CEQA Initial Study
And Mitigated Negative Declaration

Haiwee Power Plant Penstock Replacement Project

September 2016

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Table of Contents

Section Name **Page Number**

Table of Contents

List of Tables

Table Name **Page Number**

List of Figures

Figure Name **Page Number**

Section 1
Project and Agency Information

1.1 PROJECT TITLE AND LEAD AGENCY

Project Title:	Haiwee Power Plant Penstock Replacement Project
Lead Agency Name:	Los Angeles Department of Water & Power
Lead Agency Address:	111 North Hope Street, Room 1044 Los Angeles, California 90012
Contact Person:	Ms. Julie Van Wagner
Contact Phone Number:	(213) 367-5295
Project Sponsor:	Same as Lead Agency

1.2 PROJECT BACKGROUND AND OBJECTIVES

The City of Los Angeles is a municipal corporation and charter city organized under the provisions of the California Constitution. The Los Angeles Department of Water and Power (LADWP) is a proprietary department of the City that supplies water and power to Los Angeles' inhabitants pursuant to the Los Angeles City Charter. LADWP owns power generation, transmission and distribution facilities to provide safe and reliable electrical energy to its approximately 1.4 million customers.

The city operates the existing Haiwee Power Plant Penstock for the conveyance of water from South Haiwee Reservoir to the Haiwee Power Plant as part of the overall Los Angeles Aqueduct System. [A penstock is a pressurized pipe used to feed water to a hydroelectric power plant.] LADWP is the lead agency under the California Environmental Quality Act (CEQA) and has prepared this Initial Study (IS) to address the impacts of construction and operation of the Haiwee Power Plant Penstock Replacement Project (Haiwee Penstock Project, project). The project is the replacement of approximately 10,000 feet of existing pipe to allow the safe transmission of water from South Haiwee Reservoir to the Haiwee Power Plant.

The IS has been prepared in accordance with CEQA, Public Resources Code Section 21000 et seq., and the State CEQA Guidelines, Title 14 California Code of Regulations (CCR) Section 15000 et seq. The IS serves to identify the site-specific impacts, evaluate their potential significance, and determine the appropriate document needed to comply with CEQA. For this project, LADWP has determined, based on the information reviewed and contained herein, that the proposed Haiwee Penstock Project could potentially have a significant environmental impact, but that mitigation measures can be implemented to alleviate the impacts to a level of less than significant. Based on this IS, a Mitigated Negative Declaration (MND) is the appropriate CEQA document. Staff recommends that the City of Los Angeles Board of Water and Power Commissioners adopt this IS/MND for the proposed project.

1.2.1 Project Background

The penstock serves both LADWP Power System and Water System needs by providing generation of renewable energy, and water supply to the City of Los Angeles as part of the Los Angeles Aqueduct 1 (LAA1). Water flows entirely by gravity from an elevation of 3,685 feet above mean sea level (amsl) near the base of South Haiwee Reservoir Dam to an elevation of 3,578 feet amsl at the Haiwee Power Plant, and then on to the Upper Van Norman Reservoir in the San Fernando Valley (elevation 1,200 feet amsl). Studies have concluded that the penstock, most of which was built in 1926, has exceeded its useful life and has no margin of safety. Leaks requiring repair occur along the penstock's 10,000-foot length every few months. Replacement of the entire penstock is necessary in order to maintain safe and reliable operation.

The Haiwee Penstock is a component of the LAA System. The following is a select timeline of events relevant to the Haiwee Power Plant and Penstock:

- **1913** – To meet water supply demands in the city of Los Angeles, the LAA was completed, and storage of Owens River water began at North and South Haiwee Reservoirs. An in-line hydro-electric plant was proposed as part of the original construction, and the intake tower and tunnel within the dam were constructed. However, the power house was not designed in time, and an open bypass channel was constructed around the section where the proposed power house and penstock were to be located.

- **1913** – Los Angeles residents received their first deliveries of water from the LAA.

- **1917** – Installed from the base of the dam, the upper 1,600 feet of the penstock was constructed and connected to a small hydroelectric unit.

- **1926** – The penstock was extended to approximately 10,000 feet, made primarily of 102-inch diameter coated and lined, riveted steel pipe, connecting to two 2.5 megawatt (MW) hydroelectric units; the old unit was removed from service.

- **1952** – Most of the upper penstock was replaced with welded 3/8-inch thick coated and lined steel plate.

- **1970** – Rose Valley LAA2 was constructed and a wye branch (three openings) connection was made to the Haiwee penstock at the location of the old hydroelectric unit.

- **1984** – Approximately 1,690 feet of the penstock, located upstream of the wye branch connection, collapsed on April 14, 1984 due to a vacuum event. The penstock was subsequently pressure inflated, which partially restored the shape of the structure. The restored section is extremely distorted, with many longitudinal creases and folds.

- **2008** – Review of penstock records determined that corrosion and pitting have reduced the plate thickness of the 1926 penstock such that during normal operation the penstock is insufficient to meet current day design standards. Earthquakes or pipeline pressure surges were identified as events that could cause failure of the penstock. It was concluded that

the penstock had exceeded its service life and had no remaining safety margin. Complete replacement of the penstock was recommended.

- **2010** – Replacement of the penstock with fiber reinforced polymer composite material was reviewed and recommended.

- **2017** – Construction of the new penstock is planned.

1.2.2 Project Objective

The objective of the Haiwee Power Plant Penstock Replacement Project is to provide a reliable penstock from South Haiwee Reservoir to Haiwee Power Plant in order to increase the reliability of the water conveyance system as well as improve operability of the power generating system. The Haiwee Power Plant consists of two 2.5 MW hydroelectric generating units originally constructed and put in service in 1927.

1.3 PROJECT LOCATION AND ENVIRONMENTAL SETTING

The Haiwee Power Plant is located in the Owens Valley, off U.S. Route 395 (Hwy 395) at 1800 South Haiwee Loop Road, Inyo County, California; just south of the town of Olancha and approximately 35 miles south of Lone Pine, California (**Figure 1**). The project site is located on the Haiwee Reservoirs and Coso Junction 7.5 minute U.S. Geological Survey (USGS) quadrangles and the latitude/longitude of the north end of the project area is 36.1354°N/-117.9534°W (North American Datum 1983 UTM Zone 11N). The project site is accessed from Hwy 395 via Haiwee Reservoir Road at the north near the dam or Los Angeles Aqueduct Road off Hwy 395 south of the Power Plant.

Haiwee Power Plant is in operation, and approximately three LADWP personnel (operator, reservoir keeper and occasionally an additional operator) are present on-site to maintain and operate Department facilities. The closest residence to the project site is the caretaker's house, located at the north end of the project site, approximately 0.14 miles west of the construction area. Additional homes are located on LADWP land on Haiwee Reservoir Road, approximately 0.2 miles north of the project construction area. One is occupied by an LADWP employee; one is unoccupied. There is also a ranch house located approximately 7 miles north of the penstock, and residential properties in Olancha located approximately 9 miles north of the penstock project area.

The project area has been previously disturbed for installation of the existing penstock and power plant and construction of the on-site access roads. Desert saltbush scrub is the predominant plant community in the project area. Other on-site vegetation communities include rubber rabbitbrush scrub (along disturbed roadways and in a small disturbed area at the north end of the project site) and Mojave creosote brush scrub (south end of the project site). Haiwee Creek runs along the east side of the project area.

The existing penstock was installed under a right-of-way agreement with the U.S. Bureau of Land Management (BLM) (June 30, 1906), the owner of portions of the project site; LADWP also owns portions of the site. The City was granted the right-of-way:

> "…not to exceed two hundred and fifty feet in width, over and through the public lands of the United States in the Counties of Inyo, Kern and Los Angeles, State of California, and over and through the Sierra and Santa Barbara Forest Reserve and the San Gabriel Timber Land Reserve, in said State, for the purpose of constructing, operating and maintaining canals, ditches, pipes and pipe lines, flumes, tunnels and conduits for conveying water to the City of Los Angeles, and for the purpose of constructing, operating and maintaining power and electric plants, poles and lines for the generation and distribution of electric energy…"

1.4 PROJECT DESCRIPTION

The project includes the installation of approximately 10,000 feet of 84-inch (outside diameter) fiber reinforced polymer composite pipe, with a thickness of approximately ½ inch. The new penstock would be located immediately adjacent to, and follow the same general slope as, the existing structure (**Figures 2** through **6**). At two locations (approximately 700 feet at the north end, just south of the existing primary shutoff valve and approximately 125 feet at the southern end of the penstock), the existing penstock structure would be removed and the new penstock installed in the same location. Other areas of the exiting penstock would be abandoned in place. The new penstock would connect to the existing system at the existing primary shut off valve at the base of the South Haiwee Reservoir dam, the wye branch connection to LAA2, and the bifurcation that leads to the power house. No alterations to the power plant are proposed. Based on the preliminary design drawings, the new penstock would be buried to a depth of approximately 1.5 feet to over 4 feet; depths would be determined during final design in collaboration with the construction contractor.

The project also includes removal of a small structure and concrete foundation located approximately 1,700 feet north of the power plant. Additionally, an existing 20-inch manhole near the power plant would be replaced with a 36-inch manhole. A vacuum/air release system would also be installed.

The maximum area of potential temporary construction area is shown on **Figures 2** through **6** and includes the area to be excavated for penstock installation, area of vehicle and equipment movement, and area for vehicle and equipment staging. Disturbance in the majority of this area would be limited to vehicle travel only. The maximum area of potential construction disturbance is approximately 116.3 acres. Based on an estimated average trench width of 30 feet (range of 20 to 40 feet, depending on location), the approximately area to be excavated for installation of the new penstock is 7 acres.

1.4.1 Project Construction

Construction of the Haiwee Penstock Project is estimated to occur over approximately 15 months and to include the activities listed below and equipment summarized in **Table 1**:

- Site preparation and fence installation
  - Vegetation removal, grading, stockpiling of top 6 inches of soil
- Trench excavation
  - Soils excavation, installation of shoring if required, stockpiling of soils
- Pipeline installation
  - Installation of bedding, pipe installation, anchoring (as applicable), re-compaction of soils in trench, grading of surface contours, replacement of topsoil
- Connection construction
  - Pipe fitting
- Testing and commissioning

The 15 month construction period is an estimate only; the contractor may elect to construct the project over a different time period. Installation of the penstock would require excavation of a trench up to approximately 15 feet deep, and depending on shoring method, up to approximately 40 feet wide (20 feet on each side).

The first 6 inches of top soil removed for construction of the penstock trench would be set aside. Once installation of new facilities is completed, this soil would be replaced on the final graded surface. Excavated soils below 6 inches would be used to backfill the trench and cover the new penstock. The specific volume of excess soils would depend on the depth of soils placed over the new penstock, to be determined during final design. Up to an estimated 15,000 cubic yards of soils may be disposed off-site by the contractor.

Table 1
Haiwee Penstock Replacement Project
Summary of Estimated On-Site Construction Equipment and Vehicles

Equipment Type General Construction	Number during Peak Construction	Equipment Type Electrical Construction	Number during Peak Construction
Bulldozers	2	Pick-up trucks	4
Excavators	2	Generators	2
Graders	1	15-ton Crane	1
Loaders	2	Concrete Trucks	3
Backhoes	1	Fuel Trucks	1
Dump Trucks	3	Heavy duty fork lift	1
Water truck	1		

The on-site construction workforce would consist of equipment operators and vehicle drivers, grounds crew and construction management personnel. During peak construction activity, a maximum of approximately 50 to 60 workers is expected on-site. An average work day of 10 hours is assumed. In winter, temporary lighting may be necessary. Over the estimated 15 month construction period, approximately 10 materials deliveries would be made to the site (for pipeline segments, valves, etc.) per month. With an estimated maximum of 15,000 cubic yards of soils to be hauled off-site, on the order of 5 trucks per day would be required to haul excess soils.

The existing penstock would remain in operation during project construction, except for brief periods when the portions of the new penstock that tie in to the existing pipeline are constructed. Construction access would be off Hwy 395 from the Haiwee Reservoir Road and the southern access road to the power house, then via the existing roadway network at the site.

1.4.2 Access Roads and Construction Staging Areas

Figures 2 through **6** note the internal roadway network to be used during project construction for vehicle, equipment and worker travel. No new roadways, or substantial roadway improvements, are proposed for construction of the Haiwee Penstock Project. As shown on **Figures 2**, **5** and **6**, four potential construction laydown areas are identified for use during project construction.

1.4.3 Operations

Once constructed, flows from South Haiwee Reservoir to the Haiwee Power Plant would be conveyed in the new Haiwee Penstock. Limited maintenance and on-going monitoring would occur. Monitoring and maintenance activities would include inspection of project facilities and maintenance of pipe materials, as required.

1.5 APPLICABLE PLANS AND POLICIES

The project site is located on LADWP and BLM-administered lands within Inyo County. LADWP owns the property adjacent to the dam, land (generally) east of the penstock, and the power house site. BLM owns the land (generally) west of the penstock. The existing penstock is operated under a right-of-way agreement for use of federal lands from the BLM. The specific property boundary is shown on **Figures 3** through **6**. Inyo County designates the land use as SFL (State and Federal Lands) and NR (Natural Resources). The zoning overlay is OS-40 (Open Space, 40-acre lot minimum).

1.6 AGENCY COORDINATION

Permits, approvals and notifications for project construction and operation are anticipated to include:

- Since there is an existing right-of-way agreement for use of federal lands, the Haiwee Penstock Project would be a maintenance activity under the existing right-of-way agreement with BLM.
- The wetland delineation conducted for the project (LADWP, 2015b) indicates that construction of the proposed project would not trigger wetlands permitting from the U.S. Army Corps of Engineers. If changes to the project result in impacts to jurisdictional areas, a Clean Water Act Section 404 Permit from the U.S. Army Corps of Engineers may be required. Water Quality Certification per Clean Water Act Section 401 would then be sought from the Lahontan Regional Water Quality Control Board (RWQCB).
- Depending on the jurisdictional status of drainages present onsite, a Streambed Alteration Agreement per Section 1600 of the Fish and Game Code may be sought from the California Department of Fish and Wildlife (CDFW).

- LADWP would acquire an Incidental Take Permit from CDFW, for temporary impacts to habitat suitable for desert tortoise and Mohave ground squirrel (per the California Endangered Species Act (ESA), Fish and Game Code §§ 2050 et seq.).
- Construction of the Haiwee Penstock Project would be completed in compliance with the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ, NPDES NO. CAS000002). Per the General Permit, a Storm Water Pollution Prevention Plan (SWPPP) incorporating best management practices (BMPs) for erosion control would be developed and implemented during project construction.
- Transportation of heavy construction equipment and/or materials, which requires the use of oversized-transport vehicles on State highways, would require a transportation permit from the California Department of Transportation (Caltrans).
- Inyo County Planning Department would be notified of the construction schedule for the proposed project.

Key to Features

- Town
- Los Angeles Aqueduct
- Haiwee Penstock
- Waterway
- Highway
- County Boundary

N

0 0.5 1 Miles

Document: \\uspas1s01\muni\Clients\Los Angeles Water&Power LADWP\Owens Valley Data\Owens Valley GIS\Projects\Haiwee\HaiweeLocationMap.mxd

Imagery Source: Bing/ESRI

Haiwee Penstock Replacement Project Vicinity Map

Figure 1

Los Angeles Department of Water & Power

MWH.

Key to Features

- Existing Road
- Existing Penstock
- Pipeline Replacement
  - New 84" Diameter
- Potential Construction Laydown Area
- Width of Access Road
- Temporary Construction Disturbance Area
- BLM Right of Way
- Property Ownership

N

0 100 200 Feet

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Imagery Source: ESRI

Haiwee Penstock Replacement Project

Location Map - Reach 1

Los Angeles Department of Water & Power

Figure 2

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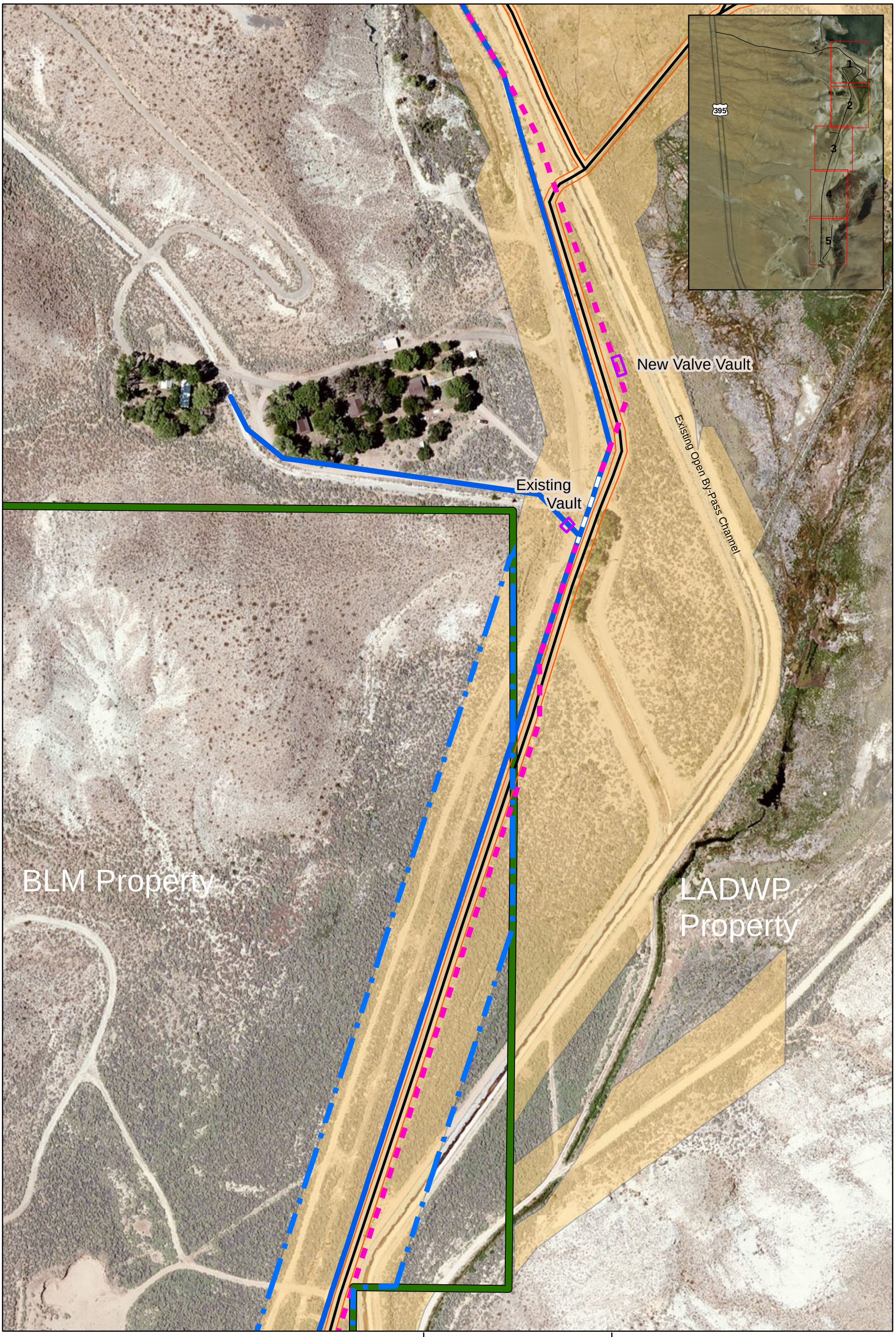

Key to Features

- Existing Road
- Existing Penstock
- Pipeline Replacement
  - New 84" Diameter
- Width of Access Road
- Temporary Construction Disturbance Area
- Existing Penstock to Remain in Place
- BLM Right of Way
- Property Ownership

Georeferenced from image of surveyed property boundary. Locations considered approximate.

N

0 100 200 Feet

Document: \\uspas1s01\muni\Clients\Los Angeles Water&Power LADWP\Owens Valley Data\Owens Valley GIS\Projects\Haiwee\PenstockReplaceV8.mxd

Imagery Source: ESRI

Haiwee Penstock Replacement Project

Location Map - Reach 2

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Figure 3

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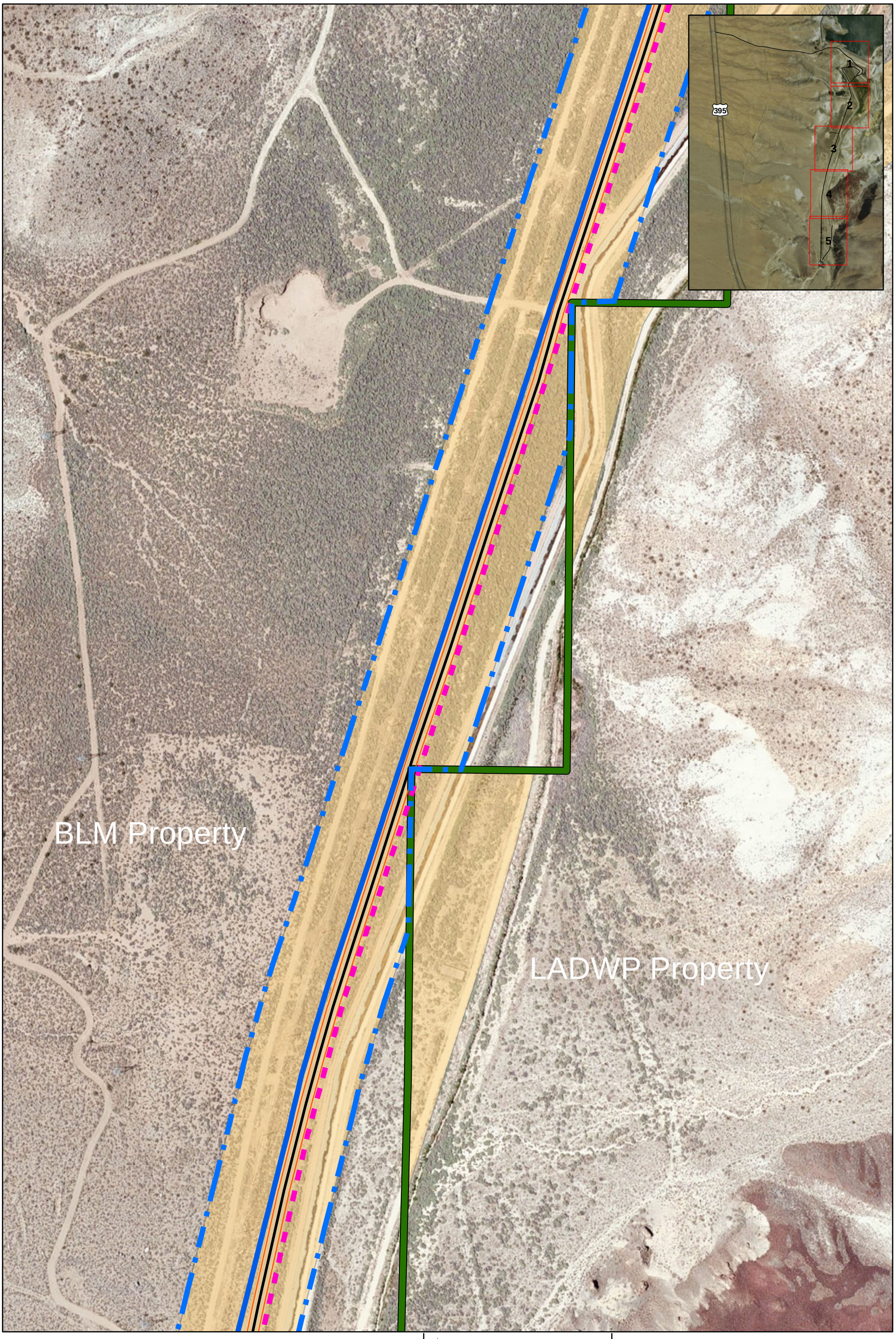

Key to Features

- Existing Road
- Existing Penstock
- Pipeline Replacement
  - New 84" Diameter
- Potential Construction Laydown Area
- Width of Access Road
- Temporary Construction Disturbance Area
- BLM Right of Way
- Property Ownership

Georeferenced from image of surveyed property boundary. Locations considered approximate.

N

0 100 200 Feet

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Imagery Source: ESRI

Haiwee Penstock Replacement Project

Location Map - Reach 3

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Figure 4

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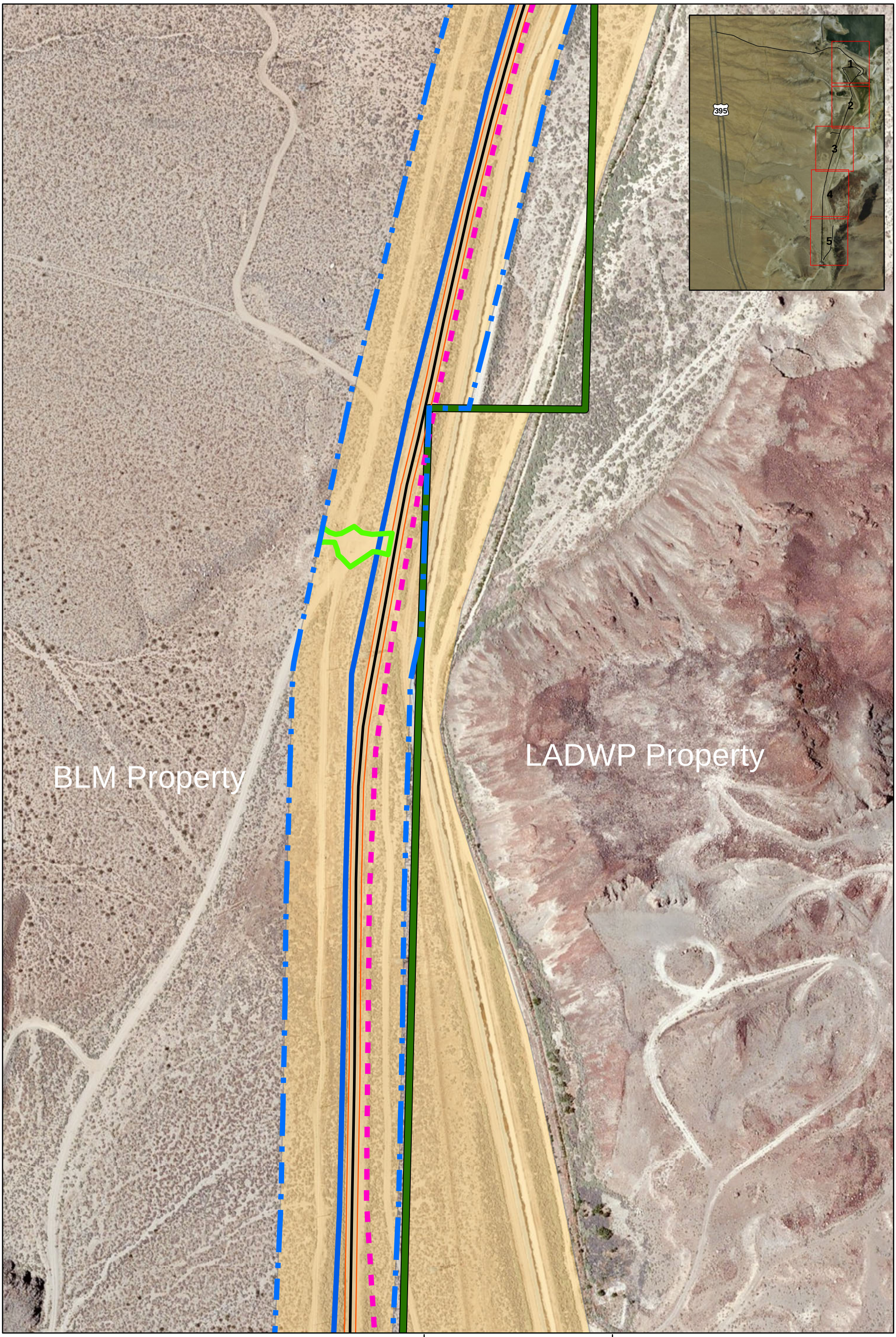

Key to Features

- Existing Road
- Existing Penstock
- Pipeline Replacement
  - New 84" Diameter
- Potential Construction Laydown Area
- Width of Access Road
- Temporary Construction Disturbance Area
- BLM Right of Way
- Property Ownership

Georeferenced from image of surveyed property boundary. Locations considered approximate.

N

0 100 200 Feet

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Imagery Source: ESRI

Haiwee Penstock Replacement Project
Location Map - Reach 4

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Figure 5

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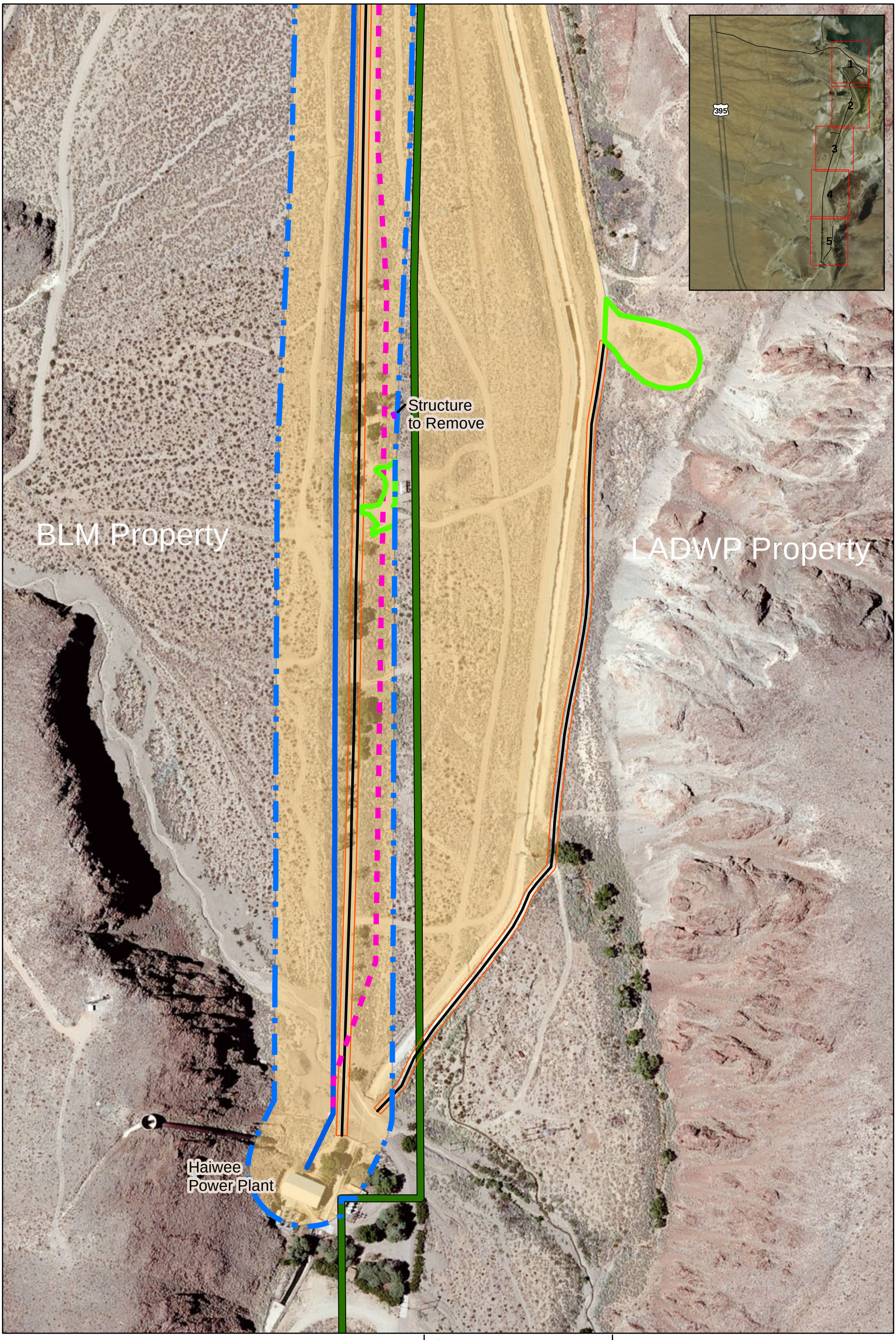

Key to Features

- Existing Road
- Existing Penstock
- Pipeline Replacement
  - New 84" Diameter
- Potential Construction Laydown Area
- Width of Access Road
- Temporary Construction Disturbance Area
- BLM Right of Way
- Property Ownership

Georeferenced from image of surveyed property boundary. Locations considered approximate.

N

0 100 200 Feet

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Imagery Source: ESRI

Haiwee Penstock Replacement Project

Location Map - Reach 5

Los Angeles Department of Water & Power

Figure 6

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Section 2
Environmental Analysis

2.1 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

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

2.2 AGENCY DETERMINATION

On the basis of this initial evaluation:

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

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

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

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

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

Signature: Julie Ka-Wagner Title: Manager, Environmental Assessment & Planning

Printed Name: for Charles C. Holloway Date: 9/1/16

2.3 ENVIRONMENTAL CHECKLIST

2.3.1 Aesthetics

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

Discussion: South Haiwee Reservoir is located in the far northern portion of the Rose Valley, with the Sierra Nevada to the west and the Coso Mountains to the east. Under existing conditions, views at the penstock site are characterized by desert vegetation (desert saltbush scrub, and rubber rabbitbrush scrub, and Mojave creosote bush scrub), water conveyance features and associated buildings and roadways. At the north end of the penstock alignment, just south of the dam, the penstock is above ground and visible (**Figure 7**). Borrow pits, low berms, and off-road vehicle tracks are found throughout the project area.

Hwy 395 is the primary north-south motor vehicle route through the Owens Valley and eastern Sierra Nevada. At the northern end of the penstock alignment, the project site is approximately 1.1 miles from Highway 395, at the southern end, Highway 395 is approximately 0.8 miles away. Motorists looking east toward the project site can view vegetated desert landscape in the foreground, and the Coso Mountains in the background, but the above ground portion of the existing penstock is not clearly visible.

a) and c) **Less than Significant Impact.** The site for the proposed penstock replacement is a roughly flat-lying to very gently southward-sloping wash approximately 2 miles long by ¼-mile wide. It is surrounded by small hills to the west, South Haiwee Reservoir Dam to the north, the Coso Mountains to the east, and Rose Valley to the south. Topographically, the site varies in elevation from approximately 3,685 feet near the base of South Haiwee Reservoir Dam to approximately 3,578 feet at the existing Haiwee Power Plant. Drainage of the project area is primarily by sheet flow to the partially channeled Owens River, beginning just below the South Haiwee Reservoir Dam and extending approximately 2 miles south into Rose Valley.

The northern end of the wash is closed off by the South Haiwee Reservoir Dam. The existing penstock, LAA1, and a paved access road begin on the western side of the dam's base and run through the wash to the Haiwee Power Plant, located approximately 10,000 feet (1.9

miles) to the south. LAA2 also parallels the penstock, LAA1, and the access road through the center portion of the wash. The wash also contains the 115 kV Long Valley–Haiwee electrical transmission line owned by Southern California Edison, as well as structures associated with the dam caretaker's residence. Areas on both sides of the existing penstock have been extensively disturbed by construction and maintenance activities.

Visual Impacts During Construction. Construction activities for the project include site preparation, including vegetation removal and fence installation, trench excavation and soil stockpiling, pipeline installation, pipeline connection construction and testing and commissioning. The construction period is estimated at 15 months, but may take up to 2 years, and views of the project site during construction would include up to 60 workers and approximately 24 pieces of construction equipment/vehicles, plus workers' personal vehicles. Given the remote location of the project and the limited duration of construction, the impact of ground disturbance associated with installation of project facilities would be less than significant on the visual character of the project site.

Aside from the caretaker's house and the structures on Haiwee Road, there are no residential communities close enough to the project site to have views of the area. Although there are partial views of the reservoir from Highway 395 north of the project site, based on the elevation of the roadway, elevations of the pipeline alignment and topography in between, views of the construction (trench and construction equipment) would predominantly not be visible from Highway 395. Therefore, construction activity would not change the dramatic backdrop or natural feel of the overall landscape of the area. The impact on aesthetics would be temporary, limited to viewers in the immediate area of the penstock alignment and less than significant.

Visual Impacts During Operation. Once installed, the penstock would be subsurface, the disturbed area would be revegetated and views of the site would be substantially the same as under existing conditions. No tall structures or other obstructions to scenic vistas are proposed as part of the project; the project would not alter or block scenic views of the surrounding mountains. Project operation would have less than significant impacts on scenic vistas and the visual character of the site.

b) **Less than Significant Impact.** Scenic roadways are designated by BLM, Inyo National Forest, Caltrans, and the Federal Highway Administration. Portions of the project area are located on federal land, subject to the provisions of BLM's Western Mojave (WEMO) Coordinated Management Plan (WEMO Plan; BLM, 2005). Highway 395 is an officially designated State Scenic Highway from Independence to north of Tinemaha Reservoir (postmiles 76.5 to 96.9) (Caltrans, 2011). Highway 395 is eligible for designation in the portions north and south of that segment (Caltrans, 2011). The project site is located east of Highway 395 (from 0.8 to 1.1 miles away) in the eligible but not designated portion of the roadway. Construction for the project would be limited to the immediate area of the 10,000 ft penstock alignment. Steeply sloped bedrock outcrops occur at the project site but would not be disturbed by project construction or operation. Vegetation disturbed for trench construction would be restored at the end of the construction period. Soil stockpiles would be removed from the site.

As discussed above, implementation of the project would temporarily alter views of the site from Highway 395 (portions along the 10,000 ft alignment only), but once installed, views of the project site would be substantially the same as existing conditions. The impact on views from a portion of a roadway eligible for designation as a scenic roadway would be less than significant.

d) **Less Than Significant Impact.** The proposed project does not include permanent installation of new sources of lighting. Construction activities would occur primarily in daylight hours; some limited use of temporary lighting may be necessary in winter. There are no plans for a 24-hour construction schedule. Since the proposed lighting would be of limited duration and confined to the specific area of construction, impacts on light that could affect day or nighttime views of the project area would be less than significant. See also the discussion under Section 2.3.4, Biological Resources; lighting, if applicable, shall be directed inward towards the construction area. Impacts on light and glare would be temporary and less than significant.

Figure 7
View of the Haiwee Penstock Project Area

2.3.2 Agricultural and Forest Resources

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

Discussion:

a) **No Impact.** The Farmland Mapping and Monitoring Program (FMMP) does not include Inyo County; therefore the proposed project would have no impact on conversion of FMMP designated Farmland (California Department of Conservation, 2006).

b) **No Impact.** Existing zoning by Inyo County of the project site is OS-40 (Open Space, 40-acre lot minimum) (Inyo County, 2010). Since Inyo County does not offer a Williamson Act program (California Department of Conservation, 2010), the proposed project would have no impact on agricultural zoning or Williamson Act contracts.

c) and d) **No Impact.** Public Resources Code Section 12220 (g) defines "Forest land" as land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits. The project site is not zoned as forested land and the proposed project would not result in conversion of forest land to non-forest use. Therefore, the proposed project would have no impact on forest lands.

e) **No Impact.** Active ranches are located several miles north of the project. However, since the project would not require construction on or adjacent to the ranches nor alter water distribution to the ranches, there would be no impact on agricultural operations from construction and operation of the Haiwee Penstock Project.

2.3.3 Air Quality

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

Discussion:

The project area is located within the jurisdiction of the Great Basin Unified Air Pollution Control District (GBUAPCD), within the Owens Valley PM_{10} Planning Area. The valley has been designated by the State and the Environmental Protection Agency (EPA) as a non-attainment area for the state and federal 24-hour average particulate matter less than 10 microns (PM_{10}) standards. Wind-blown dust from the dry bed of Owens Lake is the primary cause of the PM_{10} violations. With the exception of PM_{10}, air quality is considered excellent and the area has been designated as attainment or unclassified for all other ambient air quality standards. Large industrial sources of air pollutants are absent from the Owens Valley. The major sources of PM_{10}, other than wind-blown dust, are woodstoves, fireplaces, fugitive dust from travel on unpaved roads, prescribed burning and gravel mining. PM_{10} data for 2014 for the two closest air quality monitoring stations to the penstock project area are:

Monitoring Station	**2014 PM_{10} 24-Hour Average** (micrograms per cubic meters)	**2014 Estimated Days > PM_{10} National 24 Hour Standard***
Coso Junction	673.0	8
Olancha-Walker Creek Road	309.0	3

Source: CARB, 2014

*Standard = 150 µg/m^3, not to be exceeded more than once per year on average over 3 years

a) **Less Than Significant Impact.** The relevant air quality plan for the project area is the Final 2008 Owens Valley PM_{10} Planning Area Demonstration of Attainment State Implementation Plan (SIP) (GBUAPCD, 2008) as amended by the 2013 Amendment to the Owens Valley PM_{10} SIP (GBUAPCD, 2013). The focus of this planning document is implementation of dust control methods (DCMs) at Owens Lake, the major particulate matter sources in the Valley. The SIP demonstrates how the National Ambient Air Quality Standards (NAAQS) will be attained.

Replacement of the Haiwee Penstock would allow the continued reliable operation of the Haiwee Power Plant for hydroelectric generation. Operation of the project would not generate air pollutant emissions, including dust emissions, in excess of existing maintenance and inspection activities. During project construction, dust emissions would be reduced by the implementation of mitigation measures (described below). Therefore, with incorporation of dust control measures during project construction, the Haiwee Penstock Replacement project would be consistent with the SIP developed by GBUAPCD for the Owens Valley Planning Area. Project-related impacts on the air quality plan would be less than significant.

b) and c) **Less Than Significant Impact.** Emissions during project construction would result from the operation of the equipment listed in Section 1, including: bulldozers, excavators, graders, loaders, backhoes, cranes, fork lift, truck and workers' personal vehicles. **Table 2** summarizes worst-case, peak-day emissions estimates for construction activity during trench excavation when the greatest number of construction vehicles and equipment would be required.

The GBUAPCD has not established specific quantitative thresholds of significance for air emissions related to construction. However, projects that violate the NAAQS for PM_{10} are deemed unacceptable (GBUAPCD, 2008).

Construction activities would result in tailpipe emissions of criteria pollutants and dust emissions from earth work and vehicle travel, including travel on unpaved areas. Consistent with GBUAPCD Rule 401 (Fugitive Dust), LADWP would take reasonable precautions to prevent visible particulate matter from being airborne, under normal wind conditions, beyond the property during construction. A water truck would be used during project construction to control dust from active excavation areas, soil stockpiles and unpaved roadways. Once the penstock is installed, disturbed areas would be revegetated. With dust control during project construction, emissions would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region in is nonattainment under an applicable federal or state ambient air quality standard. Therefore, air pollutant emissions during construction would be less than significant.

Operation of the project would include infrequent travel to the site by maintenance staff, the same as under existing conditions. The renewable energy generated by operation of the project would continue to have a beneficial impact on air quality. Operation of the project would have no adverse impact on air quality.

d) **Less Than Significant Impact.** Sensitive receptors include schools, day-care facilities, nursing homes, and residences. The closest community is Olancha, approximately 9 miles to the north. The closest residences are the caretaker's house (0.14 miles west of the penstock construction area) and residences (one occupied by an LADWP employee and one unoccupied) off Haiwee Reservoir Road (approximately 0.2 miles north of the project area). As noted above, construction of the proposed project would include operation of equipment and vehicles. However, given the distance of the nearest community to the project site, the impact from gas and diesel fumes associated with motor vehicles and heavy equipment engines on sensitive receptors would be less than significant.

e) **Less Than Significant Impact.** Project construction and operation would result in minor localized odors associated with fuel use for equipment and vehicles. These odors are common and not normally considered offensive. Odor impacts to potential recreation visitors at the sites during construction activities would be temporary and less than significant.

Table 2
Summary of Estimated Worst-Case Peak Day Construction Emissions

Emissions Source (on-road vehicles and ATVs)	Vehicle Type	No.	Est Max miles per day	Emission Factor (lbs/mi) [1]						Estimated Peak Day Emissions (lbs/day)					
				VOC	CO	NOx	SOx	PM10	PM2.5	VOC	CO	NOx	SOx	PM10	PM2.5
Pickup Truck	PV	4	20	0.000601	0.005379	0.000513	0.000011	0.000094	0.000062	0.05	0.43	0.04	0.00	0.01	0.00
Dump Truck	HHDT	3	60	0.001452	0.006505	0.016904	0.000040	0.000709	0.000651	0.26	1.17	3.04	0.01	0.13	0.12
Fuel Truck	HHDT	1	5	0.001452	0.006505	0.016904	0.000040	0.000709	0.000651	0.01	0.03	0.08	0.00	0.00	0.00
Water Truck	HHDT	1	10	0.001452	0.006505	0.016904	0.000040	0.000709	0.000651	0.01	0.07	0.17	0.00	0.01	0.01
Workers Personal Vehicles [4]	PV	60	70	0.000601	0.005379	0.000513	0.000011	0.000094	0.000062	2.52	22.59	2.15	0.05	0.40	0.26
Emissions Source (construction equipment)	**No.**	**Est Max hrs of use per day**		**Emissions Factor (lbs/hr) [2]**						**Estimated Peak Day Emissions (lbs/day)**					
				VOC	CO	NOx	SOx	PM10	PM2.5 [3]	VOC	CO	NOx	SOx	PM10	PM 2.5
Backhoe	1	8		0.0559	0.3666	0.3681	0.0008	0.0222	0.0197	0.45	2.93	2.94	0.01	0.18	0.16
CAT D8 Dozer	2	8		0.1992	0.5845	1.5954	0.0021	0.0654	0.0582	3.19	9.35	25.53	0.03	1.05	0.93
CAT 365 Excavator	2	8		0.1415	0.4762	0.8988	0.0023	0.0323	0.0287	2.26	7.62	14.38	0.04	0.52	0.46
Grader	1	8		0.1121	0.5844	0.8008	0.0015	0.0397	0.0353	0.90	4.68	6.41	0.01	0.32	0.28
Front End Loader	2	8		0.0559	0.3666	0.3681	0.0008	0.0222	0.0197	0.89	5.87	5.89	0.01	0.35	0.32
Total										**10.5**	**54.7**	**60.6**	**0.2**	**3.0**	**2.5**

PV: passenger vehicles, HHDT: heavy-heavy-duty trucks; DT: delivery trucks

1 SCAQMD. 2007a. EMFAC2007 version 2.3 Emission Factors for On-Road Passenger Vehicles & Delivery Trucks. Scenario Year 2013.

2 SCAQMD. 2007b. SCAB Fleet Average Emission Factors (Diesel). Scenario year 2013.

3 SCAQMD. 2006. Final –Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance.

4 Average mileage per worker assumes 50 percent of workers are from Lone Pine (30 miles away) and 50 percent from Ridgecrest (40 miles away).

2.3.4 Biological Resources

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

Discussion: A Biological Evaluation/Biological Assessment (BE/BA; LADWP, 2015a) was prepared for the project based on records searches, field surveys and information from the following reports:

- Biological Technical Report for the Los Angeles Department of Water and Power's South Haiwee Penstock Replacement Project. Prepared by Garcia and Associates for the Los Angeles Department of Water and Power via MWH Americas, Inc., September 2010.

- Biological Evaluation/Biological Assessment for the Los Angeles Department of Water and Power South Haiwee Penstock Replacement Project. Inyo County, California. Prepared by Garcia and Associates for the Los Angeles Department of Water and Power via MWH Americas, Inc., September 2014.

- Biological Technical Report for the North Haiwee Dam Seismic Improvement Project. Prepared by Los Angeles Department of Water and Power. August, 2015.

- North Haiwee Dam No. 2 Geotechnical Investigations and Archeological Resources Testing for the Haiwee Power Plant Penstock Pre-Construction Survey Report. Prepared by the Los Angeles Department of Water and Power. Incidental Take Permit No. 2081-2011-039-06. April 29, 2015.

The BE/BA was completed prior to finalization of the current design concept, which would limit construction of the new penstock to the existing BLM right-of-way. The area of construction disturbance is now estimated at approximately 116.3 acres. The acreage of disturbance considered in the BE/BA was 126.86 acres, and is therefore conservative. Actual areas of vegetation disturbance would be less than the impacts described below.

The BE/BA considered the area of potential construction disturbance (penstock alignment and staging areas) plus an approximate 250-foot buffer. The assessment of potential indirect effects included an assessment of two ponds located near the southeast corner of the dam, and their associated wet meadows contained within a 250-foot buffer around the ponds. In total, the disturbance area considered was 127 acres (126.86 acres). Of that total, 49.59 acres are previously disturbed areas, including roads, structures, channel, storage areas, the dam, powerhouse, etc., and 0.25 acres consists of ornamental landscaping. Another 0.16 acres consist of steeply sloped bedrock outcrops that would not be impacted by project activities. Therefore, up to 76.86 acres of natural habitat could potentially be disturbed. This is considered the conservative maximum area of potential construction disturbance area; detailed construction plans defining work areas are pending. Approximately 27.32 acres of the potential disturbance area (added to the project more recently) have not yet been surveyed for special-status plants.

a) **Less Than Significant Impact with Mitigation Incorporated**.

Records Search. Known occurrences of special-status species within 10 miles of the project area were identified by searching the USFWS Ventura Office (USFWS, 2014a) database for Inyo County and the California Natural Diversity Database (CNDDB) (CDFW, 2014) for a 5-mile area centered on the project. The CNDDB search included the following 7.5 minute USGS quadrangles: Haiwee Reservoir, Coso Junction, Long Canyon, Cactus Peak, Haiwee Pass, and Upper Centennial Flat. Other sources reviewed included the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants (CNPS, 2014), the BLM Sensitive Species List (BLM, 2010, 2013), and special areas managed by the BLM, such as Mohave ground squirrel conservation areas. **Table 3** summarizes the sensitive species with potential to occur at the project site. A summary of all special-status plants and animals considered is provided in the BE/BA.

Field Surveys. The project area was surveyed for potentially occurring special-status species, including federal- and state-listed species, species covered under the federal Bald and Golden Eagle Protection Act, and non-listed species, including species covered under the federal Migratory Bird Treaty Act, and California Fish and Game Codes. Surveys for special-status animal species were conducted on May 1, 2014, and May 19-20, 2010. Special-status plant surveys were conducted on April 23 and 24, 2014, June 5 and 6, 2014, and May 19-20, 2010. Additional surveys were conducted for special-status species by LADWP biologists in

the project area on April 13, 2015. Vicinity project related surveys were also conducted in 2014 and are relevant to the current proposed project. A detailed list of all non-listed species considered is provided in the BE/BA, including habitat preferences, distribution and range, and effects determinations.

In 2010, the survey of the project site for biological resources included (1) a variable 200-foot to 300- foot corridor centered on the penstock; and (2) zone-of-influence (ZOI) surveys (one transect each at three 200-meter intervals parallel to the project perimeter) to the west of the project area. Surveys were not conducted to the east of the project area due to the adjacent physical barrier of a channel running along the length of most of the project area, and the abutment of mountain habitat. In general, the objectives of the 2010 surveys were to 1) identify and describe the onsite habitat conditions, and 2) assess habitat and the potential presence of special-status species.

These surveys were conducted during the spring to identify many of the potential special-status species. Although some species (i.e. early blooming plant species) may not have been detectable at this time, habitat was assessed for potential presence. Floristic surveys were conducted at 30-foot wide belt transects. Biological surveys followed the desert tortoise protocol *Preparing for any Action that may occur within Range of the Mojave Desert Tortoise* (USFWS, 2010). Surveys were conducted at 30-foot wide belt transects within the action area during the tortoise active season to maximize the chances for encountering tortoises above ground.

Field surveys in 2014 for special-status wildlife and plants were conducted on foot and included a 250-foot buffer around the penstock and other project components. All habitats encountered in the project area were assessed for similarity to conditions at sites known to support special status plant and animal species, including assessments of sensitive animal species that may use the property seasonally or during migration.

Wildlife surveys were conducted on May 1, 2014 and April 13, 2015. 2014 surveys were conducted along belt transects at 30-foot intervals within the construction area. 2015 surveys focused on desert tortoise and were conducted using 10 meter wide belt transects. Surveys were not conducted on steep rocky cliffs. A list of all vertebrate animal species observed during the 2014 surveys is provided in the BE/BA. One special-status invertebrate species was included in the CNDDB query for a 5-mile radius of the project area. Wong's springsnail (*Pyrgulopsis wongi*) has been reported at four locations from 1.42 to 3.32 miles from the project area. It is restricted to seeps, headsprings and upper reaches of spring runs (Liu and Hershler, 2007). The project would not affect habitat for this species.

Floristic surveys were conducted in accordance with *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW, 2009; BLM, 2010) and included both spring and summer surveys. All plant species encountered were identified to species or to a level necessary for detecting special-status species, if present. Spring surveys were conducted on April 23 and 24, 2014. Late season surveys were conducted on June 5 and 6, 2014. Plant surveys were conducted along meandering belt transects spaced at 30-foot intervals in areas containing suitable habitat for special-status

plants known to occur in the region, and up to 60 feet apart in dense, impenetrable thickets. A list of all vascular plants observed is provided in the BE/BA. Surveys were conducted at a time of year adequate for detecting special-status plants with potential to occur in the project area. However, additional potential construction areas were added to the project following completion of the special-status plant surveys, including 27.32 acres not covered during the spring and summer surveys.

Plant communities and other cover types were mapped in the field using an ortho-rectified color aerial photograph taken in May 2014. Plant community classifications are based on the *Manual of California Vegetation – second edition* (Sawyer et al., 2009). The project area was assessed for potential wetlands based on the three-parameter approach described in the U.S. Army Corps of Engineers (USACE) *1987 Wetland Delineation Manual* (USACE, 1987) and the *Arid West Supplement* [v2.0] (USACE, 2008). Potential wetlands were assessed by determining if an area was dominated by wetland plant species, exhibited hydric soil characteristics, and had positive indicators of wetland hydrology (e.g., saturation, sediment deposits, etc.). No soil pits were excavated for this reconnaissance-level assessment. The current indicator status for wetland plants occurring in the project area was obtained from the National Wetlands Plant List (USACE, 2014). The National Wetland Inventory (USFWS, 2014) was reviewed to determine if any previously documented wetlands or waters occur in the project area. The BE/BA provides a reconnaissance-level assessment of streams in the project area in a map based on the USGS National Hydrographic Dataset. The Web Soil Survey (NRCS, 2014) was reviewed to determine if hydric soils have been documented in the project area, and a soil survey map is provided in the BE/BA.

Table 3
Sensitive Species with the Potential to Occur on the Project Site

Species	Common Name	Status	Potential for Presence at the Project Site
PLANTS			
Fish Slough milk-vetch	*Astragalus lentiginosus* var. *piscinensis*	FT	Distribution restricted to a few occurrences in a 540-acre area on a 6-mile stretch of wet alkali meadow paralleling Fish Slough, north of Bishop, CA (over 100 miles from project site). Suitable habitat present in the northeast portion of the project area, however, species not observed during field surveys. Unlikely, but potentially present in a small area of wet meadow that has yet to be surveyed.
Owens Valley checkerbloom	*Sidalcea covillei*	CE CNPS List 1B.1	Known occurrences range in elevation from 3,614 to 4,670 feet. An historic record of Owens Valley checkerbloom is located in the area now inundated by Haiwee Reservoir (CNDDB 2014; Calflora 2014). Suitable habitat is found in areas of Baltic rush meadows and marshes in the northeastern portion of the project area. Species not observed during field surveys. Potentially present in a small area of Baltic rush meadows and marshes that has yet to be surveyed.
July gold	*Dedeckera eurekensis*	CR	Blooms from June to August on gritty limestone cliffs in the Southern White, Last Chance, and Inyo mountains. Potentially suitable habitat is found in the sedimentary rock of the Coso Formation in the hills east of the project area, but the species was not found during field surveys. No new potential construction disturbance areas were added that contain suitable habitat. Therefore, the project would have no direct, indirect, or cumulative effect on July gold.
ANIMALS			
Desert tortoise	*Gopherus agassizii*	FT, CT	Indirect sign (scutes, scat, carcasses, etc.) was not observed in the project area in 2014 or 2015. Burrows present on the project site are presumed to be inactive or occupied by wildlife other than desert tortoise. However, due to presence of suitable habitat in the project area, the probability of occurrence is not unlikely.
Mohave ground squirrel	*Xerospermophilus mohavensis*	CT	Occurrences recorded within the project vicinity and suitable habitat present. No direct (live or vocalizations) sign observed. However, this species is highly illusive and negative visual results do not determine absence of species.
Bald Eagle	*Haliaeetus leucocephalus*	CE	The project area is not within the known nesting range of the bald eagle and does not possess general bald eagle nesting habitat requirements. However, migratory bald eagles and transient juveniles may use Haiwee Reservoir as a stopover site.
Golden Eagle	*Aquila chrysaetos*	FP	Golden Eagles were observed nesting on the east side of Haiwee Ridge in 2009, about 0.5 miles NE of Rose Spring and 1.6 miles south of South Haiwee Dam. The nest is on a west-facing cliff above the Haiwee Power Plant and south of the reservoir, approximately 0.14 mile east of the project area (CNDDB, 2014). As Golden Eagles often utilize the same nest over multiple years, there is a high probability that this species will continue to nest at this location.
Swainson's Hawk	*Buteo swainsoni*	CT	Species not identified during survey efforts, however, the project area is within nesting range. Suitable nesting habitat is present on the north and south ends of the project area where cottonwood trees are present; however, this species is not expected to nest in the project area.
Southwestern Willow Flycatcher	*Empidonax traillii extimus*	FE CE	Species not observed on-site. Scattered islands of marginal habitat occur within 5 miles of the project area. Due to absence of suitable habitat, the species is not expected to nest in the project area.

Species	Common Name	Status	Potential for Presence at the Project Site
Western Yellow-billed Cuckoo	*Coccyzus americanus*	Federal Proposed CE	Species not observed on-site. Habitat components necessary to support this species were not identified within 5 miles of the project area. The species is not expected to nest in the project area. Therefore, the project would have no direct, indirect, or cumulative effect on Western Yellow-billed Cuckoos.
Bank Swallow	*Riparia riparia*	CT	Species not observed on-site. Habitat components necessary to support this species do not exist within 5 miles of the project area. The species is not expected to nest in the project area. Therefore, the project would have no direct, indirect, or cumulative effect on Bank Swallows.
Greater Sage Grouse	*Centrocercus urophasianus*	FT	Species is not expected to occur in the vicinity of the project area, as it is 70 miles south of its range (USFWS, 2014e). Therefore, the project would have no direct, indirect, or cumulative effect on July gold.
Townsend's big-eared bat	*Corynorhinus townsendii*	CC	Evidence of Townsend's big-eared bat and roosting sites was not identified during survey efforts. However, a historical maternity colony exists in a pumice cave near Haiwee Reservoir and anthropogenic structures such as the Haiwee Dam (Greenwald 2010), or nearby buildings, may be utilized by Townsend's big-eared bat as roosting sites.
Owens tui chub	*Siphateles bicolor snyderi*	FE CE	Known natural populations exist at the Owens River Gorge, source springs of the Department's Hot Creek Hatchery, and a pond and ditches at Cabin Bar Ranch in Olancha. The species is not expected to occur in the project area. Therefore, the project would have no direct, indirect, or cumulative effect on Owens tui chub.
Owens pupfish	*Cyprinoden radiosus*	FE CE	This species' range does not occur within 5 miles of the project area, therefore it is not expected to occur at the project site. Therefore, the project would have no direct, indirect, or cumulative effect on Owens pupfish.
Desert bighorn sheep	*Ovis canadensis nelsoni*	FP	Species favors open rocky and steep terrain, avoiding dense vegetation that blocks visibility. The species' range includes the region, but suitable habitat is not contained within the project area. Therefore, the project would have no direct, indirect, or cumulative effect on desert bighorn sheep.

FT – Federal Threatened, CT – California Threatened, FE – Federal Endangered, CE – California Endangered, FP – CDFW Fully Protected, CC – California Candidate, CR – California Rare

CNPS – California Native Plant Society listing (1A Plants presumed extinct in California; 1B Plants rare, threatened, or endangered in California and elsewhere; 2 Plants rare, threatened, or endangered in California, but more common elsewhere; 3 Plants about which we need more information - a review list; 4 Plants of limited distribution - a watch list)

Plant Communities and Other Cover Types. Eleven cover types were mapped in the project area based on the classification system used in *A Manual of California Vegetation – second edition* (Sawyer et al., 2009). **Table 4** shows the acreage distribution of these communities in the total survey area and in the potential construction area.

Table 4
Cover Types in the Project Area

Plant Community or Other Cover Type	Total Survey Area (acres)	Potential Construction Area (acres)
Creosote bush-white bursage scrub	29.52	16.48
Allscale (saltbush) scrub	65.62	52.41
Baltic rush meadows and marsh	24.22	5.47
Cattail marsh	1.31	0.30
Cattail marsh and cottonwood-black willow mosaic	1.30	0.86
Ponds (open water habitat)	0.08	0.00
Fremont cottonwood-black willow groves	0.48	0.95
Bedrock outcrops (cliffs and steep rocky slopes)	3.05	0.16
Ephemeral streambed (Haiwee Creek)	0.51	0.39
Ornamental landscaping (mature ornamental trees)	3.19	0.25
Disturbed (roads, structures, dam, storage areas, reservoir, aqueduct, etc.)	56.95	49.59
Total	186.23	126.86

Sensitive Plant Species. Rare plants were not observed during the field surveys for the project in 2010 or 2014. Additionally, suitable habitat is present in the project area for several non-listed special-status plants; however, none were found and surveys were adequate for detecting rare species known from the project vicinity. However, an approximately 27-acre area has yet to be surveyed.

Suitable habitat for Fish Slough milk-vetch is found in the wet alkali meadows in the northeast portion of the project area, away from the freshwater influence of the ponds supported by the toe drain of the dam. However, Fish Slough milk-vetch presence is highly unlikely in the project area as the documented global range is restricted to a small area over 80 miles away near Bishop.

Suitable habitat for Owens Valley checkerbloom is found in the areas mapped as Baltic rush meadows and marshes in the northeastern portion of the project area. This species was not found during the spring and early summer surveys. However, a portion of the new areas (mapped as Baltic rush meadows and marshes) contains suitable habitat for Owens Valley checkerbloom. July Gold was not found during field surveys. New project areas do not contain suitable habitat for July gold.

Impacts on Sensitive Plants - Sensitive plants, if present, could be directly impacted by removal during construction. To confirm presence or absence in the unsurveyed areas, pre-construction surveys would be conducted under **Bio-5**. Sensitive plants could also be indirectly impacted by soil compaction, grading, erosion, and sediment deposition during construction. Soil disturbance and contamination of vehicle and equipment tires and undercarriages also increases the potential for the introduction or spread of invasive plants. Grading could change surface drainage patterns and could cause erosion and sedimentation. The resultant disturbed soils could degrade habitat and render it vulnerable to colonization by invasive plant species, which could reduce the availability of suitable habitat for sensitive plants through competition. Mobilization of dust during construction could reduce the survivorship and productivity of individual plants by decreasing photosynthetic output, reducing transpiration, and adversely affecting reproductive success. If sensitive plant species are present, the avoidance plan for listed species required under **Bio-5** would avoid potential for direct take. Indirect effects are addressed by protection of wetland habitat under **Bio-6**, BMPs for protecting soil and water quality and minimizing dust in **Bio-7**, and implementation of a noxious weed prevention plan (**Bio-8**). With mitigation, project-related impacts on sensitive plants would be less than significant.

Sensitive Habitats. Staging and other related activities would be located out of sensitive habitats (wet meadows or marshes) under mitigation measures **Bio-6** and **Bio-7**. Additionally, implementation of a noxious weed plan under **Bio-8** would ensure the project does not contribute to a cumulative loss of habitat.

Desert Tortoise. Desert tortoise live in a variety of habitats from sandy flats to rocky foothills, including alluvial fans, washes and canyons where food (annual wildflowers, grasses, and new growth of selected shrubs, cacti and their flowers) and suitable soils for den construction might be found. The desert tortoise occurs from near sea level to 7,300 feet in elevation and ranges throughout the Mojave Desert, covering California, Arizona, Nevada, and Utah. Typical habitat for the desert tortoise in the Mojave Desert has been characterized as creosote bush scrub between 1,970 feet and 5,900 feet in elevation where precipitation ranges from 2 to 8 inches and vegetation diversity and production is high (Nussear et al., 2009). Tortoises are most active between March and June, but when the temperatures become unsuitable (summer heat and winter cold) they spend the majority of their time in their burrows.

The CNDDB identified three recorded occurrences of desert tortoise within 2 miles of the project site; a fourth occurrence is recorded within 3 miles of the project site (USFWS, 2010b). The most recent of these occurrences is from 2006. During the 2010 survey, no direct observations of live tortoises were made in the project area. One Class 5 burrow (deteriorated condition; this includes collapsed burrows; possibly desert tortoise) was observed in the project area. During the 2014 survey, three additional (Class 5) burrows were found, although two of these burrows did not retain the classic crescent shape indicative of tortoise burrows and were completely

deteriorated. The 2014 and 2015 surveys, including the North Haiwee Dam 2 (NHD2) borrow site 7 survey as well as the pre-construction penstock survey, resulted in a couple of badger and canid burrows. No live desert tortoises, burrows or associated tracks, scat, or shell fragments were found. One of the class 5 burrows from 2010 and 2014 had the appropriate crescent shape and size, but no other definitive desert tortoise sign was found. For this reason, these class 5 burrows can only be considered to be of possible tortoise origin. Due to lack of any associated sign (i.e. scat, tracks, shell fragments, etc.) around these burrows or within their surrounding habitat, it is presumed that they were either inactive or occupied by wildlife species other than desert tortoise.

Suitable habitat for desert tortoise occurs within the project area. Evidence for the potential presence of this federal- and state-listed species was identified from past CNDDB records. A couple of class 5 burrows were identified during surveys; all but one was too deteriorated to speculate as to their origin. However, desert tortoises have the potential to occupy the survey area.

This project could result in the temporary loss of 68.89 acres of potential desert tortoise habitat, including 16.48 acres of moderate quality creosote bush scrub, and 52.41 acres of low quality saltbush scrub. Staging, laydown, and parking would utilize previously disturbed areas, and the new penstock would be buried, allowing for revegetation and eventual natural regeneration. The natural regeneration would be supplemented by implementation of the restoration plan, as described in **Bio-9**. Activities associated with habitat disturbance, such as soil compaction, installation of impermeable surfaces, removal of food sources, and activities that attract predators, such as uncontained refuse, may lead to predation, starvation, overexposure, and dehydration. Suitable desert tortoise habitat could be permanently and temporarily lost as a result of increased pollution, displacement from preferred habitat, increased competition for food and space, and increased vulnerability to predation. With implementation of mitigation measures **Bio-1**, **Bio-3**, **Bio-4**, and **Bio-10**, impacts on desert tortoise would be less than significant.

Mohave Ground Squirrel. The Mohave ground squirrel ranges throughout portions of the Mojave Desert, including Inyo County. The CNDDB (2014) includes four recorded occurrences of Mohave ground squirrel within 5 miles of the project site and suitable habitat is present throughout.

Visual surveys for Mohave ground squirrel were conducted during the appropriate activity period. No direct (live or vocalizations) sign of Mohave ground squirrel was observed in the project area; however, this species is highly elusive and negative visual results do not determine absence of species. Most burrows observed from 2015 surveys appeared to be Kangaroo Rat (*Dipodomys merriami*) and Beechy Ground Squirrel (*Spermophilus beecheyi*) habitations and digs. There were occasional mounds of what appeared to be abandoned White-tailed Antelope Ground Squirrel (*Ammospermophilus leucurus*) burrows with no inhabitants. White-tailed Antelope Ground Squirrels were frequently seen in the project area.

Suitable habitat for Mohave ground squirrel occurs within the project area. Verified evidence for the presence of this California threatened species was not identified during wildlife surveys, but based on recent CNDDB records, this species' range appears to include the project area. Rodent burrows were identified during surveys, but they could not be positively identified as those of

Mohave ground squirrel. There is potential for loss of Mohave ground squirrels, their habitat, and habitat features such as burrows. Activities associated with habitat disturbance, such as soil compaction, installation of impermeable surfaces, removal of food sources, and activities that attract predators such as uncontained refuse may lead to predation and/or starvation. The proposed project could result in the temporary loss of 68.89 acres of potential Mohave ground squirrel habitat, including 16.48 acres of moderate quality creosote bush scrub and 52.41 acres of low quality saltbush scrub. Staging, laydown, and parking would utilize previously disturbed areas, and the new penstock would be buried, allowing for revegetation and eventual natural regeneration. The natural regeneration would be supplemented by implementation of the restoration plan, as described in **Bio-9**. Implementation of the avoidance plan outlined in **Bio-1** would minimize these potential effects. With implementation of **Bio-1**, **Bio-3**, **Bio-4**, **Bio-9** and **Bio-10** impacts on Mohave ground squirrel would be less than significant.

Bald and Golden Eagles. The project area is not within the known nesting range of the Bald Eagle and does not possess general bald eagle nesting habitat requirements. However, migratory bald eagles and transient juveniles may utilize South Haiwee Reservoir as a stopover site. Replacement of the penstock would have no impact on Bald Eagles.

Protected under the Bald and Golden Eagle Protection Act, Golden Eagle are mainly distributed through western North America, from Alaska south to central Mexico, with small numbers in eastern Canada and a few isolated pairs in the eastern U.S, primarily occurring in mountainous canyon land, rimrock terrain of open desert and grassland areas. Golden eagles nest in open habitats from near sea level to 3,630 meters. (Kochert et al., 2002). This species was not identified during 2010 to 2015 survey efforts.

On March 1, 2009, Golden Eagles were observed nesting on the east side of Haiwee Ridge, about a half-mile northeast of Rose Spring and 1.6 miles south of South Haiwee Dam. The nest is on a west-facing cliff above the Haiwee Power Plant and south of the reservoir, approximately 0.14 mile east of the project area (CNDDB, 2014). As Golden Eagles often utilize the same nest over multiple years, there is a high probability that Golden Eagles will continue to nest at this location.

Activities associated with the project may affect nesting and non-nesting eagles if disturbances such as noise, construction traffic, increased human presence, and encroachment occur. With implementation of **Bio-2, Bio-3** and **Bio-4**, impacts to Golden Eagles would be less than significant.

Swainson's Hawk. Swainson's Hawks were not identified during survey efforts, and there are no recorded occurrences of Swainson's Hawk within 5 miles of the project site (CDFW, 2014). However, the project area is within the Swainson's Hawk's nesting range. The primary potential nest trees occurring near the project area are Joshua trees and Fremont cottonwoods, but other large trees may also be used, especially where planted in narrow bands such as agricultural windbreaks (e.g., cottonwoods and cedars). Suitable nesting habitat is present on the north and south ends of the project area where cottonwood trees are present, as well as in the area surrounding the project area; however, this species is not expected to nest in the project area. Activities associated with the project may affect nesting and non-nesting Swainson's Hawks if disturbances such as noise, construction traffic, increased human presence, and encroachment

occur. With implementation of **Bio-2, Bio-3** and **Bio-4**, impacts to Swainson's Hawk, if they were to occur in the project area, would be less than significant.

Southwestern Willow Flycatcher. The Southwestern Willow Flycatcher is listed as endangered under the federal ESA, and the entire species (*E. traillii*) is listed as endangered under the California ESA. The Southwestern Willow Flycatcher is usually less than 6 inches in length, including tail, and has conspicuous light-colored wingbars, though it lacks the conspicuous pale eye-ring of many similar *Empidonax* species. The body is brownish-olive to gray-green above with a white throat, pale olive breast, and yellowish belly. It is best identified by its "fitz-bew" call (USFWS, 2014c). The Southwestern Willow Flycatcher breeds in relatively dense riparian tree and shrub communities associated with rivers, swamps, and other wetlands, including lakes and reservoirs, usually classified as forested wetlands or scrub-shrub wetlands (USFWS, 2014c). The Southwestern Willow Flycatcher will nest in native communities such as willow, seepwillow, box elder, and cottonwood; non-native vegetation communities including tamarisk and Russian olive; and mixed native and non-native vegetation communities (USFWS, 2014c). Scattered islands of marginal habitat occur within 5 miles of the project area, but Southwestern Willow Flycatchers were not detected during surveys. Due to absence of suitable habitat, it is not expected to nest in the project area.

Southwestern Willow Flycatchers were not identified during survey efforts. This species is known to nest in the region in better developed riparian habitat, but is not expected to nest in the project area. However, this species could use portions of the project area for short periods of time during migration. Activities associated with the project may affect non-nesting flycatchers if disturbances such as noise, heavy traffic, and encroachment occur. These would be considered less-than-significant impacts considering the limited number of Southwestern Willow Flycatchers that might use the project area and the amount of better quality habitat for this species in the region. With implementation of **Bio-2** through **Bio-6**, impacts to the Southwestern Willow Flycatcher would be less than significant.

Townsend's Big-eared Bat. The Townsend's big-eared bat ranges throughout western North America from British Columbia to the central Mexican highlands, with isolated populations reaching east in the United States to the Ozarks and Appalachia (Hall, 1981). They are most commonly associated with desert scrub, mixed conifer forest, and pinion-juniper or pine forest habitat. Within these communities, they are specifically associated with limestone caves, mines, lava tubes, and anthropogenic structures (Pearson et al., 1952; Graham 1966; Kunz and Martin 1982; Dobkin et al., 1995; Pierson et al., 1996). Evidence of Townsend's big-eared bat and roosting sites was not identified during survey efforts. However, a historical maternity colony exists in a pumice cave near Haiwee Reservoir and anthropogenic structures such as the Haiwee Dam (Greenwald, 2012) or nearby buildings may be utilized by Townsend's big-eared bat as roosting sites. However, direct effects to Townsend's big-eared bat would be less than significant since this species is nocturnal and would be active when work activities were not occurring. Additionally, roosting habitat would not be altered as a result of the project. Potential indirect effects to the Townsend's big-eared bat due to the project could potentially include the attraction of predators and possible disruption of daytime roosting. In addition, Townsend's big-eared bats utilize water features for foraging that may be affected by erosion and sedimentation resulting from construction activities. Grading could change surface drainage patterns, and erosion and sediment deposition could degrade habitat and render it vulnerable to colonization by invasive

plant species, which could reduce the availability of suitable prey for this species. With implementation of mitigation measures **Bio-3** through **Bio-7**, impacts on Townsend's big-eared bat would be less than significant.

Wild Horses and Burros. A portion of the project area is within the BLM Centennial Herd Management Area for wild horse herds. Herd Management Areas (HMAs) are designated in BLM land use plans to manage for populations of wild horses and/or burros to preserve the health of the land and water resources. The project is not expected to have significant adverse or beneficial effects on the wild horses or burros. Therefore, the project would not cause changes in the wild horse or burro population that might result in impacts to land and water resources.

Summary of Impacts to Sensitive Animal Species. The project site is potential habitat for several sensitive species. With implementation of mitigation measures **Bio-1** through **Bio-10**, impacts to sensitive species would be less than significant. Effects determinations are summarized in **Table 5**.

Table 5
Summary of Impacts to Federal- and State-listed Animal Species

Species	Listing Status	Impact Determination after Mitigation
Fish Slough milk-vetch	Federal Threatened	No Effect
Owens Valley checkerbloom	California Endangered	Not Likely to Adversely Affect individuals or habitat
July gold	California Rare	No Effect
Desert tortoise	Federal Threatened California Threatened	Not Likely to Adversely Affect
Mohave ground squirrel	California Threatened	Not Likely to Adversely Affect
Bald Eagle	California Endangered	No Effect
Golden Eagle	Fully Protected	Not Likely to Adversely Affect
Swainson's Hawk	California Threatened	Not Likely to Adversely Affect
Southwestern Willow Flycatcher	Federal Endangered California Endangered	Not Likely to Adversely Affect
Western Yellow-billed Cuckoo	Federal Proposed California Endangered	No Effect
Bank Swallow	California Threatened	No Effect
Townsend's big-eared bat	California Candidate	Not Likely to Adversely Affect
Owens tui chub	Federal Endangered California Endangered	No Effect
Owens pupfish	Federal Endangered California Endangered	No Effect

Non-Listed Species. No individuals or sign of other non-listed CDFW- or BLM-status animal species were observed in the project area; however, suitable habitat was observed for the California Species of Special Concern Burrowing Owl (*Athene cunicularia*), Le Conte's Thrasher (*Toxostoma lecontei*), and Loggerhead Shrike (*Lanius ludovicianus*). A detailed list of unlisted species is provided in the BE/BA.

b) and c) **Less Than Significant Impact with Mitigation Incorporated**. A wetland delineation was conducted for the valley bottom between South Haiwee Reservoir and the Haiwee Power Plant, parts of which would be disturbed by the Haiwee Power Plant Penstock Replacement Project (LADWP, 2015b). Where Haiwee Creek crosses the project area it is a dry wash that flows only in response to local flood events. Vegetated wetland was delineated following guidelines of the 1987 Wetland Delineation Manual and the Arid West Region Supplement (USACE, 2008). Four classes of hydric features were identified in the South Haiwee project area:

Wet meadow/marsh: Two areas (WM1 and WM2) comprise a total of 0.44 acres. Dominant vegetation is yerba mansa (*Anemopsis californica*), cattail (*Typha latifolia*), Baltic rush (*Juncus balticus*) and Douglas sedge (*Carex douglasii*). Hydrophytic vegetation is present. Hydric soil indicators and sandy redox features and loamy gleyed matrix. Wetland hydrology indicators include high water table and saturation at some time during the growing season. These areas are wetland.

Irrigated wet meadow: Three areas (IWM1, IWM2, and IWM3) comprise a total of 17.93 acres. Dominant vegetation is rubber rabbitbrush (*Ericameria nauseosus*), Baltic rush, and yerba mansa. Hydrophytic vegetation is present. Hydric soil indicators are sandy redox features and loamy gleyed matrix. These areas are actively irrigated with water from a toe drain on Haiwee dam. Alluvial groundwater is also present. Indicators of wetland hydrology include surface water (albeit irrigation), high water table, saturation, and oxidized rhizospheres along living roots. These areas are assumed to be wetland.

Artificial wetland: Four areas (AW1, AW2, AW3, and AW4) comprise a total of 0.08 acres. Baltic rush, common spikerush (*Eleocharis palustris*), cattail are the understory. Siberian elm (*Ulmus pumila*) and rubber rabbitbrush are rooted outside of the wet zone, but overhang the understory. Hydric soil indicators are not evident. These areas are sustained by water from the existing penstock. Each of the four areas has a standpipe, faucet, or leaking pipe. These areas are not jurisdictional wetland.

Drainage ditch: Two areas (DD1 and DD2) comprise a total of 0.76 acres. Cattail, Baltic rush, common spikerush are typically flanked by robust rubber rabbitbrush. Hydric soil indicators are not evident. The drainage ditch collects irrigation runoff from IWM3 and flows about 1 mile south, where water sinks into porous volcanic rock. These areas are not jurisdictional wetland.

Direct impacts of the proposed penstock replacement would be limited to the elimination of four artificial wetlands (0.08 acres) that are sustained by standpipes, faucets, and leaky pipes from the existing penstock. When the existing penstock is removed and the new penstock constructed, the hydrologic source for these artificial wetlands that are not jurisdictional wetlands would be eliminated and existing vegetation would be disturbed. Minor direct impacts are also expected to occur to the dry ephemeral wash at the southern end of the project area during project construction. The existing penstock would be excavated just off the western boundary of the existing road that transects this wash. The new penstock would be constructed in its place before traversing across the road to the east. Although excavation of soil would occur across the wash to

remove and replace the penstock, these impacts would be temporary, as the wash would be restored to original grade post construction. Additionally, sediment control barriers such as straw wattles would be placed around the construction area to confine the work limits of the project and minimize further impacts to the wash. All construction activities would be limited to existing roadways, storage yards, and staging areas. No jurisdictional vegetated wetland would be directly disturbed, which in turn, will not trigger the requirement of a 404 Permit from the USACE. With implementation of BMPs for the protection of water quality and wetlands (mitigation measure **Bio-7**), the impacts on sensitive vegetation types and wetlands would be less than significant.

d) **Less Than Significant Impact with Mitigation Incorporated**. South Haiwee Reservoir provides a stopping point along the Pacific Flyway for migratory waterbirds. Construction and operation of the proposed penstock would have no impact on the reservoir. Impacts to nesting and brooding of avian species at the project site would be mitigated to less than significant levels. Therefore, the impact from construction and operation of the penstock replacement project on wildlife migration corridors and nursery sites would be less than significant.

e) **Less Than Significant Impact.** No tree ordinances apply to the project area. The Inyo County General Plan Goals and Policies document (2001) includes two goals for biological resources issues: Maintain and enhance biological diversity and healthy ecosystems throughout the County, and provide a balanced approach to resource protection and recreation use of the natural environment (Goals BIO-1 and BIO-2). Since mitigation measures have been identified for the protection of sensitive species and habitat, the project would not conflict with these goals. Therefore, the impact on local policies or ordinances protecting biological resources would be less than significant.

f) **Less Than Significant Impact with Mitigation Incorporated.** LADWP developed a Habitat Conservation Plan (HCP) for LADWP-owned lands in Inyo and Mono Counties (LADWP, 2015). The seven species covered under the HCP are Owens pupfish, Owens tui chub, Owens/Long Valley speckled dace, bi-state population of Greater Sage-Grouse, Yellow-billed Cuckoo, Willow Flycatcher, and Bell's Vireo. As the proposed penstock replacement project would have no impact on any of the Covered Species, the project would not be inconsistent with the HCP.

   The project is located in part on federal land under BLM's jurisdiction and is therefore subject to the provisions of WEMO Plan (BLM, 2005). The project occurs within a BLM WEMO-designated Mohave Ground Squirrel Conservation Area, but is not within a Significant Natural Area (SNA) as defined by CDFW.

   With implementation of the mitigation measures described below, the penstock replacement project would be consistent with the management actions described in the WEMO.

   Therefore, since the project would not conflict with the goals or management actions contained in the WEMO, the impact of the penstock replacement project on habitat conservation planning would be less than significant.

Mitigation Measures for Impacts to Biological Resources

The following measures would reduce impacts to federal- and state-listed species, and species covered under the federal Bald and Golden Eagle Protection Act, as well as non-listed species covered under the federal Migratory Bird Treaty Act to less than significant levels. Measures are also included below to ensure the project has no impact or a less than significant impact after mitigation on all non-listed species potentially occurring in the project area. All avoidance and minimization measures are consistent with the habitat conservation guidelines outlined in the WEMO Plan.

Bio-1 Preconstruction Surveys for Desert Tortoise, Mohave Ground Squirrel, Burrowing Owl and their Habitat

- Pre-construction surveys for desert tortoise shall be conducted throughout all areas associated with construction, including the construction areas, laydown areas, and access roads, including the access roads from Highway 395 into the project area. Pre-construction surveys should be conducted no more than 30 days prior to the start of construction. Should a desert tortoise burrow be observed during pre-construction surveys, and the end of the burrow is not visible, the burrow should be scoped for tortoise occupancy. Should a live desert tortoise be observed during pre-construction surveys, above or below ground, BLM, USFWS, and CDFW shall be contacted. Work shall not start until approval is given by the agencies. Approaches to be taken if a tortoise is encountered may include fencing. In that case, desert tortoise fencing shall be installed around project work areas, excluding access roads. Tortoise fencing shall avoid occupied burrows. If tortoises require handling, it shall be done only with the approval of the resource agencies.

- During pre-construction surveys for tortoises, biologists shall also search for Mohave ground squirrel and burrowing owl. Should Mohave ground squirrels be observed during pre-construction surveys, BLM and CDFW shall be contacted. Work shall not start until approval is given by the agencies. Approaches to be taken may include avoidance of potential burrows and a 50-foot radius around the burrow, if feasible, or live-trapping and translocation of Mohave ground squirrels for a period of time to be specified by the agencies. All handling must be by qualified biologists. Translocation areas must be approved. If an occupied burrowing owl burrow is observed in the project area, or within 250 feet of the area, the following steps shall be implemented:
    (a) If the burrow is found between October 1 and January 31, a one-way door shall be installed to passively exclude the owl. Two days after one-way door installation, the burrow shall be examined with a fiber-optic scope to confirm non-occupancy, then the burrow shall be completely hand-excavated and backfilled. For each excavated burrow, two replacement burrows shall be required. The replacement burrows can be a combination of unoccupied natural burrows or constructed artificial burrows. All replacement burrows shall be at least 300 feet from the construction areas.

(b) If the burrow is found between February 1 and September 30 (nesting season), the burrow shall be left intact and avoided by at least 250 feet.

- A qualified biologist shall be retained to monitor construction for the duration of project construction. The biologist shall review the construction sites for special-status wildlife, including desert tortoise, burrowing owl, and Mohave ground squirrel. If individuals or burrows of these three species are observed by the monitor, the procedures described above for pre-construction surveys shall be implemented.

- Disturbance shall be kept to the minimum necessary to safely complete project activities. This shall include the requirement that vehicles and equipment stay on existing roads and staging areas to the extent possible.

- The speed of vehicles and equipment shall not exceed 20 miles per hour in the project area.

Bio-2 Conduct Pre-construction Nesting Bird Surveys

- For all construction-related activities that start within the nesting season, recommended as March 1 through August 31 in the project area, or as defined by USFWS and CDFW, a preconstruction nesting-bird survey shall be conducted by an qualified biologist no more than two weeks prior to project initiation within the project area and a 300-foot buffer (a 500-foot buffer for raptors). The pre-construction surveys for nesting birds shall be conducted throughout all areas associated with construction, including the laydown areas, and access roads from Highway 395 into the project area. If listed species are observed in the project area and buffer zone, protocol survey methods shall be utilized. If active nests are found for listed or non-listed species, a no-disturbance buffer zone shall be established around them according to the biologist's assessment of the species' sensitivity to disturbance. The precise size of the buffer shall be established during permitting. Currently accepted MBTA buffers are 300 feet for smaller birds and 500 feet for raptors. Within this buffer zone, no construction shall take place until the biologist determines that a nest is no longer active, or unless an alternative method of avoiding nest disturbance is prepared by the biologist and approved by the resource agencies.

- If work activities have ceased for at least two weeks during the general nesting season, then nesting bird surveys shall be conducted prior to the start of work activity. Survey results are valid for two weeks.

Bio-3 Conduct Pre-construction and Weekly Educational Tailgate Sessions

- A qualified biologist shall provide environmental awareness training to all construction personnel before construction begins. The training shall include species descriptions and discussion of protection measures. The biological monitor shall present relevant information at least once per week at the morning tailgate meetings.

Bio-4 Implement Best Management Practices for Avoiding Impacts to Wildlife

- At the end of each construction work day, potential wildlife pitfalls (trenches, bores, and other excavations) shall be 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. Any wildlife encountered during the course of construction shall be allowed to leave the construction area unharmed.

- Trash and waste items generated by construction or crew activities shall be properly contained and removed from the project area.

- Pets, campfires, and firearms shall not be permitted within the project area during construction.

- If night lighting is necessary during construction, it shall be the minimum necessary for work and/or security purposes and shall be directed inward toward the work/staging areas.

- In accordance with federal and California ESAs, observations of listed species shall be reported to LADWP and care shall be taken not to take or harass the species. An LADWP representative shall inform appropriate federal and state resource agency personnel of the sighting.

Bio-5 Conduct Pre-construction Surveys for Special-Status Plants in Un-surveyed Areas

- A qualified botanist shall conduct special-status plant surveys in spring and early summer within the unsurveyed 27.32-acre area. If listed species are found, an avoidance plan including an adequate buffer and protection of the hydrology of the habitat shall be prepared to ensure no direct or indirect effects to listed plant species. Potential indirect effects from erosion and sediment deposition, construction-related dust, changes in hydrology, and the spread of noxious weeds shall be addressed and minimized.

- If non-listed special-status plant species are found and complete avoidance is not possible, a mitigation plan shall be prepared. The performance standard for the plan shall ensure that the non-listed special-status species is avoided with a minimum 20-foot buffer, and any significant direct, indirect, or cumulative impacts to non-listed special-status species are mitigated to a less than significant level.

Bio-6 Designate Ponds, Streams, Wet Meadows, and Mature Riparian Trees outside Permitted Work Areas as Environmentally Sensitive Areas during Construction

- Temporary construction fencing and/or flagging shall be installed along the boundary of sensitive riverine habitats (ponds, streams, wet meadows and mature riparian trees) that are not permitted for inclusion in the work area and that are within 50 feet of construction activity; temporary construction fencing and/or flagging shall also be installed to protect the terrestrial habitats on the stream banks outside of the permitted

work area. All temporary flagging and/or fencing shall be removed from the project area upon completion of project activities.

- Signage shall be installed that persons, vehicles, and equipment are prohibited within these designated sensitive habitat areas during construction.

Bio-7 Implement Best Management Practices for Avoiding or Minimizing Impacts to Water Quality and Wetlands

- Sediment controls such as straw wattles, sand bags, silt fencing or similar barriers shall be installed so that spoil and/or other deleterious materials from project equipment are not allowed to pass into hydric features. These controls shall be inspected and maintained each work day when in use.

- Spoil sites, project building material and/or construction equipment shall not be located within a hydric feature where spoils may be washed back into a hydric feature or where they may cover aquatic or riparian vegetation.

- If rain is forecast within 24 hours, spoil piles shall be covered.

- Parking, storage, refueling, and maintenance shall be confined to a designated staging and storage area that is a minimum of 30 horizontal feet from the outer boundary of designated wetlands, ponds, streams, and riparian vegetation. Collected stormwater shall be properly contained and handled consistent with BMPs contained in the project SWPPP.

- Any equipment or vehicles driven and/or operated within or adjacent to a hydric feature shall be checked and maintained daily to prevent leaks of materials that could be deleterious to aquatic and terrestrial life or riparian habitat.

- Construction that occurs within 30 feet of wetlands, ponds, streams, and riparian vegetation shall be conducted during the non-rainy portion of the year, or as prescribed in applicable permits.

- Dust control measures shall be implemented, including use of water trucks and the placement of gravel on staging and laydown areas, as applicable. These measures would assist in protecting wet and mesic meadow areas from fugitive dust during construction activities.

- Work areas shall be configured to protect and avoid wet and mesic meadow areas and confine all heavy equipment, vehicles, and construction work to existing access roads, road shoulders, and developed areas.

- Excavated soil shall be stockpiled outside of wetland features, properly contained to prevent runoff or sedimentation, or shall be removed off site.

- The top six 6 inches of topsoil shall be placed on spoil piles so that it is the last soil to be repositioned after work is complete.

- Disturbed soils shall be stabilized with appropriate erosion and sediment control measures, and revegetated following construction. Fill or runoff from work areas shall not be permitted to enter wet or mesic meadow habitat.

- Chemicals such as fuel and hydraulic fluid shall be stored away from wetlands. Spill control materials shall be on site to manage spills.

Bio-8 Implement Best Management Practices for Minimizing Spread of Noxious Weeds

- The contractor shall wash the tires and tracks of earth-moving, grading, and excavation equipment before entering the site, to prevent inadvertent introduction and spread of noxious weeds.

Bio-9 Prepare and Implement a Restoration Plan

- Prior to the start of construction, a restoration plan shall be prepared for temporarily disturbed areas. The plan shall include site preparation, seed mixes appropriate for the vegetation types disturbed, application rates of the seed mixes, and schedules for planting. Site preparation shall include segregation of topsoil during grading and spreading topsoil onto disturbed areas prior to application of the seed mixes.

- The restoration plan shall also include schedules for maintenance (e.g. control of non-native plants) and monitoring. The restored areas shall be monitored on a quarterly basis for the first two years, then annually for three years, or until success criteria are achieved. Success criteria shall be in the plan and shall include density and cover percentage.

Bio-10 Incidental Take Permit

- LADWP shall obtain an Incidental Take Permit from CDFW, which would include measures to minimize impacts to habitat suitable for desert tortoise and Mohave ground squirrel. All impacts are expected to be temporary. In some areas complete grading would not occur, but rather vehicles or equipment would crush vegetation, leaving root stock in place, which would further minimize temporary impacts. A final determination of the acreage of disturbance shall be conducted after construction is complete.

Impact on Biological Resources After Mitigation

With implementation of the above mitigation measures, project-related impacts on biological resources would be less than significant.

2.3.5 Cultural Resources

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐
e) Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code 21074?	☐	☒	☐	☐

Discussion:

Cultural resources investigations of the project area were conducted by Garcia and Associates (GANDA) in 2009, and from 2014 to present. An Area of Potential Effect (APE) for the assessment of impacts to cultural resources was established for the proposed project. This 126.1-acre area includes the new penstock alignment, area of potential construction disturbance adjacent to the penstock, and potential equipment laydown areas.

Record Searches. Cultural resources records searches were conducted at the Eastern Information Center (EIC) at the University of California, Riverside, on August 5, 2009, and March 17, 2014. The records searches encompassed the entire project area plus a 0.25-mile buffer. The following sources were consulted:

- EIC base maps: USGS series topographic quadrangles.
- Pertinent survey reports and archaeological site records were examined to identify recorded archaeological sites and historic-period built-environment resources (such as buildings, structures, and objects) within or immediately adjacent to the project area. Historical maps and historical aerial photographs of the area were examined.
- The California Department of Parks and Recreation's California Inventory of Historic Resources (1976) and the Office of Historic Preservation's Historic Properties Directory (2007), which combines cultural resources listed on the California Historical Landmarks, California Points of Historic Interest, and those listed in or determined eligible for listing in the National Register of Historic Places (NRHP) or the California Register of Historical Resources (CRHR).

- Historic maps, drawings, and photographs; reports; and other primary and secondary sources were reviewed at the following repositories:
    - LADWP Archives, Bishop Office, Bishop, California
    - Eastern California Museum, Independence, California
    - LADWP Photograph Archive, Los Angeles Public Library (http://www.lapl.org/collections-resources/visual-collections/department-water-power-photo-archive)
    - Internet Archive (https://archive.org/index.php)
    - Online Archive of California (http://www.oac.cdlib.org)

The cultural resources record search identified seven previous studies within the 0.25-mile radius of the project area. Three of the studies involved intensive survey within the current project area; as a result, approximately 80 percent of the APE has been previously surveyed for cultural resources. The record search identified 24 previously recorded cultural resources within a 0.25-mile radius of the project area, including 14 sites located partially or completely within the project APE.

Extended Phase I Investigation. An extended Phase I Cultural Resources Investigation was conducted to characterize cultural resources that could be impacted by the proposed project. Class III (intensive) archaeological surveys of the APE for observable cultural resources were conducted by archaeologists with cross-training in paleontology from May 12 to 17, 2014 and July 7 to 10, 2014. The report completed for the project is on file with LADWP. To protect resources, site records are not appended to the Initial Study. The confidentiality of records and information pertaining to the location, character, or ownership of archaeological sites and historic properties will be maintained consistent with NHPA Section 304, ARPA Section 9, and California Government Code 6254.10, as applicable.

Phase II Testing Program. Based on the results of the extended Phase I study, a Phase II testing program was conducted on April 21 to April 27, 2015. The field procedures for archaeological testing and site evaluation included a program of mechanized excavation (geoarchaeological test trenching) outside of the known archaeological site boundaries, and a combination of surface documentation and limited hand excavation within site boundaries. The backhoe trenching program focused on identifying and assessing the potential for buried archaeological deposits and paleosols (fossil surface soils indicative of past conditions) within the proposed penstock alignment. Twelve deep (up to 15 feet deep) backhoe test trenches and four shallower trenches were completed within or near the proposed penstock alignment. Phase II testing of 19 archaeological sites was conducted on May 13 to 22, May 27 to June 5, and June 25 to 30, 2015. The program included intensive surface documentation, in situ analysis and partial collection of surface artifacts, and controlled hand excavations. Laboratory procedures included sourcing and dating of obsidian artifacts, and microdebitage analysis to assess depositional integrity.

The Phase II testing resulted in the collection of over 2200 prehistoric and historic artifacts for laboratory analysis, as well as in situ documentation and analysis of over 400 artifacts that were not collected. The vast majority of prehistoric artifacts consist of obsidian tools and tool

manufacturing debris (debitage). Historic artifacts consist of a combination of domestic, industrial, and structural debris.

Native American Consultation. On August 31, 2009, project archaeologists contacted the Native American Heritage Commission (NAHC) and requested information about sacred lands that may be located within the project areas. On September 15, 2010, the NAHC indicated that a search of their Sacred Lands file did not result in the identification of any Native American cultural resources within a 0.50-mile radius of the project APE, but it was indicated that Native American resources are present near the APE. The NAHC also provided a list of local tribes and individuals to contact for further information regarding local knowledge of sacred lands.

On September 17, 2009, project archaeologists sent letters to 11 Native American tribes or individuals on the list. Each tribe or individual was asked to provide pertinent information or to express any concerns they may have about the proposed project. One individual, Mr. Bill Helmer of the Big Pine Paiute Tribe of the Owens Valley, expressed concerns about the Project, because the penstock alignment is close to the Rose Springs Site (CA-INY-372) where burials have been recorded.

Consultation per the requirements of Assembly Bill (AB) 52 was conducted by LADWP. Representatives from the Big Pine Band of Owens Valley, Big Pine Paiute Tribe of the Owens Valley, Bishop Paiute Tribe, Fort Independence Indian Community of Paiutes, Lone Pine Paiute Shoshone Reservation, and Timbisha Shoshone Tribe were invited to meet to discuss cultural issues related to the project. Two meetings were held on January 6 and 7, 2016 in the Owens Valley with representatives of the Bishop Paiute Tribe and Big Pine Paiute Tribe of the Owens Valley. Additional Native American consultation for the project was conducted by the BLM.

a) b) and e) **Less than Significant Impact with Mitigation Incorporated.** Significant cultural resources recommended as eligible for the NRHP / CRHP are known for the project area. **Table 6** summarizes eligibility recommendations for cultural sites in the project area based on the records search, pedestrian survey, and the testing and evaluation program.

Table 6
Summary of Eligibility Recommendations for Archaeological Sites in the Project Area

Trinomial or Temporary Field Number	Description	Land Ownership	Recommended for NRHP / CRHP Eligibility
CA-INY-2329/H	Prehistoric lithic scatter, historic levee	BLM	√ (prehistoric only)
CA-INY-6954/7308	Prehistoric lithic scatter; two milling	BLM	
CA-INY-6955	Prehistoric lithic scatter	LADWP	√
CA-INY-6957	Prehistoric lithic scatter	BLM	
CA-INY-6958	Prehistoric lithic scatter	BLM	
CA-INY-6959	Prehistoric lithic scatter	BLM	
CA-INY-6975	Prehistoric lithic scatter	BLM	
CA-INY-6976	Complex of structures, historic refuse scatter	LADWP	√ (prehistoric and historic)
CA-INY-7302	Prehistoric lithic scatter	LADWP	

Trinomial or Temporary Field Number	Description	Land Ownership	Recommended for NRHP / CRHP Eligibility
CA-INY-7466	Prehistoric lithic scatter	LADWP	√ (prehistoric only)
CA-INY-7470/7301/H	Prehistoric lithic scatter, historic	BLM / LADWP	√ (prehistoric and historic)
HP-CK-01	Prehistoric lithic scatter	LADWP	
HP-CK-02H	Historic domestic refuse scatter LADWP Low	LADWP	
HP-CK-03H	Historic domestic refuse scatter and wooden structure	LADWP	
HP-CK-04/H	Prehistoric lithic scatter, historic refuse scatter	BLM	
HP-CK-05/H	Prehistoric lithic scatter, historic refuse scatter	BLM	
HP-CK-06H	Historic domestic refuse scatter	LADWP	
HP-CK-07H	Wooden structure and historic refuse scatter	LADWP	
HP-CK-08	Prehistoric lithic scatter	BLM	√

Of the six sites located in the APE and recommended as eligible for the CRHP/NRHP, four can be completed avoided, one can be almost completely avoided, and one would be impacted by project construction. Construction of the penstock in a small fraction of site CA-INY-2329 would not significantly impair the integrity of the site, since the concentration of artifacts is distant from the penstock alignment. The portion of CA-INY-2329/H located within the APE has been heavily disturbed and contains no substantial subsurface deposit, and therefore does not contribute to the site's overall eligibility to the NRHP and CRHR. Further, the in situ analysis, artifact collections, and test excavations conducted during the site investigation have exhausted the data potential of this portion of the site. However, penstock installation through site CA-INY-7470/7301 could impact the integrity of the site. The prehistoric component of CA-INY-7470/7301 is recommended as eligible for listing in the NRHP and CRHR under Criteria A/1, while the historic component qualifies for inclusion in the NRHP and CRHR under Criterion A/1 and D/4, and qualifies as a contributing element of the proposed Los Angeles Aqueduct Historical Archaeological District. Construction-related ground disturbances would potentially fracture, crush, demolish, and/or relocate cultural materials. This would adversely alter archaeological resources potentially CRHR-eligible, and adversely alter their immediate surroundings, such that the significance of the resources could be materially impaired. The impact of project construction on significant archaeological resources is therefore potentially significant. Mitigation measures **CR-1** and **CR-2** would be implemented to reduce potential impacts on cultural resources to less than significant levels.

Evaluation of the Haiwee Penstock as an Historic Feature. Based on the field survey and the archival research completed to date, the Haiwee Penstock is recommended as ineligible for individual listing in the NRHP and CRHR; further, it is recommended as a noncontributing resource to the proposed First Los Angeles Aqueduct Historical Archaeological District. Therefore, there would be no impact.

c) **Less than Significant Impact with Mitigation Incorporated.** The project site occupies a remnant of the eroded valley of the greater Owens River and is located between the out-wash slopes of the Sierra Nevadas, which are approximately 4 miles to the west, and the lava capped Coso Mountains to the east. The valley, in which the project area lies, consists largely of alluvial deposits. The bedrock underlying the project site and the South Haiwee Reservoir is approximately 40-50 feet deep and consists of an unaltered shale deposit that dips at 10 degrees westward and is overlain by the alluvial deposits (DPS, 1916). A wide range of geologic ages is represented in the vicinity of the Project with much more of the record missing than is present (Bateman et al., 1965). Most rocks within the vicinity of the project area are of Cenozoic age, chiefly quaternary.

A fossil locality search was conducted on September 9, 2009 using the Berkeley Natural History Museum (BNHM) online database, which includes data from the University of California, Museum of Paleontology (UCMP). The database search identified 734 fossil localities within Inyo County: 19 specimens from the Precambrian, 281 from the Cambrian, 146 from the Ordovician, 35 from the Silurian, 106 from the Carboniferous, 80 from the Permian, 35 from the Tertiary, 7 from the Quaternary, 14 of unknown age and 11 of disputed age.

The following geologic units have been mapped for the project area (Whitmarsh, 1997a, b; Duffield and Bacon, 1981):

- Plio-Pleistocene aged sediments- Fanglomerate belonging to the Coso Formation. The fanglomerate of basement rocks, arkosic sandstone, tuffaceous sandstone and siltstone, tuffaceous acustrine beds, and silicic tuff belongs to the Coso Formation. This is a paleontologically sensitive geological unit that contains mammalian fossils (Schultz, 1937).

  The UCMP lists 26 specimens directly related to the Coso Formation. These fossil finds include Pliocene age *Equus* (horse), *Borophagus* (hyena-like dog), *Felis* (cat) and *Agriotherium* (bear-like).

- Pleistocene Rocks – Rhydodacite southeast of Haiwee Reservoir. Rocks of the rhydodacite, southeast of the Haiwee Reservoir unit, consist of flows and domes of moderately porphyritic rhyodacite up to 30 meters thick. This geological unit is not known to contain fossils.

- Younger aged sediments – Younger Alluvium - This geological unit consists of alluvial fan deposits, stream deposits of gravel, sand and silt, windblown sand, and deposits of silt and clay in closed depressions. The age and thickness of this geologic unit is unknown. Because alluvial fans often mix both new and older sediments this geologic unit, while consisting predominantly of Holocene age sediments may contain Pleistocene aged sediments too, thus making fossil finds both vertebrate and invertebrate plausible.

  While no fossils are directly associated with this Quaternary unit, the UCMP lists seven fossils from the Quaternary Period with five from the Pleistocene, specifically of

Rancholabrean age coming from similar or the same geological lithologies as this unit. The Rancholabrean is the most significant extinction phase of the Quaternary and occurred around 10,000 years ago, when 43 genera went extinct during a period of only about 1,000 years (Webb, 1989). Because there is only scattered evidence for large mammals inhabiting the Sierra Nevadas, and there are only 10 extinct taxa that left direct records in the western foothills (Edwards, 1996), this geologic unit has a high paleontological sensitivity.

Paleontological resources were not identified during the cultural resources surveys and investigations of the APE conducted in 2009, 2014 or 2015.

Paleontological remains are considered to be limited, nonrenewable, scientific, and educational resources. Fossils can qualify as unique resources because they represent the best examples of specific species found in the region, particularly if they are discovered in an undisturbed context. Fossils can also qualify as unique paleontological resources because they provide evolutionary, paleoclimatic, or paleontological data important to our understanding of geologic history (SVP, 1996).

Project-related construction, including grading, excavating or crushing bedrock, has the potential to disturb soils containing paleontological resources. If significant fossils are present and not recovered or avoided, destruction during construction would be a significant impact. Therefore, mitigation measure **CR-3** shall be implemented to protect paleontological resources from disturbance during construction of the Haiwee Penstock Replacement project. With implementation of mitigation, impacts on paleontological resources would be less than significant.

d) **Less than Significant Impact with Mitigation Incorporated.** Based on a review of the available historic maps available for the area, no recorded cemeteries are located within the proposed project area. Human remains were not found in the course of the archaeological investigations at the project site. However, in the unexpected event that human remains are discovered, the Inyo County Coroner would be contacted, the area of the find would be protected, and provisions of State CEQA Guidelines Section 15064.5 would be followed. With implementation of the mitigation measure **CR-4**, project-related impacts on human remains potentially present in the project area would be less than significant.

Mitigation Measures

With implementation of the following mitigation measures, project-related impacts on cultural resources would be less than significant.

CR-1 Cultural Resources Monitoring Program. A Cultural Resources Monitoring Program shall be developed and implemented during construction activities with the potential to disturb native soils in archaeologically sensitive areas.

- A qualified archaeologist shall be retained to implement a monitoring and recovery program. The qualified archaeologist shall meet the US Secretary of the Interior's Historic Preservation Professional Qualification Standards for Archaeology.

- Native American tribes with an interest in the project area, as identified by the NAHC, shall be contacted prior to the start of project construction. Qualified Native American monitors shall be afforded an opportunity to be present during earthwork and excavations associated with the project.
- The qualified archaeologist shall provide cultural resources awareness training prior to the start of construction for all construction personnel. Construction personnel shall be briefed on procedures to be followed in the event that a unique archaeological resource, historical era building or structure, or human remains are encountered during construction. A training log shall be maintained. The qualified archaeologist shall provide a telephone number where they can be reached by the construction contractor, as necessary.
- The qualified archaeologist shall develop procedures to delineate the locations of cultural resources sites to be avoided during project construction (CA-INY-6955, CA-INY-6976, CA-INY-7466, and HP-CK-08). The archaeological monitor shall ensure that construction activities are not conducted within the delineated cultural resources sites.
- A data recovery program shall be implemented during construction activity near archaeological site CA-INY-7470/7301. The data recovery program shall include:
    - Development of a comprehensive research design to address research themes on a broad regional level and to provide a procedural framework for the collection of data at sites determined to be significant
    - Mapping and systematic collection of surface artifacts not recovered during the testing and evaluation phase
    - Subsurface investigation through controlled hand-excavation units, machine excavations, deep testing, or a combination of methods. When applicable, other techniques, such as geophysical testing methods, may also be used
    - Analysis of recovered material through visual inspection and chemical analysis when applicable
    - Preparation of a data recovery report
    - Transmittal of the report to involved parties and Eastern Information Center at University of California, Riverside
    - Appropriate curation of the collected artifacts
- The qualified archaeologist shall coordinate with the construction contractor to limit the area of disturbance to site CA-INY-7470/7301.
- The qualified archaeologist/monitor shall be present during initial earthwork with the potential to disturb native soils. Monitoring of bedding material installation, penstock installation, or backfilling shall not be required. The monitor shall be authorized to halt construction, if necessary, in the immediate area where buried cultural materials are encountered. Prior to the resumption of grading activities in the immediate vicinity of the cultural remains, LADWP should provide the qualified archaeologist

with the necessary resources to identify and implement a program for the appropriate disposition of those materials.

- The monitor shall maintain a daily monitoring log which describes monitoring activities and results. At the completion of archaeological monitoring, a monitoring report shall be submitted to BLM and the Eastern Information Center at University of California, Riverside.
- A written agreement shall be secured with a recognized museum repository regarding the final disposition and permanent storage and maintenance of any unique archaeological resources or historical resources recovered as a result of the archaeological monitoring, as well as corresponding geographic site data that might be recovered as a result of the specified monitoring program.

CR-2 Protection of Unknown Cultural Resources. If previously unknown cultural resources are discovered in the course of excavation for project construction, all work shall cease in the immediate area of the discovery until the find can be evaluated by a qualified archaeologist. If the cultural material discovered is determined to be of potential archaeological significance, the investigation and future activities shall be conducted in consultation with relevant Native American tribes. Work shall not resume until the discovery has been evaluated and the recommendations of a qualified archaeologist have been implemented.

CR-3 Protection of Discovered Paleontological Resources. During earthwork necessary for installation of the Haiwee Penstock replacement, a paleontological monitor shall be present. The monitor may be a qualified paleontological monitor or a cross-trained archaeologist, biologist, or geologist working under the direction of a qualified principal paleontologist. Monitoring shall continue in the project area until the supervising qualified paleontologist determines that no native sediments are present or that significant paleontological resources are not likely to be discovered.

If paleontological materials are discovered and cannot be avoided, all construction work within a 50-foot radius of the find shall be halted until a qualified paleontologist or paleontologically-trained archaeologist can assess the significance of the find.

If the discovery is significant or potentially significant, then the following shall apply: data recovery and analysis, preparation of a data recovery report, and accession of recovered fossil material at an accredited paleontological repository (e.g., the University of California's Museum of Paleontology). Significant vertebrate fossils shall be recovered. A representative sample of significant invertebrate and plant fossils shall be recovered.

CR-4 Human Remains. In the unlikely event that human remains are discovered, there shall be no further excavation or disturbance of the site or any area that is reasonably suspected to overlie adjacent human remains until the following conditions are met:

On LADWP lands: The Inyo County Coroner has been informed and has determined that no investigation of the cause of death is required, and if the remains are of Native

American origin, the most likely descendants have been contacted. The most likely descendants may make a recommendation to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98.

On BLM lands: The Native American Graves Protection and Repatriation Act (NAGPRA; 25 USC 3001–3013) would apply for a discovery on federal lands. A NAGPRA discovery does not necessarily solely entail human remains; it can include associated or unassociated funerary objects, sacred objects, and cultural patrimony per 25 USC 3001 Section 2(3). According to the provisions of NAGPRA, all work in the immediate vicinity of the discovery must cease, and any necessary steps to insure the integrity of the immediate area must be taken. The BLM archaeologist must be notified immediately. The BLM as a managing agency is responsible for compliance with NAGPRA. NAGPRA requires federal agencies, such as the BLM, to cease activity around the discovery, protect the items, and provide notice to Native American tribes with an interest in the items and determine final disposition of these items, including, if required, repatriation (25 USC 3002[a] and [d]; 25 USC 3005).

2.3.6 Geology and Soils

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

Discussion: The project area is approximately 9 miles south of Olancha, California at the south end of the Owens Valley, north end of the Rose Valley. The Owens Valley of eastern California is a deep north-south trending basin, lying between the Sierra Nevada to the west and the White-Inyo Mountains to the east. The Owens Valley was formed as a fault block basin with the valley floor dropped down relative to the mountain blocks on either side. The Owens Valley is the westernmost basin in a geologic province known as the Basin and Range, a region of fault-bounded, closed basins separated by parallel mountain ranges stretching from central Utah to the Sierra Nevada and encompassing all of the state of Nevada. The Haiwee Reservoir is situated in a summit valley, the southern portion of which drains to the south towards the Mojave Desert, and the northern portion of which drains towards Owens Lake.

The project site occupies a remnant of the eroded valley of the greater Owens River and is located between the out-wash slopes of the Sierra Nevadas, which are approximately 4 miles to the west, and the lava capped Coso Mountains to the east. The penstock alignment is a flat-lying to very gently sloping valley approximately 2 miles long by ¼ mile wide. The site varies in elevation from approximately 3,685 feet above sea level at South Haiwee Dam to approximately

3,578 feet near the powerhouse. The bedrock underlying the project site and the Haiwee Reservoir is approximately 40-50 feet deep and consists of an unaltered shale deposit that dips at 10 degrees westward and is overlain by alluvial deposits (DPS, 1916).

The soils at the project site vary from north to south along the proposed penstock alignment. Starting from the north to the south, soils are: silty sand (near the dam), clayey sand and fat clay to lean clay, silty clayey sand with gravel, sandy lean clay with gravel, to sand with silt and gravel (near the powerhouse) (LADWP, 2010).

a)-i) and a)-ii) **Less Than Significant Impact.** The project is located in an area that has not been mapped as part of the Alquist-Priolo Earthquake Fault Zoning Act, however twenty six active faults are known to exist within 100 miles of the project site based on the EQFault database search (Blake, 2000). Two faults systems are located within 5 miles of the project site – Southern Sierra Nevada and Owens Valley. Located possibly through, and at minimum in close proximity, the Southern Sierra Nevada Fault could generate large displacements and an earthquake of maximum moment magnitude 7+. Located approximately 4.9 miles north of the project site, the Owens Valley Fault could generate large displacements and an earthquake of maximum moment magnitude 8+ (LADWP, 2010).

Surface rupture and seismic ground shaking are therefore possible for the project site and surrounding region. A site-specific seismic hazard analysis was performed to determine the site specific ground motions and the design spectra that would be used for the structural systems and components of the project. As required by the California Building Code, penstock connections would use expansion joints with the flexibility to accommodate movement. In the event of a failure due to a seismic event, the penstock would not expose people or structures to a substantial risk involving flooding, since the facility would be buried. Additionally, since habitable structures would not be built as part of the proposed project, people would not be exposed to adverse effects involving seismic ground shaking. Damage to project facilities would be repaired as necessary. Therefore, impacts related to seismic events would be less than significant.

a)-iii) **Less Than Significant Impact.** The project does not expose people or structures to potential substantial adverse effects involving strong seismic-related ground failure. Ground failure by liquefaction requires saturated soils, which could occur in the northern portion of the project area. Water was encountered at the north end of the project area at approximately 12 feet from the surface (LADWP, 2010). However, since habitable structures would not be built as part of the proposed project, people would not be exposed to adverse effects involving seismic-related ground failure. The proposed penstock would have automatic shutoff values where necessary to stop the water flow in case an earthquake of high magnitude occurs (LADWP, 2010). Damage to project facilities would be repaired as necessary. Therefore, impacts related to ground failure would be less than significant.

a)-iv) **No Impact.** Due to the relatively flat project area and lack of slopes in the immediate vicinity of the proposed penstock replacement, seismically induced landslides are not considered to be a potential hazard. Additionally, since habitable structures would not be built as part of the proposed project, people would not be exposed to adverse effects

involving landslides. The proposed penstock would be subsurface, therefore, the project would have no impacts related to landslides.

b) **Less Than Significant Impact.** Soil disturbance related to the proposed project would be limited to installation of the new penstock. The first 6 inches of top soil removed for construction of the penstock trench would be set aside. Once installation of new facilities is completed, this soil would be replaced on the final graded surface. Therefore, impacts related to erosion and loss of topsoil would be less than significant.

c) **Less Than Significant Impact.** Ground failure by liquefaction requires saturated soils, which could occur in the northern portion of the project area. Water was encountered at the north end of the project area at approximately 12 feet from the surface (LADWP, 2010). However, since no habitable structures would be built as part of the proposed project, the impact would be less than significant.

d) **No Impact.** Habitable structures would not be built as part of the proposed project. Therefore, there would be no project-related impacts from expansive soils.

e) **No Impact.** Sanitation facilities are not present or proposed for the project site. Therefore, there would be no impact on soils related to wastewater disposal.

2.3.7 Greenhouse Gas Emissions

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

Discussion: Greenhouse gases (GHGs) are gases that trap heat in the atmosphere. The most common GHGs emitted from natural processes and human activities include carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Examples of GHGs created and emitted primarily through human activities include fluorinated gases (hydrofluorocarbons and perfluorocarbons) and sulfur hexafluoride. Each GHG is assigned a global warming potential. The global warming potential is the ability of a gas or aerosol to trap heat in the atmosphere. The global warming potential rating system is standardized to CO_2, which has a value of one. For example, CH_4 has a global warming potential of 21, which means that it has a global warming effect 21 times greater than CO_2 on an equal-mass basis. Total GHG emissions from a source are often reported as a CO_2 equivalent (CO_2e). The CO_2e is calculated by multiplying the emission of each GHG by its global warming potential and adding the results together to produce a single, combined emission rate representing all GHGs. On a national scale, federal agencies are addressing emissions of GHGs by reductions mandated in federal laws and Executive Orders. Several states have promulgated laws as a means to reduce statewide levels of GHG emissions. In particular, the California Global Warming Solutions Act of 2006 directs the State of California to reduce statewide GHG emissions to 1990 levels by the year 2020.

Assembly Bill (AB) 32, California Global Warming Solutions Act of 2006, was signed into law on September 27, 2006. AB 32 requires CARB, in coordination with other State agencies and members of the private and academic communities, to adopt regulations to require the reporting and verification of statewide greenhouse gas emissions and to monitor and enforce compliance with this program. Under the provisions of the bill, by 2020, statewide greenhouse gas emissions would be limited to the equivalent emission levels in 1990. On December 12, 2008, CARB adopted its Climate Change Scoping Plan pursuant to AB 32 (CARB, 2008). The Scoping Plan was re-approved by CARB on August 24, 2011. The scoping plan indicates how these emission reductions will be achieved from significant greenhouse gas sources via regulations, market mechanisms and other actions.

The potential effects of proposed GHG emissions are by nature global, and have cumulative impacts. As individual sources, project GHG emissions are not large enough to have an

appreciable effect on climate change. Therefore, the impact of proposed GHG emissions to climate change is discussed in the context of cumulative impacts.

As a power utility, the majority of LADWP's GHG emissions results from power generation. Other GHG emissions are a result of vehicle and equipment use for construction and operation of LADWP facilities. To reduce Department-wide GHG emissions, LADWP has instituted various programs including: increasing the generation of renewable energy to 33 percent by 2020, early divestiture of coal generation, repowering existing natural gas power plants, adopting an aggressive energy efficiency program, and use of electric fleet vehicles.

a) **Less Than Significant Impact.** Project-related GHG emissions would be limited to air pollutants generated from construction equipment and vehicles during the construction period. As described in Section 2.3.3 Air Quality, construction of the project would result in less than significant combustion emissions from vehicles and equipment. Once operational, the project would ensure the reliable transmission of water and generation of renewable hydropower. The impact on emissions of GHG, and thus climate change, would be less than significant. Improvements to the reliability of the hydropower system would be beneficial.

b) **No Impact.** The penstock replacement project would increase the reliability of the existing water and power systems, assisting the City of Los Angeles in meeting its Renewable Portfolio Standard goals and reducing reliance on fossil-fuel generated power. Projects in support of hydropower are consistent with greenhouse gas policies and regulations. Therefore, the project would have no adverse impact on GHG policies.

2.3.8 Hazards and Hazardous Materials

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

Discussion: Aside from fuels for vehicle and equipment use, hazardous materials are not currently used or stored on the project site.

a) and b) **Less Than Significant Impact.** Construction of the proposed project would require the routine transport, use, and storage of limited quantities of gasoline and diesel fuel, and potentially degreasers and solvents for construction vehicle maintenance. Other chemical use is not anticipated.

LADWP would employ standard operating procedures for the routine transport, use, storage, handling, and disposal of hazardous materials related to the construction of the penstock facilities. Therefore, with adherence to the standard operations procedures for hazardous materials use, impacts related to release or accidental exposure to humans or the environment would be less than significant.

c) **No Impact.** There are no schools within ¼ mile of the project area. The closest school is located in Lone Pine, over 30 miles north of the project site. Therefore, the proposed project would have no impact on hazardous materials release within ¼ mile of an existing or proposed school.

d) **No Impact.** Section 65962.5 of the California Government Code requires the California Environmental Protection Agency (CalEPA) to update a list of known hazardous materials sites, which is also called the "Cortese List." The sites on the Cortese List are designated by the State Water Resources Control Board, the Integrated Waste Management Board, and the Department of Toxic Substances Control.

Based on a search of hazardous waste and substances sites listed in the Department of Toxic Substances Control (DTSC) "EnviroStor" database; a search of leaking underground storage tank (LUST) sites listed in the State Water Resources Control Board (SWRCB) "GeoTracker" database; and a search of solid waste disposal sites identified by the SWRCB with waste constituents above hazardous waste levels outside the waste management unit, there are no sites listed on or adjacent to the project site. Therefore, the project would have no impact related to hazardous waste sites.

e) and f) **Less Than Significant Impact.** Seven public access airports and six private airstrips are located throughout Inyo County (Inyo County, 2001). The Lone Pine Airport is located approximately 30 miles north of the project site. However, the project does not propose new tall structures and the project area is not located sufficiently near either a private airstrip or public airport to pose a safety risk. Therefore, project-related impacts on airport safety would be less than significant.

g) **Less Than Significant Impact.** Limited numbers of construction, delivery trucks and soil disposal trucks would travel to the project site, primarily via Hwy 395. The Los Angeles Aqueduct Road and Haiwee Reservoir Road (not part of an emergency evacuation plan route) would also be used throughout the construction period. Since the project site is not designated as an emergency staging area, the project would have a less than significant impact on emergency access and evacuation plans.

h) **Less Than Significant Impact.** New habitable structures are not proposed as part of the project. Project construction would require a construction crew of up to approximately 60 workers. Increased fire risk would be managed by the construction contractor, as applicable, during use of welding equipment, if any. Once the penstock is installed and disturbed areas are revegetated, the risk of fire at the project site would be similar to existing conditions. Therefore, replacement of the penstock would have a less than significant impact related to wildland fires.

2.3.9 Hydrology and Water Quality

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

Discussion:

Surface waters in the project area include: the existing by-pass open channel that runs through the project site (engineered structure); ephemeral streams, including Haiwee Creek, which empties into the project area just above the Haiwee Power Plant; and two small freshwater ponds supported by the toe drain of the dam. The ponds are contained within a larger fenced area

grazed by horses. Drainage of the project area is primarily by sheet flow to the partially channelized Owens River from south of the dam to Rose Valley to the south.

a) and f) **Less than Significant Impact.** Beneficial uses and water quality objectives are specified in the Water Quality Control Plan for the Lahontan Region (Basin Plan) prepared by the Lahontan RWQCB (Regional Board, 2005). Relevant to the project site, beneficial uses are designated for minor surface waters and minor wetlands in the Lower Owens Hydrologic Area (HA 603.30) (**Table 7**).

Table 7
Beneficial Uses of Waters in the Project Area

Surface water	MUN	ARG	IND	GWR	FRSH	REC-1	REC-2	COMM	WARM	COLD	WILD	RARE	SPWN	WQE	FLD
Minor Surface Waters	X	X	X	X		X	X	X	X	X	X	X	X		
Minor Wetlands	X	X		X	X	X	X	X	X	X	X			X	X

MUN – municipal and domestic supply; AGR – agricultural supply; IND – industrial service supply; GWR – groundwater recharge; FRSH – freshwater replenishment; REC-1 – water contact recreation; REC-2 – noncontact water recreation; COMM – commercial and sportfishing; WARM – warm freshwater habitat; COLD – cold freshwater habitat; WILD – wildlife habitat, RARE – rare, threatened or endangered species; SPWN – spawning, reproduction and development; WQE – water quality enhancement; FLD - flood peak attenuation/flood water storage.
Source: Regional Board, 2005

Waterbody-specific numeric objectives are specified for the outlet of the South Haiwee Reservoir for total dissolved solids, chloride, sulfate, fluoride, boron, nitrate, total nitrogen and orthophosphate. Replacement of the penstock would have no impact on the water quality of reservoir outlet water. Waterbody-specific numeric objectives for the protection of the designated beneficial uses for minor surface waters and minor wetlands in HA 603.30 are not specified in the Basin Plan. However, narrative and numeric water quality standards for all surface waters (including wetlands) in the region are applicable for: ammonia, coliform bacteria, biostimulatory substances, chemical constituents, total residual chlorine, color, dissolved oxygen, floating materials, oil and grease, non-degradation of aquatic communities and populations, pesticides, pH, radioactivity, sediment, settleable materials, suspended materials, taste and odor, temperature, toxicity, and turbidity.

During the geotechnical investigation for the project, groundwater was encountered at the north end of the penstock between 7 and 12 feet below ground surface; depth to groundwater increases at the south end of the project site (LADWP, 2010). With a trench depth of 15 feet, groundwater dewatering may be required for project construction. Discharge of groundwater during construction would be conducted as prescribed by mitigation measures defined for the protection of biological resources (e.g., sediment controls; see Section 2.3.4), to protect wetland areas.

Additionally, during project construction, stormwater would be managed in accordance with BMPs identified in a SWPPP completed in compliance with the NPDES General Permit for Storm Water Discharges Associated with Construction Activity (General Permit). With implementation of the required SWPPP, potential increases of sediment load in stormwater would not adversely affect surface water beneficial uses. The impact on water quality would be less than significant.

b) **No Impact.** The proposed penstock would be subsurface and new roadways or other impervious surfaces are not proposed as part of the project. Therefore, the project would not alter groundwater recharge at the site. The project would therefore have no impact on groundwater.

c), d), and e) **No Impact.** Existing stormwater drainage facilities at the project site include drainage ditches. The project includes improvement of an existing drainage ditch at the north end of the penstock. During construction, stormwater would be managed in compliance with the State Water Resources Control Board General Permit for Discharges of Storm Water Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ, amended by 2010-0014-DWQ & 2012-0006-DWQ, NPDES No. CAS000002). A SWPPP would be prepared by the construction contractor and appropriate BMPs would be implemented to control erosion and discharge of polluted runoff. The BMPs could include, but would not be limited to, those outlined in **Table 8**. Once installed, surface topography at the site would be restored and stormwater flow patterns would be similar to existing conditions. The project would have a less than significant impact on drainage patterns or stormwater drainage.

g), h), and i) **No Impact.** A 100-year floodplain has been delineated on the Haiwee Reservoir (Federal Emergency Management Agency [FEMA], 2011). However, no habitable structures are proposed as part of the project. Temporary redirection of flood flows during construction, if any, would be minor and would not risk the three existing habitable structures on the project site. Construction staging areas are located just south of the South Haiwee dam, but the dam would not be modified by the project. Once installed, the subsurface penstock would not redirect flood flows. Therefore, the project would have no impacts on flooding or flood hazard areas.

j) **No Impact.** Due to the distance to the ocean, tsunami is not relevant for the proposed project. Depending on volume conditions, localized seiche of Haiwee Reservoir is possible but would not expose people or structures at the project site to loss, injury or death. Similarly, mudflows if any, would not impact habitable structures related to the project since none are proposed. The project would have no impacts related to seiche or mudflow.

Table 8
Summary of Anticipated Construction Stormwater BMPs

Best Management Practices for the Protection of Stormwater Quality During Construction
Housekeeping Measures • Conduct an inventory of products used or expected to be used • Cover and/or berm loose stockpiled construction materials • Store chemicals in watertight containers
Employee Training • Brief staff on the importance of preventing stormwater pollution • Have staff review SWPPP • Conduct refresher training during the wet season • Document training
Erosion and Sediment Controls • Provide effective cover for inactive areas – cover, berm, or direct runoff to suitable basins • Establish and maintain effective perimeter control • Stabilize construction entrances and exits to control sediment – inspect ingress and egress points daily, and maintain as necessary • Control dust during earthwork • Place sandbags or other barriers to direct stormwater flow to suitable basins
Spill Prevention and Control • Inspect construction equipment for leaking • Use drip pans until equipment can be repaired • Cleanup spills Immediately – remove adsorbent promptly • Notify the proper entities in the event of a spill
Concrete Truck Washing Waste • Provide containment for capture of wash water • Maintain containment area
Hazardous Waters Management and Disposal • Store hazardous wastes in covered, labeled containers with secondary containment for liquid hazardous wastes • Store wastes separately to promote recycling and to prevent undesirable chemical reactions
Materials Handling and Storage • Establish a designated area for hazardous materials • Berm, cover, and/or contain the storage area as necessary to prevent materials from leaking or spilling • Store the minimum volume of hazardous materials necessary for the work
Vehicle and Equipment Maintenance, Repair, and Storage • Inspect vehicles and equipment regularly • Conduct maintenance as necessary • Designate areas for storage – where fluids can be captured and disposed of properly
Scheduling • Avoid work during storm events • Stabilize work areas prior to predicted storm events

2.3.10 Land Use and Planning

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

Discussion:

a) **No Impact.** The proposed project is located in an area zoned OS-40 (open space, 40-acre minimum) (Inyo County, 2015). The closest community is Olancha, approximately 9 miles to the north. The closest residence is the caretaker's house, located 0.14 miles west of the penstock construction area, and residences (one occupied by an LADWP employee, one unoccupied) off Haiwee Reservoir Road, approximately 0.2 miles north of the project area. No habitable structures are located on or immediately adjacent to the project site, and none are planned as part of the proposed project. Therefore, there would be no project-related impacts on established communities.

b) **Less Than Significant Impact with Mitigation Incorporated.** The project area is located south of South Haiwee Dam, on land owned by LADWP and BLM (see Figures 2 through 6 for land ownership boundary). In an Act dated June 30, 1906, the United States Congress granted the City of Los Angeles Rights-of-Way, not to exceed 250 feet in width, over and through the public lands of the United States in the Counties of Inyo, Kern and Los Angeles, for the purpose of constructing, operating and maintaining canals, ditches, pipes and pipe lines, flumes, tunnels and conduits for conveying water to the City of Los Angeles. The existing penstock is operated within a 250-ft right-of-way agreement with BLM. Where installation of the replacement penstock would occur on federal land, the new penstock and associated construction activity would be contained within the existing right-of-way.

The project area is within the California Desert Conservation Area (CDCA), WEMO (BLM, 2005). A result of federal, state, and local planning, the WEMO identifies specific management direction on BLM lands within the western Mojave Desert. The WEMO is a multispecies landscape-scale conservation plan developed to protect and conserve the desert tortoise, Mohave ground squirrel, and numerous other sensitive species and their habitats; prevent future species listing; and provide a consistent, cost-effective, streamlined process for complying with the ESA. The project occurs within a BLM WEMO-designated Mohave Ground Squirrel Conservation Area. Mitigation measures to be implemented for the protection of biological resources (see Section 2.3.4) would ensure the project's consistency

with the goals of WEMO. A portion of the project area is also located within the Rose Spring Area of Critical Environmental Concern (ACEC), a BLM special management area for important Native American cultural resources. With construction of the project within the existing right-of-way and implementation of mitigation measures for the protection of biological and cultural resources, impacts on BLM land use planning would be less than significant.

Inyo County General Plan. The Land Use Element of the Inyo County General Plan (2001) includes Policy LU-5.6 State and Federal Lands Designation (SFL): This designation applies to those State- and Federally-owned parks, forests, recreation, and/or management areas that have adopted management plans. Policy LU-5.4 Natural Resources Designation (NR) provides for the preservation of natural resources, the managed production of resources, and recreational uses. The Conservation/Open Space Element of the Inyo County General Plan (2001) includes Policy 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. LADWP maintains public access at the Haiwee Reservoir site. During construction, access may be restricted for public and worker safety. Once the new facilities are installed, access to the site would be similar to existing conditions. No additional fencing, barriers, or obstructions are proposed. Therefore, the penstock replacement project would be consistent with existing land use plans and policies and project-related impacts on land use would be less than significant.

c) **Less than Significant Impact.** Please see Section 2.3.4 Biological Resources, item f.

Mitigation Measures for Impacts to Land Use

The mitigation measures described in Sections 2.3.4 Biological Resources (**Bio-1** to **Bio-10**) and 2.3.5 Cultural Resources (**CR-1** to **CR-4**) would reduce impacts on land use planning to less than significant levels.

2.3.11 Mineral Resources

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

Discussion: Approximately 60 percent of the land in Inyo County is thought to have mineral potential; the predominant mining activity is the extraction of aggregate resources (stone, sand, gravel and clays) (Inyo County, 2001). Important mineral resources in the general project area include gravel deposits associated with alluvial fans. The California Department of Conservation Office of Mine Reclamation (2015) maps several mines in the project area. An idle LADWP mine just west of the dam was previously used for decomposed granite. South of project area, there are three other mines: active LADWP fill dirt, active LADWP rock, and a closed pumice mine.

Inyo County is the Lead Agency for the processing of surfacing mining reclamation plan applications on private lands, Inyo County's Road Department, City of Los Angeles, and California Department of Transportation borrow pits, and surface mining on federally administered lands. All surface mining operations that disturb greater than 1 acre or move more than 1,000 cubic yards or more are required to have an approved reclamation plan before the start of mining activity.

a) and b) **No Impact.** The project would require the use of limited volumes of readily available mineral resources, such as gravel and concrete for pipeline bedding material and backfill. However, construction activity would not occur on or near active or idle mining operations or within the boundaries of a mineral lease area. The project would not result in the loss of availability of mineral resources. There would be no impact on mining operations adjacent to Haiwee Penstock.

2.3.12 Noise

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

Discussion: Haiwee Penstock is located in a remote area where the main source of noise is the roadway noise along Highway 395. Sensitive noise receptors in the area are limited to the dam caretaker's house and two residences (one occupied by an LADWP employee and one unoccupied) located on Haiwee Reservoir Road. All three of these structures are owned by LADWP.

Per the Public Safety Element of the Inyo County General Plan (2001), the normally acceptable noise level for residential properties ranges up to 60 Ldn and conditionally acceptable noise level ranges up to 70 Ldn. The term "Ldn" refers to the average sound exposure over a 24-hour period. Ldn values are calculated from hourly Leq values, with the Leq values for the nighttime period (10:00 p.m. to 7:00 a.m.) increased by 10 dB to reflect their greater disturbance potential.

a) and d) **Less Than Significant Impact.** The closest noise receptor to the project site is the dam keeper's residence located south of the dam and just west of the penstock alignment; this house is owned by LADWP and occupied by an LADWP employee. The closest school is located in Lone Pine, over 30 miles north of project site. During construction for replacement of the penstock, noise would be generated from trucks, bulldozers and other earth moving equipment, generators and cranes. Noise would be noticeable to occupants of the dam keeper's residence and potentially visitors/recreators on adjacent BLM lands. With a distance of over 7 miles to ranch buildings north of the project site, construction noise would

not be noticeable to off-site sensitive receptors. For example, construction equipment emitting 90 dBA at 50 feet would attenuate to approximately 33 dBA at 7 miles (Canter, 1977). Additionally, construction activity would not occur during 10:00 p.m. to 7:00 a.m. when there is greater potential for noise disturbance to residences. Therefore, given the distance from the project site to sensitive residential receptors, the project would not cause noise levels to exceed established thresholds and noise impacts would be less than significant.

b) **Less Than Significant Impact.** Construction equipment may create minor groundborne vibration or groundborne noise. Aside from the three LADWP-owned residences located on-site, there are ranch buildings approximately 7.7 miles north of the project site. At this distance, impacts related to temporary groundborne vibration or noise would be less than significant.

c) **Less Than Significant Impact**. Noise generated during project operation would include vehicle travel to the site for inspection and maintenance of the penstock. This routine travel to the site would be the same as existing conditions and would not generate noise noticeable by any sensitive receptors. Noise impacts from project operation would therefore be less than significant.

e) and f) **No Impact.** Seven public access airports and six private airstrips are located throughout Inyo County (Inyo County, 2001). The Inyokern Airport is located approximately 30 miles south of the penstock project site, and the Long Pine Airport is located over 30 miles to the north. A private airstrip in Inyokern, the Sacatar Meadows Airport, is approximately 10 miles from the project site. Therefore, the project would not be located sufficiently near either a private airstrip or public airport to expose people residing or working in the area to experience excessive noise levels. There would be no project-related impacts on noise near an airport/airstrip.

2.3.13 Population and Housing

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

Discussion:

a) **Less Than Significant Impact.** Since the project does not include construction of homes or businesses, it would not directly impact population growth in the project area. However, construction of the project would require approximately 50 to 60 workers for penstock installation. This minor number of workers over an approximately 15 month construction period would have a less than significant impact on population growth.

b) and c) **No Impact.** No habitable structures are planned as part of the penstock replacement project. Therefore, there would be no impacts on housing from construction and operation of the project.

2.3.14 Public Services

	Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a)	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 governmental 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:				
	i) Fire protection?	☐	☐	☒	☐
	ii) Police protection?	☐	☐	☐	☒
	iii) Schools?	☐	☐	☐	☒
	iv) Parks?	☐	☐	☐	☒
	v) Other public facilities?	☐	☐	☐	☒

Discussion:

a) i) **Less Than Significant Impact.** No new habitable structures are proposed for the project site. The limited number of construction workers required to implement the project would not generate substantial population growth or create the need for new or expanded fire services. Construction methods with an associated fire risk, such as welding, would be conducted in accordance with standard safety provisions. The construction contractor would perform their work under the supervision of LADWP staff. The temporary impact on fire protection services during the construction period would be less than significant.

ii – v) **No Impact.** No new habitable structures are proposed as part of the penstock replacement project. The limited number of construction workers required to implement the project would not generate substantial population growth or create the need for new or expanded public services. Therefore, there would be no project-related impacts on police protection, schools, parks, or other public facilities.

2.3.15 Recreation

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Discussion:

a) **No Impact.** No new habitable structures are proposed as part of the penstock replacement project. The limited number of construction workers required to implement the project would not generate substantial population growth or create the need for new or expanded parks. Therefore, the project would have no impact on neighborhood or regional parks or other recreation facilities.

c) **No Impact.** The project does not include the construction of recreational facilities or generate population growth that would require the construction or expansion of recreational facilities. Therefore, there would be no impact on recreational facilities.

2.3.16 Transportation and Traffic

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

Discussion: The only major roadway in the project area is Hwy 395, located, at the closest, approximately 0.8 miles west of the penstock alignment. Hwy 395, generally a four-lane divided highway, is the main north-south transportation route through Inyo County and the Owens Valley. Access to the site is via Haiwee Reservoir Road which connects Hwy 395 and the South Haiwee dam, and a southern access road that connects with Hwy 395 less than 3 miles south of the dam.

a) and b) **Less Than Significant Impact.** Level of Service (LOS) is a qualitative measure describing operational conditions within traffic stream, or their perception by motorists and/or passengers which is calculated based on a number of design and operating criteria, such as lane width, roadside obstacles, trucks and busses, curvature, grades, etc. (Transportation Research Board, 2000). LOS A reflects free-flow conditions; at LOS E a road is operating at capacity and is congested. Typically, LOS C or LOS D represents acceptable flow conditions. The highway capacity as determined by the Highway Capacity Manual 2000 for a two-lane highway is 1,600 passenger cars per hour (pc/h) for each direction of travel; the capacity of a two lane-highway is 3,200 pc/h for both directions of

travel combined. Based on traffic counts reported by Caltrans, Highway 395 operates well below capacity at LOS A (Caltrans, 2014).

Delivery trucks (pipe, concrete, other materials), soil disposal trucks (approximately 5 per day) and workers commuting to the project site (approximately 50-60 per day) would travel on Hwy 395. Once transported to the site, most construction equipment (backhoe, generators, cranes, etc.) would remain in place for the duration of the approximately 15-month construction period, and then be demobilized. Soils excavated during penstock installation would be reused as feasible at the North Haiwee dam project; soil hauling trucks would travel approximately 6 miles north on Hwy 395 to reach the North Haiwee Dam access roadway. For roadways operating at LOS A and B, Caltrans recommends consideration of a Traffic Impact Study when more than 100 peak hour trips are assigned to a State Highway facility (Caltrans, 2002). Combined, construction worker vehicles, delivery trucks and soil hauling truck trips during penstock installation would be less than 100 round trips per day, substantially less than 100 trips per hour. Based on the existing excellent LOS on Hwy 395 (LOS A), the temporary addition of these additional vehicle and truck trips would have a less than significant impact on traffic.

c) **No Impact.** The project site is located approximately 30 miles south of the Lone Pine Airport. The project does not include tall structures that would alter air traffic patterns. Therefore, there would be no impact on air traffic safety.

d) **No Impact.** The project would not include any new roadways or roadway design features. Therefore, the project would have no impact on roadway hazards.

e) **Less Than Significant Impact.** The Haiwee Power Plant is currently accessible to emergency vehicles via Hwy 395 and local access roads. Construction of the proposed project would temporarily increase the volume of trucks travelling on these roadways but would not alter the access points. The impact of an additional less than 100 trips per day for construction workers commuting to the site, soil hauling trucks and delivery trucks would be less than significant on emergency access. Prior to the start of construction, local emergency service providers (Inyo County Sherriff, Olancha Cartago Fire Department, Inyo National Forest Fire Organization) would be notified of the construction schedule for the project.

f) **No Impact.** The project would not include housing, employment, or roadway improvements relevant to alternative transportation measures. Therefore, there would be no project-related impacts on alternative transportation.

2.3.17 Utilities and Service Systems

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

Discussion:

a) and b) **No Impact.** Habitable structures are not proposed as part of the project. The limited number of construction workers (approximately 50 to 60) required to implement the project would not create the need for new or expanded water or wastewater service. During construction activities, wastewater temporarily generated at portable toilets would be treated offsite in compliance with existing regulations. The project would have no impact on water or wastewater treatment facilities or wastewater treatment requirements.

c) **Less Than Significant Impact**. The project includes improvement of an existing drainage ditch at the north end of the penstock. After installation of the penstock, the finished grade of the project area would be similar to existing conditions. Therefore, impacts on storm drain facilities would be less than significant.

d) **Less Than Significant Impact**. In addition to the negligible potable water demand from construction workers, water would be used for dust control during the approximately 15-month construction period. Water trucks would be filled with reservoir water. Since no new supplies or entitlements would be required, the impact on water supplies would be less than significant.

e) **Less Than Significant Impact**. Portable toilets would be provided for the approximately 50 to 60 construction workers required to build the project. Wastewater would be treated by the Lone Pine Community Services District or other wastewater service provider. Due to the negligible increase in wastewater generated during the approximately 15-month project construction period, the impact on wastewater treatment capacity would be less than significant.

f) and g) **Less Than Significant Impact.** Replacement of the penstock would generate construction waste from the limited portions of the existing penstock proposed for removal. The Inyo County Code Section 7.11.040 (Diversion Requirements) calls for diversion of all materials from the solid waste stream that can reasonably be diverted for alternate uses and as may be required as a condition of the project's building permit, if local markets are available for the debris. Construction debris and the limited volumes of solid waste generated by construction workers would be disposed at a permitted landfill, such as the Lone Pine Landfill, in compliance with applicable regulations. Additionally, excavated soils (approximately 15,000 cubic yards) would require disposal; although it is assumed that these soils, if suitable, would be reused as part of the North Haiwee Dam project. Since solid waste generated during project construction would be reused or disposed of at a permitted landfill, impacts related to solid waste disposal would be less than significant.

2.3.18 Mandatory Findings of Significance

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

Discussion:

a) **Less Than Significant Impact With Mitigation Incorporated.** Project construction could potentially impact sensitive plant and animal species known for the project area. Mitigation measures have been defined to protect nesting birds, desert tortoise, Mohave ground squirrels, burrowing owls and other species from inadvertent disturbance and harm during construction. Additional mitigation measures have been defined to protect rare plants potentially present at the project site, to protect wetland areas during construction, and to limit the spread of invasive plant species. With implementation of mitigation measures, impacts on biological resources would be less than significant.

Cultural resources are known for the project site and could be inadvertently damaged during project construction. Mitigation measures have been defined to delineate cultural sites and protect them during construction, and to recover data from the one site that cannot be avoided during penstock installation. With implementation of mitigation measures, impacts on cultural resources would be less than significant.

b) **No Impact**. The long-term goal of the project is to provide a reliable penstock from South Haiwee Reservoir to Haiwee Power Plant in order to increase the reliability of the water conveyance system as well as improve operability of the power generating system. There are no short-term goals related to the project that would be disadvantageous to this long-term goal.

c) **Less Than Significant Impact.** Cumulatively with other infrastructure replacement and improvement projects, the project would be beneficial related to continued transmission of potable water and the generation of renewable energy. Project construction may be concurrent with other construction, such as the North Haiwee Dam project. However, due to the limited number of construction workers for the project (approximately 50 to 60) and minor number of construction vehicles, cumulative impacts with other construction and maintenance activities in the area would be less than significant.

d) **Less Than Significant Impact.** The goal of the project is to provide a reliable penstock from South Haiwee Reservoir to Haiwee Power Plant in order to increase the reliability of the water conveyance system as well as improve operability of the power generating system. The long-term goal is to continue power generation from renewable sources and limit reliance on fossil-fuel generated power – a beneficial impact on human beings. The nearest off-site residence to the project site is several miles away. Temporary impacts from project construction on noise, air quality and traffic would therefore be less than significant.

Section 3
References, Abbreviations, and Report Preparation

3.1 REFERENCES AND BIBLIOGRAPHY

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3.2 ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
ACEC	Area of Critical Environmental Concern
APE	Area of Potential Effect
amsl	Above mean sea level
BE/BA	Biological Evaluation / Biological Assessment
BLM	(United States) Bureau of Land Management
BMPs	best management practices
BNHM	Berkeley Natural History Museum
CalEPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCR	California Code of Regulations
CDCA	California Desert Conservation Area
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CH_4	methane
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CRHR	California Register of Historic Resources
DCM	dust control measure
DPS	Department of Public Services
DTSC	Department of Toxic Substances Control
EIC	Eastern Information Center (at University of California at Riverside)
EIR	Environmental Impact Report
EPA	(United States) Environmental Protection Agency

ESA	Endangered Species Act
Farmland	Prime Farmland, Unique Farmland, or Farmland of Statewide Importance
FEMA	Federal Emergency Management Agency
FMMP	Farmland Mapping and Monitoring Program
GBUAPCD	Great Basin Unified Air Pollution Control District
GHG	greenhouse gas
HA	Hydrologic Area
HCP	Habitat Conservation Plan
HMA	Herd Management Area
Hwy	Highway
IS	Initial Study
LAA1	Los Angeles Aqueduct 1
LADWP	(City of) Los Angeles Department of Water and Power
LOS	Level of Service
LUST	leaking underground storage tank
MND	Mitigated Negative Declaration
MW	megawatt
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NAHC	Native American Heritage Commission
NHD2	North Haiwee Dam 2
NPDES	National Pollutant Discharge Elimination System
NR	Natural Resources
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
pc/h	passenger cars per hour
PM	particulate matter
PM_{10}	particulate matter 10 microns or less in diameter
PV	Passenger Vehicles
RPS	Renewable Portfolio Standard
SFL	State and Federal Lands

SIP	State Implementation Plan
SNA	Significant Natural Areas
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
UCMP	University of California Museum of Paleontology
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UTM	Universal Transverse Mercator
WEMO	Western Mojave
ZOI	Zone-of-Influence

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