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February 25, 2021

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  
Tehachapi Pumped Storage Project, FERC Project No. \_\_\_\_\_

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 Tehachapi Pumped Storage Project. As detailed in the application, Premium Energy proposes to evaluate the potential development of a pumped storage power plant in the southern area of the Tehachapi Mountains in southern California. 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 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](mailto:victor.rojas@pehllc.net).

Sincerely,

A handwritten signature in blue ink, appearing to read "Victor M. Rojas", is written over a light blue circular stamp or watermark.

Victor M. Rojas

Managing Director at Premium Energy  
Holdings, LLC

Enclosures

cc:

**BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION**

**APPLICATION FOR PRELIMINARY PERMIT  
FOR THE  
TEHACHAPI PUMPED STORAGE PROJECT**

FERC Project No. \_\_\_\_\_

Prepared by

**Premium Energy Holdings, LLC**

February 25, 2021

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**INITIAL STATEMENT**  
**BEFORE THE**  
**FEDERAL ENERGY REGULATORY COMMISSION**

**Application for Preliminary Permit**  
**for the Tehachapi Pumped Storage Project**

Premium Energy Holdings, LLC (“Premium Energy” or “PEH”), a California based limited liability corporation, applies to the Federal Energy Regulatory Commission for a preliminary permit for the proposed Tehachapi 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: Kern County, Los Angeles County  
Township or nearby town: Lebec  
Streams or other body of water: California Aqueduct, Castac Lake, Quail Lake

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 exact name and business address of each person 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

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.

5. Term of Permit:

The proposed term of the requested permit is thirty-six (36) months.

6. Existing Dams or Other Project Facilities:

The proposed project would not make use of any existing dams or other project facilities. Therefore, the project proposes new upper and lower reservoirs with their respective dams.

**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.

Kern County, Administrative Office  
1115 Truxtun Avenue, Fifth Floor  
Bakersfield, CA 93301  
Telephone: (661) 868-3140

Los Angeles County, Board Executive Office  
Hall of Administration, Room 383  
Los Angeles, CA 90012  
Telephone: (213) 974-1411

- 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:

California Department of Water Resources  
1416 9<sup>th</sup> Street  
Sacramento, CA 95814  
Telephone: (916) 653-5719

Metropolitan Water District  
P.O. Box 54153  
Los Angeles, CA 90054-0153  
Telephone: (213) 217-6000

Los Angeles Department of Water & Power  
111 N Hope St.  
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:

California Department of Water Resources  
1416 9<sup>th</sup> Street  
Sacramento, CA 95814  
Telephone: (916) 653-5719

- 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:

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

Los Angeles County Waterworks Districts  
1000 South Fremont Avenue  
Building A9-E, 4<sup>th</sup> Floor  
Alhambra, CA 91803

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

California Independent System Operator (CAISO)  
P.O. Box 639014  
Folsom, CA 95630

California Public Utilities Commission (CPUC)  
Commission's Docket Office  
505 Van Ness Avenue  
San Francisco, CA 94102

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

Chairperson  
Torres Martinez Desert Cahuilla Indians, California  
P.O. Box 1160  
Thermal, CA 93513  
Telephone: (760) 397-0300

Chairperson  
Tejon Indian Tribe  
1731 Hasti-Acres Drive, Suite #108  
Bakersfield, CA 9339  
Telephone: (661) 834-8566

Chairperson  
Te-Moak Tribe of Western Shoshone Indians of Nevada  
525 Sunset Street  
Elko, NV 89801  
Telephone: (775) 738-9251

Chairperson  
Tule River Indian Tribe of the Tule River Reservation, California  
P.O. Box 589  
Porterville, CA  
Telephone: (559) 781-4271

Chairperson  
Fort Independence Indian Community of Paiute Indians of the Fort  
Independence Reservation, California  
P.O. Box 67



Independence, CA  
Telephone: (760) 878-5160

## VERIFICATION STATEMENT

This application for a preliminary permit for the proposed Tehachapi 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 this 25th day of February of 2021.



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 February 25<sup>th</sup>, 2021.



NOTARY PUBLIC



## EXHIBIT 1 – DESCRIPTION OF THE PROPOSED PROJECT

### 1. GENERAL CONFIGURATION.

The proposed Tehachapi Pumped Storage Project (“Tehachapi PSP”) would be located 6 miles east of Lebec, California, in the limits between Los Angeles and Kern County. The project concept envisions the construction of a pumped storage power facility with a capacity of 1,000 MW, and a storage duration of 12 hours.

The Tehachapi PSP would add storage resources to the state’s clean energy portfolio and would help in the goal of reducing carbon footprint, improving the grid’s reliability and flexibility, and meeting customer’s needs.

The project proposes the construction of an upper and lower reservoir in either of the following locations:

**Alternative A.** A new upper reservoir (Quarry Reservoir) in the Tehachapi Mountains, and a new lower reservoir (Border Reservoir) two miles south, in Kern County. This alternative would require the following construction activities:

- Earthworks and grading to obtain the proposed reservoir floor.
- Construction of the proposed Dams for the lower reservoir.
- Realignment of a section of an existing road.
- Construction of a diversion structure at the West Branch of the California Aqueduct and a connecting channel or pipeline to the proposed Lower Reservoir.

**Alternative B.** A new upper reservoir (Edison Reservoir) two and a half miles east of Gorman, and a new lower reservoir (Teson Reservoir) two miles west of Quail Lake, in Los Angeles County. This alternative would require the following construction activities:

- Earthworks and grading to obtain the proposed reservoir floor.
- Construction of the proposed Dams for the upper reservoir.
- Realignment of a section of the existing Tejon Pass Rd.
- Construction of a diversion structure at the West Branch of the California Aqueduct and a connecting channel or pipeline to the proposed Lower Reservoir.

**Alternative C.** A new upper reservoir (Crane Reservoir) two miles northeast of Gorman, and a new lower reservoir (Oso Reservoir) two miles north of Quail Lake, in Los Angeles County. This alternative would require the following construction activities:

- Earthworks and grading to obtain the proposed reservoir floor.
- Construction of the proposed Dams for the upper and lower reservoir.
- Realignment of a section of the existing Tejon Pass Rd.
- Construction of a diversion structure at the West Branch of the California Aqueduct and a connecting channel or pipeline to the proposed Lower Reservoir.

Either of the alternatives for the upper reservoir to operate the Tehachapi PSP, would require the construction of a new embankment. The new upper reservoir alternatives are described below and are depicted in Exhibit 3, Map 1.

- Upper Reservoir Alternative A: A new Quarry Reservoir at 4,870 ft el.
- Upper Reservoir Alternative B: A new Edison Reservoir at 4,500 ft el.
- Upper Reservoir Alternative C: A new Crane Reservoir at 4,500 ft el.

Alternatives A and C are in land owned by Tejon Ranch Co. (“TRC”), but Alternative A is on land leased to National Cement of California, Inc. (“National”). Also, one of the penstocks would pass through land owned by MDM Gorman Post Ranch LP (“Gorman Post”). On the other hand, Alternative B would be located entirely on land owned by Gorman Post. The filling of the reservoirs would be carried out by using water conveyed through the existing California Aqueduct through water agreements with senior water right holders. It is expected that surrounding electrical utilities will be interested in the project as a resource for storing renewable energy.

The proposed project would operate as a closed loop hydro-power pumped storage plant. Once the proposed upper and lower reservoirs are filled with enough stored water for project operation, water will not be diverted from the California Aqueduct, except for small amounts to make up for losses due to evaporation. These losses will be controlled using floating PV solar panels. Percolation losses will be controlled using geomembranes covering the bottoms of each reservoir.

The project’s proposed upper and lower reservoirs would require the construction of new embankments for them to be filled. The embankments for the project’s proposed reservoirs would consist of compacted earth dams. Conceptual dimensions for the project’s dams and penstock for each alternative are detailed in Table 1 and

Table 2, respectively.

Table 1. New Reservoirs’ Embankment Dimensions

Description	Proposed Reservoir	Dam Crest Elev. [ft]	Dam Height [ft]	Dam Length at Crest [ft]
Lower Reservoir Alternatives	Border Reservoir (Alt. A)	3,935	255	5,350
	Teson Reservoir (Alt. B)	0	0	0
	Oso Reservoir (Alt. C)	3,545	195	5,485
Upper Reservoir Alternatives	Quarry Reservoir (Alt. A)	0	0	0
	Edison Reservoir (Alt. B)	4,515	300	2,997
	Crane Reservoir (Alt. C)	4,515	300	3,840

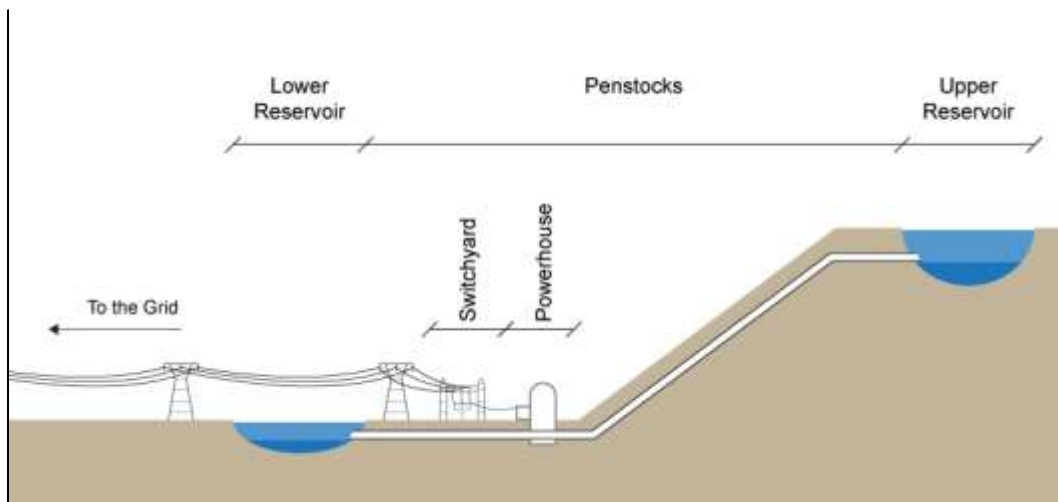
Table 2. Hydro Power Penstock Alternatives Dimensions

Lower Reservoir	Upper Reservoir Alternative	Head [ft]	Tunnel Diameter [ft]	Tunnel / Penstock Length [mi]
Border Reservoir	Quarry Reservoir	1,180	31	1.6
Teson Reservoir	Edison Reservoir	1,000	33	1.5
Oso Reservoir	Crane Reservoir	970	34	3.7

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 Tehachapi Pumped Storage Powerhouse would be interconnected with Los Angeles Department of Water and Power (“LADWP”) 230 KV at Rosemond Substation, or Southern California Edison’s (“SCE”) 220 KV at Bailey Substation, through short interconnecting transmission lines. In the generating operation mode, the project would deliver 1,000 MW to either utility power grid (Points of Interconnection). Use of SCE or LADWP’s existing right-of-way and upgrades to SCE or LADWP’s existing transmission lines and substations would be necessary to this end.

Figure 1. Conceptual Tehachapi PSP Configuration (not to scale).



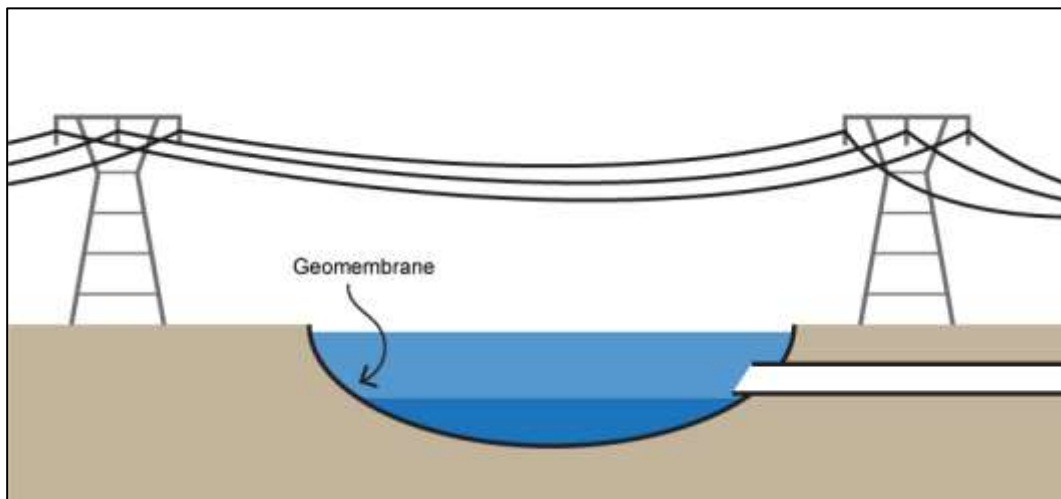
2. RESERVOIRS.

The upper and lower reservoirs configuration is to be 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, PEH will further investigate on the new reservoirs configuration and select the best suited location for energy, economic and environmental considerations.

The project concept includes three lower reservoir alternatives and three upper reservoir alternatives in the southern area of the Tehachapi Mountains. A hydraulic head between 970 ft and 1,180 ft, depending on the selected alternative, would exist between the new upper and lower reservoir, which would be exploited for hydro power generation.

Although percolation losses could otherwise represent a major setback on the development of the project, PEH is considering the implementation of geomembranes on the base of the reservoirs to reduce these losses (See Figure 2). Soil conditions would need to be further studied to determine the permeability of the soil.

Figure 2. Conceptual diagram: Geomembrane implementation (not to scale).



#### A. Lower Reservoir Configuration

The project proposes three alternatives as a lower reservoir for pumped storage operation. Lower Reservoir Alternative A, Border Reservoir, would be located two miles south of the proposed Quarry Reservoir. The new Border Reservoir would have a 137 acres area and a 21,600 acre-ft storage capacity at an elevation of 3,920 ft. The proposed reservoir would require excavation of 13 million cubic yards. The creation of the reservoir would include earthworks and grading to obtain the desired reservoir floor at 3,630 ft elevation.

Although the excavation amount for the Lower Reservoir seems excessive, since this reservoir is in a limestone mining area, the material could be quarried by National Cement Co., to produce cement for the project.

Lower Reservoir Alternative B, Teson Reservoir, would be located two miles west of Quail Lake. The new Teson Reservoir would have a 63 acres area and a 21,800 acre-ft storage capacity at an elevation of 3,500 ft.

Lower Reservoir Alternative C, Oso Reservoir, would be located two miles north of Quail Lake. The new Oso Reservoir would have a 314 acres area and a 21,690 acre-ft storage capacity at an elevation of 3,530 ft.

The reservoirs would be filled during high water level season through a new piping segment connected to the existing California Aqueduct. The California Aqueduct System currently delivers water from the State Water Project to Los Angeles. However, the project will operate in a closed loop system. Therefore, operation will reuse the water in a cyclic manner and no more significant amount of water will be diverted once the reservoirs filling is completed. The project's proposed reservoirs will provide enough water storage capacity for 12 hours of 1,000 MW continuous output.

#### B. Upper Reservoir Configuration

The first project alternative involves a new upper reservoir created in leased land of National Cement Co. The second alternative for an upper reservoir is located two and a half miles east of Gorman. The third alternative for an upper reservoir is located two miles east of Gorman. The new upper reservoir alternatives' physical characteristics are detailed in Table 3.

Table 3. Upper Reservoir Alternatives Characteristics

<b>Proposed Upper Reservoir</b>	<b>Surface Area [acre]</b>	<b>Storage Capacity [acre-ft]</b>	<b>Maximum Surface Elevation [ft]</b>
Alt. A: Quarry Reservoir	59	14,610	5,100
Alt. B: Edison Reservoir	62	18,000	4,500
Alt. C: Crane Reservoir	156	23,950	4,500

Any of the proposed upper reservoir alternatives would have enough storage capacity for 1,000 MW of power generation for up to 12 hours.

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 Tehachapi Powerhouse and then to the either of the proposed lower alternatives.

In the event water would need to be released from the reservoirs, it would discharge through the spillways. For proposed Border, Quarry, Edison, Teson, and Oso Reservoirs, runoff water would run through natural creeks that discharge to the California Aqueduct. On the other hand, the proposed Crane Reservoir would discharge runoff water through the existing natural creeks up to Castac Lake. Described stream paths<sup>1</sup> are depicted on Exhibit 3, Map 14.

### 3. TRANSMISSION LINES.

A new Tehachapi Switchyard would be installed at any of the proposed Lower Reservoir options, using air (AIS) or gas (GIS) insulated equipment, while the powerhouse could be located above- or underground. The alternatives to interconnect the Tehachapi PSP to the regional electrical utility network are as follows:

1. Transmission Alternative 1 considers the construction of a new 230 KV tie line to interconnect the Project with the existing LADWP's 230 KV Barren Ridge Renewable transmission project, in the section running from Rosamond to Haskell Canyon Switching Station. To this end, around 30 miles of SCE's existing right-of-way would be used. The selected Point of Interconnection (POI) for this alternative would be the new Rosamond Switching Station, that is expected to be commissioned by 2025 and will be used as a hub for nearby renewable projects. Two different configurations are envisioned to implement this first interconnection alternative:
  - a) Construction of a new yard 6 miles south from the Rosamond Station, to serve as a tap between the proposed and existing 230 KV lines (See Exhibit 3, Map 5, 8, 11), or
  - b) Direct connection to Rosamond Station, which will require the expansion of 6 miles of the existing LADWP's right-of-way (See Exhibit 3, Map 6, 9, 12).
2. Transmission Alternative 2 would connect the Tehachapi PSP proposed yard to the existing SCE's Bailey Substation, where 220 KV lines coming from Pastoria Substation are currently tapped, and then continue to Pardee Substation. This alternative would require upgrading around 7 miles of the existing 66 KV SCE's lines, to take advantage of the existing right-of-way (See Exhibit 3, Map 6, 10, 13).

The Tehachapi PSP would be able to store renewable energy and provide load balancing, as well as deliver energy to either SCE, PGE, LADWP, or SCPA members when needed.

Further studies of the project's transmission path, voltage level, number of circuits, and interconnection alternatives will be carried out during the term of this preliminary permit, to select the best alternative.

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<sup>1</sup> GIS data obtained from the Natural Resources Conservation Service of the U.S. Department of Agriculture (<https://gdg.sc.egov.usda.gov/>).



#### 4. PROJECT CAPACITY.

The project is proposed to store renewable energy, mainly solar photovoltaic, during the day, and facilitate the goal of supply firm, low-priced, clean power generation throughout the night hours, including the hours of dusk and dawn, with some load following capability. Based on preliminary analysis, the planned total installed capacity of the Tehachapi PSP would be 1,000 MW. However, the project's rating may vary as studies progress. 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% (based on goal of 12 hours daily generation), the Tehachapi PSP, rated at 1,000 MW, would supply a total of 3,500 GWh per year (the remaining 12 hours are for pumping). Based on a preliminary analysis, the maximum gross head may be up to 1180 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 powerhouse, each unit rated 250 MW.

#### 5. FEDERAL LANDS.

At the time this permit is submitted, the project does not make use of Federal Lands. However, as the project is developed, this may change.

The interconnection of the project would use existing transmission lines interconnecting the proposed Tehachapi Powerhouse, to SCE and/or LADWP's stations. The existing transmission corridor extends through private lands.

#### **Site Control**

The project layout study boundary, as shown on Exhibit 3, encompasses private lands. Most of the project area will occupy TRC and Gorman Post lands. Premium Energy has reached TRC regarding the development of the Tehachapi PSP. However, the approval of this project is subjective to the interest of the landowners on pursuing this project.

The project's proposed Alternative A reservoirs would be located in TRC's land leased to National Cement Co. for mining and exploitation purposes, until 2026 with "option to extend the term for successive periods of 20 and 19 years"<sup>2</sup>. The upper reservoir would make use of an existing/active quarry, which would require more excavation to reach the required volume for the Tehachapi PSP operation (See Exhibit 3, Map 2). Obviously, the quarried material could be used for cement production by National Cement. This project could use all the cement quarried from these reservoirs, for the construction of dams, pressure tunnels, powerhouse, intake/outlet structures, and others.

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<sup>2</sup> Tejon Ranch Co. 2019 Annual Report.

The project's proposed Alternative B reservoirs (Edison and Teson Reservoirs) would be created in undeveloped Gorman Post's land (See Exhibit 3, Map 3).

The project's proposed Alternative C reservoirs would be located in TRC's land. The proposed Crane Reservoir would be in undeveloped TRC's lands. On the other hand, the proposed Oso Reservoir would occupy part of TRC's Centennial development lands. Based on the "Centennial Specific Plan", PEH has identified areas considered as Open Space<sup>3</sup> to locate the proposed Oso Reservoir. A section of the penstocks would use underground Gorman Post lands (See Exhibit, Map 4).

## 6. ADDITIONAL INFORMATION.

In the development of this application, Premium Energy has acknowledged the following issues pertaining to the project:

Wilderness, Conservation, and Roadless Areas: Premium Energy understands the importance of preserving the Wilderness designated areas under the Wilderness Act of 1964. Thus, PEH has reviewed information from the U.S. Forest Service (USFS), Bureau of Land Management (BLM), and California Department of Fish and Wildlife (CDFW) to ensure the proposed reservoirs and facilities do not affect any Wilderness, Conservation, and Roadless areas. In this process, the Tejon Ranch Conservancy was identified, and has been avoided, as shown in Exhibit 3, Map 14. Additionally, mitigation measures and environmental remediation will be carried out throughout the project's lifetime to reduce the possible affectations.

California Condor: As depicted in Exhibit 3, Map 15, the proposed reservoirs are in the approximate current Condor Range<sup>4</sup>. All proposed alternatives would require further study, to identify (if any) possible impact to the Condor's habitat.

First Filling of the Reservoirs: Water would be taken from the California Aqueduct to fill the reservoirs once. As mentioned previously, once the reservoirs are filled, there would not be a need for more significant amount of water taken from the Aqueduct. The filling water would be obtained through water agreements with senior water right holders, as similar trades have been conducted by the Department of Water Resources in the past<sup>5</sup>.

Fault Zones: Premium Energy is aware of the high seismicity in the Tehachapi area. The proposed Alternative A reservoirs are located close to the Garlock Fault Zone (2 miles approximately). On the other hand, proposed Alternatives B and C reservoirs are close to the San Andreas Fault Zone (1 mile approximately). This information has been obtained from the U.S. Geological Service (USGS).

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<sup>3</sup> PlaceWorks (2019). *Centennial Specific Plan – Final Draft*, 2-17.

[https://planning.lacounty.gov/view/centennial\\_specif\\_plan](https://planning.lacounty.gov/view/centennial_specif_plan)

<sup>4</sup> General information of the California Condor obtained from the U.S. Fish & Wildlife Service (<https://www.fws.gov/cno/es/CalCondor/Condor.cfm>). GIS data obtained from the CDFW website.

<sup>5</sup> Department of Water Resources, Historical Water Transfer Data (<https://info.water.ca.gov/wtims/>)

Earthquake resistance will be a foremost requirement in the design of the proposed dams in this application. The selected lower and upper reservoir dam will have an appropriate structural and geotechnical design to withstand the corresponding peak ground acceleration of the site during seismic events (50-60% 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.

Tribes and Tribal Lands: Premium Energy has identified the Indian tribes that may be affected by the project (see page 4 of this application) and has also used U.S. Census Bureau<sup>6</sup> information to identify Tribal Lands that could be affected by the project. At the moment of filing this application, neither a Tribe, nor Tribal lands, are directly affected by the proposed Tehachapi PSP.

Some other opportunities have also been identified by PEH during the development of this application, including, but not limited to:

Feed for National Cement: A pumped storage project requires lots of raw material to construct the facilities needed for the project. This material would be extracted from National's plant quarry and could be provided to support the construction process of the required facilities (pressure tunnels, intakes, dams, powerhouse, etc.).

Added Value for Centennial Development: Most of the west side of Centennial has been considered as an Open Space. The construction of the Oso Reservoir (Alternative C's lower reservoir) could enhance the planned housing development by Tejon Ranch, adding a recreational and scenic asset for the new development, increasing the beauty of the natural surroundings.

Solar Generation: Floating photovoltaic (FPV) system could be mounted on top of any of the upper reservoirs, generating clean energy that could be stored during the day in pumping operation mode, compensating losses, thus improving overall efficiency. Not all the reservoir's surface would be covered, as there would be a variation level due to the cycling of the water between the lower and upper reservoirs (See Figure 3). Considering a 27% system coverage of the water surface, and an average system capacity of 10,000m<sup>2</sup>/MW<sup>7</sup>, the installed FPV would generate between 6 and 17 MW, depending on the selected alternative. Also, the floating solar panels would help to reduce evaporation rates of the reservoirs, as well as reduced algae growth<sup>8</sup>.

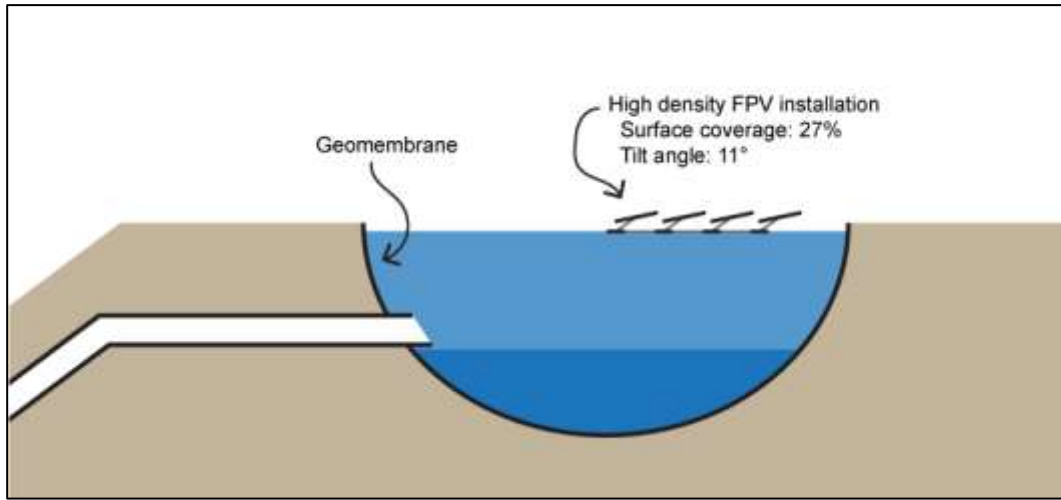
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<sup>6</sup> <https://catalog.data.gov/dataset/tiger-line-shapefile-2017-nation-u-s-current-american-indian-alaska-native-native-hawaiian-area>

<sup>7</sup> Source: Robert S. Spencer, Jordan Macknick, Alexandra Aznar, Adam Warren, and Matthew O. Reese *Environmental Science & Technology* 2019 53 (3), 1680-1689.

<sup>8</sup> Source: Nathan Lee et al. Hybrid floating solar photovoltaics-hydropower systems: Benefits and global assessment of technical potential. *Renewable Energy*, 2020.

Figure 3. Conceptual diagram: FPV and Geomembrane implementation (not to scale).



Market Operation: Premium Energy envisions the project as a “Night Solar Farm”, storing renewable generation energy from producers during the day, and dispatching the stored energy at night to utilities and other large load aggregators. For this purpose, Power Purchase and Power Sell Agreements would be part of the business operation considered during the analysis of project Economics, Financial and Operational sections of the study (“Energy Production” and “Economic Feasibility” studies as shown on Exhibit 2, General Requirement). This approach is envisioned to be developed by either utilities, governmental or public agencies, or private investors.

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 filing this application.

Form FERC-587  
 OMB No. 1902-0145  
 (Expires 10/31/2021)

**LAND DESCRIPTION**

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

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

3. TOWNSHIP 9N RANGE 17W MERIDIAN San Bernardino

4. Check one:

License  
 Preliminary Permit

Check one:

Pending  
 Issued

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

**5. EXHIBIT SHEET NUMBERS OR LETTERS**

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

6. Contact's name Victor M. Rojas

Telephone no. (909-595-5314)

Date submitted February 25, 2021

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

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

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Telephone no. ( 909-595-5314 )

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## EXHIBIT 2 – DESCRIPTION OF THE PROPOSED STUDIES

### 1. GENERAL REQUIREMENT.

During the 36-month term of this Preliminary Permit, Premium Energy will conduct studies to evaluate the proposed Tehachapi PSP. The studies will be conducted both on-office and field research to improve the preliminary plant characteristics as presented in this application, which includes plant capacity, energy generation and consumption, facilities layouts, environmental and institutional constraints, costs, and schedules.

- **Technical feasibility studies:**

This proposed study will include a) Project site land investigation, b) Evaluation of proposed upper and lower reservoir alternatives, c) Engineering studies to optimize the project's physical configuration, and d) Determination of size and specifications of the required electromechanical equipment.

- **Geotechnical studies:**

This proposed study will address a) Geological and seismic conditions, and b) Soil surveys, test pits, bore holes, and topographical surveying.

- **Water and groundwater quality studies:**

This proposed study will evaluate hydrological conditions in the area (runoff water, rain, evaporation, percolation, and groundwater flow).

- **Water rights study:**

This study will analyze the project's water supply plan, including legal and water rights matters.

- **Environmental and cultural impact studies:**

This study will comprise environmental surveys, impact identification, and evaluate mitigation strategies.

- **Energy production and energy needs studies:**

This proposed study will a) Evaluate the energy market, b) Determine preliminary power sales and supply expectations, c) Evaluate transmission interconnection alternatives, and d) Analyze the electrical system impact.

- **Economic feasibility study:**

This proposed study will prepare a) Cost Estimates, b) Economic feasibility, and c) Financing options research.

Consultation with appropriate state, federal, and local resource agencies, private and non-governmental organizations will take place. Also, throughout the term of the preliminary permit, Premium Energy will conduct an Open House and multiple outreach meetings with the different stakeholders to address comments, concerns and inquiries. This would ensure a successful development of the project.

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. New access roads will not be required to reach the proposed reservoirs

of Alternatives A and C. The existing Telephone Road and Tejon Mountain Road will be used to reach the site of the proposed reservoirs of alternative A. Likewise, Alternative B would make use of existing Gorman Post Road and Edison Teson Mountain Road. For alternative C, the National Cement Quarry Road will be enough to reach the proposed reservoirs.

Lastly, even though the transmission alternatives 1 and 2 consider the use of existing LADWP's 230 KV, or SCE's 66 KV corridors, the construction of small sections of access and spur roads would still be required to reach the proposed switchyard site and related transmission structures.



## 2. WORK PLAN FOR NEW DAMS CONSTRUCTION.

The new dams' construction will require subsurface investigations in TCR, Gorman Post and National Cement lands. 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 powerhouse 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 4. Schedule of Activities

<b>Activity</b>	<b>Start Month</b>	<b>End Month</b>
Consultation with appropriate state, federal, and local agencies, private and non-governmental organizations	0	33
Technical feasibility studies	0	33
Environmental and cultural impact studies	6	33
Geotechnical studies	12	24
Water and groundwater quality studies	18	24
Water rights study	18	24
Energy production and need studies	24	33
Economic feasibility study	24	33
Organize PAD / NOI	33	36
Submit PAD / NOI application	36	36

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 about \$5 Million dollars.

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

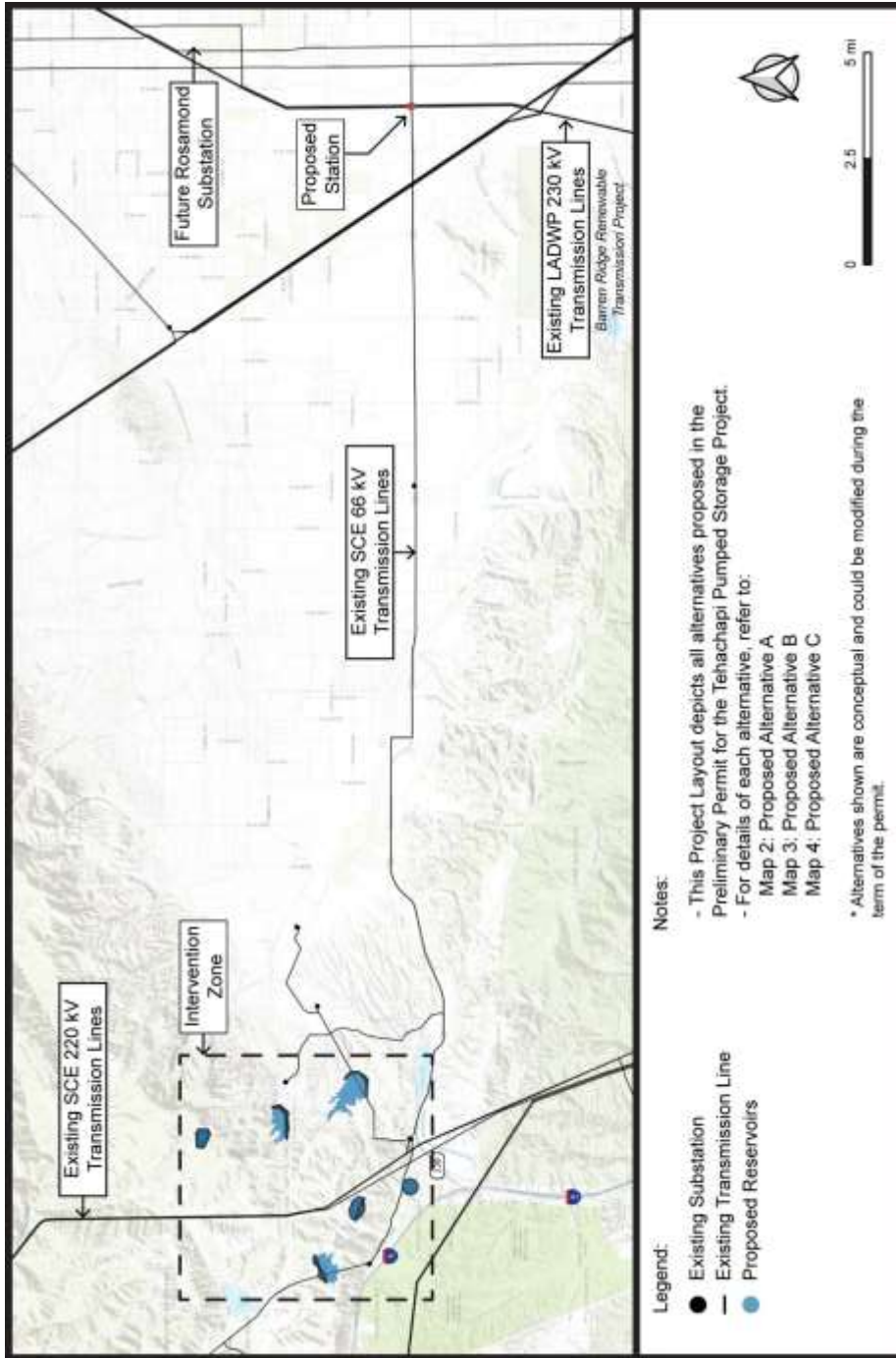
- Premium Energy's available funds
- Equity Investors
- Grants

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 – TEHACHAPI PUMPED STORAGE PROJECT MAPS

#### 1. PROPOSED PROJECT STUDY AREA BOUNDARY.

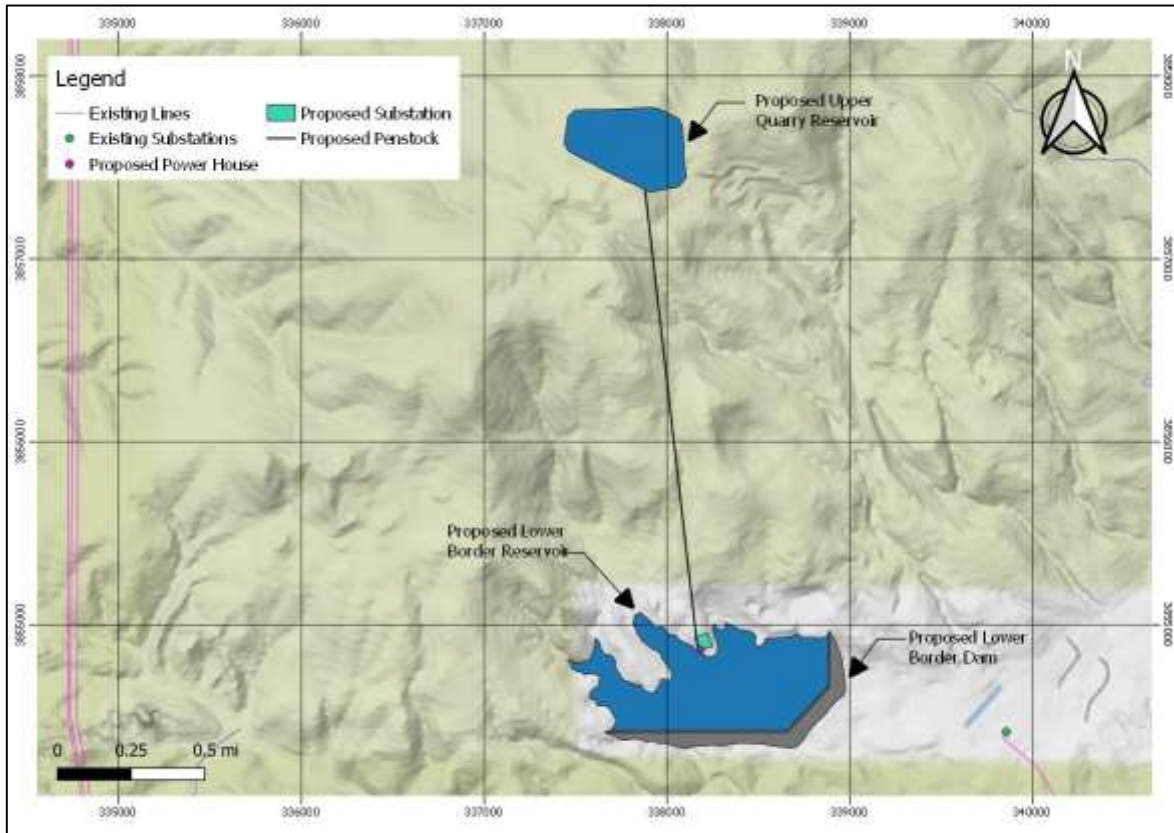
**Map 1. Project Layout**



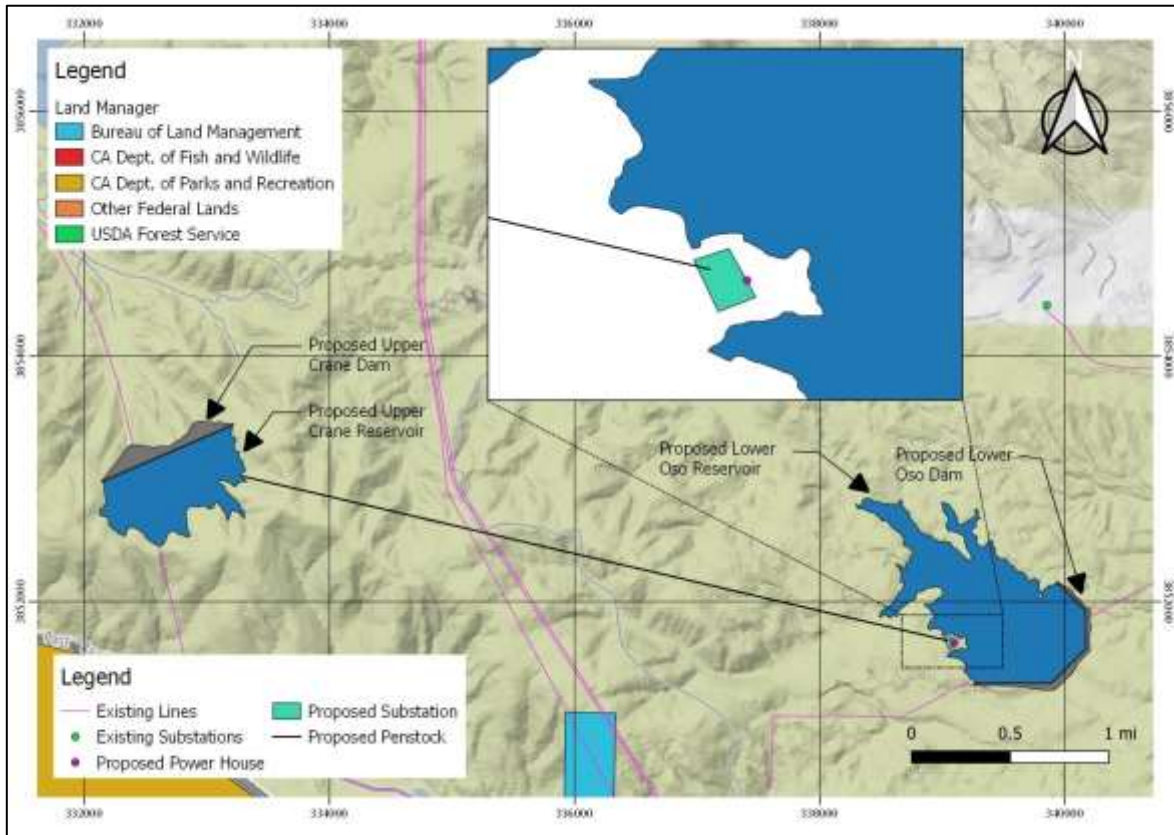
The project layout depicts all alternatives proposed in the Preliminary Permit. For details of each alternative refer to Map 2 to 13.

## 2. PROPOSED ALTERNATIVES FOR RESERVOIRS.

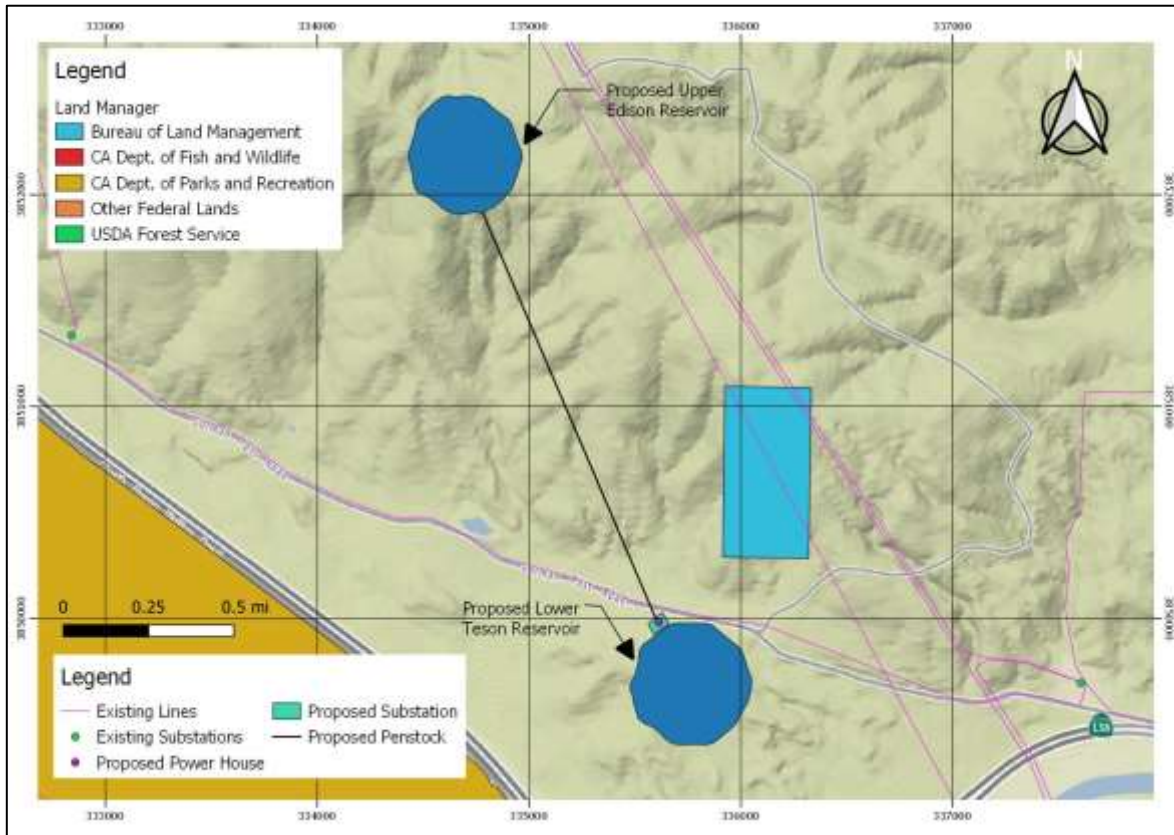
**Map 2. Alternative A: Quarry - Border Reservoirs.**



### Map 3. Alternative B: Edison - Teson Reservoirs.

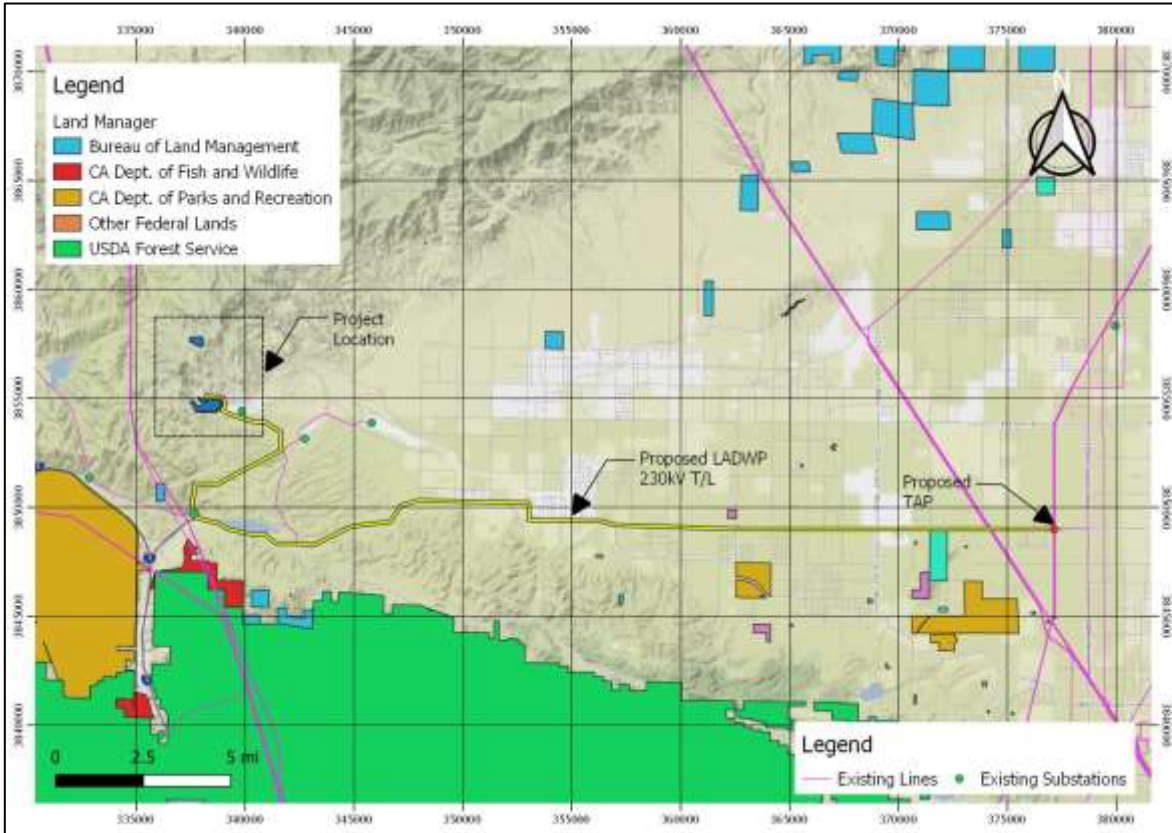


**Map 4. Alternative C: Crane - Oso Reservoirs.**

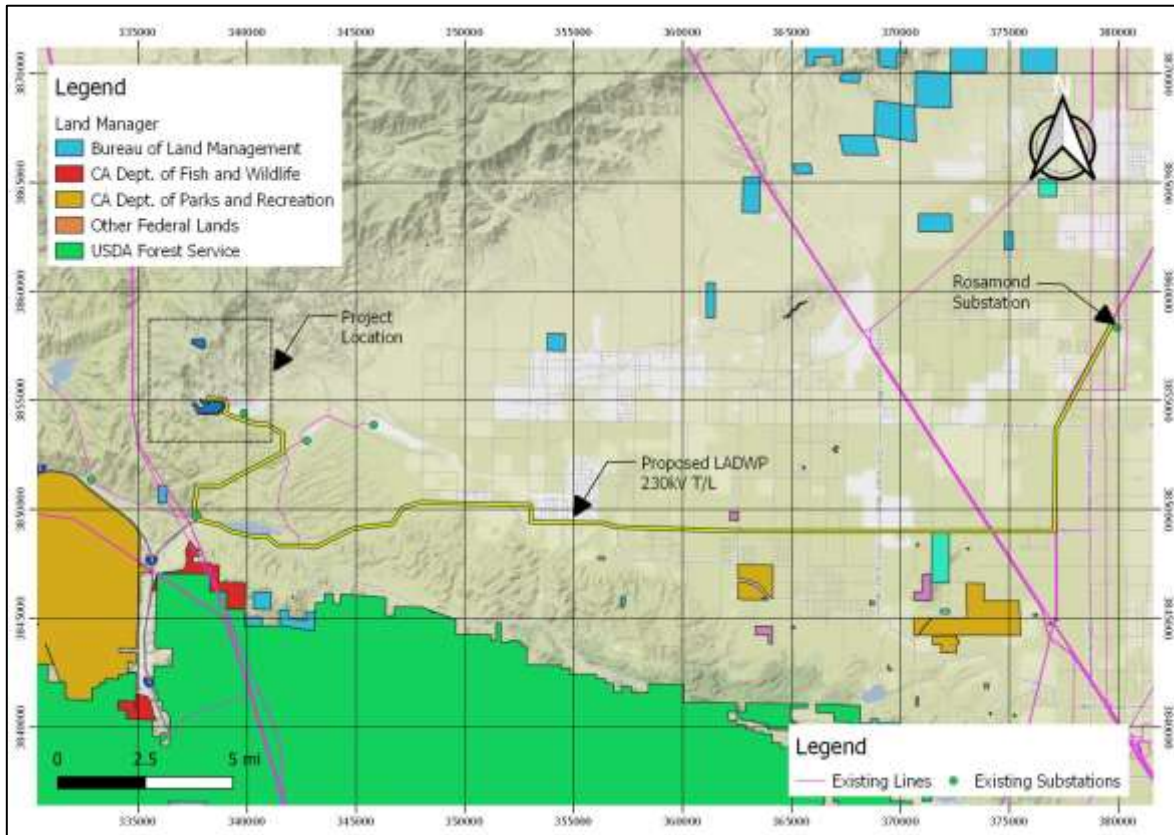


3. PROPOSED ALTERNATIVES FOR ELECTRICAL INTERCONNECTION.

Map 5. Quarry – Border. Transmission Alternative 1-A (LADWP).

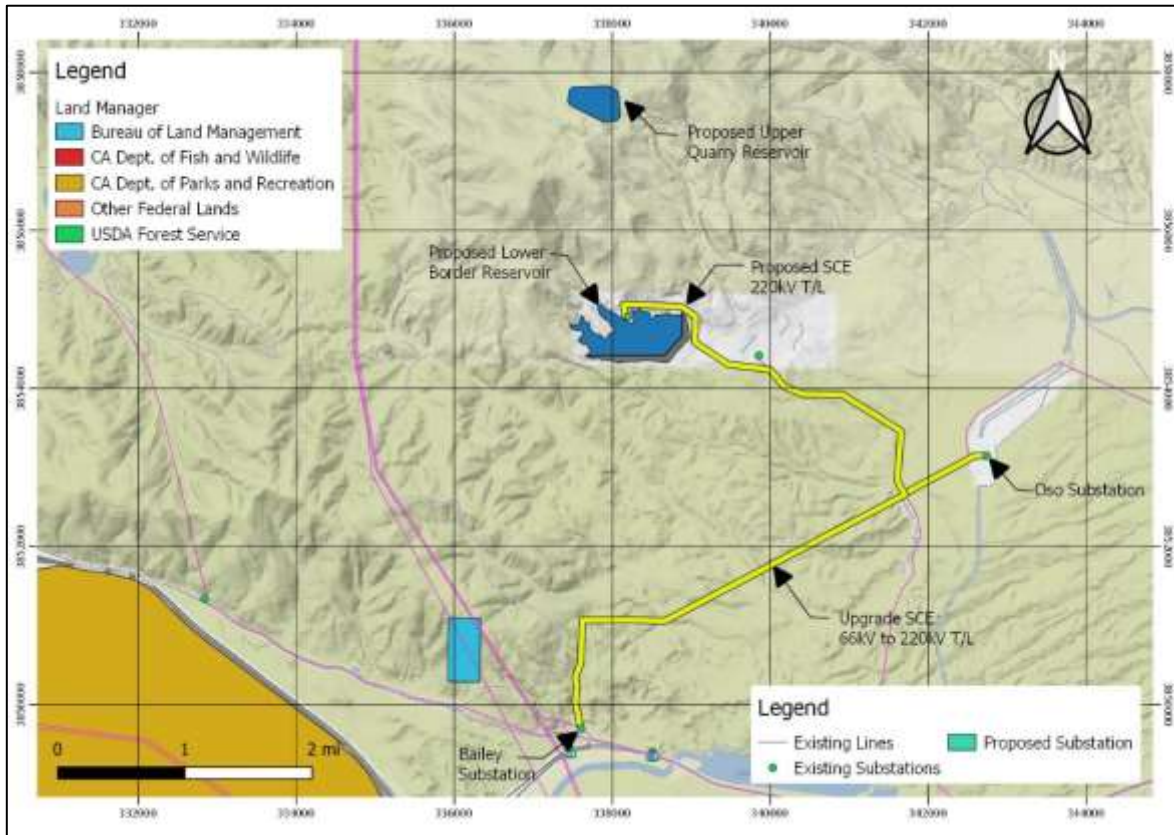


Map 6. Quarry – Border. Transmission Alternative 1-B (LADWP).

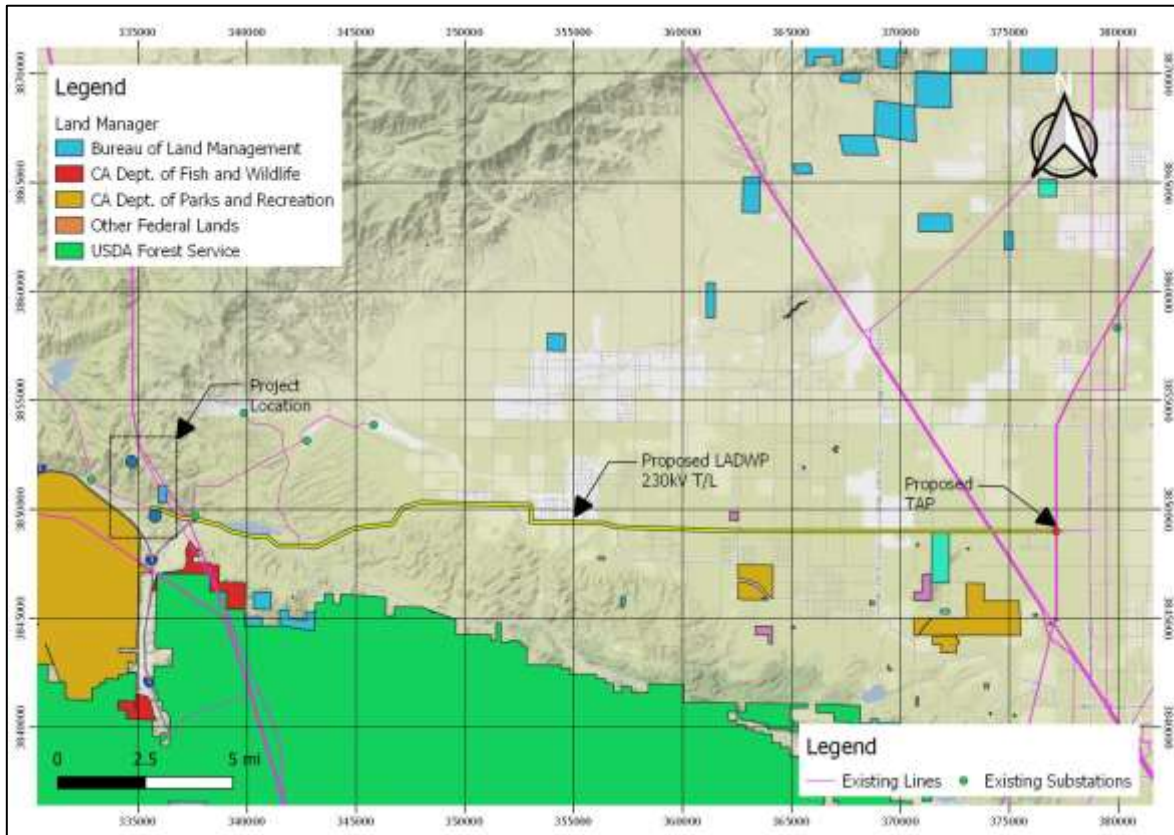




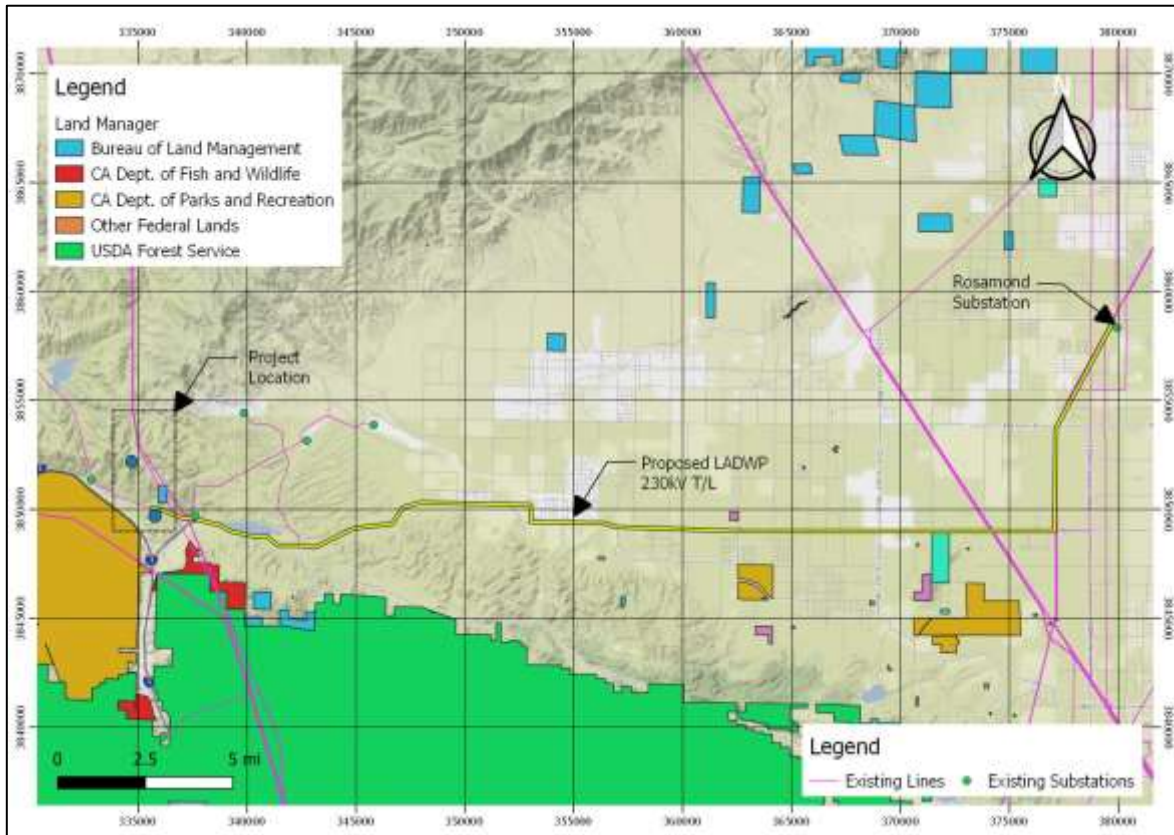
Map 7. Quarry – Border. Transmission Alternative 2 (SCE).



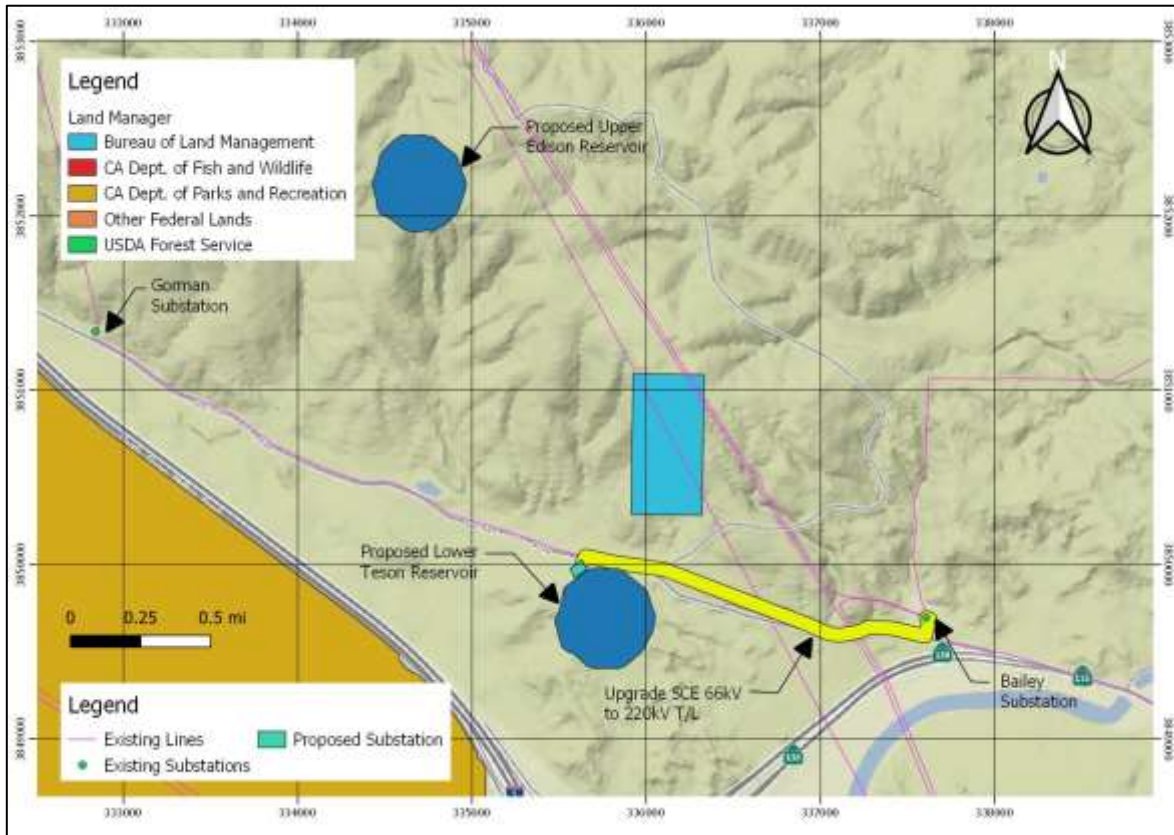
**Map 8. Edison – Teson. Transmission Alternative 1-A (LADWP).**



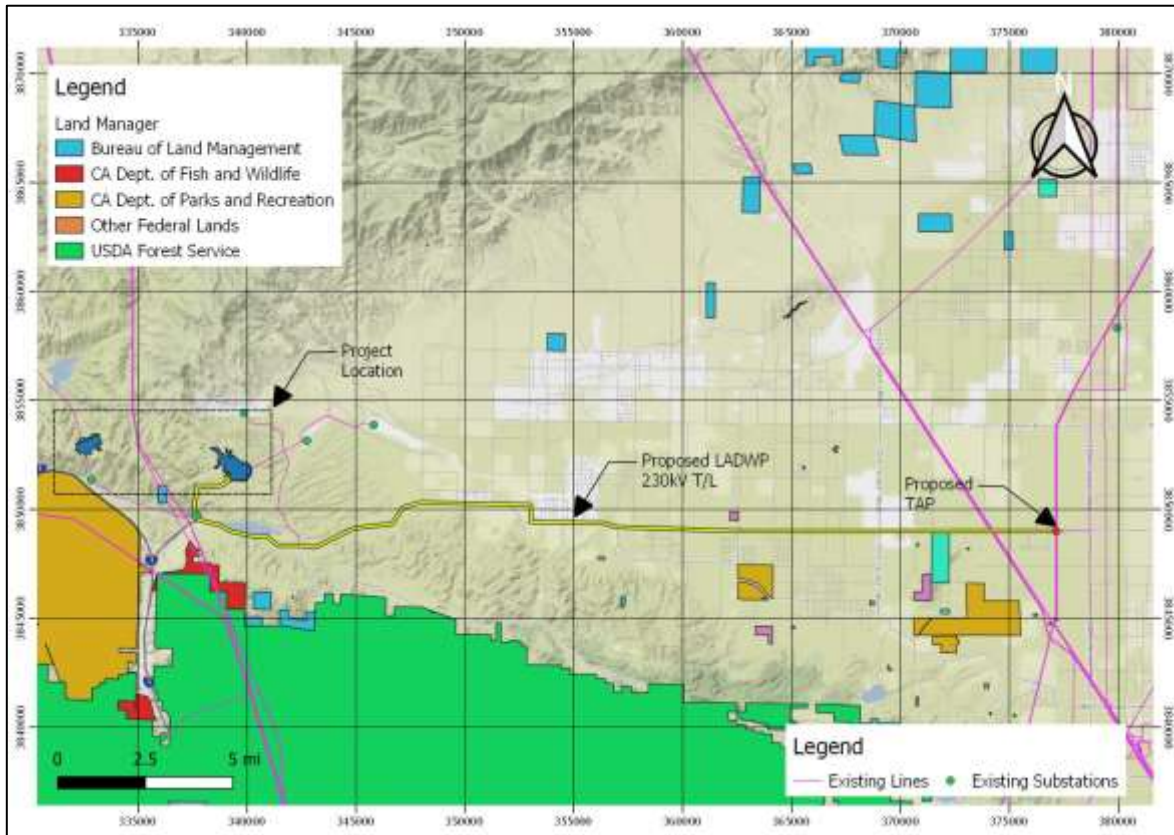
**Map 9. Edison – Teson. Transmission Alternative 1-B (LADWP).**



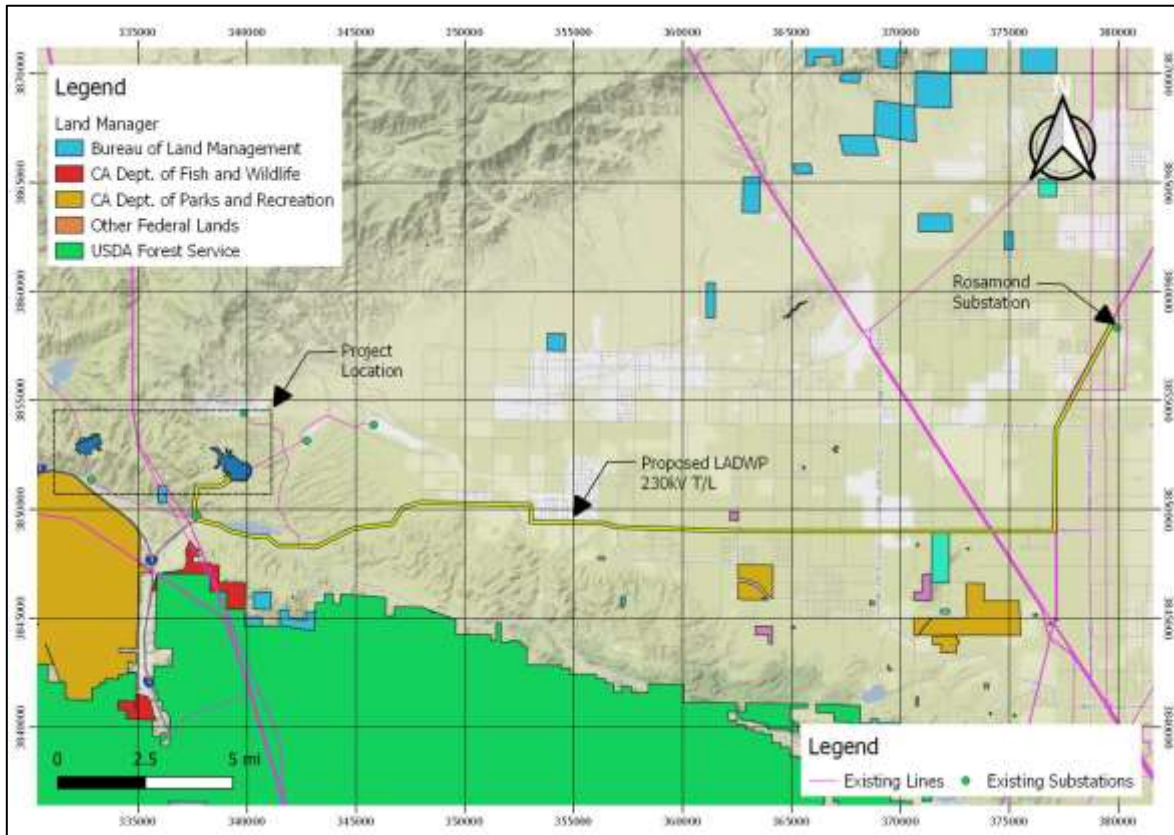
**Map 10. Edison – Teson. Transmission Alternative 2 (SCE).**



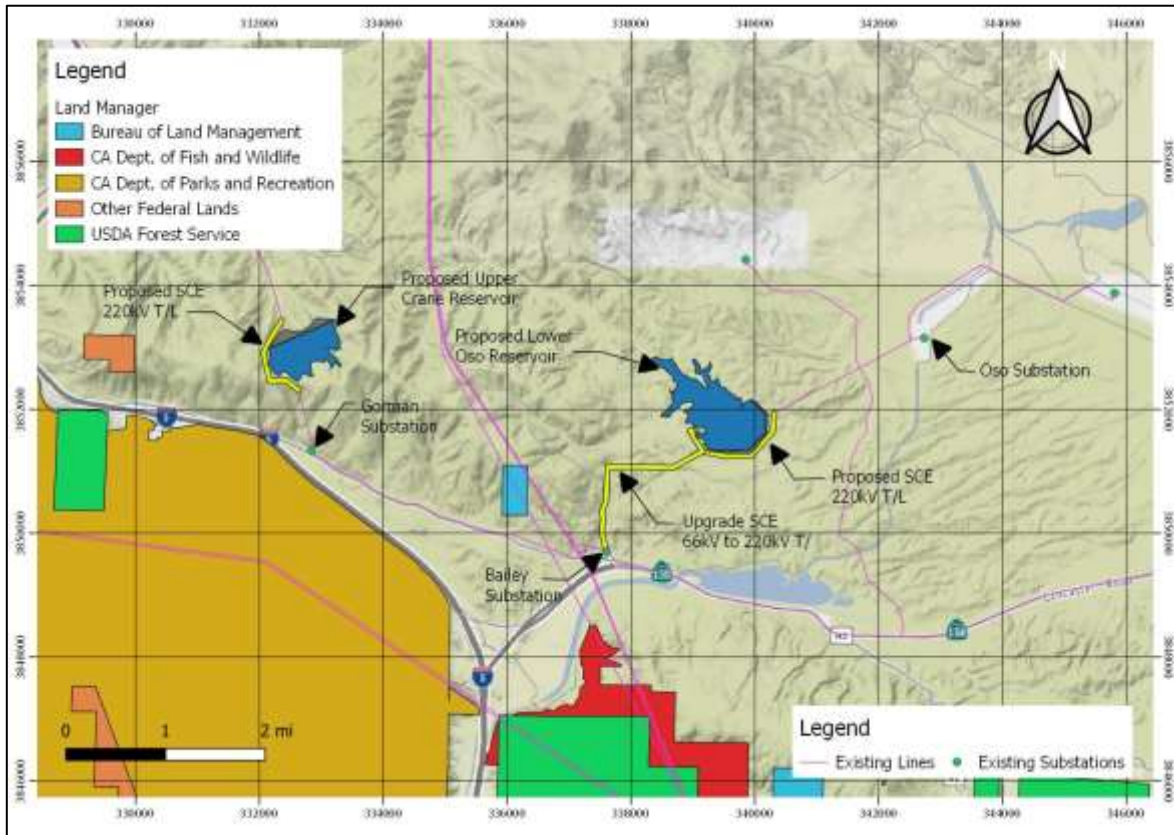
Map 11. Crane – Oso. Transmission Alternative 1-A (LADWP).



Map 12. Crane – Oso. Transmission Alternative 1-B (LADWP).

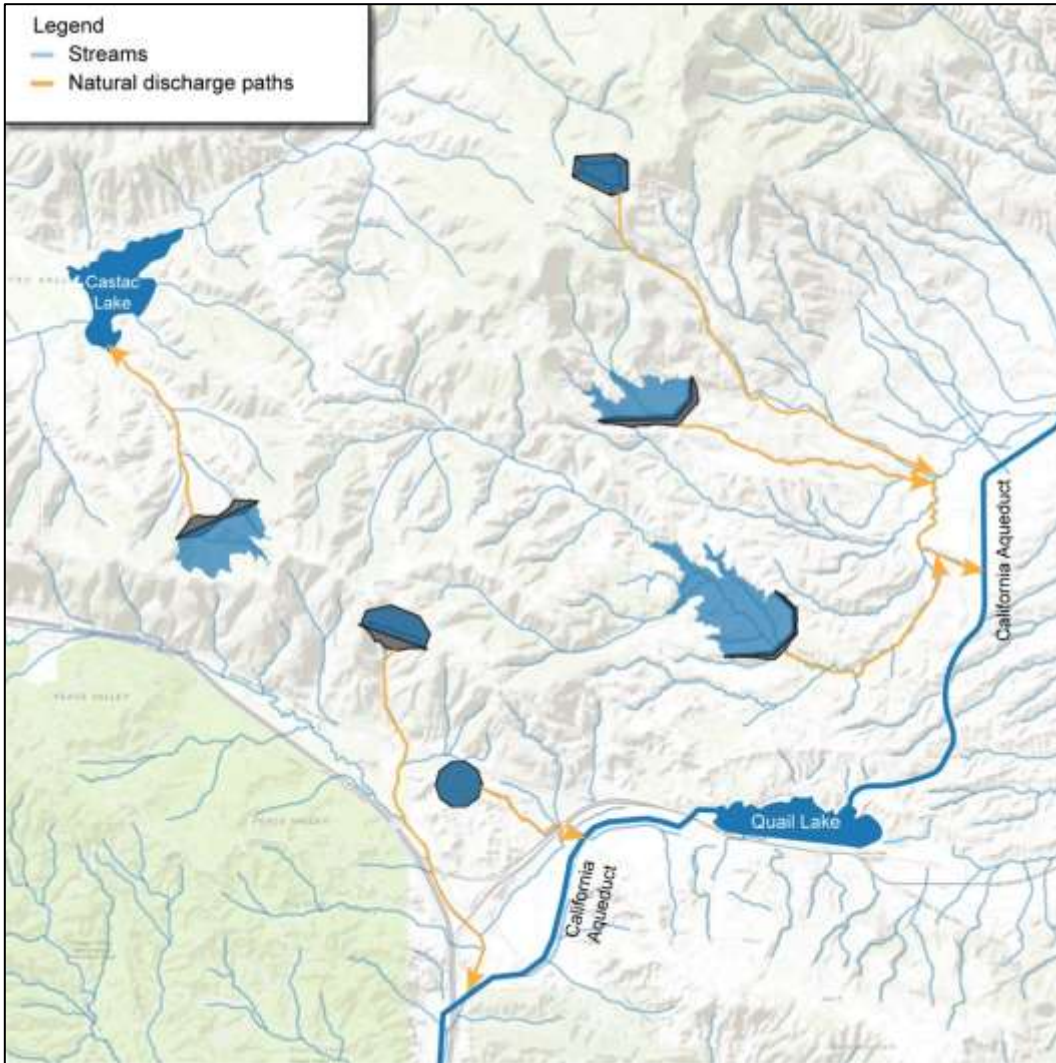


Map 13. Crane – Oso. Transmission Alternative 2 (SCE).



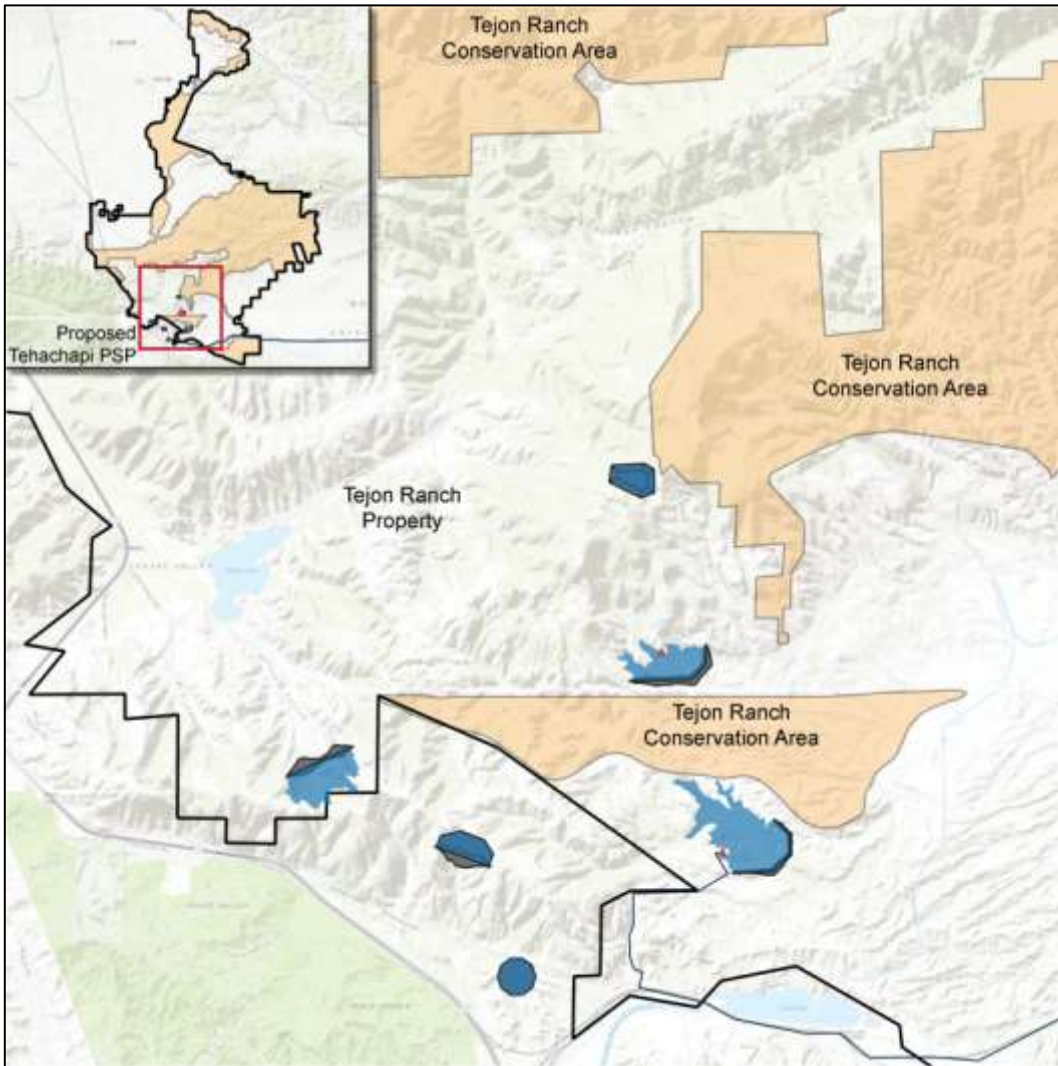
4. ADDITIONAL MAPS

**Map 14. Preliminary Discharge Paths.**

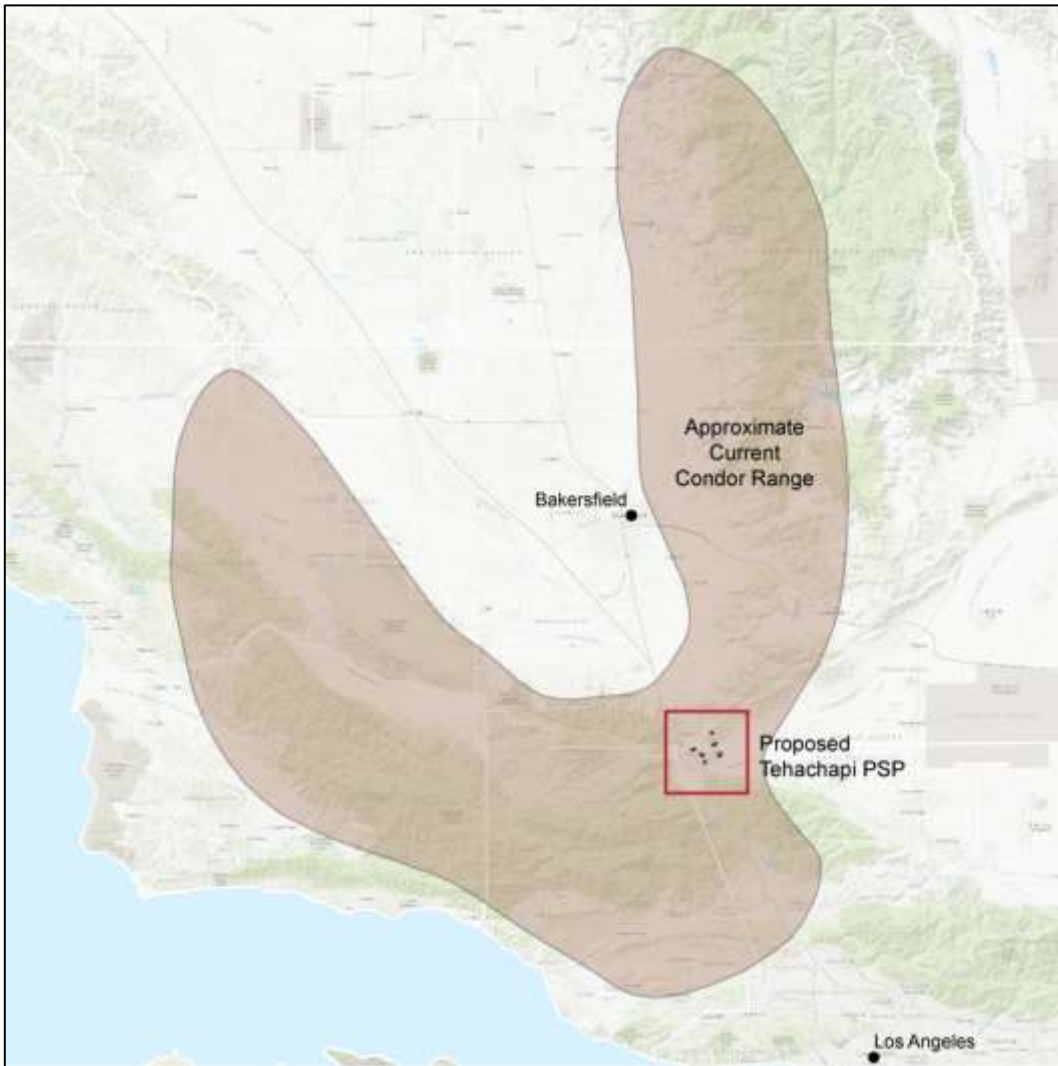




**Map 15. Tejon Ranch Conservancy Area.**



**Map 16. Approximate Current Condor Range.**



Document Content(s)

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