
SUMMARY

S.1 INTRODUCTION

The Los Angeles Department of Water and Power (LADWP) is the nation's largest municipal utility serving over 3.8 million customers. Its service territory covers the City of Los Angeles and certain parts of the Owens Valley. In 2007, LADWP prepared an energy resource planning document called the Power System Integrated Resource Plan (IRP) that provided a framework for ensuring the future electrical energy needs of LADWP. The IRP recognizes the need to increase energy efficiency and conservation, reduce greenhouse gas emissions, and increase power generated from renewable energy sources. This should be accomplished while maintaining power system reliability and minimizing financial impact on the City ratepayers. The City's "GREEN LA Plan" is an action plan to lead the nation in fighting global warming and reducing the City's greenhouse gas emissions to 35% below the 1990 levels by the year 2030. The cornerstone of the GREEN LA Plan is the reduction of greenhouse gases by increasing the use of renewable energy.

The State of California has one of the most aggressive renewable energy programs in the country and has established a Renewable Portfolio Standard (RPS) policy requiring the increased production and use of renewable energy (such as wind, solar, small hydroelectric, biomass, and geothermal energy). As a component of the IRP, LADWP's RPS policy matches that of the State. To achieve a more environmentally sustainable energy resource mix and meet RPS goals, LADWP must access renewable energy sources, most of which are located in more remote areas (such as the Owens Valley, Mojave Desert, Tehachapi Mountains) where limited electrical infrastructure exists.

To achieve these objectives and bring this renewable power from these remote areas into Los Angeles' demand center, LADWP is proposing to construct and operate the Barren Ridge Renewable Transmission Project, the proposed project (BR RTP or Project). LADWP has developed the purpose and need for this Project in accordance with the National Environmental Policy Act (NEPA), and Project objectives in accordance with the California Environmental Quality Act (CEQA):

- Reduce the environmental impacts associated with greenhouse gas emissions and create a more sustainable environment.
- Assist LADWP in meeting RPS goals.
- Assist in meeting LADWP's future electrical energy demands.
- Allow interconnection and expansion of LADWP's renewable energy in the Tehachapi Mountains and Mojave Desert areas.
- Increase LADWP's system reliability and flexibility in the utilization of renewable energy sources.
- Enable the delivery of renewable energy to the City of Los Angeles.

The Project would be located in Los Angeles and Kern Counties, and would consist of the following five Project components:

- 1) Expanding existing Barren Ridge Switching Station;
- 2) Constructing a new switching station in Haskell Canyon;
- 3) Constructing 61 miles of a new 230 kilovolt (kV) double-circuit transmission line from the LADWP Barren Ridge Switching Station to Haskell Canyon;
- 4) Reconductoring 76 miles of the existing Barren Ridge – Rinaldi (BR-RIN) 230 kV transmission line with larger-capacity conductors between the Barren Ridge Switching Station and the Rinaldi Substation; and
- 5) Adding 12 miles of a new 230 kV circuit on the existing double-circuit structures from Haskell Canyon to the Castaic Power Plant.

It has been determined that the proposed Project is a major federal action and California governmental action that may have a significant impact upon the quality of the human environment, and the appropriate environmental analysis document is a joint Environmental Impact Statement / Environmental Impact Report (EIS/EIR). This Draft EIS/EIR has been prepared by the U.S. Department of Agriculture, Forest Service (USFS) and the U.S. Department of the Interior, Bureau of Land Management (BLM), as Co-Lead Agencies under NEPA, and LADWP as the Lead Agency under CEQA. This action is in response to LADWP's application (1) to the USFS for a special use authorization, and (2) to the BLM for a Right of Way Grant. The grant of these applications by the agencies is a federal action requiring compliance with NEPA. As a governmental agency within California, LADWP is required to comply with CEQA for its direct undertaking of discretionary governmental actions (CEQA Guidelines, Section 15002(b)).

S.2 PUBLIC SCOPING AND ALTERNATIVES DEVELOPMENT

S.2.1 PUBLIC SCOPING

Starting in spring 2008, public scoping for the BR RTP has been conducted to determine the scope of issues to be addressed, and to identify the range of actions, alternatives, mitigation measures, and environmental effects to be analyzed in this Draft EIS/EIR. The public has suggested a number of alternatives to the Proposed Action that include system, design, and routing alternatives. The process used to identify, evaluate, and screen potential alternatives is described in Chapter 2 of this Draft EIS/EIR. Alternatives that the public has suggested include:

- Use of tubular steel monopoles instead of lattice steel structures
- Undergrounding of the transmission line
- Use of a single-tower system (multi-circuit towers) to accommodate the need for existing and proposed towers, as well as to minimize right-of-way (ROW) expansion by combining new and existing lines on one set of structures
- Use of Direct Current (DC) lines as an alternative to the proposed alternating current (AC)

- Consideration of niobium wire as an alternative to aluminum or copper wire for the conductor
- Generation of electricity within the City of Los Angeles to avoid long-distance electrical transmission distribution and impacts to rural communities, such as through the installation of solar panels
- Two localized routing alternatives were proposed by the public during the scoping period. The first, referred to as the Green Valley Re-route, was proposed by the unincorporated community of Green Valley residents and would be approximately one quarter-mile west of the unincorporated community of Green Valley along an existing fire road through National Forest System lands. This re-route would avoid possible impacts to the unincorporated community of Green Valley. The second routing suggestion, referred to as the 110th Street Re-route, was proposed by residents to occur along Segments F and H (see Figure S-1). The modification of Segment F would parallel 110th Street and connect Segments F and H instead of following along the existing transmission lines to Antelope Substation. This modification was proposed to follow property lines and avoid bisecting private property in the area.

S.2.2 ALTERNATIVES DEVELOPMENT

To determine which alternatives would be analyzed in this Draft EIS/EIR, alternatives were evaluated as to whether they would:

1. Attain the purpose and need of the Project, as well as most of the basic objectives of the Project;
2. Have the potential to avoid or substantially lessen any of the significant or adverse effects of the Project; and
3. Be considered feasible.

Through scoping, subsequent public involvement efforts, and preparation of preliminary technical reports, all potentially significant environmental resource issues listed in Table S-1 were identified with the construction, operation, maintenance, and decommissioning of the proposed BR RTP.

TABLE S-1. SIGNIFICANT ENVIRONMENTAL RESOURCE ISSUES OF THE BR RTP

RESOURCE	ISSUES AND CONCERNS
Biological Resources	<ul style="list-style-type: none"> • Potential for adverse effects to rare, threatened, endangered, and special-status species. • Considerable concern for Riparian Conservation Areas and the spread of noxious weeds throughout Angeles National Forest lands. • Impacts to avian species and increased raptor predation of sensitive species due to the use of lattice towers. • Potential for loss of habitat.
Cultural Resources	<ul style="list-style-type: none"> • Impacts to historical, cultural, and archaeological resources in the Project area.
Earth Resources	<ul style="list-style-type: none"> • Adverse impacts to soils throughout the Project area, including sedimentary rocks and fossils.

RESOURCE	ISSUES AND CONCERNS
Water Resources	<ul style="list-style-type: none"> • Impacts to drainages, wetlands, Waters of the State, Waters of the U.S., and blue-line streams.
Land Use	<ul style="list-style-type: none"> • Acquisition of private property, eminent domain, and the expansion of transmission line rights-of-way and easements. • Decreased property values with additional transmission lines. • Conflicts with land use and recreation policies of the Angeles National Forest Land Management Plan.
Wildfire Suppression and Management	<ul style="list-style-type: none"> • Impacts to fire suppression efforts.
Recreation	<ul style="list-style-type: none"> • Impacts to recreational facilities and trails. • Impacts to the quality of the Antelope Valley California Poppy Reserve, Pacific Crest National Scenic Trail, Wild and Scenic River Corridor, and wilderness.
Visual Resources	<ul style="list-style-type: none"> • Adverse effects to visual resources of the area, especially those important to the character of the ridgelines, as well as views from homes, communities, businesses, trails, State Parks, the Angeles National Forest, BLM-managed lands, and other public lands.

NEPA and CEQA require an EIS/EIR to consider a reasonable range of alternatives to the Project that would meet the purpose and need of the Project, but avoid or substantially lessen any adverse effects of the Project. The scoping process, informational public meetings, and preliminary studies identified sixteen alternatives to the Proposed Action that were considered and eliminated from full analysis in this Draft EIS/EIR. The alternatives are categorized as generation (four total), design (eight total), or routing alternatives (two total). Chapter 2 provides a brief description of each alternative, the alternative’s ability to meet the screening criteria, and a rationale for elimination of the alternative from full analysis in this Draft EIS/EIR.

S.2.3 ALTERNATIVES DESCRIPTION

The following alternatives were identified as a reasonable range of alternatives to the Project that would feasibly meet the basic objectives of the Project, but avoid or substantially lessen any of the significant or adverse effects of the Project. The four action Alternatives and the No Action Alternative are described below.

Action Alternatives

In addition to a new double-circuit 230 kV transmission line between the Barren Ridge and Haskell Canyon switching stations, whose route would vary among the action Alternatives, the four action Alternatives would include the following common components: the expansion of the existing Barren Ridge Switching Station, construction of a new Haskell Canyon Switching Station, reconductoring of the existing 230 kV transmission line from the Barren Ridge Switching Station to Rinaldi Substation, and the addition of a new 230 kV circuit on existing towers between the Castaic Power Plant and Haskell Canyon Switching Station. The action Alternatives are shown on Figure S-1.

Project Components Common To All Action Alternatives

Four of the BR RTP components would be common to all action Alternatives analyzed in this Draft EIS/EIR. These common components are described in the sections below.

Expansion of the Existing Barren Ridge Switching Station

LADWP proposes expansion of the existing Barren Ridge Switching Station to the east side by 235 feet, for a total station size of 485 feet by 500 feet (approximately 6 acres). The expansion area of the station would include electrical structures and equipment for the addition of transmission lines, a material staging area, roadway within the station, and a drainage area.

Construction of the Haskell Canyon Switching Station

As a component of the BRRTP, LADWP proposes the construction of a new switching station in Haskell Canyon, south of the Angeles National Forest on LADWP-owned property at the convergence of several existing and proposed 230 kV transmission lines (the existing BR-RIN, the proposed double-circuit Barren Ridge – Haskell Canyon, existing Castaic – Northridge, Castaic – Sylmar, Castaic – Olive, and the proposed Castaic – Haskell Canyon). The station would be approximately 500 feet by 600 feet to accommodate the necessary circuit positions, which are made up of equipment, such as steel support structures, circuit breakers, disconnect switches, and associated equipment, and a relay house and control house containing control and protective relaying equipment.

Reconductor Existing 230 kV Transmission Line

LADWP proposes the reconductoring of 76 miles of the existing BR-RIN 230 kV transmission line with larger conductors from the Barren Ridge Switching Station to Rinaldi Substation. The existing conductors (954/ 2,312 kcmil) would be replaced with a new 1,433.6 kcmil “Merrimack” ACSS/TW/HS (aluminum conductor steel supported/trapezoidal wires/high strength) conductor. The new conductor would have a larger diameter that allows for greater electrical capacity.

Additional New 230 kV Circuit

Between the proposed Haskell Canyon Switching Station and the existing Castaic Power Plant, the LADWP proposes the addition of 12 miles of a new 230 kV transmission circuit onto existing Castaic – Olive 230 kV Transmission Line structures. The new circuit would not require a new or additional ROW. This new circuit would be called Castaic – Haskell Canyon #4 and would utilize the same conductor (bundled 715.5 kcmil “Starling” ACSS/AW [aluminum conductor steel supported/aluminum-clad steel wire]) as that proposed for the new 230 kV transmission line between Barren Ridge and Haskell Canyon Switching Stations.

New 230 kV Double-circuit Transmission Line

Only the new double-circuit 230 kV transmission line would differ between the action Alternatives. The new transmission line for each Alternative is discussed below.

Alternative 1

In addition to the four common Project components described above, Alternative 1 would include a new 83-mile-long 230 kV double-circuit transmission line. It would be the longest transmission line among the Alternatives. It would run from the Barren Ridge Switching Station to unincorporated community of Mojave, while paralleling LADWP’s existing 230 kV BR-RIN

and 500 kV Pacific Direct Current Intertie (PDCI) transmission lines. It would continue south-southwest to parallel the Los Angeles Aqueduct to Lancaster Road, where it would travel west to the Interstate 5 (I-5) utility corridor. It would then run southeast along LADWP's existing Castaic – Rinaldi corridor to the proposed Haskell Canyon Switching Station.

Within the Angeles National Forest (ANF) where the terrain is steep and access is limited, the USFS would require that the new double-circuit 230 kV structures be constructed with the use of helicopters (such as the Hughes 500, Bell 212, or Sikorsky Skycrane). Approximately eight miles of this Alternative would be constructed with helicopters.

Alternative 2 (Proposed Action)

Alternative 2 is LADWP's Proposed Action and would include the four common Project components described above and a new 61-mile 230 kV double-circuit transmission line. It would be the shortest transmission line alignment at 61 miles long. It would begin at the Barren Ridge Switching Station and run south, paralleling LADWP's existing 230 kV BR-RIN and 500 kV PDCI transmission lines. It would travel south from the unincorporated community of Mojave through the Antelope Valley and approximately one mile east of the Antelope Valley California Poppy Reserve before continuing onto National Forest System lands and ending at the proposed Haskell Canyon Switching Station. The entire route would remain within designated utility corridors and would parallel existing transmission lines.

Although no specific areas have been identified for helicopter construction, within the ANF where the terrain is steep and access is limited, the USFS would require that the new double-circuit 230 kV structures be constructed with the use of helicopters (such as the Hughes 500, Bell 212, or Sikorsky Skycrane). These areas would be identified during final design.

In areas where there are ROW expansion constraints due to existing primary residences, and where LADWP has existing 230 kV transmission lines, LADWP is proposing to construct three-circuit towers within the existing ROW to carry the existing BR-RIN circuit and the two proposed Barren Ridge to Haskell Canyon (BR-HC) circuits. This would avoid acquisition of residential property in the unincorporated communities of Willow Springs, Elizabeth Lake, and Green Valley.

LADWP must maintain the electrical service along the existing BR-RIN transmission line to avoid impacts to the hydroelectric power plants north of the Barren Ridge Switching Station. Therefore, during construction of the three-circuit towers, a temporary transmission line approximately eight miles long would be constructed of wood and steel single poles, which would keep the BR-RIN circuit energized. After the temporary line is constructed, the existing BR-RIN single-circuit towers would be removed to allow the new three-circuit towers to be constructed within the existing ROW. Once construction of the three-circuit towers is completed, the temporary transmission line would be removed. Construction would occur within a temporary 80- to 100-foot ROW. The majority of the temporary transmission line would be constructed along San Francisquito Canyon Road.

Alternative 2a

In addition to the four common Project components described above, Alternative 2a would include a new 63-mile 230 kV double-circuit transmission line. It would be very similar to the Alternative 2 transmission line, sharing the same alignment for 56 miles with Alternative 2, but the Alternative 2a transmission line would include a re-route to avoid the unincorporated community of Green Valley. This re-route around Green Valley would place a portion of the new transmission line outside of existing utility corridors through the ANF. The re-route would rejoin the Alternative 2 transmission line alignment south of Green Valley before continuing south and ending at the proposed Haskell Canyon Switching Station.

Within the ANF where the terrain is steep and access is limited, the USFS would require that the new double-circuit 230 kV structures be constructed with the use of helicopters (such as the Hughes 500, Bell 212, or Sikorsky Skycrane). Approximately four miles of this alternative would be constructed with helicopters.

Similar to Alternative 2, in areas where there are ROW expansion constraints and where LADWP has existing 230 kV transmission lines, LADWP is proposing to construct three-circuit towers to carry the existing BR-RIN circuit and two new BR-HC circuits. This would avoid acquisition of residential property in the unincorporated communities of Willow Springs (milepost 27.1 to 27.6) and Elizabeth Lake. These are the same areas that were identified for three-circuit tower mitigation for Alternative 2, with the exception of approximately five miles that would be left unchanged (BR-RIN would remain in place) through the unincorporated community of Green Valley.

Alternative 3

Alternative 3 would include the four common Project components described above and a new 76-mile 230 kV double-circuit transmission line. The Alternative 3 transmission line would begin at the Barren Ridge Switching Station and run south, paralleling LADWP's existing 230 kV BR-RIN and 500 kV PDCI lines. It would travel south from the unincorporated community of Mojave through the Antelope Valley and approximately one mile east of the Antelope Valley California Poppy Reserve before continuing southeast past Southern California Edison's (SCE) Antelope Substation. The route would then extend toward the City of Palmdale parallel to SCE's existing high-voltage transmission lines. It would turn sharply south to parallel LADWP's existing Victorville – Rinaldi 500 kV and Adelanto – Rinaldi 500 kV transmission lines. This Alternative would then parallel these transmission lines west, crossing approximately four miles of the ANF. The Alternative would then parallel LADWP's 500 kV PDCI line north to the proposed Haskell Canyon Switching Station. Alternative 3 has the potential to impact portions of unincorporated Kern and Los Angeles Counties; unincorporated communities of Mojave, Willow Springs, Leona Valley, Antelope Acres, Agua Dulce, Castaic and Saugus; and cities of Lancaster, Palmdale, Santa Clarita, and Los Angeles.

LADWP is proposing to avoid ROW expansion and acquisition of residential property in the community of Willow Springs by constructing three-circuit towers from milepost 27.1 to 27.6. The new three-circuit towers would be constructed within existing ROWs and carry the existing BR-RIN circuit and two new BR-HC circuits.

Jurisdictions of the Action Alternatives

The land jurisdiction(s) crossed by each Alternative is presented in Table S-2.

TABLE S-2. JURISDICTIONS CROSSED BY ALTERNATIVE

	Alternative 1	Alternative 2 (LADWP's Proposed Action and Federal Agency Preferred Alternative)	Alternative 2a	Alternative 3
New double-circuit 230 kV transmission line				
Length on USFS Lands	15.9 miles	13 miles	15.5 miles	4.4 miles
Length on BLM Lands	3.7 miles	3.7 miles	3.7 miles	3.7 miles
Length on State Lands	2.4 miles	0 miles	0 miles	0 miles
Length on Private Lands	60.8 miles	44.0 miles	43.3 miles	67.4 miles
Total Length	83.1 miles	60.7 miles	62.5 miles	75.5 miles
Length of 3-Circuit Tower Mitigation Temporary Transmission Line	0 miles	7.5 miles	7.5 miles	0 miles
Identified Helicopter Construction	8.4 miles	0 miles	3.6 miles	0 miles
New 230 kV circuit between proposed Haskell Canyon Switching Station and Castaic Power Plant				
Length on USFS Lands	4 miles for all alternatives			
Length on BLM Lands	300 feet for all alternatives			
Length on State Lands	4.5 miles for all alternatives			
Length on Private Lands	8.5 miles for all alternatives			
Total Length	12 miles for all alternatives			
Reconductoring of the Barren Ridge-Rinaldi 230 kV transmission line				
Length on USFS Lands	13 miles for all alternatives			
Length on BLM Lands	4 miles for all alternatives			
Length on Private Lands	59.5 miles for all alternatives			
Total length	76.1 miles for all alternatives			
New Haskell Canyon Switching Station				
Total Area	Seven acres on LADWP-owned land [Station: 500 feet x 600 feet (6.9 acres); Gravel Parking Area: 100 feet x 100 feet (0.25 acres)]			
Expansion of Barren Ridge Switching Station				
Total Area	Three acres (235 feet x 500 feet)			

Note: Quantities are approximate.

No Action Alternative

Under the No Action Alternative, the construction of a new 230 kV transmission line, the addition of a new circuit on existing structures from Haskell Canyon to the Castaic Power Plant, the reconductoring of the existing BR-RIN transmission line, the construction of a new Haskell Canyon Switching Station, and the expansion of the existing Barren Ridge Switching Station would not occur. LADWP currently maintains an estimated 147 miles of existing access roads in the project area, 97 of which are within ANF. Current, on-going operation and maintenance activities for existing facilities in the Project area would continue. This Draft EIS/EIR must address the resulting environmental effects from taking no action and compare it to the effects of permitting the Proposed Action or an Alternative to the Proposed Action.

S.3 ENVIRONMENTAL IMPACTS

Impacts that would result from constructing and operating the Proposed Action and Alternatives were assessed using a methodology that documents the existing environmental conditions, then classifies and quantifies the various types of impacts that could occur. The potential impacts are compared to impact thresholds and assigned significance based on the extent of change from existing conditions. Mitigation measures are proposed as necessary to alleviate significant adverse effects. The methodology employed is discussed below.

S.3.1 IMPACT ASSESSMENT METHODOLOGY

The impact assessment methodology for each resource in Chapter 4 was used to determine the significance of identified impacts, as required by CEQA. The impact locations and intensity were recorded and the impacted area described. To determine impact intensity (i.e., the severity of the potential impact), an “impact model” was developed for each resource classification using the same criteria, as applicable:

- Resource sensitivity—the probable impact(s) to a particular resource as a result of Project-related activities
- Resource quality—the pre-Project condition of the resource potentially affected
- Resource quantity—the amount of the resource potentially affected
- Duration of impact—the period of time over which the resource would be affected, measured as short-term (up to a few years) or long-term (life of the Project and beyond)
- Time of year—the season or period of time which the resource would be affected
- Setting—consideration of the Project location, the affected region, and interests
- Expressed public concern—the amount of concern expressed by the land management agencies and the public

Pursuant to NEPA, the intent of the environmental impact analysis is to provide a scientific and analytic basis for comparing the Alternatives. The analysis also identifies any adverse environmental effects that cannot be avoided should the Project be implemented, and presents mitigation measures to minimize adverse environmental impacts (40 CFR 1502.16).

Environmental effects include direct, indirect, and cumulative impacts. Cumulative impacts are discussed in Chapter 5 of this Draft EIS/EIR.

S.3.2 IMPACTS

The implementation of the Proposed Action or Alternatives has the potential to result in three basic types of impacts to environmental resources. These impact types include the following:

Construction impacts associated with the short-term presence of Project construction activities, resulting in impacts such as ground disturbance, noise, and air emissions;

Increased access-related impacts associated with enhanced accessibility by persons, such as by using Project access roads into areas that are currently remote or inaccessible; and

Operational impacts associated with the long-term presence of Project facilities and improvements, such as inspections, maintenance checks, and repairs, and the long-term operation of facilities and improvements.

Construction and operation of the BRRTP would result in a number of permanent and temporary impacts. The temporary impacts would cease upon completion of the construction phase. Many of the impacts can be minimized by implementing General Practices (GPs) and specifically recommended mitigation measures.

S.3.3 MITIGATION MEASURES

Mitigation measures were examined to see if they could be effective in reducing the intensity of impacts. If analysis concludes the possibility of a potentially significant impact even after GPs are considered, then specific mitigation was applied to lessen the impact or potentially reduce it to a less than significant level. Both Section 1508.20 of the Council for Environmental Quality regulations for implementing NEPA and the CEQA Guidelines Section 15370 define mitigation as:

- a. Avoiding the impact altogether by not taking a certain part or parts of an action;
- b. Minimizing impacts by limiting the degree or magnitude of the action and its implementation;
- c. Rectifying the impact by repairing, rehabilitating, or restoring the affected [“impacted” under CEQA] environment;
- d. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and
- e. Compensating for the impact by replacing or providing substitute resources or environments.

Mitigation is only required for significant impacts under CEQA; however, NEPA encourages mitigation for all of the adverse impacts of a project. For this reason, some mitigation measures described in this document are wholly appropriate under NEPA, although the impacts they address may not be considered significant under CEQA.

S.3.4 ENVIRONMENTAL CONSEQUENCES

CEQ NEPA Regulations require that an EIS include a discussion of those adverse environmental effects that cannot be avoided through project redesign, the selection of environmentally superior alternatives, or mitigation measures (42 USC 4332(C)(ii) and 40 CFR 1502.16). A discussion of the Proposed Action and alternatives is included in Chapter 1 (Purpose and Need) and Chapter 2 (Alternatives Including the Proposed Action) of this Draft EIS/EIR. Together these chapters detail the Project objectives, the need for the Project, the Proposed Action, and the identification and selection of potential feasible alternatives, and fully address the Project’s specific design. The potential environmental effects of the Proposed Action or alternatives and mitigation measures to reduce or avoid these effects are described in detail in Chapter 4 (Environmental Impacts) and Chapter 5 (Cumulative Effects) of this Draft EIS/EIR. Impacts identified as significant and unavoidable are those that cannot be reduced to less-than-significant levels through the application of feasible mitigation measures; these are considered adverse environmental effects that cannot be avoided. These adverse environmental effects that cannot be avoided are summarized in Table S-3 below.

TABLE S-3. ADVERSE ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED

Adverse Environmental Effects that Cannot be Avoided for All Action Alternatives
Agriculture - Cumulatively significant impacts to agricultural operations as a result of Project construction and operation
Air Quality and Climate Change - Maximum daily construction emissions would exceed regional significance thresholds in 2013 and 2014
Air Quality and Climate Change - Emissions of NO _x would be above the <i>de minimis</i> threshold in 2013 and/or 2014
Air Quality and Climate Change – Cumulative impacts to PM ₁₀ emissions by contributing to exceeding regional significance thresholds.
Biological Resources – Cumulative impacts to slender mariposa lily; short-joint beavertail cactus; desert tortoise; and California gnatcatcher
Cultural Resources – Effects to a National Register of Historic Places- and California Register-listed historic resource (Old Ridge Route and its contributing elements) and Olive Power Plant 1 Transmission Line (eligible for listing on the National Register; listed on California Register)
Recreation – Degradation of the Pacific Crest National Scenic Trail
Recreation – Contribute to the long-term loss or degradation of recreational opportunities by allowing for unmanaged recreational uses
Recreation – Construction impacts related to restricted access or disruption of activities within recreational areas
Transportation/Traffic – Construction activities would exceed LOS standard “D”
Visual Resources – Impact to the Pacific Crest National Scenic Trail outside and within Angeles National Forest
Visual Resources –Non-compatibility with Forest Service Scenic Integrity Objectives and reduced Scenic Integrity created as a result of the project
Visual Resources – Impacts on residences, travelers, and recreationists as a result of contrasts created by the project
Visual Resources – Cumulative impact as a result of an increase in the number of structures and structure prominence.
Water Resources – Cumulative impact on watersheds

S.4 ALTERNATIVES COMPARISON

The following sections offer a comparison of the potential environmental impacts associated with the five Project Alternatives: the No Action Alternative and the four action Alternatives. As the Project common components (the expansion of the existing Barren Ridge Switching Station, construction of a new Haskell Canyon Switching Station, reconductoring of the existing 230 kV transmission line from the Barren Ridge Switching Station to Rinaldi Substation, and the addition of a new 230 kV circuit on existing towers between the Castaic Power Plant and Haskell Canyon Switching Station) are shared by all action Alternatives, their associated impacts would be the same for each action Alternative; therefore, this comparison focuses on the impacts of the proposed 230 kV double-circuit transmission line for each action Alternative.

S.4.1 NO ACTION ALTERNATIVE

Under the No Action Alternative, the construction of a new 230 kV transmission line, the addition of a new circuit on existing structures from Haskell Canyon to the Castaic Power Plant, the reconductoring of the existing BR-RIN transmission line, the construction of a new Haskell Canyon Switching Station, and the expansion of the existing Barren Ridge Switching Station would not occur. Current, ongoing operation and maintenance activities for existing facilities in the Project area would continue. Impacts of the No Action Alternative would include impacts from the continuation of ongoing activities, but new impacts associated with the implementation of the No Action Alternative are not anticipated. Relative to the action Alternatives, all impacts associated with the construction, operation, maintenance and decommissioning of BR RTP would be avoided.

S.4.2 ALTERNATIVES COMPARISON SUMMARY TABLE

Table S-4 below summarizes the impacts within a 500-foot corridor for the proposed new 230 kV double-circuit transmission line for each action Alternative by environmental resource. The No Action Alternative represents a no-build scenario and does not include the 230 kV transmission line. As such, it has not been included in this summary table. As the Project common components (the expansion of the existing Barren Ridge Switching Station, construction of a new Haskell Canyon Switching Station, reconductoring of the existing 230 kV transmission line from the Barren Ridge Switching Station to Rinaldi Substation, and the addition of a new 230 kV circuit on existing towers between the Castaic Power Plant and Haskell Canyon Switching Station) are shared by all action Alternatives, their associated impacts would be the same for each action Alternative; therefore, they have not been included in the summary table.

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TABLE S-4. COMPARISON TABLE FOR ACTION ALTERNATIVES

Issues or Concerns		Proposed New 230 kV Double-Circuit Transmission Line For Each Action Alternative			
		Alternative 1	Alternative 2 Proposed Action	Alternative 2a ¹	Alternative 3
Jurisdiction Crossed (miles)	United States Forest Service	15.9	13.0	15.5	4.4
	Bureau of Land Management	3.7	3.7	3.7	3.7
	State Land	2.4	0.0	0.0	0.0
	Private	60.8	44.0	43.3	67.4
	TOTAL	83.1	60.7	62.5	75.5
Miles Within Access Road Ground Disturbance Categories (percentage of Alternative)	1. Existing roads or agricultural land, no proposed road widening anticipated	33.1 (39.8%)	52.4 (86.2%)	50.3 (80.4%)	47.3 (62.5%)
	2. Existing 8-foot wide roads that require an additional 8 feet of width	34.4 (41.3%)	8.3 (13.7%)	8.6 (13.7%)	27.8 (36.7%)
	3. Construct new road on flat terrain (0-10%)	6.4 (7.7%)	0	0	0
	4. Construct new road on sloping terrain (10-20%)	0	0	0	0
	5. Construct new road on steep terrain (20-30%)	0.4 (0.5%)	0.1 (0.2%)	0.1 (0.2%)	0.5 (0.7%)
	6. Construct road on very steep terrain (greater than 30%)	0.5 (0.6%)	0	0	0.1 (0.1%)
	Identified Helicopter Mitigation areas	8.4 (10.1%)	0	3.6 (5.8%)	0
Ground Disturbance Estimates	Miles of transmission line requiring new access roads	7.3	0.1	0.1	0.6
	Temporary (acres)	576 – 599	398 – 399	405 – 409	512 – 520
	Permanent (acres)	120 – 199	57 – 70	59 – 75	91 – 135
Land Use	Residences within 1000 Feet of Centerline	106	156	70	242
	Acquisition of Residential Structures	0	0	0	7
	Number of Pacific Crest Trail Crossings	1	1	1	3
	USFS Back Country Non-Motorized Crossed	2.4 requires a Project-specific ANF LMP amendment	0.0	1.0 requires a Project-specific ANF LMP amendment	0
	Miles of Centerline within Eligible Wild and Scenic River Corridor	0.0	2.7	2.1	0.0
	Miles of State Park/Recreation Area Crossed	2.4 (Centerline) 2.9 (within 500-foot corridor) Castaic Lake State Recreation Area	0.0	0.0	0.0
	Miles of Mountains Recreation and Conservation Authority Parkland Crossed	0.0	0.0	0.0	1.0
	Miles of Centerline within Agency-Designated Utility Corridor	14.2 72.5% of federal land crossed	14.5 86.8% of federal land crossed	13.6 59.4% of federal land crossed	8.0 98.8% of federal land crossed
Cultural Resources	Number of Eligible Sites (determined or assumed) within 50-foot Corridor, including Resources Listed or Eligible to be listed to the National Register of Historic Places (NRHP) or California Register of Historic Resources (CRHR)	33 (Eligible or assumed eligible to be listed to the NRHP) Resources listed to the NRHP: Old Ridge Route, which includes the National Forest Inn, Halfway Inn, Reservoir Summit Service Center Resources listed to CRHR and eligible to be listed to the NRHP: Olive Power Plant I Transmission Line	15 (Eligible or assumed eligible to be listed to the NRHP) Resources listed to the CRHR and eligible to be listed to the NRHP: Olive Power Plant I Transmission Line	15 (Eligible or assumed eligible to be listed to the NRHP) Resources listed to the CRHR and eligible to be listed to the NRHP: Olive Power Plant I Transmission Line.	26 (Eligible or assumed eligible to be listed to the NRHP) Resources listed to the CRHR and eligible to be listed to the NRHP: Olive Power Plant I Transmission Line
	Miles of Centerline with Previous Survey within 500-foot Corridor	31.1	11.5	13.6	18
	Miles (Percentage) Surveyed Without Known Resources	10.2 (33%)	7.1 (62%)	6.7 (49%)	15.4 (86%)
Wildfire and Fuels	Miles of Modeled Very High Risk Conditions for Firefighter Safety and Obstruction to Suppression	10	4.5	6.5	1.5

Issues or Concerns		Proposed New 230 kV Double-Circuit Transmission Line For Each Action Alternative			
		Alternative 1	Alternative 2 Proposed Action	Alternative 2a ¹	Alternative 3
	Miles of Modeled Very High Risk Conditions for Potential for Wildfire	8	2.5	2.5	4
	Miles of Modeled Very High Risk Conditions for Native Vegetation Alteration	13.5	1.5	2.5	9.5
Paleontological Resources	Maximum Resource Sensitivity Levels (miles crossed)	25.2 miles 9.5 miles Castaic Formation 0.3 miles Hungry Valley Formation 0.3 miles Mint Canyon Formation 2.3 miles Peace Valley Formation 0.3 miles Quail Lake Formation 12.2 miles Ridge Route Formation 0.3 miles Saugus Formation	2.4 miles 0.3 miles Anaverde Formation 0.1 miles Castaic Formation 0.3 miles Mint Canyon Formation 1.7 miles Saugus Formation	2.4 miles 0.3 miles Anaverde Formation 0.1 miles Castaic Formation 0.3 miles Mint Canyon Formation 1.7 miles Saugus Formation	6.1 miles 0.3 miles Anaverde Formation 1.5 miles Castaic Formation 4.1 miles Mint Canyon Formation 0.2 miles Saugus Formation
	Number of Public Roadway Crossings Causing Poor Levels of Service (LOS) During Construction	0	0	0	Bouquet Canyon Rd, north of Esquerra (LOS F) and Sierra Highway, north of Davenport Rd (LOS E)
Traffic and Transportation	Miles of Potentially Significant Traffic Impacts	Construction Phase - 20.6 miles Maintenance Phase - 0 miles	Construction Phase - 15.9 miles Maintenance Phase - 0 miles	Construction Phase - 12.1 miles Maintenance Phase - 0 miles	Construction Phase - 17.2miles Maintenance Phase - 0 miles
	USFS Roads That May Require Temporary Improvement to Objective Maintenance Level.(ObML)	8N01 – Liebre Gulch (ObML 2) 8N04 – Old Ridge Route (ObML 3) 8N05 – Tumble Inn Rd (ObML 2) 6N43 – Forest Inn Rd (ObML 2) 5N17 – San Francisquito Motorway (ObML 2) 6N21 – City Highline Rd (or City Highline Motorway Rd) (ObML 2) 5N29 – Dry Canyon Rd (ObML 3) 6N32.3 – Templin Highway (ObML 2)	6N21-City Highline Rd (ObML 2) 5N27-Drinkwater Canyon Rd (ObML 2) 6N04--Leona Divide Fire Rd (ObML 2) 7N02--South Portal Rd (ObML 2) 7N0--Tule Divide Fire Rd (ObML 2)	6N21-City Highline Rd (ObML 2) 5N27-Drinkwater Canyon Rd (ObML 2) 6N04--Leona Divide Fire Rd (ObML 2) 7N02--South Portal Rd (ObML 2) 7N01--Tule Divide Fire Rd (ObML 2)	none
Visual Resources	Residual Impact Level (miles)	H – 20.4 M - 18.1 Pacific Crest National Scenic Trail, residences, and ANF Templin vista point	H – 4.5 M – 11.7 Residences, Pacific Crest National Scenic Trail, and ANF Green Valley Camp Site	H – 4.6 M – 12.5 Residences, Pacific Crest National Scenic Trail (generally parallel alignment within the foreground visibility zone for approximately two miles), the ANF Green Valley Camp Site, and transportation viewpoints	H – 9.0 M - 29.1 Residences, Pacific Crest National Scenic Trail, minor trails, Mountains Recreation and Conservation Authority, Ritter Ranch, Veluzat Motion Picture Ranch
	Non-Compliance with ANF SIOs	14.5	13.3	15.5	3.6
	Miles of ANF Land Use Zone Not Suitable for Major Utility Corridor	1.7	0.0	1.0	0.0
	Miles within the ANF visible from the Pacific Crest National Scenic Trail (PCT) within the Foreground	0.0	1.5	2.8	0.8
	Number of Residences within 500 Feet of Centerline	29	63	32	23
Air Quality ²	Conformance with South Coast Air Quality Management District (SCAQMD) and Antelope Valley Air Quality Management District (AVAQMD) (NO _x Exceeding Threshold)	AVAQMD: Emissions above the daily CO, NO _x , and PM10 threshold. SCAQMD: Emissions above the daily CO, NO _x , PM10, and PM2.5 thresholds.	AVAQMD: Emissions above the daily CO, NO _x , and PM10 threshold SCAQMD : Emissions above the daily CO, NO _x , PM10, and PM2.5 thresholds	AVAQMD: Emissions above the daily CO, NO _x , and PM10 threshold SCAQMD: Emissions above the daily CO, NO _x , PM10, and PM2.5 thresholds	AVAQMD: Emissions above the daily CO, NO _x , and PM10 threshold SCAQMD: Emissions above the daily CO, NO _x , PM10, and PM2.5 thresholds
	Federal Conformity Determination Requirement	Annual construction emissions for the portion of Alternative 1 on federal lands would be less than the de minimis thresholds for all pollutants in both the SCAB and the MDAB during 2012. In 2013 and 2014, emissions of NO _x would be above the de minimis threshold for NO _x of 10 tons per year.	Annual construction emissions for the portion of Alternative 2 on federal Lands would be less than the de minimis thresholds for all pollutants in both the SCAB and the MDAB during 2012 and 2013. In 2014, emissions of NO _x would be above the de minimis threshold for NO _x of 10 tons per year.	Annual construction emissions for the portion of Alternative 2a on federal Lands would be less than the de minimis thresholds for all pollutants in both the SCAB and the MDAB during 2012 and 2013. In 2014, emissions of NO _x would be above the de minimis threshold for NO _x of 10 tons per year.	Annual construction emissions for the portion of Alternative 3 on federal lands would be less than the de minimis thresholds for all pollutants in both the SCAB and the MDAB during 2012 and 2013. In 2014, emissions of NO _x would be above the proposed de minimis threshold for NO _x of 10 tons per year

Issues or Concerns		Proposed New 230 kV Double-Circuit Transmission Line For Each Action Alternative																			
		Alternative 1				Alternative 2 Proposed Action				Alternative 2a ¹				Alternative 3							
Fish and Wildlife Resources	Total Miles Crossed with Known Federal and State Endangered Species Act (ESA) Listed Species	4.2 1.7 BLM (Desert Tortoise) 1.4 BLM/Private (Desert Tortoise) 0.1 NFS (California Condor) 0.2 NFS (California Condor) 0.1 Private (California Condor) 0.6 Private (Desert Tortoise)				3.7 1.7 BLM (Desert Tortoise) 1.4 BLM/Private (Desert Tortoise) 0.6 Private (Desert Tortoise)				3.7 1.7 BLM (Desert Tortoise) 1.4 BLM/Private (Desert Tortoise) 0.6 Private (Desert Tortoise)				3.7 1.7 BLM (Desert Tortoise) 1.4 BLM/Private (Desert Tortoise) 0.6 Private (Desert Tortoise)							
	Miles Crossed with Known NFS Special Status Wildlife Species	0.0				0.1 0.1 NFS (Coastal Rosy Boa) Potential habitat was observed as being present throughout the ANF during 2008-2010 surveys.				0.0				0.0							
	Miles of Federally Designated Critical Habitat Crossed	0				0				0				0							
	Miles of Avian Risk	H - 6 M - 19 L - 58				H - 1 M - 7 L - 55				H - 1 M - 11 L - 53				H - 1 M - 11 L - 65							
	Miles of Condor Risk	H - 6 M - 33 L - 46				H - 0 M - 10 L - 53				H - 3 M - 9 L - 53				H - 1 M - 25 L - 51							
Vegetation	Miles Crossed with Known NFS Threatened, Endangered, or Special-Status Plant Species	1.3 1.2 Short-joint Beavertail 0.1 Slender Mariposa Lily				3.2 1.2 Short-joint Beavertail 1.7 Slender Mariposa Lily 0.3 Slender Mariposa Lily & Short-joint Beavertail				3.1 1.1 Short-joint Beavertail 1.7 Slender Mariposa Lily 0.3 Slender Mariposa Lily & Short-joint Beavertail				1.2 1.1 Slender Mariposa Lily 0.1 Slender Mariposa Lily & Short-joint Beavertail							
	Acreage of Riparian Vegetation Crossed	79 acres				77 acres				161 acres				406 acres							
	Acreage of Joshua Tree Woodland Crossed	334 acres				320 acres				320 acres				320 acres							
	Number of Riparian Conservation Areas (RCA) Crossed	26				21				25				0							
	Acres of RCA within 500-foot Corridor	99.5 acres				70.9 acres				87.6 acres				0.6 acres							
	Miles with Noxious Weeds or Invasive Species Present within 500-foot Corridor	1.4				3.6				2.9				0.1							
Geohazards/ Geologic Resources	Distinctive Geologic Features	None				None				None				0.4 miles of white tuff marker beds							
	Miles Crossed of High Levels of Earthquake Ground Shaking	13.4 Traverses the San Andreas fault zone diagonally and has a longer distance of departure from the high impact areas				9.8 Crosses perpendicular to the San Andreas fault zone and departs from the high ground shaking areas in a shorter distance				11.8 Crosses perpendicular to the San Andreas fault zone				16.9 Traverses the San Andreas fault zone diagonally and has a longer distance of departure from the high impact areas							
	Miles Crossed of Liquefaction Hazard Zones (ratio to available data)	1.2 (13.6%)				2 (11.7%)				1.8 (10.2%)				10.4 (24.9%)							
	Miles Crossed of Potential Landslides (ratio to available data)	6.6 (25.4%)				0.2 (0.7%)				0.2 (0.7%)				4.1 (11.5%)							
	Miles Crossed of Earthquake Induced Landslide Hazard Zone (ratio to available data)	8.5 (63.6%)				2.0 (16.0%)				1.9 (12.4%)				18.8 (45.1%)							
	Miles Crossed of High Soil Erosion Potential (% of total length)	26.0 (31.3%)				20.4 (25.1%)				17.2 (27.6%)				20.2 (26.9%)							
Water Resources	Miles Slope % Crossed	0-10	10-20	20-30	>30	54.1	4.5	12.3	12.3	44.4	3.2	7.4	5.8	44.3	2.8	7.4	8.3	50.0	5.9	13.8	6
	Number of Stream Crossings (perennial & intermittent) by Centerline	146				78				79				92							
	Number of Streams within 500-foot Corridor (perennial & intermittent)	168				95				97				113							
	Number of National Wetlands Inventory (NWI) wetlands crossed by Centerline or 500-foot Corridor	1 (California Aqueduct)				2 (Vegetated Wetland and California Aqueduct)				1 (Vegetated Wetland) 1 (California Aqueduct)				1 (California Aqueduct)							
	Miles of Significant Ecological Areas (SEA) crossed	8.1				2.6				2.4				4.7							

NOTES:

NA = Not applicable

M=Moderate impact

H=High impact

L=Low impact

¹ Environmental Resources are summarized from Barren Ridge Switching Station to the proposed Haskell Canyon Switching Station.

² All other annual emission standards are met.

S.5 NEPA FEDERAL AGENCY PREFERRED ALTERNATIVE

Pursuant to NEPA Regulations (40 CFR 1505.2(b)), the environmentally preferable alternative or alternatives must be identified in the Record of Decision (ROD) for the Project. In this Draft EIS/EIR, the BLM and USFS have identified the No Action Alternative and Alternative 2 as environmentally preferable. The No Action Alternative avoids the impacts associated with the action Alternatives and would be the environmentally preferable alternative among all the Alternatives. No Action does not meet the purpose and need of the Project, including the transmission and storage of renewable energy. Alternative 2, the Proposed Action, has the least overall impacts of the action Alternatives, and is the environmentally preferable action alternative.

NEPA Regulations require the lead agency to identify the agency's preferred alternative, if one of more exists, in the Draft EIS (40 CFR 1502.14(e)). The BLM and USFS have selected Alternative 2, the Proposed Action, as the agency preferred alternative.

S.6 CEQA ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Consistent with CEQA Guidelines Section 15126.6(e)(2), Alternative 2, the Proposed Action, has been identified by the CEQA Lead Agency, LADWP, as the environmentally superior Alternative. For a full comparison of the Alternatives, please refer to Table S-4, Comparison Table for Action Alternatives, above, and Section 2.6, Alternatives Comparison Summary, in Chapter 2 of this Draft EIS/EIR.

Alternative 2 has several unique advantages, including containing all Project components within a single utility corridor within the ANF and the immediate surrounding communities, which would limit the impact footprint of the Project. The Alternative 2 230 kV double-circuit transmission line would be located on federal land entirely within a federally designated utility corridor identified by the 2009 West-Wide Energy Corridor Final Programmatic EIS (PEIS). Alternative 2 would also consolidate all Project components with existing LADWP facilities, minimizing ongoing operation and maintenance impacts. Additionally, Alternative 2 would utilize approximately two miles of existing four-circuit structures in the southern portion of the ANF for the proposed transmission line, reducing the need for new towers. The consolidation of facilities would allow LADWP to utilize the existing network of access roads, resulting in the least ground disturbing impacts among the action Alternatives. The Alternative 2 230 kV double-circuit transmission line would traverse the unincorporated community of Green Valley. To minimize impacts to this community, Three-Circuit Tower Mitigation would be implemented, combining the existing BR-RIN line onto a single tower with the proposed transmission line.

Alternative 1 would include the longest transmission line and greatest temporary and permanent ground disturbing impacts among the action Alternatives. It would also create impacts to the only cultural resource in the Project study area currently listed on the National Register of Historic Places, the Old Ridge Route and its contributing components. Additionally, it would create unique impacts to the Castaic Lake State Recreation Area.

Alternative 2a, similar to the Proposed Action (Alternative 2), would locate a majority of the transmission line on federal land within the federal corridor identified in the West-Wide Corridor

PEIS, but would avoid the unincorporated community of Green Valley by exiting the corridor and creating a new pathway through the ANF for four miles before re-joining the federal corridor. The Alternative 2a transmission line would not parallel an existing transmission line or the proposed reconductoring activities for those four miles, resulting in construction, operation and maintenance impacts in additional areas of the ANF. Importantly, Alternative 2a would result in significant and unavoidable impacts to firefighting abilities within the ANF, by creating an indefensible Transmission Line Bounded Island of forest land between the existing BR-RIN and proposed transmission lines, where firefighting activities would be severely limited. Such an indefensible island would permanently put the unincorporated community of Green Valley, as well as the unincorporated communities of Lake Hughes and Elizabeth Lake, at higher risk from wildfires.

Alternative 3 would minimize the Project footprint on the ANF, but would impact the rural residential communities through which the proposed transmission line would traverse. It is the only Alternative that would require the acquisition of private residences. Seven residences would need to be acquired for the construction of the proposed 230 kV double-circuit transmission line associated with Alternative 3. It is also the only Alternative that would impact Mountains Recreation Conservation Authority land.