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# DEVIL CANYON PROJECT RELICENSING FERC PROJECT NUMBER 14797



## Draft License Application Exhibit A – Project Description

April 2019

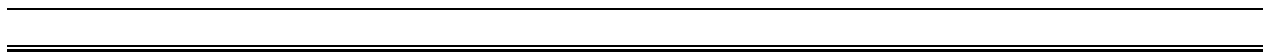


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## COMMONLY USED TERMS, ACRONYMS & ABBREVIATIONS

§	Section
CFR	Code of Federal Regulations
cfs	cubic feet per second
DPR	California Department of Parks and Recreation
DWR	California Department of Water Resources
FERC	Federal Energy Regulatory Commission
hp	horsepower
NMWSE	Normal Maximum Water Surface Elevation
O&M	Operation and Maintenance
Project	Devil Canyon Project
Project vicinity	This is the area within the existing Project boundary and the area surrounding the Project on the order of a USGS 1:24,000 quadrangle
rpm	revolutions per minute
SWP	State Water Project
U.S.	United States
U.S.C.	United States Code

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## 1.0 INTRODUCTION

The California Department of Water Resources (DWR) has prepared this Exhibit A, Project Description, as part of its Application for a New License Major Project – Existing Dam (Application for New License) from the Federal Energy Regulatory Commission (FERC) for the Devil Canyon Project, FERC Project Number 14797. This exhibit has been prepared to conform with Title 18 of the Code of Federal Regulations (CFR), Subchapter B (Regulation under the Federal Power Act), Part 4, Subpart F (Application for License for Major Project – Existing Dam) (Traditional Licensing Process). In particular, this report complies with the regulations in 18 CFR Section (§) 4.51(b). For reference, 18 CFR § 4.51(b) states:

Exhibit A is a description of the project. This exhibit need not include information on project works maintained and operated by the U.S. Army Corps of Engineers, the Bureau of Reclamation, or any other department or agency of the United States, except for any project works that are proposed to be altered or modified. If the project includes more than one dam with associated facilities, each dam and the associated component parts must be described together as a discrete development. The description for each development must contain:

- (1) The physical composition, dimensions, and general configuration of any dams, spillways, penstocks, powerhouses, tailraces, or other structures, whether existing or proposed, to be included as part of the project;
- (2) The normal maximum surface area and normal maximum surface elevation (mean sea level), gross storage capacity, and usable storage capacity of any impoundments to be included as part of the project;
- (3) The number, type, and rated capacity of any turbines or generators, whether existing or proposed, to be included as part of the project;
- (4) The number, length, voltage, and interconnections of any primary transmission lines, whether existing or proposed, to be included as part of the project (see 16 U.S.C. 796[11]);
- (5) The specifications of any additional mechanical, electrical, and transmission equipment appurtenant to the project; and
- (6) All lands of the United States that are enclosed within the project boundary described under paragraph (h) of this section (Exhibit G), identified and tabulated by legal subdivisions of a public land survey of the affected area or, in the absence of a public land survey, by the best available legal description. The tabulation must

show the total acreage of the lands of the United States within the project boundary.

Excluding this introductory material, this exhibit includes six sections. The Project's location is described in Section 2.0. Section 3.0 provides details of the existing Project facilities, including dimensions, physical features, and other pertinent information. Section 4.0 describes the area within the existing Project boundary, including the legal description and total acreage for all parcels owned by the United States (U.S.). Section 5.0 describes DWR's proposed changes to existing Project facilities. Section 6.0 discusses DWR's proposed changes to the existing Project boundary, including changes to total acreage of land within the existing Project boundary owned by the U.S. Section 7.0 includes a list of references cited in this exhibit.

Refer to Exhibit B for a description of Project operations, Exhibit C for a description of construction history and proposed construction schedule, Exhibit D for costs and financing information, and Exhibit E for a discussion of potential environmental effects and DWR's proposed resource management measures. Project design drawings are included in Exhibit F, and Project maps are included in Exhibit G. Exhibit H includes a detailed description of the need for the power generated by the Project, and other important miscellaneous information.

All elevation data in this exhibit are in U.S. Department of Commerce, National Oceanic and Atmospheric Association, National Geodetic Survey Vertical Datum of 1929, unless otherwise stated.



## **2.0 PROJECT LOCATION**

The existing Project is part of a larger water storage and delivery system, the State Water Project (SWP), which is the largest state-owned and operated water supply project of its kind in the U.S. The SWP provides southern California with many benefits, including an affordable water supply, reliable regional clean energy, opportunities to integrate green energy, accessible public recreation opportunities, and environmental benefits.

The Project is located in San Bernardino County on the East Branch of the SWP. Figure 2.0-1 shows the Project vicinity. Figure 2.0-2 shows Project facilities; the existing and proposed Project boundaries are shown for reference purposes.

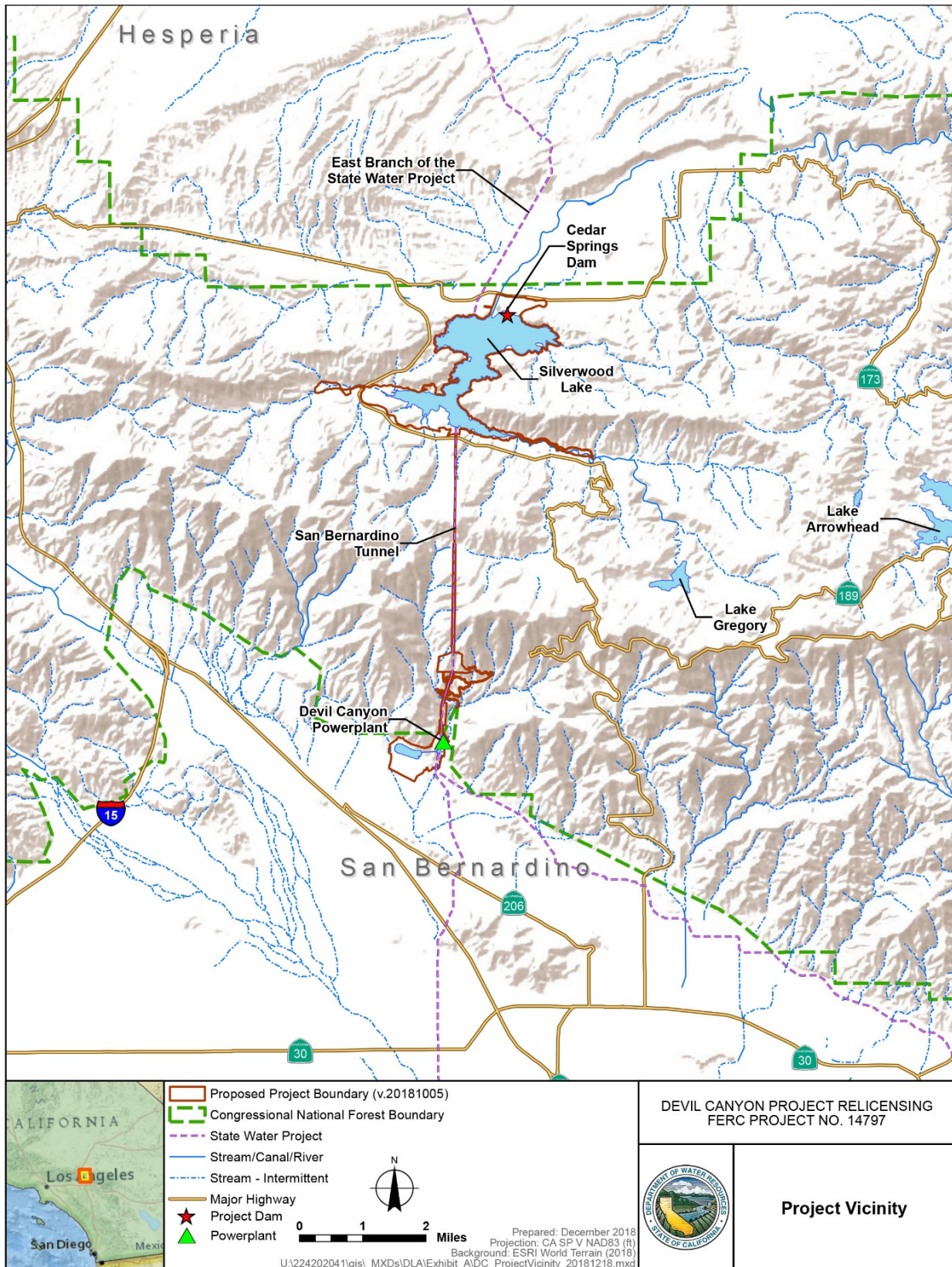


Figure 2.0-1. Devil Canyon Project Vicinity

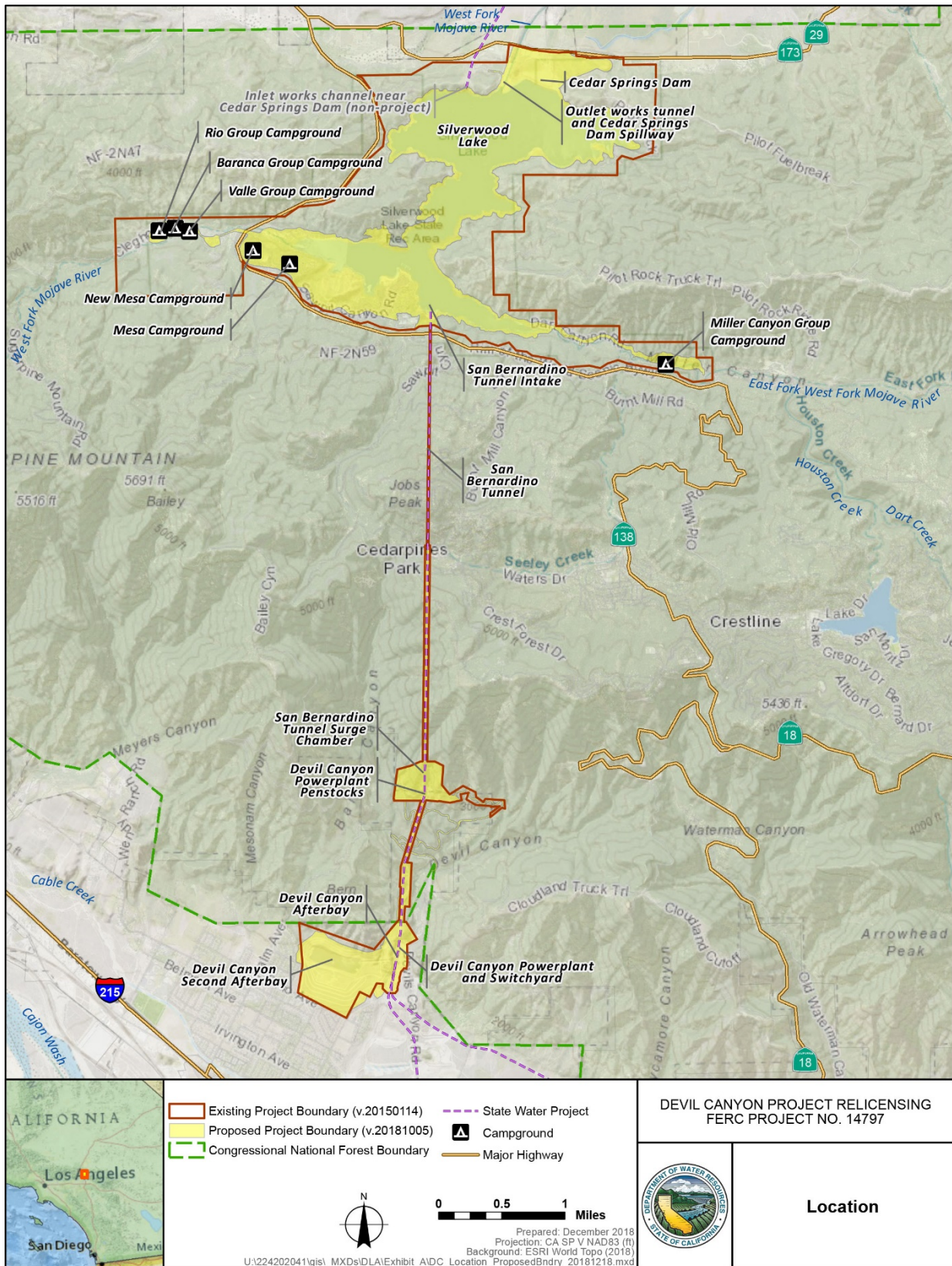


Figure 2.0-2. Devil Canyon Project Location

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### 3.0 EXISTING PROJECT FACILITIES AND FEATURES

The existing Project can store approximately 76,051 acre-feet of SWP water, and generates an average of 836,000 megawatt-hours (MWh) of energy annually. The existing Project's FERC licensed authorized installed capacity is 272,796 kilowatts (kW) and the Project's calculated dependable capacity is 250,100kW. Table 3.0-1 and Table 3.0-2 summarize key information for Project powerplants and for reservoirs and impoundments, respectively.

The Project includes one development: Devil Canyon. The Project does not include the following features located within the proposed Project boundary or its vicinity:

- Any open water conduits, excluding the Cross Channel described in Section 3.5, transmission lines or spoil piles.
- Inlet Works at Silverwood Lake, including the transition structure, chute, energy dissipation structure, and associated riprap, which is part of the conveyance from the Mojave Siphon on the SWP outside of the existing Project boundary
- Fenced-in laydown and storage yard, which is used by DWR for multiple projects, at the base of Cedar Springs Dam.
- The water intake, treatment facilities, and distribution facilities of the Crestline-Lake Arrowhead Water Agency
- The Cleghorn Wastewater Treatment Plant, collection system, water storage tank, and outflow pipeline of the Crestline Sanitary District on the west side of State Highway 138, near the California Department of Parks and Recreation (DPR) administration building
- The Administrative Building and other facilities of the DPR
- The Pacific Crest National Scenic Trail and several trails of the Silverwood Lake State Recreation Area
- A small section of State Highway 138
- General access roads
- The Southern California Edison transmission system
- The San Bernardino Valley Municipal Water District's San Bernardino Pipeline, the SWP's Santa Ana Valley Pipeline, the San Gabriel Valley Municipal Water District's Azusa Pipeline, and the Metropolitan Water District of Southern California's Rialto Pipeline from the Devil Canyon Afterbay, including their valves, turnouts, meters and connections
- The SWP's Santa Ana Pipeline and the SWP's Inland Feeder Pipeline from the Devil Canyon Second Afterbay, including their valves, turnouts, meters, and connections

**Table 3.0-1. Devil Canyon Project Powerplants: Key Information**

Powerhouse	Unit	Turbine Type	Rated Head (feet)	Rated Hydraulic Capacity (cfs)		Generation Capacity (kW)		Average Annual Energy (MWh/yr) <sup>2</sup>
				Minimum	Maximum	Installed	Dependable <sup>1</sup>	
Devil Canyon	1	Pelton	1,357	50	670	59,850	--	--
	2	Pelton	1,357	50	670	59,850	--	--
	3	Pelton	1,250	50	800	76,548	--	--
	4	Pelton	1,250	50	800	76,548	--	--
<b>Total</b>	<b>4</b>	<b>--</b>	<b>--</b>	<b>200</b>	<b>2,940</b>	<b>272,796</b>	<b>250,100</b>	<b>836,000</b>

Sources: ACES the CAISO NERC Registry, Mapper Reservoir Storage Software, Operation Control Office  
Note:

<sup>1</sup>DWR calculated dependable capacity by multiplying the Devil Canyon Powerplant's average monthly Resource Adequacy (RA) data for 2013 through 2017 by the yearly RA capacity.

<sup>2</sup>DWR calculated average annual energy by multiplying the Project's installed capacity by the reported Devil Canon Powerplant operating availability average of 89.31 percent for the 2010 through 2017 period.

The maximum capacity of the San Bernardino Tunnel and penstocks is 2,811 cfs.

Key:

cfs = cubic feet per second

kW = kilowatt

MWh/yr = megawatt-hours/year

**Table 3.0-2. Devil Canyon Project Reservoirs and Impoundments: Key Information<sup>1</sup>**

Project Reservoir	NMWSE (feet)	Gross Storage (AF)	Usable Storage <sup>2</sup> (AF)	Surface Area <sup>3</sup> (acres)	Maximum Depth <sup>1</sup> (feet)	Shoreline Length	Drainage Area <sup>3</sup> (square miles)
Silverwood Lake	3,355	75,000	33,820	995	236	13 miles <sup>1</sup>	144.8
Devil Canyon Afterbay	1,932.6	49	43	4	15	1,940 feet	None
Devil Canyon Second Afterbay	1,930.5	1,002	620	36	40	5,500 feet	None
<b>Total</b>	--	<b>76,051</b>	<b>34,483</b>	<b>1,035</b>	--	--	--

Notes:

<sup>1</sup>All values are based on the normal maximum operating levels

<sup>2</sup>Storage between operating maximum 3,353 feet and operating minimum pool 3,312 feet.

<sup>3</sup>At the dam, drainage areas are not additive.

Key:

AF = acre-feet

NMWSE = Normal Maximum Water Surface Elevation

The following data corresponds to the operating maximum elevation of the facility:

Silverwood: NMWSE – 3,353 ft, gross capacity – 73,032 ac-ft, surface area – 962 acres.

DC 1<sup>st</sup> AB: NMWSE – 1,932 ft, gross capacity – 49 ac-ft, surface area – 4 acres

DC 2<sup>nd</sup> AB: NMWSE – 1,930 ft, gross capacity – 960 ac-ft, surface area – 36 acres

### 3.1 CEDAR SPRINGS DAM AND SILVERWOOD LAKE

Cedar Springs Dam and Silverwood Lake (Figure 3.1-1), located on the West Fork Mojave River, are about 90 miles southeast of the bifurcation of the east and west branches of the SWP and 25 miles north of the City of San Bernardino. Completed in 1971, Cedar Springs Dam is a 249-foot-tall, zoned earth and rockfill dam, with a dam crest that is 42 feet wide and 2,230 feet long, at an elevation of 3,378 feet. It contains approximately 7.6 million cubic yards of embankment. At the Normal Maximum Water Surface Elevation (NMWSE) of 3,353 feet, Silverwood Lake has a storage capacity of 73,032 AF, a usable storage capacity of 33,820 AF, normal maximum surface area of 962.0 acres, and a shoreline length of about 13 miles.



**Figure 3.1-1. Downstream Face of Cedar Springs Dam and Silverwood Lake from the Right Abutment**

The Cedar Springs Dam Spillway is located on the left abutment of the dam and consists of a 120-foot long, un-gated crest with a rectangular lined concrete channel.

The Cedar Springs Dam low-level outlet works is located in the left abutment of the dam directly below the spillway. The low-level outlet works consists of an un-gated intake



tower, a pressure tunnel connecting the intake tower to a gate chamber, a free-flow tunnel downstream from the gate chamber that discharges into the spillway chute just upstream from the stilling basin, and an air intake that also serves as an emergency exit. The maximum capacity of the low-level outlet works is 5,000 cubic feet per second (cfs).

### **3.2 SAN BERNARDINO TUNNEL AND PENSTOCKS**

The San Bernardino Tunnel intake is a vertical reinforced concrete tower on the south end of Silverwood Lake that draws water from the reservoir and conveys it into the San Bernardino Tunnel.

The San Bernardino Tunnel is a pressure conduit, which conveys water from Silverwood Lake to the Devil Canyon Penstocks. The 3.81-mile-long, concrete-lined tunnel is 12.75 feet in diameter and has a design capacity of 2,811 cfs at Silverwood Lake NMWSE.

Water enters the Devil Canyon Powerplant via two surface penstocks. One of the penstocks, which is constructed of steel, is 1.3 miles long, with a diameter varying from 9.5 feet at the south portal (i.e., where the tunnel transitions to a penstock) to 8 feet at the plant. The other penstock, constructed of steel, is also 1.3 miles long, and has a diameter varying from 12.5 feet at the south portal to 8 feet at the plant. The above-ground penstocks run parallel, generally following the ground slope from the south portal to the Devil Canyon Powerplant. The maximum capacities of the two penstocks at Silverwood Lake NMWSE are approximately 1,200 cfs and 1,600 cfs, respectively.

### **3.3 DEVIL CANYON POWERPLANT**

The Devil Canyon Powerplant (Figure 3.3-1) is located at the base of the San Bernardino Mountains in the City of San Bernardino and is designed to recover power in electrical form from the waters of the SWP as it drops from the high desert through the Devil Canyon Powerplant turbines.

The elevation drop from Silverwood Lake provides the Devil Canyon Powerplant with a normal static head of 1,406 feet at the NMWSE of Silverwood Lake.

The Devil Canyon Powerplant has four generation units. These include one Baldwin-Lima-Hamilton Pelton-type turbine and one Sulzer Escher Wyss Pelton-type turbine, each with 1,357 feet rated head, 277 revolutions per minute (rpm) runner speed, 81,000 horsepower (hp) rated output, 670 cfs approximate rated discharge, and a licensed capacity of 59,850 kW. The other two are Voith Pelton-type turbines, each with 1,250 feet rated head, 277 rpm runner speed, 102,064 hp rated output, 800 cfs approximate rated discharge, and a licensed capacity of 76,548 kW.



**Figure 3.3-1. Devil Canyon Powerplant and Devil Canyon Afterbay from the Road Leading to the Second Afterbay**

### **3.4 DEVIL CANYON SWITCHYARD**

The Devil Canyon Switchyard includes four step-up transformers. There are multiple current transformers and potential transformers in the switchyard. The main function of the transformers is metering and protection. The ratings of the current transformers and potential transformers, which are part of the interconnected transmission system, are CEII and are provided separately (Single-Line Diagram of the Devil Canyon Powerplant in Exhibit F).

### **3.5 DEVIL CANYON AFTERBAY DAM AND AFTERBAY**

Water from the Devil Canyon Powerplant flows to the off-channel Devil Canyon Afterbay, which has a surface area of four acres at a NMWSE of 1,932.6 feet, a capacity of 49 AF, and an embankment crest elevation of 1,940 feet. Completed in 1974, the afterbay provides a minimal amount of regulatory capacity for matching the powerplant's inflows and outflows to different pipelines for SWP water deliveries outside of the existing Project boundary.

SWP water supply in Devil Canyon Afterbay is either conveyed to the Devil Canyon Second Afterbay for future delivery or via four pipelines to meet downstream water supply demands. SWP water is delivered to the Devil Canyon Second Afterbay via the 1,100-foot-long, 40-foot-wide, 27-foot-deep concrete-lined Cross Channel with an approximately 13-foot-high uncontrolled weir structure at the inlet to the Cross Channel. SWP water scheduled to meet downstream water supply demands is delivered through the following four pipelines: the Rialto Pipeline; Azusa Pipeline; Santa Ana Pipeline; or the San Bernardino Pipeline.

The Devil Canyon Afterbay includes a spillway structure designed for emergency purposes but the spillway has never been used, and is obsolete due to the construction of the Second Afterbay. This spillway and the four pipelines connected to the Devil Canyon Afterbay, including their valves, turnouts, meters, and connections, are not part of the Project facilities. There are no other releases from the Devil Canyon Afterbay.

### **3.6 DEVIL CANYON SECOND AFTERBAY DAM AND AFTERBAY**

Completed in 1995, the Devil Canyon Second Afterbay (Figure 3.6-1) was added to the Project to increase the operational flexibility and capacity of the Devil Canyon Powerplant. The Devil Canyon Second Afterbay NMWSE is 1,930.5 feet, has a gross storage capacity of 960 AF, and a surface area of approximately 36 acres. Devil Canyon Second Afterbay is an off-channel, below-original-ground-level water holding structure.

All operational releases from the Devil Canyon Second Afterbay occur through the outlet structure. SWP water can be delivered through the outlet structure via one of three pipelines: the Rialto, Santa Ana, and Inland Feeder. The Devil Canyon Second Afterbay also has an emergency overflow spillway discharge outlet, as well as a low-level emergency outlet release. The Rialto Pipeline, Santa Ana Pipeline, and Inland Feeder, including their valves, turnouts, meters, and connections within the existing Project boundary, are non-Project facilities.



**Figure 3.6-1. Devil Canyon Second Afterbay from the West Side of the Afterbay Looking East**

### **3.7 PROJECT GAGES**

The existing license does not identify any streamflow or reservoir stage gages for the purpose of complying with streamflow or reservoir elevation requirements.

### **3.8 PROJECT RECREATION FACILITIES**

Table 3.8-1 lists Project recreational facilities, all of which are located at Silverwood Lake. Public access to the Devil Canyon Afterbay and Second Afterbay is not permitted due to safety concerns.

**Table 3.8-1. Project Recreation Facilities**

<b>Silverwood Lake SRA Recreational Facility</b>	<b>Description</b>
Rio Group Camp	Group camping facility with 100 person capacity
Baranca Group Camp	Group camping facility with 100 person capacity
Valle Group Camp	Group camping facility with 100 person capacity
Cleghorn Day Use Area	Day use shoreline facility with swim beach and picnicking sites
Cleghorn Boat Launch	Day use facility with boat launch and courtesy dock, restrooms
Garces Overlook	Developed overlook view point
New Mesa Campground	Campground with 42 full hook up individual camping units
Entrance Station	Kiosk entry station for recreationists
Nature Center	2,700-square foot facility for interpretive programs
Mesa Campground	Campground facility with 107 individual camping units
Campfire Center	Outdoor amphitheater for interpretive programs
Sawpit Canyon Picnic Area 3	Day use facility with 57 picnicking units
Sawpit Canyon Picnic Area 2	Day use facility with 45 picnicking units
Sawpit Canyon Picnic Area 1	Day use facility with 10 picnicking units
Sawpit Canyon Day Use Area	Day use shoreline facility with swim beach with multiple picnicking facilities and concessionaire store
Black Oak Picnic Area	Day use facility with 84 picnicking units
Sawpit Canyon Marina	Marina facilities with moorage facilities for 61 boats and concessionaire boat rentals
Sawpit Canyon Boat Launch	7-lane boat launch and courtesy docks
Jamajab Point Overlook	Developed overlook view point
Serrano Landing Day Use Area	Boat-in/hike-in shoreline day use site with picnicking facilities
Miller Canyon Picnic Area	Bike-in/hike-in day use site with 12 picnicking units
Lynx Point Overlook	Developed overlook view point
Devil's Pit Overlook	Developed overlook view point with wooden viewing platform
Miller Canyon Group Camp	Group camping area with 3 sites holding up to 40 persons each
Miller Canyon Trailhead	Developed trail head for accessing all Miller Canyon facilities and shorelines
Sycamore Landing Day Use Area	Boat-in day use site with 13 picnicking units
Live Oak Landing Day Use Area	Boat-in/hike-in day use site with 8 picnicking units
Chamise Day Use Area	Boat-in day use site with 7 picnicking units
Garces Trail	0.4-mile-long trail linking Cleghorn Day Use area to Garces Overlook

**Table 3.8-1. Project Recreation Facilities (continued)**

<b>Silverwood Lake SRA Recreational Facility</b>	<b>Description</b>
Miller Canyon Trail	1.6-mile-long asphalt surfaced trail linking Miller Canyon Group Camps to the Silverwood Bike Path
East Fork Trail	0.3-mile long asphalt surfaced trail
Silverwood Bike Path	5.6-mile-long paved bike path connecting Serrano Landing Day Use Area in Miller Canyon to Cleghorn Day Use Area on the West end of Silverwood Lake SRA

Source: DWR 2016b

Key:

ADA = Americans with Disabilities Act of 1990 (U.S.)

SRA = State Recreation Area

### 3.9 ROADS AND TRAILS

The existing license does not identify any Primary Project Roads. A Primary Project Road or Trail includes any road or any trail that is identified in the license as a Project facility, is used almost exclusively to access the Project, is within the existing Project boundary, and is operated and maintained exclusively by DWR as a Project feature. Roads and trails associated with Project recreation facilities are considered part of the Project recreation facilities and are not discussed in this section.

## 4.0 EXISTING PROJECT BOUNDARY

The existing Project boundary comprises 3,744.0 acres of land (Figure 2.1-2). Within the total acreage, 221.0 acres are federal lands managed by the U.S. Department of Agriculture, Forest Service as part of the San Bernardino National Forest (Table 4.0-1). Most of these federal lands are located along the west side of Silverwood Lake, San Bernardino Tunnel and Surge Chamber, and Devil Canyon Powerplant Penstocks areas.

**Table 4.0-1. Summary of Land Ownership Within the Existing Project Boundary**

Development	USFS (acres)	State of California (acres)	Private (acres)	Total	
				Area (acres)	Percent of Total
Devil Canyon	221.0	3501.3	21.7	3744.0	--
Percent	5.90%	93.52%	0.58%	--	100.0%

*Source: Compiled by the California Department of Water Resources – Geodetic Branch – Property Management and Land Records section from Department land records and County Assessor Data.*

*Key:*

*State of California = Lands owned by DWR and the California Department of Parks and Recreation*

*USFS = United States Forest Service*

## 4.1 LANDS OF THE U.S. WITHIN THE EXISTING PROJECT BOUNDARY

Table 4.1-1 identifies each section, or portion thereof, within the existing Project boundary that is federal land, per the Public Land Survey System.

**Table 4.1-1. Federal Lands Within the Existing Project Boundary**

Administered by	Township	Range	Section	Acres
USFS	01N	04W	6	0
USFS	02N	04W	4	6.9
USFS	02N	04W	5	1.6
USFS	02N	04W	6	0.3
USFS	02N	04W	7	4.6
USFS	02N	04W	8	0.11
USFS	02N	04W	9	0
USFS	02N	04W	10	0
USFS	02N	04W	18	0
USFS	02N	04W	19	24.15
USFS	02N	04W	29	57.44
USFS	02N	04W	30	52.57
USFS	02N	04W	32	1.8
USFS	02N	05W	1	0
USFS	02N	05W	2	71.51
USFS	02N	05W	11	0
USFS	02N	05W	12	0
USFS	03N	04W	31	0
USFS	03N	04W	33	0
Total				220.98

Source: Compiled by the California Department of Water Resources – Geodetic Branch – Property Management and Land Records section from Department land records and County Assessor Data.

Key:

USFS = United States Forest Service



## 5.0 PROPOSED CHANGES TO PROJECT FACILITIES AND FEATURES

### 5.1 GENERATING FACILITIES

DWR does not propose to add to the Project any previously constructed, unlicensed water power structures or facilities, or new generating facilities, or to modify any existing Project generating facility.

### 5.2 RECREATION FACILITIES

DWR does not propose to add to the Project any additional Recreation Facilities, including recreation-related roads and trails.

### 5.3 GAGES

Table 5.3-1 describes one existing reservoir gage that DWR proposes to add to the Project for the purpose of documenting compliance with conditions in the new license. DWR does not propose to add to the Project any streamflow gages since DWR does not propose any measures related to streamflow.

**Table 5.3-1. List of Existing Gages DWR Proposes to Add to the Project for the Purpose of Compliance with License Conditions**

USGS Gage No.	Gage Name	Purpose of Gage as Related to the Project
10260790	Silverwood Lake, Near Hesperia, CA	Record Silverwood Lake stage

*Key:*  
 USGS = U.S. Geological Survey

### 5.4 ROADS AND TRAILS

Table 5.4-1 describes 10 existing roads that DWR proposes to add to the Project as Primary Project Roads. DWR does not propose to add to the Project any trails as Primary Project Trails. Each of the roads is within DWR's proposed Project boundary.

**Table 5.4-1. List of Primary Project Roads DWR Proposes to Add to the Project**

<b>Designation</b>	<b>Begins</b>	<b>Ends</b>	<b>Land Ownership</b>	<b>Distance (miles)</b>	<b>Purpose</b>
Tunnel Outlet Access Road	Locked Gate on Devils Canyon Road	San Bernardino Tunnel Outlet	City of San Bernardino, State of California, and USFS	2.4	Access to San Bernardino Tunnel Outlet
Surge Chamber Access Road	Tunnel Outlet Access Road	San Bernardino Tunnel Surge Chamber	USFS	0.5	Access to San Bernardino Tunnel Surge Chamber
Upper Penstocks (West) Access Road	San Bernardino Tunnel Outlet	San Bernardino Penstocks	City of San Bernardino, State of California, and USFS	1.1	Access to west side of Upper Portion of Devil Canyon Penstocks
Upper Penstocks (Upper East) Access Road	Tunnel Outlet Access Road	San Bernardino Penstocks	City of San Bernardino and State of California	0.7	Access to east side of Upper Portion of Devil Canyon Penstocks
Upper Penstocks (Lower East) Access Road	Tunnel Outlet Access Road	San Bernardino Penstocks	City of San Bernardino and State of California	0.1	Access to east side of Upper Portion of Devil Canyon Penstocks
Lower Penstocks Access Road	Devil Canyon Powerplant Complex	San Bernardino Penstocks	City of San Bernardino and State of California	0.8	Access to Lower Portion of Devil Canyon Penstocks
Dam and Spillway Access Road	Locked gate	Silverwood Lake	State of California	1.0	Access to Cedar Springs Dam and east side of Cedar Springs Dam Spillway
Dam Downstream Face Access Road	Locked gate	Downstream Face of Cedar Springs Dam	State of California	0.4	Access to downstream face of Cedar Springs Dam
Spillway Access Road	Mojave Power/Pumping Plant Road	Silverwood Lake	State of California	0.3	Access to west side of Cedar Springs Dam Spillway
Intake Access Road	Locked gate	San Bernardino Tunnel Intake	State of California	<0.1	Access to San Bernardino Tunnel Intake

Key:  
USFS = United States Forest Service

## 6.0 PROPOSED CHANGES TO THE PROJECT BOUNDARY

DWR proposes several changes to the existing Project boundary to more accurately define lands necessary for the safe operation and maintenance (O&M) of the Project and other purposes, such as recreation, shoreline control, and protection of environmental resources. There are two categories of proposed Project boundary changes:

- Proposed addition of lands to the existing Project boundary that are currently utilized with a preponderance of use related to the Project O&M (e.g., the drainage area west of the Devil Canyon Second Afterbay), and proposed removal of lands from the existing Project boundary that do not have Project facilities and are not used or necessary for Project O&M (e.g., certain areas between Silverwood Lake and State Highway 138). These proposed changes are essentially corrections to the existing Project boundary.
- Proposed changes to the existing Project boundary around the Project reservoir and impoundments from surveyed coordinates to a contour located above the NMWSE. These changes reflect the preferred method of defining a project's boundary, as outlined in the FERC Drawing Guide (FERC 2014), and more accurately represents lands required for Project O&M around the Project reservoir.

The net effect of modifying the existing Project boundary is the reduction of area within the boundary from 3,744.0 acres to 2,079.4 acres. This change would reduce the 221.0 acres of federal land (approximately 6 percent of the total area within the existing Project boundary) to 126.0 acres of federal land (approximately 6 percent of the total area within the proposed Project boundary). Table 6.0-1 shows DWR's proposed changes to the existing Project boundary.

**Table 6.0-1. Summary of Proposed Changes to Land Ownership Within the Existing Project Boundary**

Development	USFS (acres)	State of California (acres)	Private (acres)	Total (acres)
Existing Project Boundary	221.0	3501.3	21.7	3744.0
Proposed Project Boundary	125.9	1913.3	40.2	2079.4
Change to Project Boundary	95.1	1588.1	-18.5	1664.6

*Source: Compiled by the California Department of Water Resources – Geodetic Branch – Property Management and Land Records section from Department land records and County Assessor Data.*

*Key:*

*USFS = United States Forest Service*

The proposed changes are based on DWR's current and historic use of land for the Project, DWR's comprehensive review of facilities, operations, and land information to date, and additional new information and data available for facilitating a more refined

boundary delineation. The most significant change in the delineation is the use of a 100-foot buffer from Silverwood Lake’s NMWSE to define the proposed Project boundary around portions of the lake, which reduces the land area considerably on the eastern, western, and southern side of Silverwood Lake.

Table 6.0-2 identifies each section, or portion thereof, within the proposed Project boundary that is federal land, per the Public Land Survey System.

**Table 6.0-2. Differences Between Federal Lands in the Existing and Proposed Project Boundaries**

Administered by	Township	Range	Section	Acres
<b>PROPOSED PROJECT BOUNDARY</b>				
USFS	02N	04W	4	0
USFS	02N	04W	7	4.6
USFS	02N	04W	8	0.1
USFS	02N	04W	9	0
USFS	02N	04W	18	0
USFS	02N	04W	19	24.2
USFS	02N	04W	29	35.4
USFS	02N	04W	30	60.8
USFS	02N	04W	31	0.1
USFS	02N	04W	32	0.8
Total				125.9
<b>DIFFERENCES BETWEEN EXISTING (TABLE 4.0-1) AND PROPOSED PROJECT BOUNDARIES</b>				
USFS	01N	04W	6	0
USFS	02N	04W	4	6.9 Less
USFS	02N	04W	5	1.6 Less
USFS	02N	04W	6	0.3 Less
USFS	02N	04W	7	0
USFS	02N	04W	8	0
USFS	02N	04W	9	0
USFS	02N	04W	10	0
USFS	02N	04W	18	0
USFS	02N	04W	19	0
USFS	02N	04W	29	22.0 Less
USFS	02N	04W	30	8.2 More
USFS	02N	04W	32	1.0 Less

**Table 6.0-2. Differences Between Federal Lands in the Existing and Proposed Project Boundaries (continued)**

Administered by	Township	Range	Section	Acres
USFS	02N	05W	1	0
USFS	02N	05W	2	71.5 Less
USFS	02N	05W	11	0
USFS	02N	05W	12	0
USFS	03N	04W	31	0.1 more
USFS	03N	04W	33	0
Difference				95.0 less

Source:

Compiled by the California Department of Water Resources – Geodetic Branch – Property Management and Land Records section from Department land records and County Assessor Data

Key:

USFS = United States Forest Service

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## **7.0 REFERENCES CITED**

Federal Energy Regulatory Commission. 2014. Managing Hydropower Project Exhibits, Guidance Document. August.

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