also provide domestic water in other parts of Inyo County. The Project Site is located in a less populated and undeveloped area of Inyo County and does not feature connections to any municipal water provider. Adjacent to the Project Site, the community of Haiwee's potable water supply service consists of individual wells, including the independent well located at the reservoir keeper's residence. To the northwest of the Project Site, the communities of Olancha and Cartago are served by individual groundwater wells operated by the Cartago Mutual Water Company. The LAA System, including NHD and NHR, is the only major water facility near the Project Site. However, the LAA System does not deliver water to the Project Site, but rather conveys water from the Eastern Sierra Nevada mountains, through Owens Valley and the Project Site, to the City of Los Angeles. According to the 2015 LADWP Annual Owens Valley Report, the volume of water transported via the LAA in the past four years has been exceptionally low due to extreme drought in the State of California. In 2015, the Eastern Sierras experienced their fourth consecutive year of extreme drought and the snowpack was measured to be four percent of normal, the lowest on record. In 2015, water transported to NHR and South Haiwee Reservoir was available for use by the City of Los Angeles only after the water use demands in Owens Valley were met for the 2015 summer season.

Water use from the Owens Valley consists of irrigation, stockwater, recreation, wildlife projects, dust abatement, enhancement and mitigation supply, and domestic or commercial use. The primary consumptive use of water in the Owens Valley is the Owens Lake Dust Mitigation Program, managed by LADWP. Owens Lake is located approximately 15 miles north of the Project Site. Domestic water demand is low due to the region's sparse population.

Wastewater

The Project Site is located in a less populated and undeveloped area of Inyo County and does not feature a connection to a municipal wastewater conveyance system. Less populated areas, like the communities near the Project Site, utilize individual septic systems and community septic systems maintained by local operators. The communities of Haiwee, adjacent to the Project Site, and Olancha, north of the Project Site utilize individual septic systems.

[8] The primary goal of the 1991 Inyo/Los Angeles Long Term Water Agreement is to manage the water resources within Inyo County in order to avoid decreases and changes in vegetation, and ensure that no significant effect on the environment occurs which cannot be acceptably mitigated while providing a reliable supply of water for export to Los Angeles and for use in Inyo County.

Solid Waste

IWM is responsible for the operation of five landfills, four transfer stations, and four bin transfer sites in the County. IWM offers recycling of numerous materials at the landfills and manned transfer stations, and accepts construction and demolition materials, including broken concrete. The closest landfill to the Project Site is the Lone Pine Landfill, which is located approximately 29 miles north of the existing Dam. The Lone Pine Landfill has a daily permitted intake of 22 tons and has a remaining capacity of approximately one million cubic yards with an estimated closure year of 2065. The only landfill in Inyo County permitted to accept non-friable asbestos and contaminated soil is the Bishop-Sunland Landfill, located approximately 83 miles north of the Project Site. Bishop-Sunland Landfill has a daily permitted intake of 120 tons and a remaining capacity of approximately 3.3 million cubic yards. Both the Lone Pine Landfill and Bishop-Sunland Landfill operate at approximately half their annual capacity. Table 3.19-2 lists the landfills where solid and industrial waste, such as construction and demolition debris, can be disposed, and the types of materials accepted at each landfill. Figure 3.19-1 shows the locations of the landfills.

TABLE 3.19-2
EXISTING LANDFILLS IN INYO COUNTY

Figure 3.19-1 ID	Landfill	Distance to Project Site (Miles)	Daily Permitted Intake (Tons)	Remaining Capacity (cubic yards)[a]	Accepted Materials
1	Bishop-Sunland Landfill	83	120	3,314,752	- Asbestos - Contaminated soil - All Other Materials Listed Below
2	Independence Landfill	43.5	10	126,513	- Construction and demolition - Clean soil - Clean scrap metal - Special handling - Tires - Mixed debris loads - Organics - Manufacturing wood material - Tree stumps
3	Lone Pine Landfill	29	22	1,002,586	

Note:
[a] Data retrieved from the Inyo County REGPA, 2014
Sources: CalRecycle, 2015. Website http://www.calrecycle.ca.gov/FacIT/facility/search.aspx, accessed September 2015; Inyo County Integrated Waste Management, 2012, Website http://www.inyocountysolidwaste.com/inyo_waste_locations.html, accessed September 2015

Stormwater Drainage Facilities

The Project Site is located in a rural and sparsely populated area of Inyo County that does not have any significant stormwater drainage facilities and are not served by any public stormwater management system. Due to the natural topography of the Project Site, which is characterized by barren landscape with sparse desert vegetation, stormwater generally evaporates, infiltrates into the ground, or follows surface drainage paths such as rills and gullies to the existing LAA and NHR, or local water bodies via several unnamed stream paths. The surface drainage area for the sites of the NHD2 components (including the basin), the Cactus Flats Road Realignment, and the LAA Realignment sites are approximately 5,683 acres, 860 acres, and 5,504 acres, respectively. The surface drainage area for the LAA Excavation Area has an existing stream path located on the southern portion of the site that drains into the LAA with flows from the west.

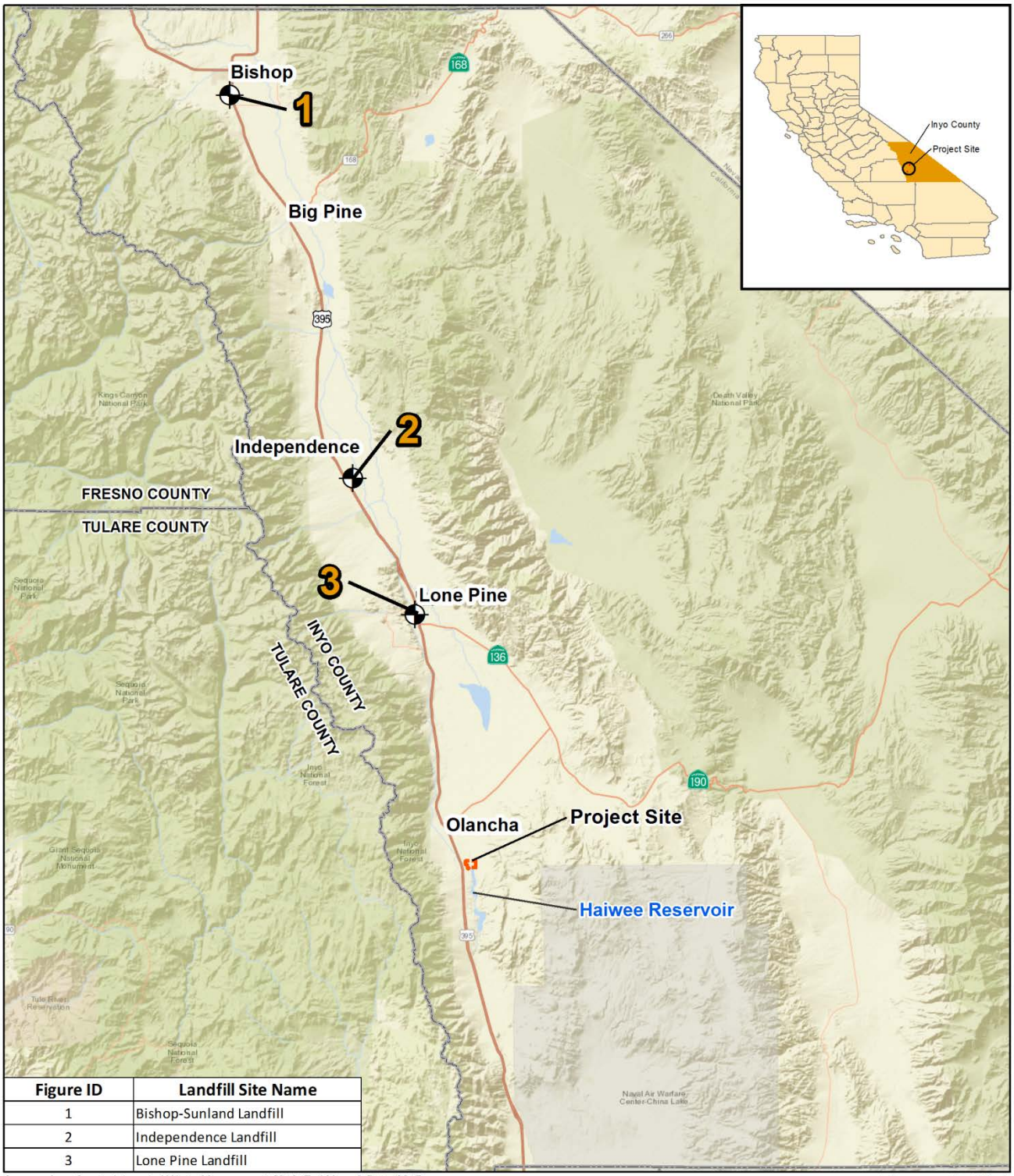

Figure ID	Landfill Site Name
1	Bishop-Sunland Landfill
2	Independence Landfill
3	Lone Pine Landfill

Sources: Inyo County Integrated Waste Management, 2016. Esri Maps & Data, 2017;
Prepared By: AECOM, 2017.

Figure 3.19-1

Existing Landfill Sites within the Project Vicinity

Energy

LADWP and Southern California Edison are the providers of electricity in Inyo County. LADWP has transmission lines that run along the east side of the Owens Valley, beginning in the Owens River Gorge and continuing into the San Fernando Valley. The Southern California Edison transmission line service area includes Inyo County and has ties into LADWP lines.

3.19.3 Methodology for Analysis

The utilities and service systems section evaluates the potential of the Proposed Project to impact the existing operation of utilities and service systems provided by Inyo County. This analysis was based in part on the existing conditions section of the Hydrology and Water Quality Technical Report (Appendix K) prepared for the Proposed Project. In order to establish an existing baseline and evaluate the impacts of the Proposed Project, the following agency's websites were consulted for general information: LADWP, Inyo County Water Department, Inyo County Environmental Health Services Department, Inyo County Waste Management Department, and CalRecycle. Planning documents, including the Inyo County *Draft Program EIR Renewable Energy General Plan*, Inyo County General Plan, and Inyo County Code were also reviewed for relevant plans, policies, goals, and information.

CEQA Significance Criteria

The thresholds of significance for the Proposed Project's potential to impact utilities and service systems are based on Appendix G of the State CEQA Guidelines. The following thresholds of significance were analyzed:

- Would the project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?
- Would the project require, or result in, the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?
- Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?
- Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?
- Would the project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Appendix F of the State CEQA Guidelines provides guidance for evaluation of environmental impacts related to energy. Impacts on energy conservation are considered significant if implementation of the Proposed Project would:

- Result in wasteful, inefficient, and unnecessary consumption of energy during construction and operation of the project.

The Appendix G significance criteria listed below were scoped out of the analysis for further consideration in the IS (Appendix A), and are discussed in Chapter 4, Other CEQA and NEPA Considerations, of this Draft EIR/EA.

- Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?
- Would the project comply with federal, state, and local statutes and regulations related to solid waste?

NEPA Requirements

The term "significantly" as used in NEPA requires considerations of both context and intensity (40 CFR 1508.27). Therefore, thresholds serve as a benchmark for determining if a project action would result in a significant adverse environmental impact when evaluated against the baseline. The environmental effects analysis of the Proposed Project related to utilities and service systems includes an assessment of the context and intensity of the impacts as defined in the NEPA implementing regulations, 40 CFR 1508.27, and the BLM *NEPA Handbook H-1790-1 of 2008*. The BLM *NEPA Handbook H-1790-1* requires that duration be considered and that both short- and long-term adverse and beneficial impacts be disclosed in the NEPA analysis. The effects analysis must demonstrate that BLM took a "hard look" at the impacts of the action. The level of detail must be sufficient to support reasoned conclusions by comparing the amount and the degree of change (impact) caused by the proposed action and alternatives (BLM *NEPA Handbook H-1790-1*, 2008, p. 55). Additionally, direct, indirect, residual, and cumulative impacts for the Proposed Project must be considered. BLM does not provide a determination on the level of significance in a NEPA document. Rather, BLM leaves that determination to the FONSI which will be completed prior to the signing of a Decision Record. Any characterization of significance in this Draft EIR/EA applies only to the CEQA determination.

3.19.4 Environmental Consequences

UT-1: *Would the project require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?*

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

No Project Alternative

Under the No Project Alternative, the existing Dam, Cactus Flats Road, and LAA would remain on the Project Site as under existing conditions. The Project Site does not currently feature connections to water or wastewater conveyance or treatment facilities. Typical maintenance activities would continue to occur in the same manner as they do under existing conditions. No excavation for or purchase of earthen material would be required. Therefore, no impact related to construction of new water facilities or expansion of existing facilities or a determination that there would be insufficient water supplies available to serve the project from existing entitlements and resources, requiring new or expanded entitlements would occur under the No Project Alternative.

Build Alternatives - Construction

CDSM Alternative

Construction of the NHD2 components, Cactus Flats Road Realignment, LAA Realignment, and diversion channel and NHD modifications would require water for dust control, excavation, mixing concrete, and other construction-related activities. Construction activities at the LAA Excavation Area would also require water for revegetation at the end of construction, which would restore the site to natural conditions to minimize impacts. During construction, non-potable water would be supplied from multiple sources, including from NHR via pumps, from construction dewatering wells, and/or from water tanks brought in from offsite. Water for dust suppression could be supplied out of the existing NHR. As previously discussed, the LAA Excavation Area is adjacent to the reservoir keeper's residence; however, water from the individual water well at the residence would not be used for construction since water usage from that location is at capacity. The Proposed Project would not impact the water supply of this well. In addition, all water used at the Project Site would be obtained in compliance with LAA operating requirements and local water-related agreements. Construction activities requiring water would be limited and temporary, and would not consume sufficient amounts of water such that the construction or

expansion of a water treatment facility, or new water entitlements would be required. Therefore, impacts related to the construction or expansion of water treatment facilities would be less than significant under the CDSM Alternative. Additionally, construction activities associated with the CDSM Alternative would not require new or expanded water entitlements.

Excavate and Recompact Alternative

Similar to the CDSM Alternative, construction of the NHD2 components, Cactus Flats Road Realignment, LAA Realignment, and diversion channel and NHD modifications would require water for dust control and other construction-related activities. Therefore, impacts related to the construction or expansion of water treatment facilities would be less than significant under the Excavate and Recompact Alternative. Additionally, construction activities associated with the Excavate and Recompact Alternative would not require new or expanded water entitlements.

Build Alternatives - Operation

During operation, the NHD2 components, Cactus Flats Road Realignment, and LAA Realignment would be passive uses that would require minimal maintenance. The basin would be filled with water and require minimal maintenance similar to the existing NHD, NHR, and LAA as it would operate as part of the LAA system. Operation of the Proposed Project would use similar amounts of water to existing conditions. The Project components would be inspected and maintained by existing staff and no additional staff would be required for the operation of the Proposed Project. Therefore, operation of the Proposed Project would not require the construction or expansion of a water treatment facility, and no new or expanded water entitlements would be required. No impact would occur with operation of any of the Build Alternatives.

UT-2: *Would the project require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?*

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

No Project Alternative

Under the No Project Alternative, the existing Dam, Cactus Flats Road, and LAA would remain on the Project Site as under existing conditions. The Project Site does not currently feature a connection to wastewater treatment provider, and the No Project Alternative would be consistent with this. No excavation for or purchase of earthen material would be required. Therefore, no impact related to construction of new or expanded wastewater treatment facilities would occur under the No Project Alternative.

Build Alternatives - Construction

CDSM Alternative

Wastewater would be generated by construction workers and typical construction activities, such as vehicle washing. At the peak of construction of the Proposed Project, there would be 111 daily personnel who would generate wastewater under the CDSM Alternative. Portable, self-contained toilets would be used during construction, and maintained and operated under stringent standards. Construction-related wastewater generated at the Project Site would be disposed offsite in a permitted facility. Wastewater generated from construction activities, such as vehicle washing, would be handled in accordance with the CWA and general good housekeeping methods for construction (refer to Section 3.10, Hydrology and Water Quality).

Construction of NHD2 and the basin may require dewatering during excavation activities that could generate wastewater. If dewatering is necessary, dewatered groundwater would require analysis and/or treatment prior to discharge to surface water in the area. Treatment of groundwater would potentially involve a chemical precipitation process including coagulation, mixing, and filtration. Water would be treated through a portable treatment system, made up of water feed pumps, multiple dual filter systems, backwash pumps, chemical feed systems, and a central control panel. Discharge pumps would be used to transfer water to the LAA or NHR. The treatment systems would be powered by portable generators. Therefore, construction or expansion of a wastewater treatment facility to handle construction wastewater would not be required, and impacts would be less than significant.

Excavate and Recompact Alternative

At the peak of construction, there would be 86 daily personnel who would generate wastewaster under the Excavate and Recompact Alternative. The construction impacts of the Cactus Flats Road Realignment, LAA Realignment, and diversion channel and NHD modifications would be similar to the CDSM Alternative. Construction of NHD2 would generate wastewater as excavation for the foundation of NHD2 would require dewatering, and construction of the basin may also require dewatering that could generate wastewater. Dewatered groundwater would require analysis and/or treatment prior to discharge to surface water in the area; however, dewatered groundwater would be treated through a portable treatment system and construction or expansion of a wastewater treatment facility would not be required. Therefore, construction or expansion of a wastewater treatment facility to handle construction wastewater would not be required, and impacts would be less than significant under the Excavate and Recompact Alternative.

Build Alternatives - Operation

Operation of the Proposed Project would require minimal maintenance and any wastewater generated would be similar to existing conditions. The Proposed Project components would be inspected and maintained by existing staff, and no additional staff would be required. Therefore, operation of the Proposed Project would not require new or expanded wastewater treatment facilities, and no impact would occur under any Build Alternative.

UT-3: *Would the project require, or result in, the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?*

No Project Alternative

Under the No Project Alternative, the existing Dam, Cactus Flats Road, and LAA would remain on the Project Site as under existing conditions. The Project Site does not currently feature a connection to a stormwater drainage facility, and would remain as such under the No Project Alternative. Typical maintenance activities would continue to occur in the same manner as they do under existing conditions. No excavation for or purchase of earthen material would be required. Therefore, no impact to stormwater drainage facilities would occur under the No Project Alternative.

Build Alternatives - Construction

CDSM Alternative

Construction of NHD2 would require clearing of vegetation and disturbance of soils from excavation or trenching, which may increase stormwater runoff as disturbance of soils could increase the potential for erosion and/or siltation on the construction site. Construction of the east and west berms and basin leveling would require earthmoving, which could also increase the potential for erosion and/or siltation on the construction site. As described in the Project's Hydrology and Water Quality Technical Report (Appendix K), construction activities for NHD2 would not alter existing drainage patterns of Loco Creek, which will continue to drain to the LAA, and construction of the east berm would result in a minor change

in existing drainage patterns. However, the Project Site does not connect to any stormwater drainage facilities and stormwater evaporates or infiltrates into the ground. The vegetation within the Project Site would be reestablished after construction and the area surrounding the Project Site would remain relatively similar to existing conditions. Additionally, the surface drainage area of the Project Site is approximately 5,683 acres and is not anticipated to be impacted by construction of the NHD2 components. Therefore, stormwater drainage would not be altered such that new or expanded stormwater drainage facilities would be required, and impacts would be less than significant.

Construction of the Cactus Flats Road Realignment would include excavation, grading, concrete work, and construction of drainage improvements. As previously discussed, construction activities, such as excavation, may increase stormwater runoff. Furthermore, as discussed in Chapter 2, Project Description and Alternatives, a four-foot wide ditch and two two-foot by four-foot concrete culverts would be installed for drainage purposes. The stormwater drainage facilities constructed as a part of the Cactus Flats Road Realignment would help direct the flow of stormwater into existing natural drainage basins surrounding the Project Site, as there are no existing stormwater drainage facilities at the Project Site. As such, construction activities for the Cactus Flats Road Realignment, including the construction of a stormwater drainage facility, would result in a minor alteration to stormwater drainage. The surface drainage area for the Cactus Flats Road Realignment site is 860 acres. Construction is not expected to impede stormwater drainage such that new or expanded stormwater drainage facilities would be required; therefore, impacts would be less than significant.

Construction activities associated with the LAA Realignment would include the demolition of a portion of the existing LAA, excavation, grading, compaction, trenching, concrete work, widening a LADWP-owned access road, and constructing the realigned portion of the LAA and diversion structure. These activities could increase the rate of surface runoff as the LAA Realignment and diversion structure would slightly increase the impervious area within the Project Site; however, as previously discussed, the Project Site does not connect to any stormwater drainage facilities, and stormwater would either evaporate or infiltrate into the ground. The vegetation surrounding the Project Site would remain relatively similar to existing conditions and vegetation within the Project Site would be reestablished after construction. Furthermore, the surface drainage area of the LAA Realignment site is approximately 5,504 acres. Thus, construction of the LAA Realignment would result in a minor alteration to the existing stormwater drainage, which is not expected to require the construction or expansion of stormwater drainage facilities. Impacts would be less than significant.

Construction activities at the LAA Excavation Area would require excavation, trenching, and revegetation at the end of construction, which would restore the site to natural conditions to minimize impacts. The construction activities at the LAA Excavation Area would overlap with the LAA Realignment construction activities, and given that the LAA Realignment would travel through the LAA Excavation Area, it would alter the existing drainage patterns of the site. As previously discussed, the Project Site does not feature a connection to any municipal stormwater drainage facilities, and stormwater follows natural drainages, evaporates, or infiltrates into the ground. The LAA Excavation Area has a drainage area of approximately 5,504 acres, and stormwater would eventually drain into the LAA. While stormwater would need to be rerouted during construction to prevent stormwater from filling the pits, groundcover in the surrounding area would remain the same as existing conditions, and the site would be revegetated at the end of construction.

Construction activities associated with the diversion channel and NHD modifications would include excavation and concrete work, which may increase stormwater runoff as disturbance of soils could increase the potential for erosion and/or siltation at the construction site. Construction of the diversion channel may slightly increase the impervious area within the Project Site. Construction of the notch in NHD would require excavation, but would occur in the footprint of the existing Dam and would not impact stormwater. As previously discussed, the Project Site does not connect to any stormwater drainage

facilities, and stormwater either evaporates or infiltrates into the ground. Impacts would be less than significant.

Construction is not expected to impede stormwater drainage such that new or expanded stormwater drainage facilities would be required, and therefore, impacts would be less than significant under the CDSM Alternative.

Excavate and Recompact Alternative

The construction impacts of the NHD2 components, Cactus Flats Road Realignment, LAA Realignment, and diversion channel and NHD modifications would be the same as under the CDSM Alternative. Therefore, construction is not expected to impede stormwater drainage such that new or expanded stormwater drainage facilities would be required, and impacts would be less than significant under the Excavate and Recompact Alternative.

Operation

The NHD2 components, Cactus Flats Road Realignment, and LAA Realignment would operate as new or realigned infrastructure that may increase the rate of surface runoff and the flow of existing drainage patterns; however, the Proposed Project's design features would incorporate drainage. The NHD2 components and LAA Realignment would be designed to collect water from surrounding areas and provide additional storage. The LAA Excavation Area would also be restored following completion of construction activities and would no longer be active. Basin and slope protection measures would help prevent erosion once the basin is filled. The Cactus Flats Road Realignment would have a drainage ditch and concrete culverts that would help direct the flow of stormwater into existing natural drainage basins surrounding the Project Site. The area surrounding the Project Site would remain the same and stormwater would run off, evaporate, or infiltrate into the ground as it does under existing conditions. Therefore, operational impacts related to the construction or expansion of stormwater drainage facilities would be less than significant under both Build Alternatives.

UT-4: *Would the project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?*

No Project Alternative

Under the No Project Alternative, the existing Dam, Cactus Flats Road, and LAA would remain on the Project Site as under existing conditions. Typical maintenance activities that would generate solid waste would continue to occur in the same manner as they occur under existing conditions. No excavation for or purchase of earthen material would be required. Therefore, no impact to landfill capacity would occur under the No Project Alternative.

Build Alternatives - Construction

CDSM Alternative

Waste generation from the construction of the NHD2 components and the Cactus Flats Road Realignment would include vegetation from site clearing and miscellaneous debris from construction-related activities, such as solid waste from construction personnel and maintenance of equipment. Soils excavated during construction of the NHD2 and diversion channel would be stockpiled on the east side of the existing Dam and reused, or hauled offsite. Construction of the LAA Realignment would include demolition of the obsolete portion of the existing LAA. The demolition of the segment of the LAA would generate approximately 5,000 cubic yards of concrete (equivalent to approximately two tons per cubic yard) and steel (equivalent to approximately 6.5 tons per cubic yard), and some fencing over approximately 22 months. Soils excavated at the LAA Excavation Area would be stockpiled on-site and used for construction of NHD2 or revegetation of the site. Limited amounts of waste would be generated from site clearing and miscellaneous debris from construction-related activities. Waste would be covered and kept

in closed containers. As discussed previously, the nearest landfill to the Project Site is Lone Pine Landfill, located approximately 29 miles to the north, which accepts up to 22 tons of waste daily. Independence Landfill accepts 10 tons daily; and, Bishop-Sunland Landfill accepts 120 tons daily. Bishop-Sunland Landfill has a remaining capacity of over three million cubic yards. As shown in Table 3.19-2, these landfills accept the types of waste that construction of the Proposed Project would generate, such as concrete, fencing, mixed debris, and organics. The three landfills currently operate at approximately half capacity and have a daily accepted intake of approximately 142 tons of waste. In accordance with Inyo County Code, LADWP would coordinate with IWM regarding daily infill limits and project schedule to transport the construction waste to a landfill in the County which has adequate capacity to accept the waste. Therefore, the three landfills serving the Project area would have adequate capacity to accept the limited quantity of solid waste generated during construction of the NHD2 components, Cactus Flats Road Realignment, LAA Realignment, and diversion channel and NHD modifications, and impacts would be less than significant.

There are no known contaminated sites within the Project Site, and it is not anticipated that there is previously unidentified contamination (refer to Section 3.9, Hazards and Hazardous Materials). In addition, it is not anticipated that naturally occurring asbestos, found in serpentine rock formations in Inyo County, would be encountered. Should any contaminated soils or material containing non-friable asbestos be encountered, they would be disposed of at Bishop-Sunland Landfill, which is the only landfill in Inyo County that accepts non-friable asbestos. These materials would be handled in accordance with all applicable County and state hazardous waste regulations.

Therefore, the landfills serving the Project area would have sufficient permitted capacity to accommodate the Proposed Project's solid waste disposal needs under the Excavate and Recompact Alternative, and the impact would be less than significant.

Excavate and Recompact Alternative

The construction impacts of the NHD2 components would be similar to the CDSM Alternative. The construction impacts of the Cactus Flats Road Realignment, LAA Realignment, and diversion channel and NHD modifications would be the same as under the CDSM Alternative. Therefore, construction impacts to landfill capacity would be less than significant under the Excavate and Recompact Alternative.

Build Alternatives - Operation

Operation of the Proposed Project would generate limited quantities of waste similar to the quantities generated under existing conditions. The proposed Basin would need to be dredged every 10 to 15 years, and would generate limited quantities of waste. Dredged material would be disposed of in accordance with applicable federal, County, and state regulations. The Proposed Project components would be inspected and maintained by existing staff and no additional staff would be required. The LAA Excavation Area would be revegetated following completion of construction activities and would no longer be active. Therefore, operational impacts to landfill capacity would be less than significant under the Build Alternatives.

UT-5: *Would the project result in wasteful, inefficient, and unnecessary consumption of energy during construction and operation of the Project?*

No Project Alternative

Under the No Project Alternative, the existing Dam, Cactus Flats Road, and LAA would remain on the Project Site as under existing conditions. Typical maintenance activities that consume energy would continue to occur in the same manner as they occur under existing conditions. No excavation for or purchase of earthen material would be required. Therefore, no impact to energy consumption would occur under the No Project Alternative.

Build Alternatives - Construction

CDSM Alternative

During construction, the Proposed Project would require energy consumption for the operation of construction vehicles and equipment and worker trips. Some nighttime lighting may also be required in order to maintain construction schedules. Construction of the Proposed Project is expected to last approximately five years, and would consume energy primarily in the form of fossil fuels, such as diesel for construction vehicles and equipment and gasoline for worker trips. California regulations limit idling from both on-road and off-road diesel-powered equipment and are enforced by CARB. Limitations on idling of vehicles and equipment, and the requirement that equipment be properly maintained, would result in fuel savings. Also, given the high cost of fuel, contractors and owners have a strong financial incentive to avoid unnecessary energy consumption during the operation of off-road vehicles. Despite the increase in energy demand during construction, adherence with local, state, and federal regulations, which limit engine idling times, would reduce short-term energy demand. Therefore, impacts to energy consumption during construction would be less than significant under the CDSM Alternative.

Excavate and Recompact Alternative

Construction of the Proposed Project is expected to last approximately six years, and impacts related to energy consumption for the Excavate and Recompact Alternative would be similar to those under CDSM Alternative. Therefore, impacts to energy consumption during construction would be less than significant under the Excavate and Recompact Alternative.

Build Alternatives - Operation

During operation of the Proposed Project, energy consumption would remain similar to existing conditions as the NHD2, Cactus Flats Road Realignment, LAA Realignment, and diversion channel and NHD modifications would be passive uses. Energy would be consumed in similar amounts to existing conditions during routine maintenance of the Proposed Project components. Therefore, operational impacts to energy consumption would be less than significant under the Build Alternatives.

3.19.5 Mitigation Measures

The Proposed Project would result in less than significant impacts to utilities and service systems. No mitigation measures are required.

3.19.6 Residual Impacts After Mitigation

The Proposed Project would result in less than significant impacts to utilities and service systems under CEQA.

3.19.7 NEPA Conclusions

No Project Alternative

The No Project Alternative would not change the existing conditions of the Project Site and would not utilize any earthen material.

Build Alternatives

The Build Alternatives would result in the impacts described above. Impacts related to utilities and service systems would primarily occur during construction and would be temporary. The Proposed Project would comply with all federal, state, and local requirements, and coordinate with the County, as needed. In addition, the Proposed Project would comply with the DRECP LUPA CMAs related to waste, stormwater, and lighting. Energy-related CMAs would not apply as the Proposed Project would not include transmissions facilities or renewable energy activities. Construction of the Proposed Project

would not result in the construction or expansion of water or wastewater treatment facilities, and would not require additional water entitlements or wastewater treatment capacity, as the Project Site is not connected to any existing systems. Additionally, the Proposed Project would generate construction debris, including concrete, steel, fencing, and vegetation, as well as trash typical of construction (food containers, etc.), but would not require additional landfill capacity, as existing resources have adequate capacity. The temporary work population and construction activities would contribute to a temporary additional demand for water resources, wastewater treatment, and landfills. The Proposed Project would not induce permanent population growth requiring new or expanded facilities for water or wastewater treatment, or require additional capacity for water resources, wastewater treatment, or landfills.

Stormwater drainage patterns would be altered permanently as excavation and placement of the Proposed Project components would impede existing flows; however, the areas around the Project Site would remain similar to existing conditions and the Proposed Project components would incorporate necessary drainage as part of their engineering design. The Proposed Project would construct stormwater drainage associated with the Cactus Flats Road Realignment and its design would help direct stormwater flows into existing natural drainage basins. Operation of the Project would result in similar conditions to the existing setting.

The Proposed Project would be consistent with LUPA-SW-30 as activities would comply with local requirements related to wastewater treatment and would not require long term or short term domestic water use. The Proposed Project would be consistent with LUPA-BIO-6 through implementation of BMP 10 and mitigation measure BIO-L, identified in Section 3.4, Biological Resources. The Proposed Project would be consistent with LUPA-BIO-13 and LUPA-BIO-16 per BMP 2 and mitigation measure BIO-N listed in Section 3.4, Biological Resources.

4.0 Other CEQA and NEPA Considerations

This chapter provides an overview of the environmental effects of the Proposed Project, including effects not found to be significant, cumulative impacts, significant irreversible environmental changes, short-term uses and long-term productivity, growth-inducing impacts, significant and unavoidable adverse impacts, and reasons the Project is being proposed notwithstanding unavoidable significant impacts. Cross-references are made throughout this chapter to other sections of the Draft EIR/EA where more detailed discussions of the impacts of the Proposed Project can be found.

4.1 Effects Not Found to be Significant

Section 15128 of the CEQA Guidelines requires the identification of impacts of a project that were determined not to be significant and that were not discussed in detail in an impacts chapter of the EIR. These issues were eliminated from further review during the Initial Study process (see Appendix A). The following section presents a brief discussion of environmental issues that were not found to be significant for the Proposed Project, including aesthetics (scenic resources within a state scenic highway); agriculture and forestry resources (prime farmland, unique farmland, and farmland of statewide importance, conflict with zoning of forest land or timberland, and loss or conversion of forest land or farmland); geology and soils (alternative waste water disposal systems); hazards and hazardous materials (hazards in proximity to schools, hazardous materials sites, and hazards related to airports and private airstrips); hydrology and water quality (placement of housing within a 100-year flood hazard area, placement of structures that would impede flows, and exposing people or structures to risk involving inundation by tsunami); noise (noise related to public airports and private airstrips); population and housing (displacement of people or housing); transportation and traffic (conflict with an applicable congestion management program, changes in air traffic patterns, and emergency access); and utilities and service systems (exceedance of RWQCB wastewater treatment requirements, and solid waste statutes and regulations).

It should also be noted that the Initial Study is a CEQA-only document, and evaluates potential impacts as they pertain to CEQA. Therefore, some of the thresholds that were withdrawn from further consideration in the Initial Study have been evaluated in this Draft EIR/EA, in order to evaluate the potential for impacts related to NEPA. Thresholds carried forward for further evaluation are analyzed in Chapter 3, Affected Environment and Environmental Consequences, of this Draft EIR/EA.

4.1.1 Aesthetics

Scenic Resources within a State Scenic Highway

Implementation of the Proposed Project would not damage scenic resources within a state scenic highway. The NHD2 components, Cactus Flats Road Realignment, LAA Realignment, and diversion channel and NHD modifications are located a significant distance from the official Caltrans-designated scenic highway portions of US-395 (42 miles) and of SR-190 (21 miles) and would not have any impacts on resources located along an officially designated scenic highway. The NHD2 components, Cactus Flats Road Realignment, LAA Realignment components, and diversion channel and NHD modifications would be located less than one mile from an Eligible Scenic Highway (US-395); however, the Proposed Project components would not obstruct views from this Eligible Scenic Highway. Therefore, no impact would occur.

4.1.2 Agriculture and Forestry Resources

Prime Farmland, Unique Farmland, and Farmland of Statewide Importance/Conflict with Zoning of Forest Land or Timberland/Loss or Conversion of Forest Land or Farmland

The FMMP of the California Resources Agency does not identify any Farmland within the Project Site, or in the areas surrounding the Project Site. Additionally, the Proposed Project would not convert any Farmland to non-agricultural use. Therefore, impacts related to conversion of FMMP-designated Farmland to non-agricultural use would not occur.

The nearest forestry resources to the Project Site are the Inyo National Forest (10 miles southeast of the Project Site) and the Coso Range Wilderness (approximately two miles east of the Project Site). The Proposed Project would not utilize or impact any of these resources. Therefore, impacts to existing zoning for forest land or timberland would not occur.

4.1.3 Geology and Soils

Alternative Waste Water Disposal Systems

During construction of the Proposed Project, temporary portable sanitary facilities would be provided for construction workers. No septic systems or alternative waste water disposal systems would be required during construction or operation of the Proposed Project; therefore, no impact would occur.

4.1.4 Hazards and Hazardous Materials

Hazards in Proximity to Schools/Hazardous Materials Sites/Hazards Related to Airports and Private Airstrips

There are no schools located within one-quarter mile of the Proposed Project, including the Project Site and haul routes. The closest schools to the Proposed Project are located over 10 miles away in the community of Lone Pine. Therefore, impacts related to emissions of hazards or handling hazardous materials within one-quarter mile of a school would not occur. Additionally, the Project Site is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (refer to Appendix J). Therefore, no impact would occur during construction or operation of the Proposed Project.

There are no airports located within two miles of the Proposed Project. The closest airport to the Proposed Project is Lone Pine Airport, located over 10 miles away in the community of Lone Pine. The closest private airstrip to the Project Site includes Porter Ranch and Sacatar Meadows Airports, both located in Tulare County, approximately 16 miles and 18 miles southwest of the Project Site, respectively. Therefore, impacts related to public airport or private airstrip safety hazards would not occur.

4.1.5 Hydrology, Water Quality, and Groundwater

Placement of Housing within a 100-year Flood Hazard Area, Placement of Structures that would Impede Flows, and Exposing People or Structures to Risk Involving Inundation by Tsunami

The Proposed Project does not include any housing components and would improve the seismic reliability of NHR, providing additional flood protection to the Project area. Therefore, impacts related to placement of housing within a 100-year flood hazard area would not occur.

4.1.6 Noise and Vibration

Noise Related to Public Airports and Private Airstrips

As previously discussed, the nearest public airport or private airstrip are located over 10 miles away from the Project Site. Therefore, no impact related to excessive noise levels from a public or private airport would occur.

4.1.7 Population and Housing

Displacement of People or Housing

The only residence on the Project Site is the existing reservoir keeper's residence located near the existing Dam. Construction and operation of the Proposed Project components would not displace this residence. Therefore, no impacts related to the displacement of existing housing or people would occur.

4.1.8 Transportation and Traffic

Conflict with an Applicable Congestion Management Program/Changes in Air Traffic Patterns/Emergency Access

Inyo County does not have a Congestion Management Program (CMP) and no designated roads have been established by a County CMP agency. Therefore, no impact would occur. Additionally, the Project Site is not located in proximity to an airport and would not create obstructions that could affect air traffic. Therefore, no impact to air traffic patterns would occur.

The Project Site would be accessed via US-395, Cactus Flats Road, and North Haiwee Road. The Proposed Project would not require closures of roadways during construction. Construction site emergency egress and ingress points would be maintained throughout construction. Therefore, the impact would be less than significant.

4.1.9 Utilities and Service Systems

Exceedance of RWQCB Wastewater Treatment Requirements/Solid Waste Statutes and Regulations

Wastewater would not connect to a municipal septic tank system or other type of wastewater treatment conveyance system during construction or operation of the Proposed Project. The temporary population of construction personnel at the Project Site would utilize portable sanitary facilities maintained by a commercial operator that would treat the wastewater generated by the construction workforce in compliance with all laws, regulations, and requirements set forth by the LRWQCB. Therefore, no impact would occur.

The Proposed Project would comply with federal, state, and local statutes related to solid waste as construction of the Proposed Project would generate typical construction debris which are permitted and accepted at all five landfills in Inyo County. All solid waste generated by the construction and operation of the Proposed Project would be disposed of properly in accordance with all applicable federal, state, and local regulations and statutes. Therefore, no impact would occur.

4.2 Cumulative Impacts

The following subsections describe potential impacts from the buildout of the Proposed Project in combination with development of reasonably foreseeable projects in the area. According to Section 15355 of the CEQA Guidelines, cumulative impacts refer to:

> "Two or more individual effects which, when considered together are considerable or which compound or increase other environmental effects. The individual effects may be changes resulting from a single project or a number of separate projects. The cumulative impact from several projects is the change in the environment that results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time."

Section 15130(a) of the CEQA Guidelines states that:

> "An EIR shall discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable… When the combined cumulative impact associated with the project's incremental effect and the effects of other projects is not significant, the EIR shall briefly indicate why the cumulative impact is not significant and is not discussed in further detail in the EIR… An EIR may determine that a project's contribution to a significant cumulative impact will be rendered less than cumulatively considerable and thus is not significant. A project's contribution is less than cumulatively considerable if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact."

Pursuant to Section 15130(b)(1)(A) of the CEQA Guidelines, a list of past, present, and probable future projects producing related or cumulative impacts may be used as the basis of the cumulative impacts analysis. The "list" approach was used for the cumulative impacts discussion in this Draft EIR/EA. The scale or geographic scope of related projects varies for each impact category. For instance, cumulative geology and soils or aesthetics impacts are considered localized, while cumulative traffic and transportation and air quality impacts are considered regional. Table 4-1 includes a listing of approved or proposed development projects within the vicinity of the Project Site. Figure 4-1 shows the locations of these projects in relation to the Proposed Project. The list of cumulative projects is derived from the *Inyo County Renewable Energy General Plan Amendment Final Program EIR* (2015), the Inyo County Planning Department's Current Projects webpage (2016), and the LADWP Environmental Reports online webpage (2015).

The DRECP LUPA, approved by BLM in September 2016, is a regional renewable energy and conservation plan that covers a large portion of desert lands, including the Project Site. The LUPA is a regional plan that primarily focuses on biological and other resource conservation efforts, as well as planning for renewable energy occurs at a regional scale, thereby managing the cumulative effects of projects across the California desert. The DRECP LUPA implements its objectives through specific CMAs. Many of the CMAs under the DRECP LUPA apply to the Proposed Project, and the Proposed Project's consistency with these CMAs is provided in Appendix B.

Table 4-1 and Figure 4-1 describe the related projects which were utilized to perform the cumulative impacts analysis for the Proposed Project.

4.2.1 Aesthetics

It is not anticipated that the construction of the Proposed Project would increase use, such that a substantial contrast would result in a cumulative visual effect from additional development of the area. The Project Site is within the jurisdiction of BLM and LADWP, and the substantial development or disruption of undisturbed land is not anticipated given BLM's management objectives of protecting the land and LADWP's objective of operating, maintaining, securing, and preventing public access to the LAA and Haiwee Reservoirs. The Proposed Project would also be consistent with the applicable DRECP LUPA CMAs regarding visual resources, including the CMAs related to the VRM classes established in the DRECP. Therefore, no significant cumulative aesthetic impacts are anticipated to occur as a result of the Proposed Project.

TABLE 4-1
CUMULATIVE PROJECTS

Figure ID	Project Name	Location	Project Description	Project Status
1	Keeler Dunes Dust Control Project (Great Basin Unified Air Pollution Control District)	Northeastern edge of the Owens Lake; approximately 18 miles northeast of Project Site and two miles south of the existing mine in Keeler	Project construction on public land will require the placement of straw bales, planting of native vegetation, and the temporary establishment of three staging areas, all-terrain vehicle (ATV) access routes totaling approximately 2 miles, and an above ground irrigation system about 48,000 feet in length comprised of a main supply line with lateral lines every 150 to 160 feet across the project footprint. A portion of the pipeline will be placed under SR-136 and connected to the Keeler community water well. Temporary project components will be removed after three years, at which point it is anticipated that a natural, self-sustaining vegetated dune community will be established and will mitigate PM10 emissions.	Construction to be completed by 4th quarter 2016
2	Owens Lake Phase 7a Dust Control Measures Project (LADWP)	Owens Lake	The Phase 7a Project consists of 3.1 square miles of dust control in six Dust Control Areas (DCAs) and 3.4 square miles of transitioned dust controls in seven existing DCAs for a total project area of 6.5 square miles. LADWP will implement current best available control measures including gravel cover, shallow flooding, and managed vegetation.	Construction to be completed by December 2015
3	Owens Lake Dust Mitigation Program Phase 9/10 Project (LADWP)	Owens Lake	The objective of the Phase 9/10 Project is to implement Dust Control Measures (DCMs) on Owens Lake to reduce emissions in accordance with applicable laws without increasing water commitments while, to the extent feasible, maintaining existing habitat values, maintaining aesthetic values, providing safe public access, preserving cultural resources, and utilizing existing infrastructure. DCMs would range from gravel cover, managed vegetation, and shallow flooding.	Anticipated project completion by December 31, 2017
4	Owens Lake Master Project (LADWP)	Owens Lake	The project would modify the design and operation of DCMs to reduce the amount of water applied to the lakebed. The Master Project includes all dust control areas that are now part of the Owens Lake Dust Mitigation Program, previously known as Phases 1 through 10. The Master Project proposes implementation of DCMs on up to 53.4 square miles of lakebed (currently dust control is being implemented through existing or approved projects on 48.6 square miles of the lakebed. The Master Project would modify up to 38 square miles of the lakebed to waterless, water-efficient, or hybrid DCMs.	Planning phase

TABLE 4-1
CUMULATIVE PROJECTS

Figure ID	Project Name	Location	Project Description	Project Status
5	US-395 Olancha/Cartago Four- Lane Project (Caltrans)	South of Olancha to north of Cartago	The project proposes to convert approximately 12.6 miles of the existing US-395 from a two-lane conventional highway into a four-lane expressway from post mile 29.2 to post mile 41.8 in Inyo County. The new facility will have four 12-foot lanes with a variable median width. There will be paved shoulders throughout the project, 5 feet wide on the inside and 10 feet wide on the outside. The project will construct new concrete bridges to cross the Los Angeles Aqueduct and install concrete box culverts and smaller pipe culverts throughout the project limits to promote drainage. A material site at the end of Fall Road and south of Olancha Creek may be used to provide soil and road materials for the project. Additionally, a route adoption is proposed for US-395 and SR-190.	Anticipated project construction from 2017 through 2019
6	Crystal Geyser Roxane Cabin Bar Ranch Water Bottling Plant Project	Cabin Bar Ranch, Cartago, CA; approximately five miles northeast of Project Site	The project proposes to establish a spring water bottling plan on a 23-acre site within the 420-acre Cabin Bar Ranch property through a General Plan Amendment and Conditional Use Permit.	Construction ongoing – Phase I was anticipated to begin in 2012, with Phase 2 being constructed from 2017 to 2021 and Phase being constructed from 2025 to 2027. Current status of construction unknown.
7	Munro Valley Solar Project	Two parcels east of US 395 near Olancha	The solar facility will consist of approximately 20,000 PV solar modules that will be mounted onto an aluminum and steel racking system. Water for the project will be provided by existing on-site wells. The final solar facility will not occupy more than 30.02 acres.	Construction ongoing
8	Haiwee Geothermal Leasing Area (BLM)	Between US-395 and Naval Air Weapons Station China Lake, south of the South Haiwee Reservoir	Amendment to the CDCA Plan of 1980 to lease approximately 22,060 acres of BLM-managed lands for geothermal exploration, development, and utilization. BLM prepared the Reasonably Foreseeable Development Scenario to evaluate the project. Exploration would entail reflection/refraction testing and low impact surface geophysical testing. Construction would entail the drilling of 15 production wells and seven injection wells to be drilled over the course of the estimated 30 year life of a power plant. The RFD scenario also assumes that two power plants would be constructed.	Anticipated construction from 2016 through 2020

TABLE 4-1
CUMULATIVE PROJECTS

Figure ID	Project Name	Location	Project Description	Project Status
9	Haiwee Creek Southbound Shoulder Widening (Caltrans)	Dunmovin, from 0.7 to 0.9 miles north of the Los Angeles Aqueduct Bridge	The project is list as a minor project in the Caltrans Status of Projects Report. It is currently in the project approval and environmental documentation stage, and is located near the Dunmovin area where US-395 is a four-lane roadway.	Anticipated construction in 2018

Sources: Inyo County Renewable Energy General Plan Amendment http://www.inyoplanning.org/projects/documents/5.OtherCEQAConsiderations_05NOV14.pdf
Inyo County Planning Department, Current Projects http://www.inyoplanning.org/projects.htm
LADWP Environmental Reports https://www.ladwp.com/ladwp/faces/ladwp/aboutus/a-financesandreports/a-fr-reports/a-fr-r-environmentreports?_adf.ctrl-state=r0jernegp_17&_afrLoop=275413387692630
Caltrans, Status of Projects Central Region, District 09, March 2017 http://www.dot.ca.gov/d9/projmgt/Stat_Proj/d9sop.pdf

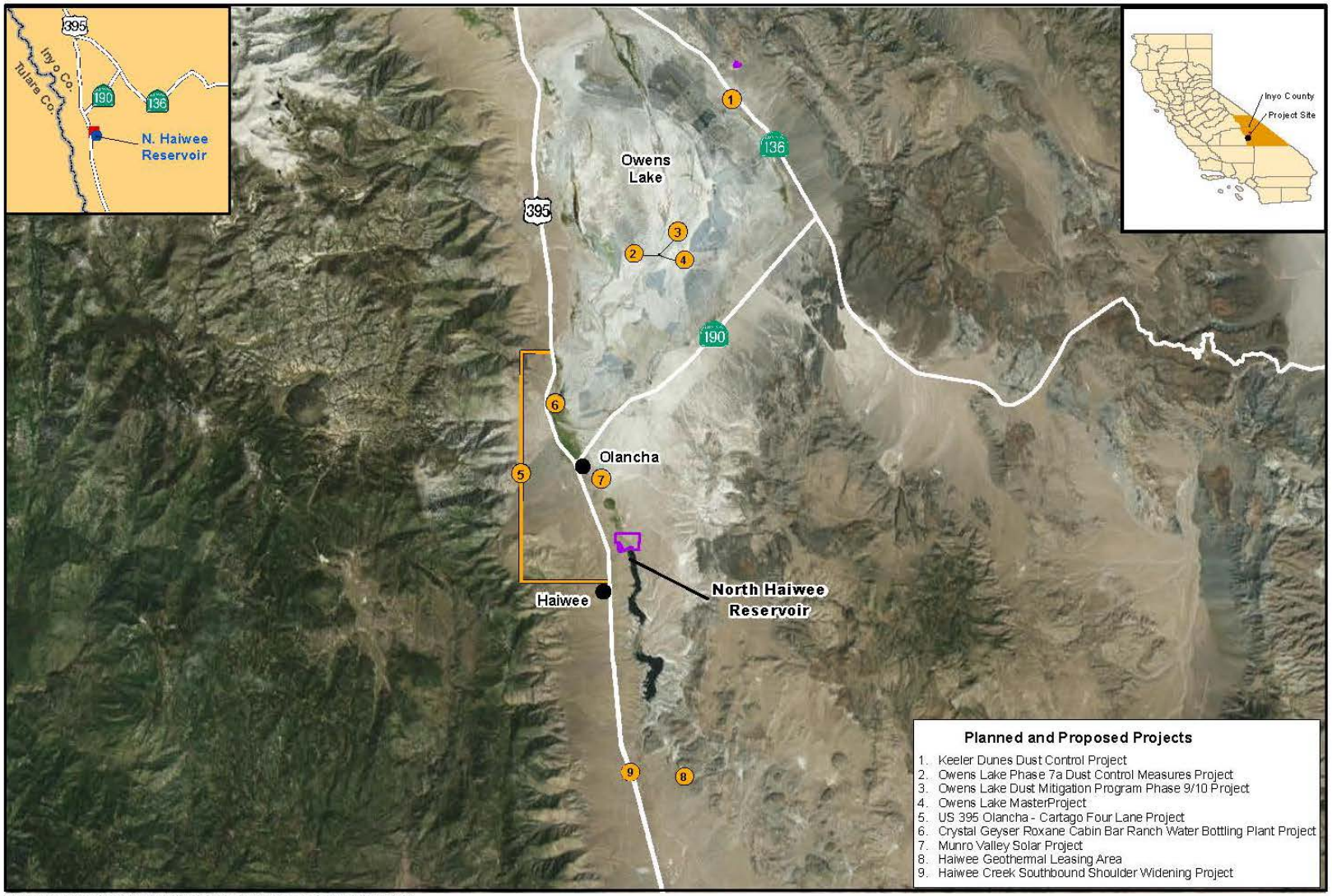

Figure 4-1
Cumulative Projects

4.2.2 Agriculture and Forestry Resources

The Proposed Project would not result in significant impacts to agricultural resources. Cumulative agriculture and forestry resource impacts could, nonetheless, occur if other related projects in the vicinity of the Project Site would result in impacts in conjunction with the Proposed Project. Related projects which would potentially affect agricultural resources would be required to comply with the land use and zoning designations of the areas where the projects would be located. Projects that would conflict with existing agricultural zoning would be required to change their site's land use and/or zoning designations, and would, therefore, be subject to findings and conditions based on maintaining general conformance with agricultural policies and needs in Inyo County. Conformance with the applicable land use designations and zoning regulations would ensure that related development would not create conflicts with agricultural zoning. The Proposed Project would neither conflict with existing designations for agricultural use, nor cause a change of land use or zoning designations. The Proposed Project would have no impacts on forestry resources. The Proposed Project would also be consistent with the applicable DRECP LUPA CMAs regarding agricultural land use. Therefore, the Proposed Project would not result in a significant cumulative impact to agriculture or forestry resources.

4.2.3 Air Quality

As discussed in Section 3.3, Air Quality, the cumulative air quality analysis focuses on whether a specific project would result in a cumulatively considerable contribution of emissions to the region. The Proposed Project would exceed the project-level air quality significance thresholds for criteria pollutant (VOC, NO_X, CO, PM10, and PM2.5) emissions during construction activities for both Build Alternatives. As such, the Proposed Project's construction emissions would have a cumulatively considerable contribution to the region's air quality. Although implementation of Mitigation Measures AQ-A through AQ-E would reduce the Project's contribution to the cumulative impacts, the mitigated NO_X, CO, PM10, and PM2.5 emissions for the CDSM Alternative and NO_X, CO, and PM10 emissions for the Excavate and Recompact Alternative emissions would continue to exceed the recommended thresholds of significance. The Proposed Project would also be consistent with the applicable DRECP LUPA CMAs regarding air quality. Therefore, the impact would be considered significant and unavoidable, despite the implementation of mitigation measures for both Build Alternatives.

4.2.4 Biological Resources

The cumulative area for biological resources within the Proposed Project area includes actions occurring within up to approximately 20 miles of the Proposed Project. In combination with approved, proposed, and other reasonably foreseeable projects in the cumulative project area, implementation of the Proposed Project could potentially result in significant impacts to special-status species and sensitive habitats throughout the region.

The Proposed Project would have no significant permanent impacts to federally and/or state threatened or endangered species, other special-status species, sensitive natural communities, wetlands, or wildlife migration corridors. Implementation of mitigation measures presented in Section 3.4.5, particularly during the construction phase, would mitigate impacts of the Proposed Project to a less than significant level, and no cumulative impacts to biological resources are anticipated. The Proposed Project would permanently impact natural vegetation communities that potentially provide suitable habitat for special-status species; however, impacts of the Proposed Project would affect only a small portion of the native habitats that are common and widespread in the region. The Proposed Project would also be consistent with the applicable DRECP LUPA CMAs regarding biological resources.

As with the Proposed Project, all related projects in the vicinity would be required to comply with applicable federal, state, and local regulations concerning biological resources, and to mitigate impacts to

a level below significance. Therefore, the Proposed Project, in conjunction with the related projects, would not contribute to significant cumulative impacts to biological resources.

4.2.5 Cultural Resources

Construction of both of the Build Alternatives would result in direct and indirect impacts to archaeological, historical, and paleontological sites identified during cultural resources inventories, desktop review, and construction within the Project area. No one Build Alternative would avoid impacts to these resources, and the number of impacted sites would be the same for each alternative. The cumulative impact analysis area for cultural and historical resources evaluates related projects within a radius of approximately 20 miles surrounding the Proposed Project. This area largely incorporates a portion of the southern Owens Valley and includes much of the traditional territories of the Native American inhabitants that utilized the resources of this region. A number of dust control, transportation, solar, and geothermal projects are either planned or underway in this region. Each of these projects would result in ground-disturbing activities that have the potential to affect significant cultural and historical resources. Comprehensive archaeological studies for each of these projects are not currently available. Consequently, the numbers and diversity of the resources present within these project areas are not clearly understood. It is anticipated that many of these large-scale projects would have Programmatic Agreements or Memoranda of Agreements developed in consultation with SHPOs, the ACHP, and tribes to lessen adverse cumulative effects to the greatest extent possible.

Furthermore, it is anticipated that regulatory permitting activities would help to reduce or eliminate impacts to significant resources during the construction and operation of these projects. The Proposed Project would also be consistent with the applicable DRECP LUPA CMAs regarding cultural resources. Archaeological and paleontological sites, however, are finite resources and cannot be replaced once damaged or destroyed. Consequently, while they cannot be specified at this time, each of these projects may result in incremental but irreversible and irretrievable impacts to cultural resources. In addition, six eligible sites, including NHD and the existing LAA which are historical resources, would be permanently impacted by the Proposed Project. However, implementation of mitigation measures would result in a greater understanding of long-term human adaptations to the region.

4.2.6 Environmental Justice

As discussed throughout this chapter, the Build Alternatives of the Proposed Project would not result in cumulatively considerable impacts to GHG emissions, noise, or transportation and traffic. As noise and transportation-related impacts are largely site- and component-specific, this would occur for each individual project effect, in conjunction with development proposals on these properties. GHG emissions are an inherently cumulative impact, but would be less than significant for the Proposed Project, as described in Section 3.8. Although the Build Alternatives of the Proposed Project would contribute to a cumulatively considerable air quality impact related to construction emissions, this impact would be regional and would not disproportionately affect any distinct population. Further, local municipalities are required to follow local, state, and federal laws regarding air quality, GHG emissions, noise, and transportation and traffic. Therefore, the Proposed Project would not contribute to a cumulatively considerable impact to environmental justice.

4.2.7 Geology and Soils

Any potentially significant impacts of the related projects associated with geology and soils, would be assessed on a project-by-project basis as geology-related issues are site-specific and would be unaffected by the presence of other projects on a cumulative basis. Cumulative impacts related to geology and soils are focused on soil erosion and loss of topsoil because these impacts can affect areas that are more regional, rather than site-specific. While the related projects' construction activities, in conjunction with construction of the Proposed Project, may heighten the amount of soil erosion in the area, several of the

related projects are proposed to implement dust control measures with the objective of controlling dust emissions from/within Owens Lake. Dust control measures would reduce wind erosion through the use of gravel cover, managed vegetation, shallow flooding, and other best available control measures. The Proposed Project would implement a SWPPP and comply with Rule 401 and 431, fugitive dust control measures, to control water and wind erosion, and to reduce erosion and loss of topsoil. The Proposed Project would also be consistent with the applicable DRECP LUPA CMAs regarding geology and soils. As the Proposed Project would manage erosion and loss of topsoil onsite, it would not cumulatively contribute to regional erosion or loss of topsoil.

4.2.8 Greenhouse Gas Emissions

The analysis of GHG emissions is inherently a cumulative impact analysis. Therefore, no additional analysis is required, and as discussed in Section 3.8, Greenhouse Gas Emissions, it is not anticipated that construction and operation of the Proposed Project would generate GHG emissions that would cause a significant impact on the environment. Therefore, the Proposed Project would not result in a considerable incremental contribution to a significant cumulative impact.

4.2.9 Hazards and Hazardous Materials

Development of the Proposed Project in conjunction with the related projects has the potential to increase the use, storage, transport, and/or accidental release of hazardous materials during construction and operation. However, compliance with existing regulations would ensure that potential impacts associated with the Proposed Project would be less than significant. With respect to the related projects, each of the related projects would require evaluation for potential hazards. As hazardous materials and risk of upset conditions are largely site-specific, this would occur for each individual project effect, in conjunction with development proposals on these properties. In addition, the US-395 Olancha/Cartago Four-Lane Project has the potential to contribute to a cumulatively considerable impact to emergency access. This related project would convert approximately 13 miles of existing US-395 from a two-lane highway into a four-lane expressway. Construction of this related project is planned to overlap with the construction schedule of the Proposed Project, with construction of the US-395 Olancha/Cartago Four-Lane Project anticipated to occur from 2017 to 2019. However, as with the Proposed Project, all related projects would be required to follow applicable standards and regulations regarding emergency access. In addition, as discussed in the US-395 Olancha/Cartago Four-Lane Project Draft EIR/EA, "during construction, a traffic management plan (TMP) would be followed to accommodate local traffic patterns and reduce delay, congestion, and accidents. By incorporating the TMP and constructing the project in stages, disruption to local and regional traffic would be minimized. Caltrans would also coordinate with ambulance, police, sheriff, and fire departments prior to any construction to minimize effects on emergency services" (Caltrans, 2015). Therefore, since the Proposed Project would not result in the closure of any roadways and the US-395 Olancha/Cartago Four-Lane Project would implement a TMP and coordinate with emergency service providers, cumulative impacts related to emergency access would be less than significant. The Proposed Project would also be consistent with the applicable DRECP LUPA CMAs regarding hazards and hazardous materials. Therefore, the Proposed Project would not contribute to a significant cumulatively considerable impact to hazards and hazardous materials.

4.2.10 Hydrology, Water Quality, and Groundwater

Water Quality

Construction of the notch in NHD would potentially disturb or expose sediments, which could degrade water quality. However, implementation of a Sediment Management Plan and appropriate BMPs would reduce the potential to degrade water quality to a less than significant level. The Proposed Project would also be consistent with the applicable DRECP LUPA CMAs regarding water quality. As impacts would

be localized and minimized, cumulative impacts to substantially degrading water quality would be less than significant.

Surface Water

Related projects identified in the Project area include dust control and mitigation, highway construction, industrial expansion, and development of solar and geothermal power resources. Development of new impervious surfaces, such as the construction of the new segment of US-395, would typically increase stormwater runoff and dry weather flows to local drainages and receiving waters. However, new development would be reviewed and regulated by the County of Inyo and the Lahontan RWQCB. BMPs and SWPPP requirements would reduce the potential for the Proposed Project impacts to water quality. All Project-related sites would be stabilized post-construction to avoid loose sediments from polluting stormwater runoff and water in NHR, as required by the ICGP. As described in Section 3.10, Hydrology, Water Quality, and Groundwater, the Proposed Project would manage water quality on-site and would not have substantial off-site impacts to water quality, due to compliance with regulations, the NPDES, ICGP and SWPPP, and BMPs. There are currently no foreseeable future projects that would violate water quality standards.

The Proposed Project is not expected to substantially increase the rate or amount of surface runoff. Post-construction conditions would be similar to existing conditions. There are no existing stormwater drainage systems in the vicinity; therefore, changes in the flow quantity would not adversely impact capacity. The Proposed Project is not expected to substantially increase or contribute to polluted runoff, as the land uses under the Proposed Project are comparable to the existing conditions. Due to the remoteness of the Project Site, there are no other proposed projects at this location or in the nearby area and cumulative impacts to surface water hydrology would be less than significant. The Proposed Project would also be consistent with the applicable DRECP LUPA CMAs regarding surface water hydrology.

The impact due to the Proposed Project's construction and operation regarding the placement of structures within a 100-year flood hazard area would have no impact, as the Proposed Project does not occur within a currently delineated 100-year flood hazard area. Additionally, once constructed, NHD2 may impede flows, but in a beneficial way, as it would provide additional capacity. Once construction is completed, NHD2 would lessen the risk associated with the failure of the existing Dam. If NHD2 and the existing Dam were to fail, the impact would be comparable to the existing impact; construction and operation of the Proposed Project would not increase this potential impact and would have a beneficial impact on flood hazards. The Proposed Project would also be consistent with the applicable DRECP LUPA CMAs regarding flood risk. Both during construction and operation, the Project Site would be exposed to the risk of inundation by mudflow. Due to the distance between the Proposed Project and related projects, the Proposed Project would not contribute cumulatively to this risk. Therefore, the Proposed Project would not cause significant cumulative impacts related to flood risk and mudflow risk.

Groundwater

The impact of dewatering due to the Proposed Project, if necessary, would be less than significant. If all Project-related sites are dewatered at the same time, the impact would still be less than significant, as the groundwater being pumped would likely be returned to NHR or used for onsite dust suppression and would recharge the same aquifer being pumped. The effects from dewatering would be localized and temporary. Once constructed, the Proposed Project would not have an impact on lowering the groundwater table or reducing the volume of the underlying aquifer. The Proposed Project would also be consistent with the applicable DRECP LUPA CMAs regarding groundwater. Cumulative impacts to groundwater would be less than significant.

4.2.11 Land Use and Planning

The Proposed Project would not result in significant land use impacts. Cumulative land use impacts could, nonetheless, occur if other related projects in the vicinity of the Project Site would result in land use impacts in conjunction with the Proposed Project. However, each of the related projects would be required to either generally conform to the land use designations and zoning for their respective project sites or be subject to findings and conditions based on maintaining general conformance with the land use plans applicable to the area. As such, development of the Proposed Project and related projects is not anticipated to substantially conflict with the intent of land use plans, policies, or regulations applicable to each site. Conformance with the applicable land use plans and regulations would ensure that related development would not result in the implementation of incompatible land uses. The Proposed Project would also be consistent with the DRECP LUPA, as described in Appendix B and analyzed in Section 3.11, Land Use and Planning. The Proposed Project would implement Mitigation Measure BIO-H to mitigate for the ground disturbance cap exceedance. Related projects that exceed the ground disturbance cap in the Basin and Range Subarea CDNCL and Olancha Greasewood ACEC would also be subject to ground disturbance mitigation. Therefore, the Proposed Project, in conjunction with the related projects, would not result in a significant cumulative land use impact.

4.2.12 Mineral Resources

Any potentially significant impacts of the related projects associated with the loss of availability of mineral resources would be assessed on a project-by-project basis. Impacts to mineral resources are site-specific, and the Proposed Project would not cause any impacts which would cumulatively add to the impacts of other projects. Although related projects could use mineral resources (such as aggregate), the related projects in conjunction with the Proposed Project would not substantially impact the mineral resources within Inyo County, as each project would be required to comply with local and state standards, obtaining permits from Inyo County and BLM where applicable. Therefore, the amount of earthen material excavated for each project would be subject to Inyo County approval. Implementation of the Proposed Project would result in a less than significant impact to mineral resources. The Proposed Project would also be consistent with the applicable DRECP LUPA CMAs regarding mineral resources. The Proposed Project would not contribute to a cumulatively considerable impact.

4.2.13 Noise and Vibration

Noise and vibration are localized impacts, typically limited to within a few hundred feet of the source. Construction activity at the Project Site is sufficiently isolated such that no related projects have the potential to generate noise or vibration that would coincide with Project-related noise and vibration. Therefore, no significant cumulative construction noise or vibration impacts at the Project Site are anticipated as a result of the Proposed Project. The analysis of truck trips accounted for cumulative traffic in the future conditions. As less than significant impacts were identified in the analysis of potential for cumulative traffic impacts, the Proposed Project would not contribute to cumulatively considerable off-site noise or vibration impacts due to construction truck trips.

As discussed above, the Proposed Project would not result in new operational noise or vibration impacts. Operational noise and vibration levels associated with the NHD2 components, Cactus Flats Road Realignment, LAA Realignment, and diversion channel and NHD modifications would be similar to existing conditions, and no Project-related operational activity would occur at the LAA Excavation Area. Therefore, no significant cumulative operational noise or vibration impacts are anticipated as a result of the Proposed Project.

4.2.14 Population and Housing

Construction of the Proposed Project may coincide with construction of present and reasonably foreseeable future projects. The US-395 Olancha/Cartago Four-Lane Project, Haiwee Geothermal Leasing

Area, and Crystal Geyser Roxane Cabin Bar Ranch Water Bottling Plant Project have construction phases that overlap with construction of the Proposed Project and are located in the vicinity of the Proposed Project. Temporary cumulative population and housing impacts could occur as overlapping construction schedules of multiple projects may create a demand for workers that cannot be met by the local labor force, thereby introducing non-local workforces that would reside in temporary existing housing accommodations. There is currently no data regarding the construction workforce for the related projects that may be constructed at the same time as the Proposed Project is being constructed. There are 439 available temporary housing units within 45 miles of the Project Site and the Proposed Project would have a peak daily labor of 111 workers. Vacancy rates for temporary units in the County fluctuate depending on the season and under conservative assumptions of non-local labor needs, the demand for temporary units would be high. In addition to the available units within 45 miles of the Project Site, the Proposed Project and related projects may utilize temporary units in Ridgecrest, located southeast of the Project Site, as it is within a reasonable commute distance. There are a total of 13 hotels and motels in Ridgecrest with a total of 910 rooms. The temporary units available in Ridgecrest would be able accommodate the temporary construction workforce of the Proposed Project and related projects. Therefore, the Proposed Project, in conjunction with the related projects, would not result in cumulatively significant adverse impacts to housing supply during construction.

Operational cumulative impacts of the Proposed Project would not occur as there would be no permanent population increase as a result of the Proposed Project. Therefore, no significant cumulative operational impacts are anticipated as a result of the Proposed Project.

4.2.15 Public Services and Recreation

As previously discussed, several related projects have construction phases that overlap with construction of the Proposed Project and are located in the vicinity of the Proposed Project. The Proposed Project and the related projects would bring an influx of construction workers to the Project area. The demand for public facilities is directly related to increases in population; however, none of the projects involve residential development or other types of projects that would permanently increase the population level in the County. The Proposed Project would not result in a permanent population increase as the construction workforce would temporarily relocate to existing housing, such as hotels and motels. The construction workforce for the Proposed Project would not be expected to relocate their families as construction is temporary in nature. Thus, the demand for schools, day care centers, and senior centers would not be expected to increase. Cumulative impacts to these facilities would be less than significant.

The construction workforce for the Proposed Project would temporarily increase demand on libraries, parks, and recreational facilities. If the related projects' construction periods overlap with the Proposed Project, the cumulative influx of temporary construction workers into the County would temporarily increase demand on libraries, parks, and recreational facilities. However, the temporary increase would not generate a substantial demand as there are several library resources, parks, and recreational facilities that could serve the population in Inyo County. The Proposed Project would also be consistent with the applicable DRECP LUPA CMAs regarding recreation. Therefore, the Proposed Project, in conjunction with related projects, would not result in a significant cumulative impact to libraries, parks, and recreational facilities.

Operational cumulative impacts would not occur as the Proposed Project would not result in a permanent population increase. Therefore, no significant cumulative operational impacts are anticipated as a result of the Proposed Project.

4.2.16 Safety and Security

Construction of the Proposed Project may coincide with construction of present and reasonably foreseeable future projects. Several related projects have construction phases that overlap with construction of the Proposed Project and are located in the vicinity of the Proposed Project. Construction

of the Proposed Project and related projects would increase demand on fire and police protection services over existing levels during construction. The Proposed Project would use construction equipment that may spark a fire. As discussed in Section 3.16, Safety and Security, there is an insufficient number of firefighters for the amount of calls received in the County. However, the FMPP, which includes fire suppression equipment and management plans in case of accidental fire, would be sufficient to respond to a fire at the Project Site and minimize the need for fire protection services for the Proposed Project. The Proposed Project would also implement an SSP, which includes security systems such as fencing, to minimize the need for police protection services. As previously discussed, the construction workforce would be relocated to existing temporary accommodations, such as hotels and motels, which would not be expected to increase demand on fire and police protection services because the hotels and motels currently operate under existing fire and police protection standards. Therefore, construction of the Proposed Project is not expected to result in cumulatively significant impacts to safety and security.

Operational cumulative impacts would not occur as the Proposed Project would not result in a permanent population increase. Therefore, no significant cumulative operational impacts are anticipated as a result of the Proposed Project.

4.2.17 Transportation and Traffic

There are nine related projects that would occur within the same geography and timeframe as the Proposed Project. Of these nine related projects, only the US-395 Olancha/Cartago Four-Lane Project could have potential impacts to traffic flows in the area during the construction of NHD2. The preferred alternative for the US-395 widening project would construct a controlled-access, four-lane divided expressway for the entire length of the US-395 that is proposed to be widened. It would begin in the existing four-lane section of US-395 near North Haiwee Road south of Olancha and travel northward to the west of Olancha and the LAA. After crossing Olancha Creek, the proposed US-395 alignment would cross the LAA and continue north through Cartago along the existing highway to join the four-lane section of US-395 to the north. The northbound and southbound lanes would be separated by a 100-foot-wide unpaved median. Posted traffic speeds on the divided highway would be set at 65 miles per hour. The existing highway south of the intersection with SR-190 East would be re-designated as SR-190. The existing highway north of the intersection with SR-190 East would be relinquished to Inyo County and would remain as a local route through Cartago. Construction of this project is anticipated to begin in 2018.

Since the proposed widening would not occur on US-395 along the Project frontage, traffic operations on the study area roadway segments would not be significantly impacted due to the US-395 widening project. In addition, it is anticipated that there would not be major roadway closures during construction. It is anticipated that traffic carrying construction material for the US-395 widening project will generally be limited to the sections of US-395 that currently have four lanes, and therefore, although there will be some additional traffic, operational impacts would be less than significant.

The Haiwee Creek Southbound Shoulder Widening project is also a roadway project with anticipated construction in 2018. The project is listed as a minor project in the Caltrans Status of Projects report and is in the project approval and environmental documentation stage. The project is located near the Dunmovin area where US-395 is a four-lane roadway. As the Proposed Project analysis does not have any significant impacts on four-lane segments of US-395, and since the Haiwee Creek Southbound Shoulder Widening project is a minor project with potentially no long term closures of US-395, it is not expected to result in cumulatively significant impacts in conjunction with the Proposed Project.

The Proposed Project would also be consistent with the applicable DRECP LUPA CMAs regarding traffic and transportation, including trails and travel management CMAs. Therefore, the cumulative impacts to traffic operations on study area roadway segments would not be significantly impacted due to the cumulative effects of the US-395 widening project and the construction of the Proposed Project.

4.2.18 Tribal Cultural Resources

BLM is currently consulting with appropriate tribal representatives regarding the presence/absence of tribal cultural resources within the Project Site. If tribal cultural resources are discovered during construction, then the Project may result in a cumulative adverse impact based on whether the resource is determined to be part of one of the pre-historic, historic, or Native American subject areas discussed in Section 3.18, Tribal Cultural Resources. However, ongoing Native American consultation, and mitigation measures developed through consultation, would reduce the Project alternatives' potential impacts related to the discovery of previously unknown resources. Additionally, it is anticipated that many of large-scale projects in the area would have Programmatic Agreements or Memoranda of Agreements developed in consultation with SHPOs, the ACHP, and tribes to lessen adverse cumulative effects to the greatest extent possible. Therefore, construction of the Proposed Project, in conjunction with the related projects, would not result in a significant cumulative impact to tribal cultural resources.

4.2.19 Utilities and Service Systems

As previously discussed, several related projects have construction phases that overlap with construction of the Proposed Project and are located in the vicinity of the Proposed Project. The Proposed Project does not feature connections to water or wastewater treatment facilities, and would not be required to construct or expand water or wastewater treatment facilities. Furthermore, the Proposed Project and related projects would comply with applicable federal, state, and local regulations regarding any water and wastewater treatment resulting from construction. The Proposed Project also does not feature any municipal connection to stormwater drainage facilities. Stormwater drainage would be altered during construction as new and realigned infrastructure would impede existing flows; however the Project design incorporates stormwater drainage facilities that would minimize the impact on stormwater drainage. Therefore, cumulative impacts to water and wastewater treatment facilities, and stormwater drainage facilities would be less than significant.

All water used for the Proposed Project construction activities would be obtained in compliance with all LAA operating requirements and local water-related agreements. Waste generated by construction activities for the Proposed Project would be transported to a landfill that has the adequate capacity to accept the waste, and that is permitted to accept the type of waste, in coordination with IWM and compliance with the Inyo County Municipal Code. Energy consumption for the Proposed Project would not result in wasteful, inefficient, and unnecessary consumption of energy during construction. Related projects would be expected to comply with applicable federal, state, and local regulations for water resources, solid waste disposal, and energy consumption. Therefore, cumulative impacts to water entitlements and resources and landfill capacity would be less than significant.

Operational cumulative impacts of the Proposed Project would not occur as the operation of the Proposed Project would be similar to existing conditions. Therefore, the Proposed Project, in conjunction with the related projects, would not result in cumulatively significant adverse impacts to utilities and service systems.

4.3 Significant Irreversible Environmental Changes/ Irreversible and Irretrievable Commitments of Resources

State CEQA Guidelines and NEPA Federal Regulations require that environmental documentation analyze the extent to which a project's primary and secondary effects would impact the environment and commit nonrenewable resources to uses that future generations will not be able to reverse.

The construction of the Proposed Project would result in the use of nonrenewable resources, including fossil fuels, natural gas, and building materials, such as earth, gravel, and concrete. The Proposed Project

does not represent an uncommon construction project that uses an extraordinary amount of raw material in comparison to other development projects of similar scope and magnitude. The Proposed Project's impacts on mineral resources are evaluated in Section 3.12. As discussed in Section 3.3, Air Quality, and Section 3.19, Utilities and Service Systems, state regulations limit idling from both on-road and off-road diesel-powered equipment and are enforced by CARB. Limitations on idling of vehicles and equipment and the requirement that equipment be properly maintained would result in fuel savings. Also, given the high cost of fuel, contractors and owners have a strong financial incentive to avoid unnecessary energy consumption during the operation of off-road vehicles. Mitigation measures for potential impacts to air quality, discussed in Section 3.3, would further improve energy efficiency as a secondary effect. Thus, despite the increase in energy demand during construction, adherence to local, state, and federal regulations, which limit engine idling times, would reduce short-term energy demand. Therefore, while the Proposed Project would utilize nonrenewable resources, it is not anticipated to consume substantial amounts of nonrenewable resources in a wasteful manner. No significant irreversible environmental changes would result from the Proposed Project.

4.4 Short-term Uses and Long-term Productivity

NEPA regulations (40 CFR Part 1502.16) and the BLM *NEPA Handbook H-1790-1* (Section. 9.2.9) require a discussion of the relationship between short-term uses of man's environment and the maintenance and enhancement of long-term productivity of the environment from implementation of a proposed project or one of the action alternatives. "Short term" refers to the total duration of project construction, whereas "long-term" refers to the life term of the project beyond the construction phase.

The specific impacts of the Proposed Project vary in kind, intensity, and duration according to the activities occurring at any given time. The Proposed Project would involve tradeoffs between long-term productivity and short-term uses of the environment.

The short-term uses of the environment as a result of the Proposed Project and its Build Alternatives would include those typically found with dam construction. Short-term impacts associated with construction activities described in Chapter 3, Affected Environment and Environmental Consequences, include effects to the physical, natural, and human environment. These can be compared to the long-term benefits of the Build Alternatives of the Proposed Project, all of which would prevent an uncontrolled release of water from NHR when NHD is subjected to an MCE event. While construction of the Proposed Project would cause the impacts described in Chapter 3, construction would result in protection of life and property from a catastrophic event and would protect a water supply critical to the daily operations of the City of Los Angeles.

4.5 Growth-Inducing Impacts

Section 15125.2(d) of the CEQA Guidelines requires a discussion of the ways in which a project could induce growth. This includes ways in which a project would foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment.

Induced growth is any growth that exceeds planned growth and results from new development that would not have taken place without the implementation of the Proposed Project. Typically, the growth-inducing potential of a project would be considered significant if it resulted in growth or population concentration that exceeds those assumptions included in pertinent master plans, land use plans, or projections made by regional planning authorities. However, the creation of growth-inducing potentials does not automatically lead to growth, whether it would be below or in exceedance of a projected level.

The environmental effects of induced growth are secondary or indirect impacts of the Proposed Project. For projects that induce growth, the secondary effects of growth could result in significant, adverse environmental impacts, which could include increased demand on community public services, increased

traffic and noise, degradation of air and water quality, and conversion of agricultural land and open space to developed uses.

The Proposed Project would not include the construction of any residential uses or other uses that would result in an increase in the population of the Project area. The Proposed Project would create temporary employment opportunities during construction. However, as described in Section 3.14, Population and Housing, the construction workforce would be housed in existing housing units of varying types, and new housing would be neither developed nor induced to develop. The Proposed Project would economically benefit the region in terms of construction jobs and purchase or rental of construction materials and equipment but, as a seismic safety project, would not create new income-generating uses, or produce goods or long-term employment that would significantly affect the economy. Therefore, the Proposed Project would not result in a direct significant growth-inducing impact in the Project area.

The Proposed Project would meet the normal operational needs of NHR and LAA to maintain a reliable water supply to the City. The Proposed Project would ensure the seismic reliability of the existing LAA System and, as a result, of the City's water supply. The Proposed Project is a seismic safety project and would not change water rights or otherwise increase the total volume of water transported through the LAA system. LADWP does not propose to increase the amount of water from the Sierras or Owens Valley through this Proposed Project. The water supply for the City would, therefore, remain unchanged under the Proposed Project and would not indirectly induce growth in the Project area or in the City of Los Angeles. Therefore, the Proposed Project would not indirectly result in a significant growth-inducing impact.

4.6 Potential Secondary Effects

Section 15126.4(a)(1)(D) of the CEQA Guidelines requires that "if a mitigation measure would cause one or more significant effects in addition to those that would be caused by the project as proposed, the effects of the mitigation measure shall be discussed but in less detail than the significant effects of the project as proposed." The following is a discussion of the potential secondary impacts that could occur as a result of implementation of the proposed mitigation measures, listed by environmental topic for which mitigation is proposed.

4.6.1 Air Quality

Mitigation Measures AQ-A through AQ-E pertain to air quality impacts during construction. Mitigation Measure AQ-A requires use of Tier 4 construction equipment; Mitigation Measure AQ-B requires activity management to avoid construction overlap; Mitigation Measure AQ-C requires minimization of equipment idling; Mitigation Measure AQ-D requires proper construction equipment maintenance; and Mitigation Measure AQ-E requires preparation of a fugitive Dust Control Plan in compliance with the DRECP LUPA CMA LUPA-AIR-5. These mitigation measures are standard best practices for construction. Implementation of these mitigation measures would not create new or substantially worsened construction impacts. Therefore, the mitigation measures would not result in any secondary effects.

4.6.2 Biological Resources

Mitigation Measures BIO-A through BIO-O pertain to impacts to biological resources during construction. Mitigation Measures BIO-A and BIO-B require an on-site biological monitor as well as worker education training. Mitigation Measures BIO-C through BIO-F require surveys prior to construction activities for special status plant and animal species, as well as an exclusion plan for American badger and kit fox. Mitigation Measure BIO-H requires a plan for salvage of topsoil and revegetation after construction. Mitigation Measures BIO-I through BIO-L require efforts to avoid impacts to plants and wildlife during construction through timing of ground-clearing activities, avoidance of wildlife entrapment, and other efforts to minimize construction-related impacts. Mitigation Measure

BIO-L provides waste management and vehicle operation requirements (including speed limits) for construction personnel. Mitigation Measure BIO-M requires an integrated weed management plan to prevent the spread of invasive species, and Mitigation Measure BIO-N requires minimization of use of lighting which could attract birds and bats. Mitigation Measure BIO-O requires implementation of Joshua Tree, Cactus, and Nolina salvage measures to reduce impacts associated with transplanting Joshua trees. These mitigation measures are standard best practices for construction. Implementation of these mitigation measures would not create new or substantially worsened construction impacts. Therefore, the mitigation measures would not result in any secondary effects.

4.6.3 Cultural Resources

Mitigation Measures AR-A through AR-F pertain to impacts to archaeological resources during construction. Mitigation Measure AR-A requires archaeological training for construction workers. Mitigation Measure AR-B requires flagging by an archaeologist of areas which should be avoided to prevent impacts to cultural resources. Mitigation Measure AR-C requires an archaeological monitoring plan, and on-site monitoring during construction to identify and halt work if potential finds are discovered. Mitigation Measure AR-D requires procedures for actions to be taken in the event of inadvertent discovery. Mitigation Measure AR-E requires that any human remains encountered are treated with respect and full compliance with all laws and regulations, including stopping work until remains are evaluated and properly treated. Mitigation Measure AR-F requires Phase III data recovery in order to reduce adverse effects to eligible resources. These mitigation measures are standard best practices for construction. Implementation of these mitigation measures would not create new or substantially worsened construction impacts. Therefore, these mitigation measures would not result in any secondary effects.

Mitigation Measure HR-A pertains to impacts to the LAA during construction and requires HAER Level II documentation of the portion of the existing LAA which would be demolished prior to demolition activities. This mitigation measure is a standard best practice for construction in the Project area. Implementation of this mitigation measure would not create new or substantially worsened construction impacts. Therefore, this mitigation measure would not result in any secondary effects.

Mitigation Measures PR-A through PR-E pertain to impacts to paleontological resources during construction. Mitigation Measure PR-A provides for retention of a principal paleontologist and surveying for paleontological resources. Mitigation Measure PR-B requires paleontological training for construction personnel. Mitigation Measure PR-C requires flagging by a paleontologist of areas which should be avoided to prevent impacts to paleontological resources. Mitigation Measure PR-D requires a paleontological monitoring plan, as well as sediment testing and on-site monitoring and during construction to identify and halt work if potential finds are discovered. Mitigation Measure PR-E requires proper recovery of paleontological resources and placement in a recognized permanent repository. These mitigation measures are standard best practices for construction. Implementation of these mitigation measures would not create new or substantially worsened construction impacts. Therefore, the mitigation measures would not result in any secondary effects.

4.6.4 Hydrology, Water Quality, and Groundwater

Mitigation Measure HWQ-A pertains to impacts related to sedimentation during construction of the notch. HWQ-A requires LADWP to prepare a Sediment Management Plan demonstrating compliance with all applicable regulations related to the disturbance, removal, treatment, and/or transport and disposal of sediments.

4.6.5 Land Use and Planning

Mitigation Measure BIO-H requires a plan for restoration after construction. This mitigation measure would be consistent with the DRECP LUPA. Implementation of this mitigation measure would not create

new or substantially worsened impacts. Therefore, the mitigation measure would not result in any secondary effects to land use and planning.

4.6.6 Noise and Vibration

Mitigation Measures NV-A through NV-F pertain to construction noise impacts, specifically related to equipment noise. Mitigation Measure NV-A requires that construction equipment shall be properly maintained and equipped with mufflers. Mitigation Measure NV-B requires that rubber-tired equipment shall be used when operating on flat terrain. Mitigation Measure NV-C requires that equipment shall be turned off when not in use for an excess of five minutes and Mitigation Measure NV-D requires that construction staging areas be located away from sensitive uses to reduce construction noise to the adjacent reservoir keeper's residence. Mitigation Measure NV-E would ensure a public liaison would be appointed during Project construction to address public concerns related to construction activities, such as excessive noise. NV-F requires LADWP to provide ear protection to sensitive noise receptors. These mitigation measures would reduce impacts on nearby sensitive receptors. These mitigation measures are standard best practices for construction. Implementation of these mitigation measures would not create new or substantially worsened construction impacts. Therefore, the mitigation measures would not result in any secondary effects.

4.6.7 Transportation and Traffic

Mitigation Measure TT-A pertains to traffic impacts during construction and requires a flagman be placed at the intersection of Cactus Flats Road and US-395 to access the Project Site. Utilization of a flagman would be temporary, lasting for nine months during the hauling of materials from the existing mine in Keeler, and implementation of this mitigation measure would not create new or substantially worsened construction impacts. Therefore, the mitigation measure would not result in any secondary effects.

4.7 Significant and Unavoidable Adverse Impacts

This section is prepared in accordance with Section 15126.2(b) of the CEQA Guidelines, which requires the discussion of any significant environmental effects that cannot be avoided if a project is implemented. These include impacts that can be mitigated but cannot be reduced to a less than significant level. An analysis of environmental impacts resulting from the Proposed Project has been conducted and is contained in Chapter 3 of this Draft EIR/EA. According to the environmental impact analysis presented in Chapter 3, the Proposed Project would result in a significant unavoidable adverse impact related to air quality, cultural resources, and noise.

4.7.1 Air Quality

As discussed in Section 3.3, Air Quality, the Proposed Project would exceed the project-level air quality significance thresholds for criteria pollutant (VOC, CO, NO_X, PM10, and PM2.5) emissions during construction activities. Mitigation Measures AQ-A through AQ-E would be required to minimize criteria pollutant emissions during construction. Implementation of mitigation would reduce VOC emissions for both Build Alternatives and PM2.5 emissions for the Excavate and Recompact Alternative to a less than significant level. However, mitigated emissions (CO, NO_X, PM10, and PM2.5 for the CDSM Alternative and CO, NO_X, and PM10 for the Excavate and Recompact Alternative) would continue to exceed the recommended thresholds of significance for regional emissions. Additionally, the mitigated daily emission concentrations would exceed the localized thresholds at the reservoir keeper's residence and two other sensitive receptors under the CDSM Alternative, and the reservoir keeper's residence and one other sensitive receptor under the Excavate and Recompact Alternative. Therefore, the impact to regional and localized construction emissions would remain significant and unavoidable after the implementation of mitigation measures.

4.7.2 Cultural Resources

As discussed in Section 3.4, Cultural Resources, the Proposed Project would impair the historical significance of NHD. Implementation of Mitigation Measure HR-A would reduce the impact by providing historical documentation and public interpretation for these resources, but would result in a significant and unavoidable impact. Even with the implementation of Mitigation Measure HR-A, the Proposed Project would constitute a substantial adverse change that would impair the significance of the historic resource by materially impairing NHD.

4.7.3 Noise and Vibration

As discussed in Section 3.13, short-term and temporary construction activity associated with the NHD2 components, Cactus Flats Road Realignment, LAA Realignment, LAA Excavation Area, and diversion channel and NHD modifications would expose persons to or generate noise levels in excess of applicable standards established in the local general plan or noise ordinance. Implementation of Mitigation Measures NV-A through NV-F would reduce impacts associated with construction of the NHD2 components, Cactus Flats Road Realignment, LAA Realignment, LAA Excavation Area, and diversion channel and NHD modifications to the greatest extent feasible, but would result in a significant and unavoidable impact.

Mitigation Measures NV-A through NV-F are designed to reduce construction noise levels. The equipment mufflers associated with Mitigation Measure NV-A would reduce construction noise levels by approximately 3 dBA. Mitigation Measures NV-B through NV-F, although difficult to quantify, would also reduce and/or control construction noise levels. Other measures were considered, such as electric equipment. However, although electric equipment would generate less noise than diesel equipment, it is not widely available, and the horsepower associated with electric equipment would not meet Proposed Project requirements. With mitigation, equipment noise levels would still exceed the 5-dBA L_{eq} significance threshold at two sensitive receptors, including the reservoir keeper's residence adjacent to and just west of the existing Dam and Butterworth Ranch north of the Project Site. No further feasible mitigation measures are available. This would be considered a significant and unavoidable short-term impact during construction (equipment noise) of the Proposed Project.

4.8 Reasons Why the Project is Being Proposed, Notwithstanding Unavoidable Significant Impacts

Section 15126.2(b) of the CEQA Guidelines requires that the reasons why the Project is being proposed, notwithstanding unavoidable significant impacts, be described. As described in detail in Chapter 1, the fundamental purpose of the Proposed Project is to improve the seismic reliability of NHR through construction of a new dam, NHD2, to the north of NHD, in order to maintain the function of an essential water conveyance infrastructure component for the City, as well as to protect local populations from a hazardous flooding event. The proposed NHD2 would serve to improve the seismic reliability of NHR in the event the existing Dam is damaged or breached by an earthquake event, thereby ensuring public health and safety and securing the City's water source. Without construction of the Proposed Project, NHR would remain impounded by a seismically unsound dam (NHD), potentially threatening life and property, and the City of Los Angeles' water supply would be at risk. The DSOD has mandated that LADWP make improvements in order to improve the seismic reliability of NHR, and under the mandate LADWP is not permitted to operate the existing Dam at its unassisted maximum elevation of 3,760 feet or NHR at its normal capacity.

In addition, two build alternatives to the Proposed Project are being considered, as discussed in Sections 3.1 through 3.19. No feasible alternative other than the Proposed Project, including the two Build Alternatives, would reduce all of the significant unavoidable impacts of the Proposed Project, while achieving the Proposed Project objectives to the extent of the Proposed Project. The No Project

Alternative and the alternatives that were considered but eliminated would not meet the Project objectives. Notably, the No Project Alternative would not meet DSOD's requirements for seismic reliability of NHR, and would continue to expose individuals to seismic hazards associated with damage to the existing Dam should an earthquake event occur. Therefore, the No Project Alternative would not meet the underlying purpose of the Proposed Project, and is not considered a feasible alternative. Alternatives to construction of NHD2 (i.e. retrofitting or replacing NHD) would not be feasible and would not meet Proposed Project objectives, as the LAA system may be shut down for long periods of time by these alternatives, cutting off an essential water source for the City. The alternative of constructing a clay core dam would meet the Proposed Project's purpose and objectives but would be financially infeasible, and therefore has been withdrawn from consideration.

Thus, even though the Proposed Project does have significant and unavoidable impacts related to air quality, cultural resources, and noise during construction, these impacts are believed to be cumulatively less than significant if the Proposed Project was not undertaken. Furthermore, the Proposed Project would ensure that, should the existing Dam be damaged or breached by an earthquake event, public health and safety would be ensured by protecting the local population from a hazardous flooding event. Additionally, the Proposed Project would also ensure that NHR would be able to continue to function as an essential water conveyance infrastructure component for the City. The Proposed Project fully supports public health, safety, and welfare, notwithstanding significant unavoidable impacts.

5.0 Coordination and Consultation

5.1 CEQA Lead Agency - City of Los Angeles Department of Water and Power (LADWP)

Primary Contact:
Charles C. Holloway, Manager of Environmental Planning and Assessment
111 N. Hope Street, Room 1044
Los Angeles, CA 90012

Charles Holloway	LADWP, Environmental Affairs Group
Nadia Parker	
Brian Gonzalez	
Joe Gobran	LADWP, Geotechnical Engineering Group
Alexander Saldivar	
Katina Thomas	
Hiren Patel	
Katherine Rubin	LADWP, Wastewater Quality and Compliance Group
Clayton Yoshida	
Chloé Grison	
Jeffrey Nordin	LADWP, Watershed Resources Group
Dave Martin	
Tammy Varnum	
Lori Gillem	

5.2 NEPA Lead Agency - U.S. Department of the Interior, Bureau of Land Management (BLM)

Primary Contact:
Paul Rodriquez, Realty Specialist
Ridgecrest Field Office
300 S. Richmond Rd.
Ridgecrest, CA 93555

Carl Symons	BLM, Ridgecrest Field Office
Robert Pawelek	
Carrie Woods	
Donald Storm	
Paul Rodriquez	
Lynette Elser	
Randall Porter	
Greg Haverstock	BLM, Bishop Field Office

5.3 Other Agencies and Tribal Groups

Gayle Rosander	Caltrans, District 9
Terry Erlwein	
Joshua Hart	Inyo County, Planning Department
Tom Schaniel	
Chantel Brown	Inyo County, Public Works
Raymond Andrews	Bishop Paiute Tribe
Danelle Bacoch-Gutierrez	Big Pine Paiute Tribe of the Owens Valley
Stephanie Arman	Fort Independence Paiute Indians
Kathy Bancroft	Lone Pine Paiute and Shoshone Tribe
Barbara Durham	Timbisha Shoshone Tribe

5.4 Consultant Team

EIR/EA

Fareeha Kibriya	Project Manager	AECOM
Shannon Ledet	QA/QC, Senior Environmental Planner	AECOM
Tisa Rodriguez	Environmental Planner	AECOM
Cristina Chung	Environmental Planner	AECOM
Vicky Wu	Environmental Planner	AECOM
Erin Murphey	Environmental Planner	AECOM
Jang Seo	GIS/Graphics Specialist	AECOM

Aesthetics

Sam Silverman	Visual Technical Lead	Terry A. Hayes Associates
Rosa Soria	Graphic Artist	Terry A. Hayes Associates
Kieran Bartholow	Assistant Planner	Terry A. Hayes Associates

Air Quality and Greenhouse Gas Emissions

Jason Paukovits	Senior Air Quality Specialist	AECOM
Mary Kaplan	Senior Project Specialist, Air Quality and Engineering Studies	AECOM
Alisa Risteen	Air Quality Engineer	AECOM
Vicky Wu	Environmental Planner	AECOM

Biological Resources

Art Popp	Senior Biologist	AECOM
Colleen Martin	Staff Ecologist	AECOM

Cultural Resources

Mike Kelly	Principal Archaeologist	AECOM
Elena Nilsson	Principal Archaeologist	AECOM
Russ Bevill	Senior Archaeologist	AECOM
Joe Stewart	Principal Paleontologist	AECOM
Kirk Ranzetta	Senior Architectural Historian	AECOM

Geology, Soils, and Seismicity

Chris Goetz	Principal Engineering Geologist	AECOM

Hazardous Materials

Joanna Luebbers	Senior Geologist	AECOM
Christiane Tamayo	Senior Geologist	AECOM

Hydrology, Water Quality, Groundwater

Vik Bapna	Principal	California Watershed Engineering (CWE)
Ben Willardson	Director of Water Resources	CWE
Joe Liles	Principal Hydrogeologist	AECOM
Carmen Caceres-Schnell	Senior Environmental Scientist	AECOM
Eddy Teasdale	Project Hydrogeologist	AECOM
Andrea Christian	Staff Engineer	AECOM

Noise and Vibration

Sam Silverman	Noise Technical Lead	Terry A. Hayes Associates
Seyedehsan Hosseini, PhD	Environmental Scientist	Terry A. Hayes Associates
Kieran Bartholow	Assistant Planner	Terry A. Hayes Associates
Rosa Soria	Graphic Artist	Terry A. Hayes Associates

Transportation and Traffic

Sandipan Bhattacharjee	Project Manager	Translutions
Deepali Chausalkar	Deputy Project Manager	Translutions

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6.0 Acronyms, Abbreviations, and Glossary

6.1 Acronyms and Abbreviations

$\mu g/m^3$	micrograms per cubic meter
ACHP	Advisory Council on Historic Preservation
AB	Assembly Bill
ACEC	Area of Critical Environmental Concern
ACS	American Community Survey
ADA	Americans with Disabilities Act of 1990
AERMOD	American Meteorological Society/USEPA Regulatory Model
af	acre-feet
APE	Area of Potential Effects
APS	Alternative Planning Strategy
AQMP	Air Quality Management Plan
ARPA	Archaeological and Historic Preservation Act of 1974
asl	above sea level
BACM	Best Available Control Measures
BACT	Best Available Control Technology
Berms	Proposed West and East Berms
BGPA	Bald and Golden Eagle Protection Act of 1940
bgs	below ground surface
BLM	U.S. Department of the Interior, Bureau of Land Management
BMP	Best Management Practice
BRA	North Haiwee Dam Seismic Improvement Project Biological Resources Assessment
CAAQS	California Ambient Air Quality Standards
CAL FIRE	California Department of Forestry and Fire Protection
CalEPA	California Environmental Protection Agency
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAP	Climate Action Plan
CCR	California Code of Regulations
CDCA	California Desert Conservation Area

CDD	California Desert District
CDFW	California Department of Fish and Wildlife
CDNCL	California Desert National Conservation Land
CDNPA	California Desert Native Plants Act
CDP	Census-Designated Place
CDPH	California Department of Public Health
CDSM	Cement Deep Soil Mixing
CDWR	California Department of Water Resources
CESA	California Endangered Species Act
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
cfs	cubic feet per second
CGP	Construction General Permit
CH_4	methane
CHP	California Highway Patrol
City	City of Los Angeles
CMA	Conservation Management Action
CMCE	Controlling Maximum Credible Earthquake
CMP	Congestion Management Plan
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	Carbon dioxide equivalent
County	County of Inyo
CRHR	California Register of Historical Resources
CSD	Community Service District
CTR	California Toxics Rule
CUP	Conditional Use Permit
CWA	Clean Water Act
CWC	California Water Code
dB	Decibel

dBA	A-weighted decibel(s)
DOC	California Natural Resources Agency, Department of Conservation
DOGGR	California Department of Conservation, Division of Oil, Gas, and Geothermal Resources
DRECP	Desert Renewable Energy Conservation Plan
DSOD	California Department of Water Resources, Division of Safety of Dams
DWR	Department of Water Resources
DWMA	Desert Wildlife Management Area
EA	Environmental Assessment
EIR	Environmental Impact Report
EIS	Environmental Impact Study
EJ	Environmental Justice
EJSA	Environmental Justice Study Area
Envirofacts	Envirofacts Multisystem Research
Envirostor	Envirostor Database
EO	Executive Order
ERA	Environmental Resource Area
ERP	Emergency Response Plan
ESA	Endangered Species Act (Section 3.4, Biological Resources)
ESA	Environmentally Sensitive Areas (Section 3.5, Cultural Resources)
Existing Dam	Existing North Haiwee Dam
FE	Listed as endangered under the Federal Endangered Species Act
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act of 1973
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FLPMA	Federal Land Policy and Management Act of 1976
FMMP	Farmland Mapping and Monitoring Program
FMPP	Fire Management and Protection Plan
FONSI	Finding Of No Significant Impact
FP	State Listed as Fully Protected
FPD	Fire Protection District
FR	Federal Register
FT	Federally Threatened
FTA	Federal Transit Administration
GBUAPCD	Great Basin Unified Air Pollution Control District

GBVAB	Great Basin Valleys Air Basin
Geotracker	Geotracker Database
GHG	greenhouse gas
GI	Geotechnical Investigation
GPS	Global Positioning System
GWP	Global Warming Potential
HAER	Historic American Engineering Record
HARP2	Hotspots Analysis and Reporting Program
HCP	Habitat Conservation Plan
HFC	hydrofluorocarbon
HHS	U.S. Department of Health and Human Services
HI	hazard index
HRA	Health Risk Assessment
HUC	Hydrologic Unit Code
ICEHSD	Inyo County Environmental Health Services Department
ICGP	Inyo County General Plan
ICHMAP	Inyo County Hazardous Materials Area Plan
ICSD	Inyo County Sheriff's Department
ICSS	Inyo County Superintendent of Schools
IMACA	Inyo Mono Advocates for Community Action
IS	Initial Study
ITP	Incidental Take Permit
IWM	Inyo County Waste Management Department
KOP	Key Observation Point
LAA	Los Angeles Aqueduct
LACM	Natural History Museum of Los Angeles County
LADWP	City of Los Angeles Department of Water and Power
LCM allotment	Lacey-Cactus-McCloud livestock grazing allotment
LEP	Limited English Proficiency
L_{eq}	Equivalent Noise Level
LORS	Laws, Ordinances, and Regulations
LOS	Level of Service
LRA	Local Responsibility Area
LRP	Legally Responsible Person
LRWQCB	Lahontan Regional Water Quality Control Board
LSAA	Lake and Streambed Alteration Agreement

LST	local significance thresholds
LUPA	Land Use Plan Amendment
mg/m^3	milligrams per cubic meter
Management Agreement	Inyo County-Los Angeles Long Term Ground Water Management Agreement
MBTA	Migratory Bird Treaty Act of 1918
MCE	Maximum Credible Earthquake
MEIR	maximally exposed individual at an existing residential receptor
MEIW	maximally exposed individual at an existing occupational worker receptor
MEP	Maximum Extent Practicable
MER	Mineral and Energy Resources
MGS	Mohave Ground Squirrel
MND	Mitigated Negative Declaration
MOE	measures of effectiveness
MOU	Memorandum of Understanding
mph	miles per hour
MPO	Metropolitan Planning Organization
MRP	Mining and Restoration Plan
MRZ	Mineral Resources Zone
MS4	Municipal Separate Storm and Sewer System
MSL	Mean Sea Level
MT	Metric Tons
MUC	Multiple-use Classifications
NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NAGPRA	Native American Graves Protection and Repatriation Act
NAHC	Native American Heritage Commission
NCCP	Natural Communities Conservation Plan
NEPA	National Environmental Policy Act
New Dam	North Haiwee Dam No. 2
NF_3	nitrogen trifluoride
NHD	Existing North Haiwee Dam
NHD2	North Haiwee Dam No. 2
NHPA	National Historic Preservation Act
NHR	North Haiwee Reservoir

N_2O	nitrous oxide
NO	nitric oxide
NO_2	nitrogen dioxide
NOP	Notice of Preparation
NOx	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NPPA	California Native Plant Protection Act of 1977
NPS	National Park Service
NR	Natural Resources Land Use Designation
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
OHP	California Office of Historic Preservation
OHV	Off Highway Vehicle
OS-40	Open Space with a 40-acre minimum size
OSR	Open Space and Recreation
OVFZ	Owens Valley Fault Zone
OVLMP	Owens Valley Land Management Plan
OVPA	Owens Valley PM_{10} Planning Area
PCE	Passenger Car Equivalents
PFC	perfluorocarbon
PM	particulate matter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
PM_{10}	particulate matter less than 10 microns in diameter
Porter-Cologne	Porter-Cologne Act
ppmv	parts per million by volume
PPV	Peak Particle Velocity
PRC	California Public Resources Code
PRD	Permit Registration Documents
PRPA	Paleontological Resources Preservation Act
QSD	Qualified Storm Water Developer
QSP	Qualified Storm Water Practitioner
RCRA	Resource Conservation and Recovery Act
REAT	Renewable Energy Action Team
RMS	Root Mean Square
ROG	reactive organic gases
ROW	Right-Of-Way

RP	Rural Protection Land Use Designation
RPS	Renewable Portfolio Standard
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SC	State Candidate for Listing
SCS	Sustainable Communities Strategy
SD	State Delisted
SE	State Endangered
SF_6	sulfur hexafluoride
SFL	State and Federal Lands Land Use Designation
SHPO	California State Historic Preservation Office
SIP	State Implementation Plan (Section 3.3, Air Quality)
SIP	State Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries (Section 3.10, Hydrology, Water Quality, and Groundwater)
SMARA	Surface Mining and Reclamation Act of 1975
SMARTS	Stormwater Multi Application and Report Tracking System
SNFFZ	Sierra Nevada Frontal Fault Zone
SO_2	sulfur dioxide
SO_X	sulfur oxide
sq.mi.	Square Miles
SR-	State Route
SRA	State Responsibility Area
SRMA	Special Recreation Management Area
SSC	State Species of Special Concern
SSP	Site Security Plan
ST	State Threatened
SVF	Special Vegetation Feature
SVP	Society of Vertebrate Paleontology
SWIS	Solid Waste Information System
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminant
TCR	Tribal cultural resource
TMDL	Total Maximum Daily Load

TMP	Traffic Management Plan
TNM	Traffic Noise Model
U.S.C.	United States Code
Unified Program	Unified Hazardous Waste and Hazardous Materials Management Regulatory Program
US-	U.S. Highway
USACE	United States Army Corps of Engineers
USD	Unified School District
USEPA	United States Environmental Protection Agency
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
v/c	volume to capacity ratio
VCR	Visual Contrast Rating
Vdb	Decibel notation used to measure root mean square
VOC	volatile organic compound
VRM	Visual Resource Management
WBWG	Western Bat Working Group
WDR	Waste Discharge Requirement
WEAP	Worker Environmental Awareness Program
yd^3	cubic yards

6.2 Glossary

California Department of Fish and Wildlife	CDFW	The CDFW protects native fish, wildlife, plant species, and natural communities for their intrinsic and ecological value and benefits to people. This includes habitat protection and maintenance in a sufficient amount and quality to ensure the survival of all species and natural communities.
California Department of Transportation	Caltrans	Caltrans is the agency responsible for managing the State's highway systems which includes more than 50,000 miles of highway and freeway lanes. Caltrans is involved in the planning, construction, and maintenance of highways, bridges and rail transportation. The Proposed Project is located within Caltrans District 9.

California Department of Water Resources Division of Safety of Dams	DSOD	The DSOD, a division of the California Department of Water Resources, protects people and properties from dam failure through engineering design parameters, reviews of site geology and seismicity, construction standards, and yearly inspections and maintenance throughout the State.
California Environmental Protection Agency California Air Resources Board	CARB	CARB is part of the California Environmental Protection Agency, and is responsible for enforcing and monitoring the State's ambient air quality standards. CARB is responsible for developing standards for the reduction of pollutants by mobile sources, including construction equipment.
City of Los Angeles Department of Water and Power	LADWP	LADWP is the Lead Agency under CEQA. LADWP is the Proposed Project proponent and builder of the Proposed Project.
County of Inyo Planning Department	County	The County of Inyo Planning Department is charged with the orderly growth and development of the County while maintaining the County's quality of life and natural environment. The County Planning Department is responsible for coordinating local land use planning and permitting, and for coordinating local mining processing.
Great Basin Unified Air Pollution Control District	GBUAPCD	The GBUAPCD is a local air district tasked with enforcing federal, state, and local air quality regulations of stationary sources of pollution. The GBUAPCD includes Alpine, Mono, and Inyo Counties which extends across 13,975 square miles
Lahontan Regional Water Resources Control Board	Lahontan	Lahontan is a regional division of the State Water Resources Control Board. The Lahontan region extends from the Oregon border to the northern Mojave Desert and includes all of California east of the Sierra Nevada crest. Compliance with the Porter-Cologne Act is administered by Lahontan.
U.S. Army Corps of Engineers	USACE	The USACE is an agency comprised of Civilians and Soldiers, and provides engineering services worldwide. USACE is responsible for protecting U.S. aquatic resources.

U.S. Department of the Interior Bureau of Land Management	BLM	BLM is the Lead Agency under NEPA for the Proposed Project. BLM is an agency within the U.S. Department of the Interior that administers the United States' public lands, totaling approximately 253 million acres, or one-eighth of the landmass of the country. BLM also manages 700 million acres of subsurface mineral estate underlying federal, state, and private lands. BLM owns a portion of the land that would be utilized for the LAA's realignment and for excavation of earthen materials for the Proposed Project. Additionally, BLM owns land that would be temporarily required for construction staging.
U.S. Department of the Interior U.S. Fish and Wildlife Service	USFWS	The USFWS is an agency within the U.S. Department of the Interior that assists with the development and application of environmental stewardship; guides the conservation, development, and management of U.S. fish and wildlife resources; and administers a national program for the public. The USFWS manages the National Wildlife Refuge System and National Fish Hatcheries, and maintains regional and field offices across the country.

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