355 South Lemon Ave, Suite A
Walnut, CA 91789
(909) 595-5314 Phone
(909) 595-5394 Fax

July 12, 2019

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Re: Premium Energy Holdings' Application for Preliminary Permit for the Haiwee Pumped Storage Project, FERC Project No. 14991

Dear Secretary Bose:

Pursuant to 18 C.F.R. §§ 4.32 and 4.81 of the Federal Energy Regulatory Commission's ("FERC") regulations, enclosed for filing is Premium Energy Holdings, LLC's ("Premium Energy") Application for Preliminary Permit for the Haiwee Pumped Storage Project. As detailed in the application, Premium Energy proposes to evaluate the potential development of a pumped storage power plant in the existing LADWP's Haiwee Reservoirs surrounding area. Premium Energy has a keen interest in harnessing and increasing renewable energy production in California. The submittal of this application is for the purpose of securing priority during the licensing process. Feasibility studies will be carried out during the term of this preliminary permit in order to support the license application.

Premium Energy looks forward to working with the commission while developing this important new source of clean and sustainable energy storage. If you have any questions or require additional information regarding this submittal, please contact me at (909) 595-5314 or email me at victor.rojas@pehllc.net.

Sincerely,

Victor M. Rojas

Managing Director at Premium Energy Holdings, LLC

Enclosures

cc:

**BEFORE THE**
**FEDERAL ENERGY REGULATORY COMMISSION**

# APPLICATION FOR PRELIMINARY PERMIT FOR THE HAIWEE PUMPED STORAGE PROJECT

FERC Project No. _____

Prepared by

**Premium Energy Holdings, LLC**

July 12, 2019

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**INITIAL STATEMENT**

**BEFORE THE**
**FEDERAL ENERGY REGULATORY COMMISSION**

**Application for Preliminary Permit**

**for the Haiwee Pumped Storage Project**

Premium Energy Holdings, LLC ("Premium Energy"), a California based limited liability corporation, applies to the Federal Energy Regulatory Commission for a preliminary permit for the Haiwee Pumped Storage Project, as described in the attached exhibits. This application is made in order that the applicant may secure and maintain priority of application for a license for the project under Part I of the Federal Power Act while obtaining the data and performing the acts required to determine the feasibility of the project and to support an application for a license.

1. The location of the proposed project is:

| | |
|---|---|
| State or territory: | California |
| Counties: | Inyo County |
| Township or nearby town: | Olancha |
| Streams: | Haiwee Creek, Haiwee Reservoirs |

2. The exact name, business address, and telephone number of the applicant are:

Premium Energy Holdings, LLC
355 South Lemon Ave, Suite A
Walnut, CA 91789
Telephone: (909) 595-5314

3. The name, business address, and telephone number of the persons authorized to act as agent for the applicant in this application are:

Victor M. Rojas
Managing Director at Premium Energy Holdings, LLC
355 South Lemon Ave, Suite A
Walnut, CA 91789
Telephone: (909) 595-5314
Email: victor.rojas@pehllc.net

Maria Hernandez
Project Manager at Premium Energy Holdings, LLC
355 South Lemon Ave, Suite A
Walnut, CA 91789
Telephone: (909) 595-5314
Email: maria.hernandez@pehllc.net

4. Preference under Section 7(a) of the Federal Power Act

5. Premium Energy is a corporation operating in California and is not claiming preference under section 7(a) of the Federal Power Act. Premium Energy's business primarily involves the retrofit and modernization of power plants and pumping plants, transmission planning and design, power system studies, testing and commissioning of power plants and substations.

6. Term of Permit:

   The proposed term of the requested permit is twenty-four (24) months.

7. Existing Dams or Other Project Facilities:

   The proposed project would not make use of any existing dams or other project facilities. The project proposes new upper and lower reservoirs with their respective dams. The filling of these reservoirs would be done through the LA Aqueduct. The existing LA Aqueduct system is owned and operated by Los Angeles Department of Water and Power (LADWP).

**ADDITIONAL INFORMATION REQUIRED BY 18 C.F.R. § 4.32(a)**

1. Identification of persons, associations, domestic corporations, municipalities, or state that has or intends to obtain and will maintain any proprietary right necessary to construct, operate, or maintain the project:

   Premium Energy Holdings, LLC
   355 South Lemon Ave, Suite A
   Walnut, CA 91789
   Telephone: (909) 595-5314

2. Identify (names and mailing addresses):

   i. Every county in which any part of the project, and any Federal facilities that would be used by the project, would be located.

   Inyo County, California Board of Supervisors
   224 N Edwards Street
   Independence, CA 93526
   Telephone: (760) 878-0373

   ii. Every city, town or similar local political subdivision:

   (A) In which any part of the project, and any Federal facilities that would be used by the project, would be located:

   *None.*

   (B) That has a population of 5,000 or more people and is located within 15 miles of the project dam:

   *None.*

   iii. Every irrigation district, drainage district, or similar special purpose political subdivision:

   (A) In which any part of the project, and any Federal facilities that would be used by the project, would be located:

   Los Angeles Department of Water and Power
   111 N Hope Street
   Los Angeles, CA 90012
   Telephone: (800) 499-8840

(B) That owns, operates, maintains, or uses any project facilities or any Federal facilities that would be used by the project:

Los Angeles Department of Water and Power
111 N Hope Street
Los Angeles, CA 90012
Telephone: (800) 499-8840

iv. Every other political subdivision in the general area of the project that there is reason to believe would likely be interested in, or affected by, the application; and interest:

California Department of Water Resources
P.O. Box 942836
1416 9th Street
Sacramento, CA 95814

State Water Resources Control Board
1001 I Street
P.O. Box 100
Sacramento, CA 95814

California Department of Fish and Game
Inland Deserts Region
3602 Inland Empire Boulevard
Suite C-220
Ontario, CA 91764

Inyo County Water Department
P.O. Box 337
135 South Jackson St.
Independence, CA 93526

California Department of Transportation (Caltrans)
1120 N Street
Sacramento, CA 95814
Telephone: (916) 654-2852

U.S. Forest Service
Inyo National Forest
351 Pacu Lane, Suite 200
Bishop, CA 93514
Telephone: (760) 873-2400

Bureau of Land Management
California State Office
2800 Cottage Way Suite W1623
Sacramento, CA 95825
Telephone: (916)978-4400

v. All Indian tribes that may be affected by the project:

Chairperson
Big Pine Paiute Tribe of the Owens Valley
P.O. Box 700
Big Pine, CA 93513
Telephone: (760) 938-2003

Chairperson
Lone Pine Paiute Shoshone Reservation
P.O. Box 747
Lone Pine, CA 93545
Telephone: (760) 8761034

Chairperson
Fort Independence Reservation
P.O. Box 67
Independence, CA 93526
Telephone: (760) 878-5160

## VERIFICATION STATEMENT

This application for a preliminary permit for the proposed Haiwee Pumped Storage Project is executed in the state of California, county of Los Angeles.

By: Victor M. Rojas
Premium Energy Holdings, LLC
355 South Lemon Ave, Suite A
Walnut, CA 91789

Being duly sworn, deposes, and says that the contents of this application for a preliminary permit are true to the best of his knowledge or belief. The undersigned applicant has signed the application on this 12th day of July of 2019.

Victor Rojas
Managing Director at Premium Energy Holdings, LLC

Subscribed and sworn before me, a Notary Public of the State of California, County of Los Angeles, this day of 12th of July, 2019.

NOTARY PUBLIC

MARIA A. HERNANDEZ
COMM. #2247108
NOTARY PUBLIC - CALIFORNIA
LOS ANGELES COUNTY
My Comm. Exp. Jun. 22, 2022

## EXHIBIT 1 – DESCRIPTION OF THE PROPOSED PROJECT

1. GENERAL CONFIGURATION

The proposed Haiwee Pumped Storage Project would be located 10 miles south of Olancha, California in the Inyo County. The project concept envisions the construction of a pumped storage power facility with capacity ranging from 1,600 MW to 2,000 MW. The project proposes a new North Haiwee Reservoir 2 located upstream North Haiwee Reservoir to serve as a lower pool.

Seismic studies have found the existing North Haiwee Reservoir could potentially fail during a maximum credible earthquake. In that event, the dam's crest could settle up to 9 ft due to liquefaction, causing the release of a large volume of water. This event could threaten public safety due to the potentially hazardous flooding. The proposed North Haiwee Reservoir 2 would improve the seismic reliability of the existing North Haiwee Reservoir. It would act as a backup dam to ensure safety of the populations and improve reliability of the existing North Haiwee Reservoir for water conveyance.

The proposed North Haiwee Reservoir 2 will require the following construction activities:

- Earthworks and grading to obtain the proposed reservoir floor.
- Construction of the proposed North Haiwee Dam 2.
- Realignment of a section of the existing Cactus Flats Road and the existing North Haiwee Road.
- Realignment of the existing LA Aqueduct reaching the existing North Haiwee Reservoir.
- Construction of a diversion structure and connecting channel or pipeline to the proposed North Haiwee Reservoir 2.

Alternatives for an upper pool to operate the Haiwee Pumped Storage Power Plant require the construction of a new embankment to create a new reservoir to the west or east of the proposed North Haiwee Reservoir 2. The new upper reservoir alternatives are described below and are depicted in Exhibit 3.

- Upper Reservoir Alternative 1: A new McCloud Reservoir at 5,260 ft el.
- Upper Reservoir Alternative 2: A new Little Cactus Reservoir at 4,980 ft el.
- Upper Reservoir Alternative 3: A new Haiwee Canyon Reservoir at 6,160 ft el.

Considering the existing L.A. Aqueduct and the project's site land are owned and operated by Los Angeles Department of Water and Power (LADWP), the project would be most attractive to LADWP due to their footprint and existing resources in the area. The filling of the reservoirs would be carried out by using the water conveyed through the existing LA Aqueduct. The development of this proposed project would be done under LADWP's supervision. Additionally, other electrical utilities are expected to be interested in the project as a resource for storing renewable energy.

The proposed power plant would operate as a closed loop hydro-power pumped storage plant. The project's operation would not alter the existing streams and it will not alter

operation of the existing Haiwee Reservoirs. Once the proposed upper and lower reservoirs are filled with enough stored water for project operation, water will not be diverted from the LA Aqueduct. However, the connecting pipeline could be used to regulate the LAA's water temperature by using the proposed North Haiwee Reservoir 2. The proposed North Haiwee Reservoir 2 would be used to warm up the cold water in the LAA, which could cause ruptures in the Aqueduct pipelines due to the temperature variations.

The project's proposed upper and lower reservoir would require the construction of new embankments for them to be filled. The embankments for the project's proposed reservoirs would consist of roller compacted concrete dams. Conceptual dimensions for the project's dams and penstock for each alternative are detailed in tables 1 and 2, respectively.

Table 1. New Reservoirs' Embankment Dimensions

| Description | Proposed Reservoir | Dam Crest Elev. [ft] | Dam Height [ft] | Dam Length at Crest [ft] |
|---|---|---|---|---|
| Lower Res. | North Haiwee Reservoir 2 | 3,780 | 160 | 7,090 |
| Upper Reservoir Alternatives | McCloud Reservoir | 5,275 | 175 | 3,068 |
| | Little Cactus Reservoir | 4,995 | 235 | 2,836 |
| | Haiwee Canyon Reservoir | 6,175 | 595 | 2,256 |

Table 2. Hydro Power Penstock Alternatives Dimensions

| Lower Reservoir | Upper Reservoir Alternative | Head [ft] | Tunnel Diameter [ft] | Tunnel / Penstock Length [mi] |
|---|---|---|---|---|
| North Haiwee Reservoir 2 | McCloud Reservoir | 1,490 | 39 | 9.1 |
| | Little Cactus Reservoir | 1,210 | 39 | 6.4 |
| | Haiwee Canyon Reservoir | 2,390 | 31 | 7.5 |

Aside from the construction of the new embankments for the new upper and lower reservoirs, a hydro power penstock or pressurized tunnel will be required to connect the two reservoirs to the powerhouse. The pumped storage powerhouse, generating/pumping units, electrical switchyards, interconnecting transmission lines, and other appurtenant facilities would complete the project.

The Haiwee Pumped Storage Power Plant would deliver between 1,600 MW and 2,000 MW through 500 kV transmission lines. The project's transmission lines would interconnect with Los Angeles Department of Water and Power (LADWP) or Southern California Edison's (SCE) transmission system to facilitate the pumped storage operation. Upgrades to existing transmission lines and substations would be necessary to deliver the electrical power to the existing high-voltage regional electrical network.

## 2. RESERVOIRS

The upper and lower reservoirs configuration is to be the best suited to maximize the available hydraulic head, as well as minimize the penstock layout within environmental constraints. The proposed reservoir sites within this application are the result of conceptual engineering completed by Premium Energy and its consultants. During the term of the preliminary permit, Premium Energy will further investigate on the new reservoirs configuration and select the best suited location for energy, economic and environmental considerations.

The project concept includes a new North Haiwee Reservoir 2 serving as a lower reservoir, two upper reservoir alternatives east of Haiwee Ridge and a third upper reservoir alternative in the Haiwee Canyon west of South Haiwee Reservoir. A hydraulic head of up to 2,390 ft would exist between the new upper and lower reservoir, which would be exploited for hydro power generation.

### A. Lower Reservoir Configuration

The project proposes a new North Haiwee Reservoir 2 to serve as the lower pool for pumped storage operation. This reservoir would be located upstream the existing North Haiwee Reservoir. The new North Haiwee Reservoir 2 would have a 320 acres area and a 38,350 acre-ft storage capacity at an elevation of 3,770 ft. The proposed reservoir would require excavation of 50 million cubic yards. The creation of the reservoir would include earthworks and grading to obtain the desired reservoir floor at 3,620 ft elevation. If no earthworks are done, the reservoir would only have water storage capacity for the power plant's rating to be in the range of 400 MW and 800 MW.

The reservoir would be filled during high water level season through a new piping segment connected to the existing LA Aqueduct. The L.A. Aqueduct System currently delivers water from the Owens River to Los Angeles. However, the project's pumped storage power plants will operate in a closed loop. Therefore, operation will reuse the water in a cyclic manner and water will not be diverted once the reservoirs filling is completed. The project's proposed reservoirs will provide enough water storage capacity for 12 hours of 2,000 MW continuous output, with backup for 24 hours of electricity generation.

### B. Upper Reservoir Configuration

The first two project alternatives for an upper reservoir are located east of Haiwee Ridge, which is east of the existing South Haiwee Reservoir. The third alternative involves a new upper reservoir created in the Haiwee Canyon west of the South Haiwee Reservoir. The new upper reservoir alternatives' physical characteristics are detailed in table 3.

To enable pumped storage operation, the new reservoirs will have intake-outlet structures with a submerged intake elevation at an adequate height. Below this elevation, a permanent reserve of water will remain in the reservoirs. From the intake-outlet structures, a hydro power penstock or pressure tunnel will unfold to connect to the new Haiwee PS Power Plant and then to the proposed North Haiwee Reservoir 2.

Table 3. Upper Reservoir Alternatives Characteristics

| Proposed Upper Reservoir | Surface Area [acre] | Storage Capacity [acre-ft] | Maximum Surface Elevation [ft] |
|---|---|---|---|
| Alt. 1: McCloud Reservoir | 504 | 44,554 | 5,260 |
| Alt. 2: Little Cactus Reservoir | 499 | 47,021 | 4,980 |
| Alt. 3: Haiwee Canyon Reservoir | 138 | 28,620 | 6,160 |

The proposed McCloud and Haiwee Canyon upper reservoir alternatives would have enough storage capacity for 2,000 MW of power generation for up to 24 hours. However, due to storage limitations, the Little Cactus Reservoir alternative would only allow 1,600 MW power generation.

The new upper reservoir alternatives site would naturally discharge runoff water to the existing streams reaching the existing Haiwee Reservoirs. During high water level season, excess water from the proposed McCloud and Little Cactus Reservoirs would be discharged to the existing creeks in the Little Cactus Flat. These creeks eventually reach the South Haiwee Reservoir. On the other hand, the proposed Haiwee Canyon Reservoir would discharge to the Haiwee Creek, which reaches South Haiwee Reservoir.

## 3. TRANSMISSION LINES

The project proposes the following interconnection alternatives to deliver the generated power to the regional electrical utility network:

- Transmission Alternative 1 would interconnect the proposed powerhouse with the existing 230 kV LADWP transmission line west of the project. A new North Haiwee Switchyard would be required for interconnection, as well as a new 2.5 miles long underground transmission line to interconnect the proposed Haiwee Pumped Storage powerhouse with the new North Haiwee Switchyard. The generated power's points of delivery would be the Barren Ridge Substation and the Windhub Substation. The 230 kV transmission line segment starting from the proposed North Haiwee Switchyard up to the Barren Ridge Substation would require to be upgraded. Options for upgrading this line include:
  - Voltage conversion of the existing 230kV transmission line to 500 kV.
  - Upgrade of the existing transmission lines to 230kV double circuit.

- Transmission Alternative 2 would use the existing PDCI west of the project to interconnect with the grid. This alternative would require a new Haiwee Converter Station, a new 2.5 miles long underground DC transmission line, as well as a new Haiwee DC Yard to interconnect to the PDCI. The PDCI segment starting from the proposed converter station until Sylmar will need to be upgraded to increase its capacity. Additionally, for this alternative the project proposes a new converter station in a rebuilt Sylmar Converter Station West to allow the electrical power delivery.

In addition, the project proposes interconnection with the Windhub substation for both transmission alternatives. The Haiwee Pumped Storage Project would be able to store wind energy and provide load balancing, as well as deliver energy through the subsequent SCE transmission lines downstream Windhub substation. For interconnection with Windhub substation, a new midpoint switchyard or a new midpoint converter station will be required for transmission alternatives 1 and 2, respectively.

Further studies of the project's transmission lines location, voltage, number of circuits, and interconnection alternatives will be carried out during the term of this preliminary permit, to select the most preferable alternative. The interconnection voltage may be 230 or 500 kV. Depending upon the selected powerhouse capacity, the project may require the upgrade of the existing subsequent transmission lines and involved substations.

## 4. PROJECT CAPACITY

The project is proposed to store excess renewable energy, helping to integrate renewables onto the grid, and to supply firm peaking power generation with primary load following capability. Based on preliminary analysis, the planned total installed capacity of the Haiwee Pumped Storage Power Plant would be 2,000 MW. However, the project's rating may vary as studies proceed. Premium Energy also plans to conduct a system impact study and power market investigations to help further refine the range of suitable generation capabilities.

Assuming a plant capacity factor of 40%, the Haiwee Pumped Storage Plant, rated at 2,000 MW, will produce a total of 6,900 GWh of annual energy production. On a preliminary analysis, the maximum gross head may be up to 2,870 feet depending on the selected upper reservoir alternative. At the present time, the project concept envisions procurement of five new pump-turbine generator-motor sets for the pumped storage power plant. Each unit would have a nominal rating at 400 MW.

## 5. FEDERAL LANDS

The project layout study boundary, as shown on Exhibit 3, encompasses both public and private lands. Most of the project area will occupy Bureau of Land Management (BLM) lands and City land belonging to Los Angeles Department of Water and Power (LADWP). Additionally, some of the project's features would also be in part of the Inyo National Forest and the Department of Defense lands.

The project's proposed North Haiwee Reservoir 2 would be created in LADWP's land and the Bureau of Land Management lands. The proposed McCloud Reservoir would be in the BLM's lands and part of the California State Lands. On the other hand, the proposed Little Cactus Reservoir would only occupy BLM's lands. Finally, the proposed Haiwee Canyon Reservoir would be created in part of the Inyo National Forest, which is managed by the U.S. Forest Service.

The interconnection of the project will require new transmission lines interconnecting with the existing Haiwee Power Plant, a proposed mid-point substation, or a proposed converter station near the PDCI corridor to the west. The proposed transmission corridor

would extend through LADWP's land and the Bureau of Land Management lands. Likewise, the proposed mid-point substation or converter station would be constructed in the BLM's lands. The subsequent transmission lines to be upgraded are in transmission corridors belonging to either LADWP or SCE, depending on each transmission alternative.

## 6. ADDITIONAL INFORMATION

Premium Energy acknowledges the comments submitted by intervenors in the prior application filed under docket P-14991 from the Inyo county communities. Premium Energy has a keen interest in maintaining safety and contentment of the communities within the project's influence area. Furthermore, respect and preservation of the existing environments and water resources is in Premium Energy's best interest.

Premium Energy understands the importance of preserving the Wilderness designated areas under the Wilderness Act of 1964. Premium Energy has studied the existing Wilderness areas boundaries and the proposed Haiwee Pumped Storage Project would stay out of the bounds of either the South Sierra Wilderness Area or the Coso Range Wilderness Area. Additionally, mitigation measures and environmental remediation will be carried out throughout the project's lifetime to reduce the possible affectations.

Premium Energy is aware of the high seismicity of the Haiwee area and the alert the July 2019 Ridgecrest earthquakes have raised. The existing Haiwee reservoirs are located near or across various fault zones, including the South Sierra Nevada Fault Zone, the Airport Lake Fault Zone, the little Lake Fault Zone, and the Owens Valley Fault Zone. Seismic studies conducted by LADWP have indicated the existing North Haiwee Dam could experience structural damage during a maximum credible earthquake (See LADWP's North Haiwee Dam No. 2 Project Draft Environmental Impact Report/Environmental Assessment).

The event of North Haiwee Dam failing or settling, would result in a potential hazard due to the uncontrolled release of water. The proposed Haiwee Pumped Storage Project proposes a North Haiwee Dam 2 to improve seismic reliability of the existing North Haiwee Dam. In case North Haiwee Dam fails due to seismic activity, the released water would be contained in the proposed North Haiwee Reservoir 2.

Furthermore, earthquake resistance will be a foremost requirement in the design of the proposed dams in this application. The proposed North Haiwee Dam 2, as well as the selected upper reservoir dam will have an appropriate structural and geotechnical design to withstand the corresponding peak ground acceleration of the site during seismic events (35-45% of gravity acceleration). Premium Energy commits to ensuring the proposed dams have a high seismic reliability to ensure safety of the nearby population and infrastructure.

Premium Energy commits to working with all agencies and intervenors to address any project related issues and concerns.

No further definitive information regarding this project is available at the time of preparing this application.

Form FERC-587
OMB No. 1902-0145
(Expires 10/31/2018)

**LAND DESCRIPTION**

**Public Land States**
**(Rectangular Survey System Lands)**

1. STATE CALIFORNIA 2. FERC PROJECT NO. Not applicable

3. TOWNSHIP 19S RANGE 37E MERIDIAN Mount Diablo

4. Check one: Check one:

_____License _____Pending
__X__Preliminary Permit _____Issued

If preliminary permit is issued, give expiration date: Not applicable

**5. EXHIBIT SHEET NUMBERS OR LETTERS**

| | | | | | |
|---|---|---|---|---|---|
| **Section 6** | **5** | **4** | **3** | **2** | **1** |
| **7** | **8** | **9** | **10** | **11** | **12** |
| **18** | **17** | **16** | **15** | **14** | **13** |
| **19** | **20** | **21** | **22** | **23** | **24** |
| **30** | **29** | **28** | **27** | **26** | **25** |
| **31** Exhibit 3 | **32** Exhibit 3 | **33** Exhibit 3 | **34** Exhibit 3 | **35** | **36** |

6. Contact's name Victor M. Rojas

Telephone no. ( 909-595-5314 )

Date submitted July 12, 2019

**This information is necessary for the Federal Energy Regulatory Commission to discharge its responsibilities under Section 24 of the Federal Power Act.**

Form FERC-587
OMB No. 1902-0145
(Expires 10/31/2018)

**LAND DESCRIPTION**

**Public Land States**
**(Rectangular Survey System Lands)**

1. STATE CALIFORNIA 2. FERC PROJECT NO. Not applicable

3. TOWNSHIP 20S RANGE 36E MERIDIAN Mount Diablo

4. Check one:

_____License
__X__Preliminary Permit

Check one:

_____Pending
_____Issued

If preliminary permit is issued, give expiration date: Not applicable

**5. EXHIBIT SHEET NUMBERS OR LETTERS**

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| **Section 6** | **5** | **4** | **3** | **2** | **1** |
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| **19** | **20** | **21** | **22** | **23** | **24** |
| **30** | **29** | **28** | **27** | **26** | **25** Exhibit 3 |
| **31** | **32** | **33** | **34** | **35** Exhibit 3 | **36** Exhibit 3 |

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1. STATE CALIFORNIA 2. FERC PROJECT NO. Not applicable

3. TOWNSHIP 20S RANGE 37E MERIDIAN Mount Diablo

4. Check one: Check one:

_____License _____Pending
__X__Preliminary Permit _____Issued

If preliminary permit is issued, give expiration date: Not applicable

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**LAND DESCRIPTION**

**Public Land States**
**(Rectangular Survey System Lands)**

1. STATE CALIFORNIA 2. FERC PROJECT NO. Not applicable

3. TOWNSHIP 20S RANGE 37-1/2E MERIDIAN Mount Diablo

4. Check one: Check one:

_____License _____Pending
__X__Preliminary Permit _____Issued

If preliminary permit is issued, give expiration date: Not applicable

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1. STATE CALIFORNIA 2. FERC PROJECT NO. Not applicable

3. TOWNSHIP 20S RANGE 38E MERIDIAN Mount Diablo

4. Check one:

_____License
__X__Preliminary Permit

Check one:

_____Pending
_____Issued

If preliminary permit is issued, give expiration date: Not applicable

**5. EXHIBIT SHEET NUMBERS OR LETTERS**

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**(Rectangular Survey System Lands)**

1. STATE CALIFORNIA 2. FERC PROJECT NO. Not applicable

3. TOWNSHIP 21S RANGE 36E MERIDIAN Mount Diablo

4. Check one:

_____License
__X__Preliminary Permit

Check one:

_____Pending
_____Issued

If preliminary permit is issued, give expiration date: Not applicable

**5. EXHIBIT SHEET NUMBERS OR LETTERS**

| | | | | | |
|---|---|---|---|---|---|
| **Section 6** | **5** | **4** | **3** | **2** | **1** Exhibit 3 |
| **7** | **8** | **9** | **10** | **11** | **12** |
| **18** | **17** | **16** | **15** | **14** | **13** |
| **19** | **20** | **21** | **22** | **23** | **24** |
| **30** | **29** | **28** | **27** | **26** | **25** |
| **31** | **32** | **33** | **34** | **35** | **36** |

6. Contact's name Victor M. Rojas

Telephone no. ( 909-595-5314 )

Date submitted July 12, 2019

**This information is necessary for the Federal Energy Regulatory Commission to discharge its responsibilities under Section 24 of the Federal Power Act.**

Form FERC-587
OMB No. 1902-0145
(Expires 10/31/2018)

**LAND DESCRIPTION**

**Public Land States**
**(Rectangular Survey System Lands)**

1. STATE CALIFORNIA 2. FERC PROJECT NO. Not applicable

3. TOWNSHIP 21S RANGE 38E MERIDIAN Mount Diablo

4. Check one: Check one:

_____License _____Pending
__X__Preliminary Permit _____Issued

If preliminary permit is issued, give expiration date: Not applicable

**5. EXHIBIT SHEET NUMBERS OR LETTERS**

| | | | | | |
|---|---|---|---|---|---|
| **Section 6** | **5** Exhibit 3 | **4** Exhibit 3 | **3** Exhibit 3 | **2** | **1** |
| **7** | **8** | **9** Exhibit 3 | **10** Exhibit 3 | **11** | **12** |
| **18** | **17** | **16** Exhibit 3 | **15** | **14** | **13** |
| **19** | **20** | **21** | **22** | **23** | **24** |
| **30** | **29** | **28** | **27** | **26** | **25** |
| **31** | **32** | **33** | **34** | **35** | **36** |

6. Contact's name Victor M. Rojas

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## EXHIBIT 2 – DESCRIPTION OF THE PROPOSED STUDIES

1. GENERAL REQUIREMENT

Premium Energy proposes to carry out an extensive feasibility study to evaluate the proposed reservoirs layout alternatives, as well as the power transmission alternatives. The primary aspects to be studied are the geological, environmental and water resources, and electrical engineering of the project. The studies would also include the economic viability and financing of the project. The complete feasibility study will include:

- Project site land investigation.
- Geological and seismic investigation.
- Soil surveys, test pits, core holes and topographical surveying.
- Hydrological studies including runoff, rain, evaporation and groundwater flow.
- Evaluation of upper reservoir configuration alternatives.
- Devising of the project's water supply plan, including legal and water rights matters.
- Environmental and cultural impact study comprising environmental surveys, impact identification, evaluation and mitigation measures.
- Engineering studies to optimize the project's physical configuration.
- Energy market studies and determination of preliminary power sales and supply expectations.
- Evaluation of transmission interconnection alternatives including electrical system impact studies.
- Determination of size and specifications of the required electromechanical equipment.
- Cost estimates, economic feasibility and financing options investigation.

Based on the results and findings of the initial stages of the feasibility study, the applicant will prepare a Notice of Intent and Pre-Application Document as detailed in 18 C.F.R. §§5.5 and 5.6.

Temporary access roads will not be required to reach the project's site and perform the required studies. Access roads will not be required to reach the proposed North Haiwee Reservoir 2 or the Haiwee Canyon Reservoir. The existing Cactus Flats Road and Haiwee Canyon Road will be used to reach these proposed reservoirs site. Likewise, the Cactus Flats Road will be enough to lead to the proposed McCloud and Little Cactus Reservoirs site. Lastly, the proposed mid-point converter station / mid-point switchyard site of transmission alternatives 1 and 2 will be reached via the existing PDCI corridor maintenance road.

## 2. WORK PLAN FOR NEW DAMS CONSTRUCTION

The new dams' construction will require subsurface investigations upstream North Haiwee Reservoir, as well as in the Haiwee Canyon and east of the Haiwee Ridge. The investigations would be done at the proposed reservoirs site, as depicted in exhibit 3. Soil and rock borings will be necessary to determine the rock/soil structure and stability for the proposed dams and power plants foundations. Soil and rock samples shall be extracted to conduct studies and determine the soil mechanical properties. Therefore, assessing the project site's suitability for construction of the new dams. Furthermore, seismic surveys will also be required.

The schedule of activities will be completed by the applicant during the permit period as shown in the table below:

Table 5. Schedule of Activities

| **Schedule** | **Activity** |
|---|---|
| Beginning in Month 1 to the end of Month 4 | Conceptual engineering and evaluation of the alternative reservoir configurations |
| Beginning in Month 1 to the end of Month 6 | Initial scoping and consultation |
| Beginning in Month 5 to the end of Month 10 | Geotechnical and hydrological studies |
| Beginning in Month 7 to the end of Month 12 | Soil and topographical surveying |
| Beginning in Month 1 to the end of Month 16 | Environmental and cultural impact study |
| Beginning in Month 1 to the end of Month 14 | Engineering studies to optimize the project´s physical configuration |
| Beginning in Month 4 to the end of Month 16 | Planning and evaluation of transmission interconnection alternatives |
| Beginning in Month 1 to the end of Month 12 | Devising of water supply plan |
| Beginning in Month 12 to the end of Month 18 | Legal and water rights matters |
| Beginning in Month 14 to the end of Month 24 | Determination of size and specifications of the required equipment |
| Beginning in Month 10 to the end of Month 16 | Energy market assessment |
| Beginning in Month 6 to the end of Month 16 | Economic study for feasibility & financial planning investigation |
| Beginning in Month 10 to the end of Month 16 | Preliminary licensing proposal, consultation, and documentation |
| Beginning in Month 16 to the end of Month 24 | Preparation, review and filing of the FERC license application |

The schedule of activities may deviate from its initial formulation. Activities may be adjusted or supplemented depending upon circumstances which may develop as the studies proceed. Remedial actions to the possible disturbance of the proposed studies include the implementation of an erosion and material disposal plan, backfilling of core borings and test pits, and replanting any disturbed vegetation.

## 3. STATEMENT OF COSTS AND FINANCING

The total estimated cost of carrying out or preparing the studies, investigations, tests, surveys, maps, plans or specifications described above are $5 Million.

The expected sources of financing available to carry out the activities of the described feasibility study are:

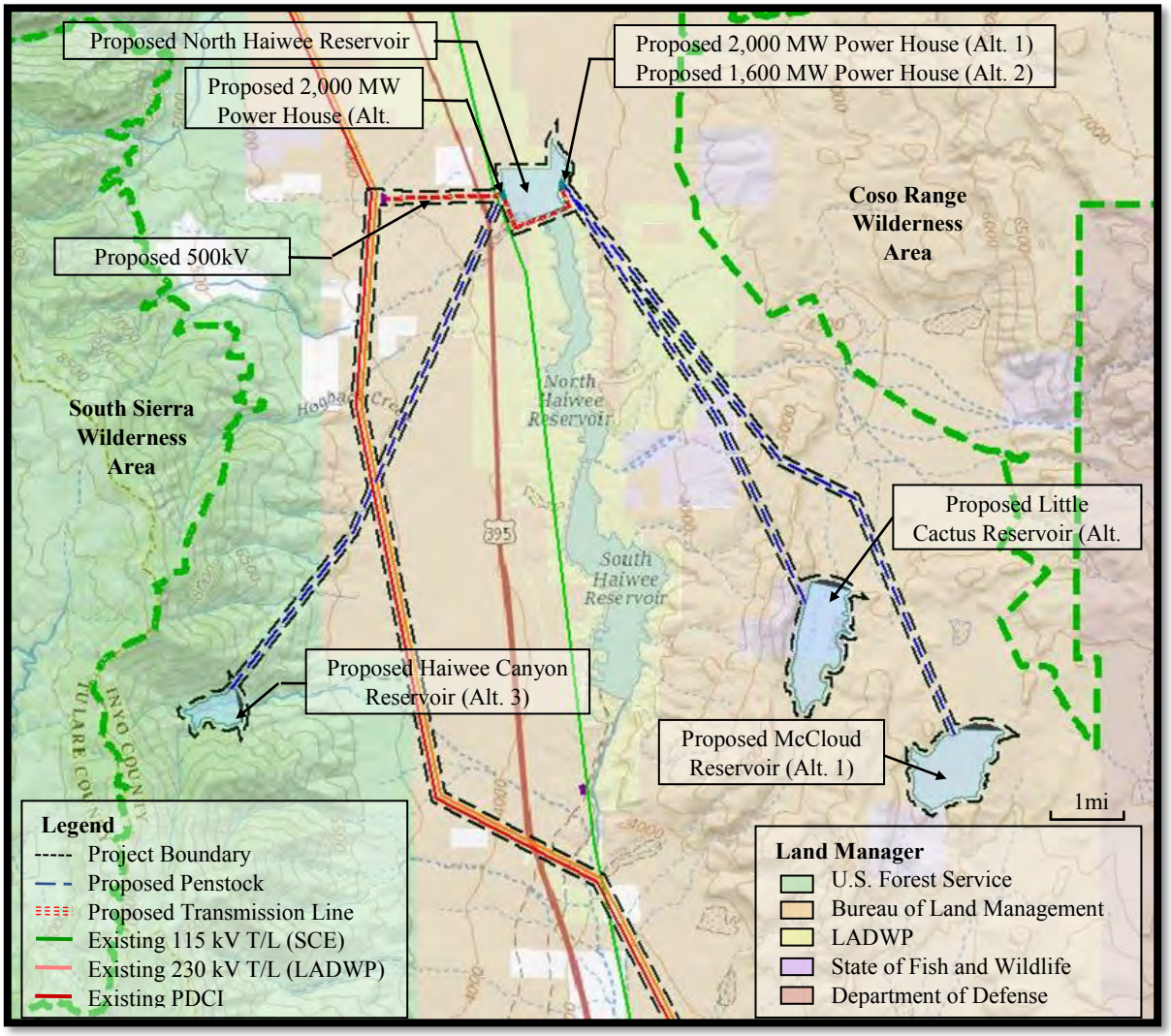
- Premium Energy's available funds.
- Balance raising through investors.

The proposed market for the energy storage and production covers the electric markets in California. Power purchasing entities and other potential off-takers will be identified in further investigations during the term of the preliminary permit.

## EXHIBIT 3 – HAIWEE PUMPED STORAGE PROJECT MAP

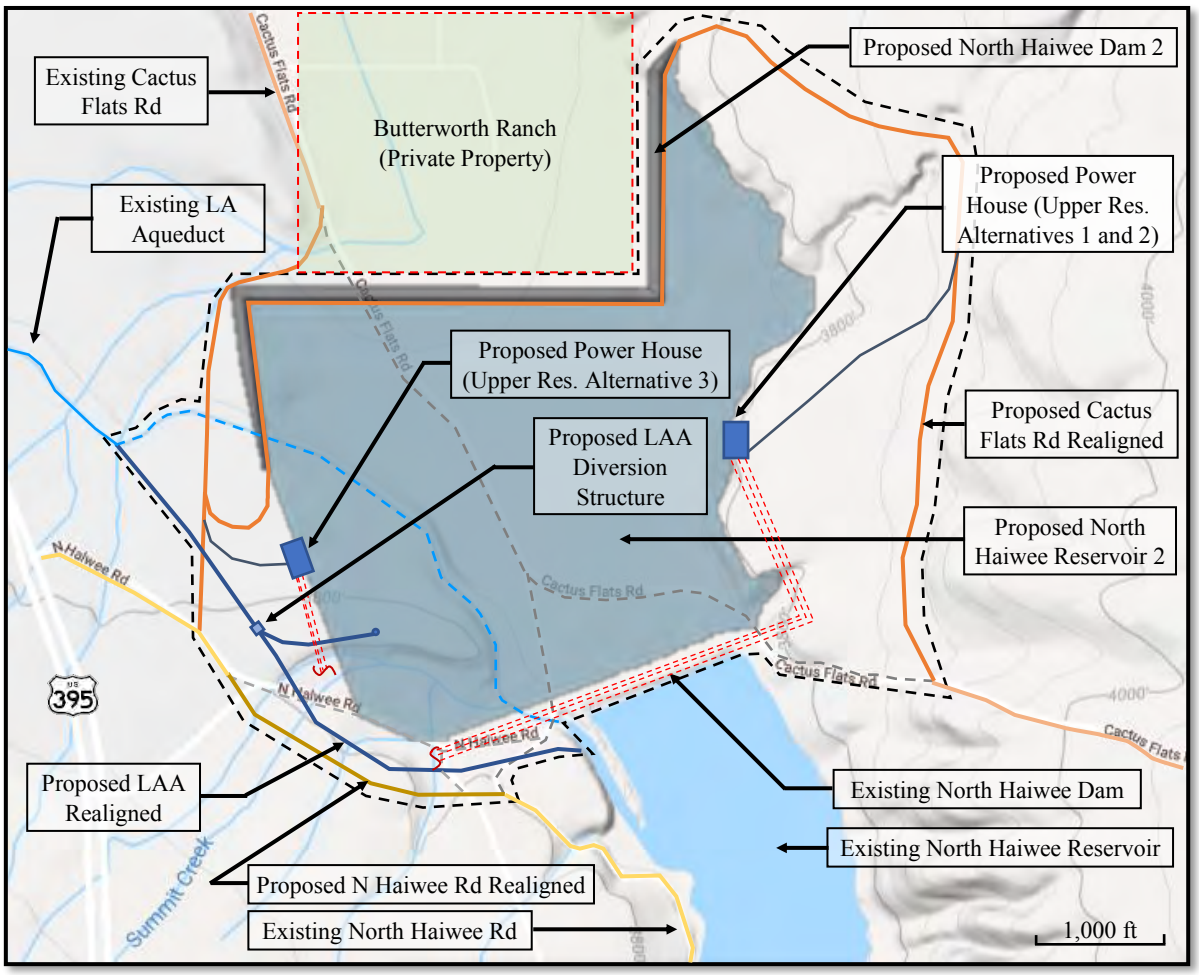
### Haiwee Pumped Storage Project Study Area Boundary

### Project Layout



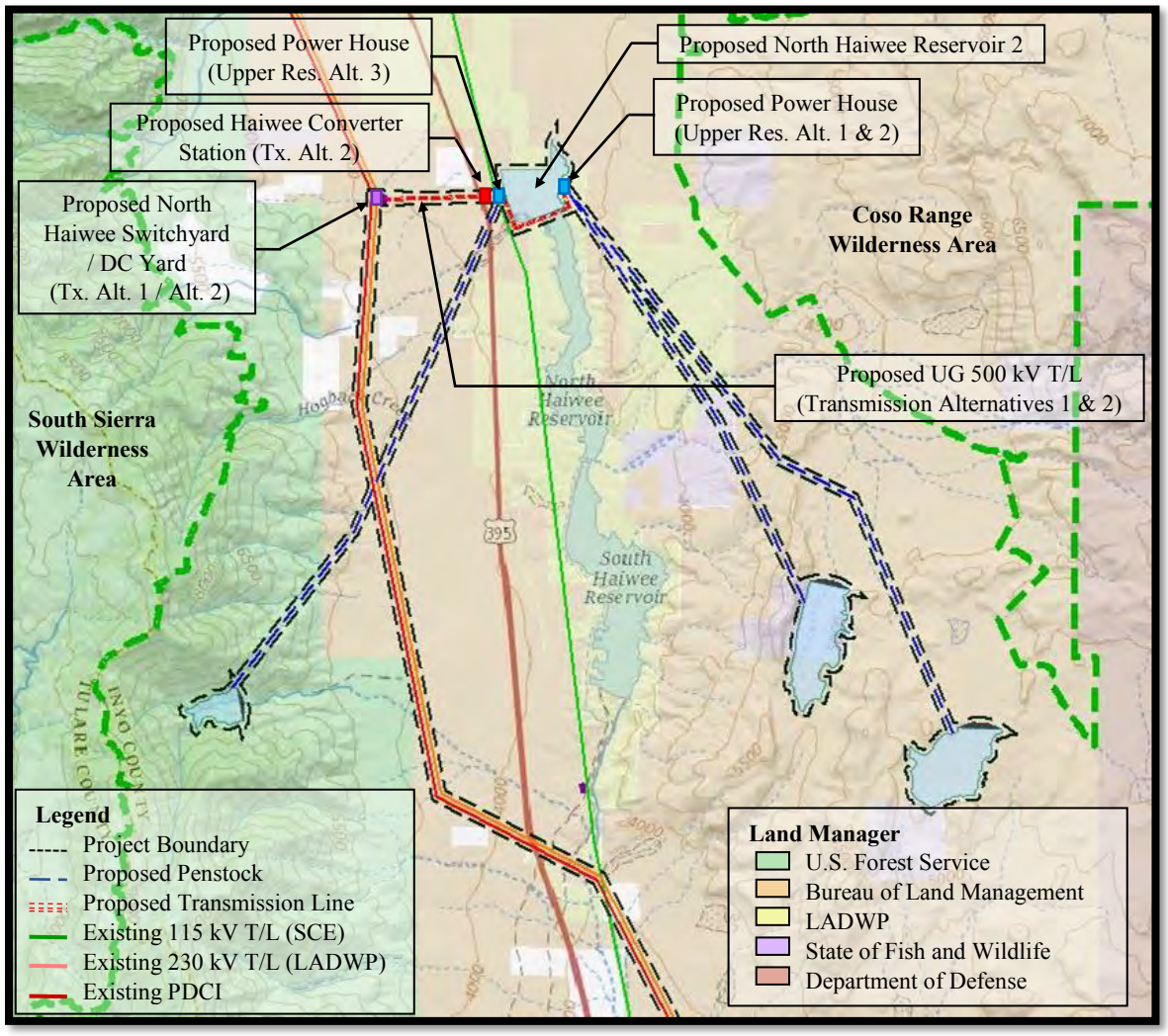
**Haiwee Pumped Storage Project Study Area Boundary**

**Proposed North Haiwee Reservoir 2 Layout and Required Modifications**



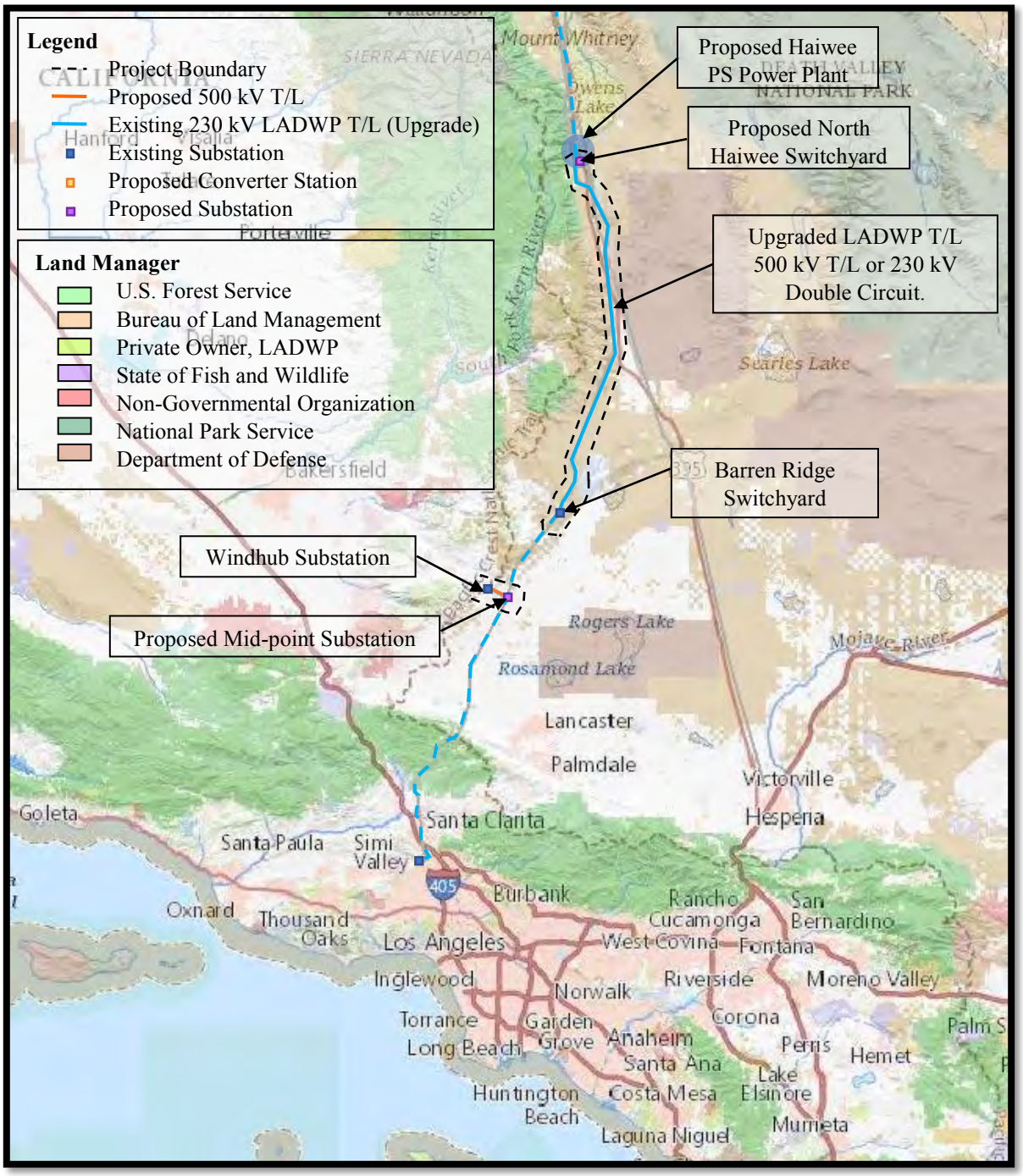
**Haiwee Pumped Storage Project Study Area Boundary**

**Electrical Interconnection**



**Haiwee Pumped Storage Project Study Area Boundary**

**Transmission Alternative 1 (AC Transmission to Barren Ridge and Windhub)**



**Haiwee Pumped Storage Project Study Area Boundary**

**Transmission Alternative 2 (DC Transmission Upgrade to Sylmar)**