CHAPTER 4: ALTERNATIVES

4.1 INTRODUCTION

In accordance with the California Environmental Quality Act (CEQA) Guidelines, alternatives to the proposed Sylmar Ground Return System (SGRS) Replacement Project (Project or proposed Project) have been considered to foster informed decision-making and public participation. According to the CEQA Guidelines Section 15126.6(a), "an EIR [Environmental Impact Report] shall describe a range of reasonable alternatives to the proposed project, or to the location of the proposed project, which would feasibly attain most of the basic objectives of the proposed project, but would avoid or substantially lessen any of the significant effects of the proposed project, and evaluate the comparative merits of the alternatives." The CEQA Guidelines state that an EIR need not consider every conceivable alternative or consider alternatives that are infeasible. The alternatives analysis must also include a comparative evaluation of a No Project Alternative. Through evaluation of alternatives, the advantages and disadvantages of each alternative, compared with the proposed Project, can be determined.

As detailed in Chapter 3, the proposed Project would result in temporary significant impacts related to air quality, noise, and traffic during construction. Impacts would be less than significant for all other environmental factors during construction. There would be no significant impacts created during operation of the proposed Project. A range of alternatives was evaluated as a means to identify alternatives that might lessen significant impacts to the extent practicable.

The Project objectives establish the basis for identifying potential alternatives. The objectives for the proposed Project are to:

- maintain the reliability and stability of the power generation and delivery system for Southern California;
- continue to meet current and projected demand for power; and
- help increase the available share of renewable resource energy.

A detailed discussion regarding these objectives and their relation to the proposed Project is included in Chapter 2.

4.2 ALTERNATIVES

4.2.1 Energy Conservation

Under this alternative, the proposed Project as outlined in Chapter 2 of this Draft EIR would not be implemented in any manner. This would effectively result in the eventual removal of the Pacific Direct Current Intertie (PDCI) transmission line from service as the existing electrode component degrades and becomes unsafe or physically inoperable. To compensate for this removal from service, the requirement for the energy provided by the PDCI on an annual basis would be offset through energy conservation in the Southern California region. This would be achieved through both energy efficiency programs (which reduce the overall demand for electricity), and demand response programs (which decrease energy use during critical high-demand periods). The rationale for this alternative is that, if implemented, it would achieve the objective of the proposed Project related to maintaining the reliability and stability of the power generation and delivery system. It would also help meet the current and projected demand for power by reducing the demand for electricity rather than providing energy generation and transmission to meet that demand. While this alternative would not directly help increase the share of renewable resource energy available to the PDCI partners, it would achieve similar aims related to renewable energy generation, including a reduction in greenhouse gas and air pollutant emissions. If implemented, this

alternative would eliminate the need for the proposed Project as described in Chapter 2, thereby avoiding the environmental impacts associated with its construction.

In accordance with state law (Assembly Bill [AB] 2021), LADWP and the other PDCI partners have implemented aggressive energy conservation programs, including both demand response and energy efficiency programs, to help minimize growth in demand and lessen the need for additional generation and associated transmission infrastructure. LADWP's 2012 Power Integrated Resource Plan, which is the department's 20-year horizon framework plan reflecting policy commitments for electrical energy use, conservation, generation, and transmission, accounts for the load reductions expected to result from these programs. Based on LADWP's programs alone, over 400 megawatts (MW) of capacity that would otherwise need to be provided by some type of generation and/or transmission facility will be displaced by 2020. By 2030, these programs will displace the need for approximately 750 MW of generation/transmission capacity. Similar levels of capacity offsets will also be achieved by the other PDCI partners, in proportion to their total system generation/transmission requirements.

However, although conservation programs potentially represent a means of achieving the objectives of the proposed Project related to system reliability and energy demand, they do not represent a technically feasible alternative to the Project because their implementation has already been accounted for in the assessment of the need for the continued availability of the energy provided by the PDCI and, therefore, the need for the proposed Project to provide a replacement for the SGRS. Based on the long-range strategies to address demand-side and supply-side resources within the power system, energy efficiency and demand response programs are complementary to the proposed Project and will continue as planned whether or not the Project is implemented.

Furthermore, the displacement of the PDCI through conservation programs in the Southern California region would essentially strand very large amounts of electrical generation capacity in the Pacific Northwest, including renewable energy resources, which are currently accessed through the PDCI. New transmission facilities would likely be required to redirect the generated energy to alternate markets. The construction and operation of such facilities would likely result in environmental impacts that cannot be specifically ascertained at this time. In addition, the displacement of the PDCI would also eliminate the capability provided by the line to transmit energy from Southern California to the Pacific Northwest during seasonal variations in load and resource conditions.

However, the greatest limiting factor affecting the implementation of this alternative is the amount of power generation that would need to be displaced through conservation in order to eliminate the need for the proposed Project and, by extension, the PDCI. In order to replace the capacity provided by the PDCI, over 3,000 MW of additional power would need to be offset through conservation programs beyond that already projected under current and future programs. The levels of conservation under the current programs generally represent the realistically achievable, cost-effective level of savings derived from the latest energy efficiency potential studies conducted in accordance with AB 2021 and California Energy Commission guidelines; therefore, additional conservation programs capable of displacing the very large capacity provided by the PDCI are deemed infeasible. Because the additional energy conservation at a level necessary to offset the capacity of the PDCI is infeasible, this alternative has been dismissed from further detailed consideration in the Draft EIR.

4.2.2 PDCI Replacement

Under this alternative, the proposed Project as outlined in the Chapter 2 of this Draft EIR would not be implemented in any manner. Instead, the existing PDCI direct current (DC) transmission line would be replaced with multiple high-voltage alternating current (AC) transmission lines. Unlike the existing DC lines, AC lines would not require a ground return electrode system, the partial replacement of which is the

purpose of the proposed Project. New AC lines would allow for the continued transfer of electrical energy between the Pacific Northwest and Southern California, as is currently provided by the PDCI. The rationale for this alternative is that, if implemented, it would achieve all the objectives of the proposed Project related to maintaining the reliability and stability of the power generation and delivery system; continuing to meet the current and projected demand for power; and helping increase the available share of renewable resource energy. If implemented, this alternative would eliminate the need for the proposed Project as described in Chapter 2, thereby avoiding the environmental impacts associated with its construction.

This alternative would require the replacement of the entire 850-mile PDCI between The Dalles, Oregon, and Sylmar in order to avoid the requirement for a ground return electrode. This would involve both the southern portion of the line (south of the Oregon border) operated by LADWP and the northern portion of the line (within Oregon) operated by the Bonneville Power Administration. The construction of the replacement AC lines would take numerous years to complete, and because the existing PDCI could not be removed from service for an extended period, this alternative would require all new construction.

However, while technically achievable, numerous important factors would make this alternative effectively infeasible when compared to the proposed Project. First, while all transmission systems experience a loss of energy between the generation source and a receiving station due to electrical resistance in the conductors, in relation to the transfer of bulk power over long distances, AC lines experience approximately 40 to 65 percent greater losses compared to DC lines. Therefore, while an AC line would continue to provide for the transfer of power between Southern California and the Pacific Northwest, it would result in the delivery of less energy. In addition, a high-voltage DC transmission system linking distant AC distribution systems (as is currently the case) provides greater stability to the electrical grid, limiting the potential for cascading failures that might occur over an interconnected AC system, as would be created under this alternative.

Second, although they cannot be specifically ascertained at this time, the potential short-term and long-term environmental impacts related to the construction and operation of new AC lines over a distance of approximately 850 miles would be substantially greater than the impacts related to the construction of the 10-mile proposed Project. Based on these impacts, the approvals that would be required from multiple jurisdictions and agencies to construct the new AC lines under this alternative would be far from assured, especially considering the adequacy of the existing PDCI, assuming the proposed Project was implemented.

Last, the cost of replacing the entire PDCI would be vastly greater compared to the cost of replacing a portion of the existing SGRS. It would also render obsolete relatively recent and major financial investments in the converter stations at the northern and southern ends of the PDCI, which would no longer be required if energy was transferred on AC rather than DC lines.

For the above reasons, but in particular the economic considerations, this alternative is considered infeasible given that only limited portions of the SGRS require replacement to maintain the full functionality of the existing PDCI system. Therefore, this alternative has been dismissed from further detailed consideration in the Draft EIR.

4.2.3 Routing Alternatives

The above alternatives considered means by which the existing PDCI system might be supplanted, which would eliminate the need for the SGRS replacement as defined under the proposed Project, thereby avoiding the environmental impacts associated with its construction. However, for the reasons outlined above, these alternatives that might supplant the PDCI are considered infeasible. Therefore, rather than

removing the PDCI (and the SGRS) from service, portions of the existing SGRS must be replaced in order to maintain the functionality of the PDCI. The need for replacement is based on the deficiencies of certain segments of the SGRS, as described in Chapter 2 of this Draft EIR. Because it would maintain the functionality of the PDCI, such a replacement would meet all of the Project objectives related to maintaining the reliability and stability of the power generation and delivery system for Southern California; continuing to meet current and projected demand for power; and helping increase the available share of renewable resource energy. The alternatives discussed below therefore consider various routing options for the SGRS replacement that might reduce the impacts associated with construction within the proposed Project route.

As previously described in Chapter 2, the existing SGRS consists of three distinct segments: an overhead segment running from the Sylmar Converter Station to the Kenter Canyon Terminal Tower; an underground segment running from the Kenter Canyon Terminal Tower to the Sunset and Gladstone Vaults; and a marine segment running from the Sunset Vault to a point approximately 6,000 feet offshore in Santa Monica Bay. The CEQA Initial Study prepared for the Project and released for public review in September 2010 (see Appendix A of this Draft EIR), included the replacement of the existing overhead, underground, and marine cabling portions of the electrode system. The Initial Study indicated that further study was necessary to determine if a full replacement of the existing marine portion of the electrode system, including the electrode array as well as the cables, would be required. Subsequent review of the existing SGRS facilities has resulted in a refinement of the Project requirements. As described in Chapter 2, it has been determined that replacement of the existing overhead portion of the electrode system is not required; therefore, the replacement of this segment is no longer under consideration in the Draft EIR. However, subsequent review also established that a full replacement of the marine portion of the electrode system is necessary as part of the Project.

Although a full replacement of the existing underground and marine segments is required, several factors in relation to this replacement must be considered when determining potential Project routing alternatives. First, although the existing underground segment originates at the Kenter Canyon Terminal Tower, a functional replacement of this segment can originate at any point along the existing SGRS overhead segment upline of the Terminal Tower if such an origination point is feasible and provides for a reasonable alternative alignment that might reduce the impacts associated with the proposed Project alignment (which originates at the existing Terminal Tower). In other words, the purpose of the replacement of the existing underground segment is to provide a link between the existing overhead segment and the proposed marine segment. However, it is important to note that while an origination point located along the existing overhead segment upline of the Terminal Tower would eliminate the overhead portion of the electrode between this new origination point and the Terminal Tower, it would not alter the location or operation of the existing high-voltage transmission towers from which the existing overhead electrode wires are currently suspended, since these towers serve an entirely independent function unrelated to the SGRS and have substantially different operating requirements that establish their location.

Second, although the existing underground segment of the SGRS must be replaced, the replacement electrode cable would not necessarily need to be located underground if there was a readily available means to install wires in an aboveground configuration. Typically, this would involve suspending the wires from existing or new electrical transmission towers that would afford adequate ground clearance and would be located such that a reasonable and appropriate route would be provided to a vault sited at the coast to establish an origination point for the marine portion of the SGRS. Generally speaking, in densely developed urban settings, new aboveground towers are considered infeasible because of severe spatial constraints and the short- and long-term impacts associated with both the construction and operation of such facilities within a built-up environment. Therefore, because there are no existing towers in the Project area that would provide for an electrode pathway to a coastal location without new

construction or major reconstruction, a replacement cable for the existing SGRS underground segment within built-up urban environments would necessarily also need to be located underground.

Third, because the existing marine segment of the SGRS must be entirely replaced, including the electrode array, the landside origination point for this segment is no longer necessarily tied to the Sunset and Gladstone Vaults associated with the existing SGRS. Although this existing origination point for the marine segment may still be appropriate in relation to certain landside alignments, its inessential nature may inappropriately influence other potential landside alignments that would not otherwise logically terminate at the Sunset and Gladstone Vaults. The requirement to replace the marine portion of the SGRS in its entirety also presents an opportunity to relocate the actual electrode bed to a site farther offshore and in deeper water to help minimize potential impacts related to its operation compared to the existing marine elements of the SGRS. The electrode bed under the proposed Project would be located approximately three miles offshore, inside the jurisdictional limit of State waters, compared to approximately 1.1 miles offshore for the existing electrode bed. The electrode bed under the proposed Project would be located approximately 160 below mean sea level, compared to approximately 60 feet below mean sea level for the existing electrode bed.

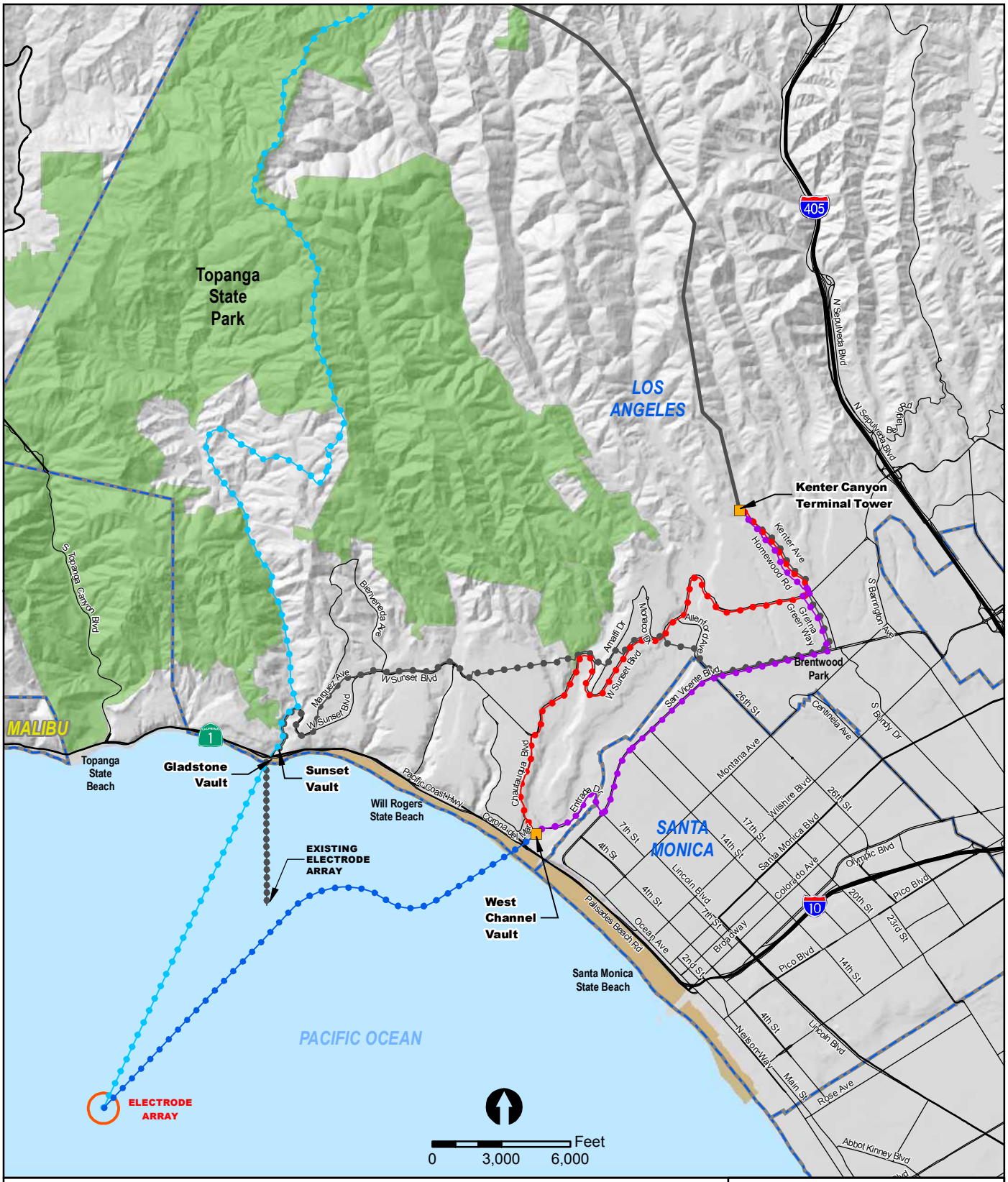
As well as the addition of the complete replacement of the marine segment, the factors described above also influence the configuration of the landside portions of the alternative SGRS replacement routes preliminarily set forth in the Initial Study, primarily by reducing their overall length. In all cases, the replacement of the existing overhead portion of the alternatives has been eliminated. As discussed above, this does not mean that all potential alternatives for the replacement of the existing underground segment must originate at the Kenter Canyon Terminal Tower, where the overhead line currently terminates. Therefore, from this perspective, the Topanga State Park Alignment included in the Initial Study remains valid in that it establishes a path between the overhead segment (upline of the Terminal Tower) to an underground segment leading to a potential origination point for the marine segment (at the Sunset and Gladstone Vaults) that would functionally replace the existing underground segment.

Because the overhead segment has been eliminated, the San Vicente Alignment included in the Initial Study (now the proposed Project in the Draft EIR) would logically originate at the Kenter Canyon Terminal Tower. However, because the complete replacement of the existing marine segment has now been determined to be necessary, terminating at the existing Sunset Vault located at Sunset Boulevard and Pacific Coast Highway (PCH) is no longer imperative. Therefore, the landside portion of the San Vicente Alignment terminates at the first coastal location opportunity at West Channel Road and PCH, where the replacement marine segment would originate. This location is within the bounds of the original San Vicente Alignment, but it would eliminate approximately 2.5 miles of underground cable installation along PCH between West Channel Road and Sunset Boulevard, which would reduce the overall duration of Project construction. While the length of the marine cable from the West Channel Road and PCH origination point to the proposed electrode bed site would be approximately five miles (compared to approximately three miles from the Sunset Vault to the new electrode bed), the duration, intensity, and impacts related to installation of this additional length of marine cable would be substantially less than those associated with trenching and duct bank construction on PCH from West Channel Road to Sunset (as was previously indicated for the San Vicente Alignment in the Initial Study).

Similarly, because the overhead segment has been eliminated, the Sunset Alignment included in the Initial Study would also logically originate at the Kenter Canyon Terminal Tower. Likewise, because the complete replacement of the existing marine segment has now been determined to be necessary, terminating the Sunset Alignment at the existing Sunset Vault located at Sunset Boulevard and PCH is no longer imperative. It has therefore been reconfigured to terminate at Chautauqua Boulevard and PCH, which provides a considerably shorter landside route. This reconfigured route would involve approximately one mile of underground cable installation on Chautauqua Boulevard that was not

previously included in the Sunset Alignment as indicated in the Initial Study, but it would eliminate approximately 3.5 miles of cable installation along Sunset Boulevard to the west of Chautauqua, which would reduce the overall duration of construction. As under the reconfigured San Vicente Alignment, although the marine cable installation from the Chautauqua Boulevard and PCH origination point to the proposed electrode bed site would be approximately two miles longer than the marine cable installation from the Sunset Vault, the duration, intensity, and impacts related to construction of this additional length of marine cable would be substantially less than those associated with trenching and duct bank construction on Sunset from Chautauqua Boulevard to PCH (as was previously indicated for the Sunset Alignment in the Initial Study), even given the addition of a segment of Chautauqua to the installation route.

Of these reconfigured alternatives, the San Vicente Alignment was selected as the proposed Project not only because it is the shortest route, but because within the landside portion, it presents the straightest alignment and is entirely located within public rights-of-way, characteristics that are important to constructability, operations, reliability, and access for future maintenance activities. However, as mentioned above the proposed Project would result in temporary but significant impacts related to air quality, noise, and traffic during construction. Therefore, the other routing alternatives (as reconfigured) that were included in the Initial Study are discussed below to determine if they could feasibly meet the Project objectives and eliminate or substantially reduce the impacts of the proposed Project. In addition to these alternatives, the potential to replace the underground segment of the electrode within the existing underground alignment is discussed. Figure 4-1 illustrates these alternatives relative to the Project.



Proposed Project
- Underground Alignment
- Marine Alignment
- Proposed Electrode Array

Routing Alternatives
- Topanga State Park Alignment
- Sunset Alignment
- Proposed Electrode Array

Existing Sylmar Ground Return System Alignment
- Existing Overhead Alignment
- Existing Underground Alignment
- Existing Marine Alignment

ROUTING ALTERNATIVES

SYLMAR GROUND RETURN SYSTEM REPLACEMENT PROJECT

POWER ENGINEERS

LA DWP

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Existing Underground Electrode Alignment

Under this alternative, the existing underground segment of the SGRS would be replaced within the existing electrode alignment between the Kenter Canyon Terminal Tower and the Sunset Vaults, and a new marine segment would be installed from the Sunset Vault to the proposed electrode bed location three miles offshore. Although the existing underground alignment basically parallels the proposed Project alignment between the Terminal Tower and San Vicente at 26th Street, the rationale for this alternative is that, if feasible, by essentially retrofitting the electrode cables within the existing vaults and duct banks, the majority of in-road trenching activities required for the proposed Project would be eliminated, and the impacts associated with these activities would be substantially reduced.

Although spare conduits were provided within the duct banks when the existing SGRS was constructed in the late 1960s, extended segments of the spare conduits have since been utilized for the installation of new electrical distribution cables. Therefore, replacing the electrode within the existing vaults and duct banks would first require the removal of the existing electrode cable in those segments where spare conduits are no longer available. Since the SGRS must remain operational until the proposed replacement Project is complete, the prior removal of the existing cable would make this approach infeasible. Therefore, this alternative has been dismissed from further detailed consideration in the Draft EIR.

Topanga State Park Alignment

Under this alternative, the existing underground segment of the SGRS would be replaced with an overhead line extending from Encino, on the north side of the Santa Monica Mountains, south through Topanga State Park to Pacific Palisades, where the line would be placed underground and continue southward to the Sunset and Gladstone Vaults. A new marine segment would be installed from the Sunset Vault to the proposed electrode location three miles offshore. The total landside length of the line under this alternative would be approximately 10 miles (approximately 5.5 miles of overhead and 4.5 miles of underground line). If implemented, this alternative would meet all the objectives of the proposed Project. The rationale for the Topanga State Park Alignment is that by avoiding the higher-density urban areas that characterize the proposed Project route, the direct impacts related to traffic, noise, and air quality created by the proposed Project construction would be reduced.

The Topanga State Park Alignment, as shown in Figure 4-1, would begin by branching off from the existing overhead segment of the SGRS approximately five miles upline of the Kenter Canyon Terminal Tower, at the intersection of Mulholland Drive and Sullivan Fire Road. (As noted above, while the overhead portion of the electrode would no longer extend to the Terminal Tower under this alternative, this would not affect in any way the location or operation of the existing high-voltage transmission towers from which the existing overhead wires are currently suspended, since these towers serve an entirely independent function from the SGRS related to the delivery of electrical power to areas of the City.) Under the Topanga State Park Alignment, approximately 200 existing wooden poles, currently supporting an existing 34.5-kV distribution line, would be removed, and approximately 60 new cylindrical steel poles would be installed to support the 34.5-kV conductors and the electrode wires in an overhead configuration. The new poles would be approximately 120 feet tall, compared to an average height of 48 feet for the existing poles. Taller poles would be required to structurally support the additional electrode wire and to allow for appropriate clearances between the ground and the power conductors and between the conductors and the electrode wire. The new poles would generally follow the same alignment as the existing poles for approximately five miles through the park and end in the Palisades Highlands neighborhood of Pacific Palisades, where the overhead line would transition to an underground installation.

The underground alignment would extend approximately 4.5 miles along Via Las Palmas, Chastain Parkway, Palisades Drive, and Sunset Boulevard to the existing Sunset Vault. Approximately 16 underground vaults (one approximately every 1,500 feet) would be placed along the route. The existing

Sunset Vault would be replaced and the existing Gladstone Vault, which would be the origination point for the marine segment, would be enlarged.

The total length of this alternative would be approximately 13 miles (consisting of 5.5 miles of overhead, 4.5 miles of underground, and three miles of marine installation) compared to a total length of the proposed Project of 10 miles (consisting of five miles of underground and five miles of marine installation). The overhead portion of the Topanga Alignment entirely avoids urban areas. While the underground portion (where trenching would be required) would pass through approximately two miles of residential neighborhoods in the Palisades Highlands neighborhood and a total of an additional mile of residential and commercial development along Palisades Drive and Sunset Boulevard, it typically avoids the higher-density areas characterizing the proposed Project route. In general, because the existing setting is less densely developed, this may result in reduced impacts related to traffic, noise, and air quality created by construction activities.

However, unlike the proposed Project, the Topanga State Park Alignment may result in significant impacts related to habitat and wildlife disturbance, visual resources, and recreation from construction and operations of the SGRS within the State Park boundaries. Such issues were initially raised by the California Department of Parks and Recreation (State Parks) and the Santa Monica Mountains Conservancy during the review of the Notice of Preparation and Initial Study for the Project. LADWP has since endeavored to resolve these potential issues with State Parks through several discussions that included proposals on such matters as pole configuration and materials, construction methods, and compensation for habitat impacts. However, after extensive review, State Parks determined that the proposed alignment through Topanga State Park was unacceptable for several reasons, including the previously mentioned visual and biological resource impacts. In addition, State Parks indicated that the proposed Topanga State Park Alignment is incompatible with general State Park policy regarding transmission line siting within park boundaries, with property use constraints imposed by federal Land and Water Conservation Funds (which were used to acquire the Topanga State Park lands), and with the General Plan for Topanga State Park. Even in the event of State Parks and Recreation Commission approval of the Topanga State Park Alignment (noted as an unlikely occurrence by State Parks), a lengthy General Plan Amendment and Land and Conservation Fund property conversion and replacement process would be required. The letter (dated July 3, 2013) issued by State Parks, as included in Appendix C of this Draft EIR, details the agency's disposition regarding the Topanga State Park Alignment. Based on the strong opposition of State Parks, which maintains complete ownership and control of the Topanga State Park property and against which LADWP possesses no legal rights, this alternative is infeasible and has been dismissed from further detailed analysis in the Draft EIR.

Sunset Alignment

Under this alternative, the existing underground segment of the SGRS would be replaced with an underground line extending from the Kenter Canyon Terminal tower primarily along Sunset Boulevard, terminating at PCH via Chautauqua Boulevard. A new marine segment would be constructed from a new vault on Chautauqua east of PCH to the proposed electrode bed location three miles offshore. If implemented, this alternative would meet all the objectives of the proposed Project. While it passes through a basically similar urban area as the proposed Project, the rationale for the Sunset Alignment is that, depending on the actual conditions related to traffic volumes and road capacities within the route, impacts related to traffic created by the proposed Project construction may be reduced.

The Sunset Alignment, as shown in Figure 4-1, would originate at the Kenter Canyon Terminal Tower and proceed southward for approximately one mile on Homewood Road and Kenter Avenue, and then turn west and proceed for approximately four miles along Sunset Boulevard to Chautauqua Boulevard. At Chautauqua Boulevard, the alignment would turn southward and proceed approximately one mile until reaching the vault location. Approximately 21 underground vaults (one approximately every 1,500 feet)

would be installed along the underground alignment. The marine segment of the Sunset Alignment would be the same as the marine segment for the proposed Project.

The total length of this alternative would be approximately 11 miles (consisting of six miles of underground and five miles of marine installation) compared to a total length for the proposed Project of 10 miles (consisting of five miles of underground and five miles of marine installation). Including land uses on both sides of the alignment, approximately 10 linear miles of residential land use and 0.2 linear miles of commercial land use front the Sunset Alignment, and two schools (Kenter Canyon Elementary School and Paul Revere Charter Middle School), and one park (Will Rogers State Beach) are located along the route, providing a similar urban environment to the proposed Project. This alternative would be located entirely within the City of Los Angeles.

Because the existing environment within the Sunset Alignment is generally similar to the environment within the San Vicente Alignment (i.e., a densely developed urban setting), and because construction activities would be basically the same and would occur in essentially the same timeframe as those associated with the proposed Project, impacts related to biological and cultural resources, air quality, and noise are anticipated to be similar to those created by the proposed Project. However, traffic impacts within different alignments may vary, even given similar construction activities because such impacts are related to the volume of traffic on the various roadway segments in relation to the capacities of the roadways as they are affected by in-street construction activities. The resulting volume to capacity (V/C) ratio would establish the level of service (LOS) on the roadway segment during construction, which can then be assessed relative to the LOS expected without construction activity to determine the impact to traffic in relation to the thresholds described in Section 3.2.5 of the Draft EIR.

In the case of the Sunset Alignment considered under this alternative, impacts to traffic along Homewood Road (Segments A and B; see Figure 4-2) would be the same as those for the proposed Project because Homewood Road north of Sunset Boulevard is included in both the Sunset Alignment and the proposed Project alignment. Therefore, in terms of comparing this alternative and the proposed Project, it is the potential impacts to traffic along Sunset Boulevard and Chautauqua Boulevard (within the Sunset Alignment) and the impacts along San Vicente Boulevard, Entrada Drive, and West Channel Road (within the proposed Project alignment) that are relevant.

Tables 4-1 and 4-2 illustrate traffic conditions within designated segments of the Sunset Alignment indicating the existing V/C ratio related to average daily traffic and peak-hour traffic, respectively. All segments within the alignment function at an acceptable LOS, except Chautauqua Boulevard, which functions at LOS E for average daily traffic and LOS F during the morning peak hour and LOS E during the evening peak hour. However, as shown in Table 4-3, the LOS in relation to average daily traffic in all segments along Sunset Boulevard would degrade to E or F, and on Chautauqua Boulevard would degrade to F when construction activities are occurring. As shown in Table 4-4, the LOS in all segments along Sunset Boulevard would degrade to E or F during both the morning and evening peak hours when construction activities are occurring; the V/C ratio on Chautauqua Boulevard would degrade from E to F during the evening peak hour and would worsen significantly within LOS F during the morning peak hour when construction activities are occurring.

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Traffic

Traffic Volume Segment

Routing Alternative

Sunset Alignment

SUNSET ALIGNMENT TRAFFIC SEGMENTS

SYLMAR GROUND RETURN
SYSTEM REPLACEMENT PROJECT

POWER ENGINEERS

LA DWP

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TABLE 4-1 EXISTING AVERAGE DAILY TRAFFIC

SEGMENT			CAPACITY	# OF LANES	VOLUME	V/C	LOS
A	Homewood Road	south of Elkins Road	5,000	2	764	0.153	A
B	Homewood Road	south of Bonhill Road	5,000	2	1,034	0.207	A
K	Sunset Boulevard	east of Bristol Circle	40,000	4	25,618	0.640	B
L	Sunset Boulevard	west of Napoli Drive	40,000	4	23,392	0.585	A
M	Sunset Boulevard	west of Brooktree Road	40,000	4	22,476	0.562	A
N	Chautauqua Boulevard	north of Almoloya Drive	15,000	2	14,677	0.978	E

TABLE 4-2 EXISTING PEAK-HOUR VOLUMES

SEGMENT			CAPACITY	# OF LANES	AM PEAK HOUR			PM PEAK HOUR		
					VOLUME	V/C	LOS	VOLUME	V/C	LOS
A	Homewood Road	south of Elkins Road	900	2	262	0.291	A	24	0.027	A
B	Homewood Road	south of Bonhill Road	900	2	150	0.167	A	58	0.064	A
K	Sunset Boulevard	east of Bristol Circle	2,500	4	2,049	0.820	D	1,557	0.623	B
L	Sunset Boulevard	west of Napoli Drive	2,500	4	1,647	0.659	B	1,756	0.702	C
M	Sunset Boulevard	west of Brooktree Road	2,500	4	1,562	0.625	B	1,631	0.652	B
M	Chautauqua Boulevard	north of Almoloya Drive	1,050	2	1,132	1.078	F	991	0.944	E

TABLE 4-3 EXISTING WITH PROJECT AVERAGE DAILY TRAFFIC

SEGMENT			CAPACITY	# OF LANES	VOLUME	V/C	LOS
A	Homewood Road	south of Elkins Road	1,250	1	764	0.611	B
B	Homewood Road	south of Bonhill Road	1,250	1	1,034	0.827	D
K	Sunset Boulevard	east of Bristol Circle	22,500	3	25,618	1.139	F
L	Sunset Boulevard	west of Napoli Drive	22,500	3	23,392	1.040	F
M	Sunset Boulevard	west of Brooktree Road	22,500	3	22,476	0.999	E
N	Chautauqua Boulevard	north of Almoloya Drive	3,750	1	14,677	3.914	F

TABLE 4-4 EXISTING WITH PROJECT PEAK-HOUR VOLUMES

SEGMENT			CAPACITY	# OF LANES	AM PEAK HOUR			PM PEAK HOUR		
					VOLUME	V/C	LOS	VOLUME	V/C	LOS
A	Homewood Road	south of Elkins Road	450	1	262	0.582	A	24	0.053	A
B	Homewood Road	south of Bonhill Road	450	1	150	0.333	A	58	0.129	A
K	Sunset Boulevard	east of Bristol Circle	1,575	3	2,049	1.301	F	1,557	0.989	E
L	Sunset Boulevard	west of Napoli Drive	1,575	3	1,647	1.046	F	1,756	1.115	F
M	Sunset Boulevard	west of Brooktree Road	1,575	3	1,562	0.992	E	1,631	1.036	F
N	Chautauqua Boulevard	north of Almoloya Drive	525	1	1,132	2.156	F	991	1.888	F

Tables 4-5 and 4-6 illustrate traffic conditions within designated segments of the Sunset Alignment indicating the future (2017, when construction is scheduled to occur) V/C ratio related to average daily traffic and peak-hour traffic, respectively. Once again, all segments within the alignment function at an acceptable LOS, except Chautauqua Boulevard, which functions at LOS E for average daily traffic and LOS F during the morning peak hour and LOS E during the evening peak hour. However, as shown in Table 4-7, the LOS in relation to average daily traffic in all segments along Sunset Boulevard and Chautauqua Boulevard would degrade to F when construction activities are occurring. As shown in Table 4-8, the LOS in all segments along Sunset Boulevard would degrade to F during both the morning and evening peak hours when construction activities are occurring; the V/C ratio on Chautauqua Boulevard would degrade from E to F during the evening peak hour and would worsen significantly within LOS F during the morning peak hour when construction activities are occurring.

TABLE 4-5 FUTURE BASE (2017) AVERAGE DAILY TRAFFIC

SEGMENT			CAPACITY	# OF LANES	EXISTING VOLUME	FUTURE		
						VOLUME	V/C	LOS
A	Homewood Road	south of Elkins Road	5,000	2	764	773	0.155	A
B	Homewood Road	south of Bonhill Road	5,000	2	1,034	1,046	0.209	A
K	Sunset Boulevard	east of Bristol Circle	40,000	4	25,618	25,905	0.648	B
L	Sunset Boulevard	west of Napoli Drive	40,000	4	23,392	23,645	0.591	A
M	Sunset Boulevard	west of Brooktree Road	40,000	4	22,476	22,728	0.568	A
N	Chautauqua Boulevard	north of Almoloya Drive	15,000	2	14,677	14,841	0.989	E

TABLE 4-6 FUTURE BASE (2017) PEAK-HOUR VOLUMES

SEGMENT			CAPACITY	# OF LANES	AM PEAK HOUR			PM PEAK HOUR		
					VOLUME	V/C	LOS	VOLUME	V/C	LOS
A	Homewood Road	south of Elkins Road	900	2	265	0.294	A	24	0.027	A
B	Homewood Road	south of Bonhill Road	900	2	152	0.169	A	59	0.065	A
K	Sunset Boulevard	east of Bristol Circle	2,500	4	2,072	0.829	D	1,574	0.630	B
L	Sunset Boulevard	west of Napoli Drive	2,500	4	1,665	0.666	B	1,776	0.710	C
M	Sunset Boulevard	west of Brooktree Road	2,500	4	1,579	0.632	B	1,649	0.660	B
M	Chautauqua Boulevard	north of Almoloya Drive	1,050	2	1,145	1.090	F	1,002	0.954	E

TABLE 4-7 FUTURE WITH PROJECT AVERAGE DAILY TRAFFIC

SEGMENT			CAPACITY	# OF LANES	VOLUME	V/C	LOS
A	Homewood Road	south of Elkins Road	1,250	1	773	0.618	B
B	Homewood Road	south of Bonhill Road	1,250	1	1,046	0.836	D
K	Sunset Boulevard	east of Bristol Circle	22,500	3	25,905	1.151	F
L	Sunset Boulevard	west of Napoli Drive	22,500	3	23,645	1.051	F
M	Sunset Boulevard	west of Brooktree Road	22,500	3	22,728	1.010	F
N	Chautauqua Boulevard	north of Almoloya Drive	3,750	1	14,841	3.958	F

TABLE 4-8 FUTURE WITH PROJECT PEAK-HOUR VOLUMES

SEGMENT			CAPACITY	# OF LANES	AM PEAK HOUR			PM PEAK HOUR		
					VOLUME	V/C	LOS	VOLUME	V/C	LOS
A	Homewood Road	south of Elkins Road	450	1	265	0.589	A	24	0.054	A
B	Homewood Road	south of Bonhill Road	450	1	152	0.337	A	59	0.130	A
K	Sunset Boulevard	east of Bristol Circle	1,575	3	2,072	1.316	F	1,574	1.000	F
L	Sunset Boulevard	west of Napoli Drive	1,575	3	1,665	1.057	F	1,776	1.127	F
M	Sunset Boulevard	west of Brooktree Road	1,575	3	1,579	1.003	F	1,649	1.047	F
N	Chautauqua Boulevard	north of Almoloya Drive	525	1	1,145	2.180	F	1,002	1.909	F

The impacts to traffic from construction along the Sunset Alignment are generally similar to those predicted for the proposed Project alignment. As under the proposed Project, for the purposes of impact determination, it is assumed that in order to complete the replacement of the electrode on schedule and to minimize the duration of construction in any one segment of the alignment, LADWP would seek a waiver from the City of Los Angeles' Mayor's Directive No. 2 restricting in-road construction activities during peak hours. Therefore, assuming such a waiver was granted, the impacts to traffic during peak hours under this alternative would be significant and unavoidable. In addition to these direct impacts on traffic congestion, the road curvature on Sunset Boulevard, as opposed to the straighter runs along San Vicente Boulevard, would make construction along Sunset Boulevard somewhat more difficult and may create potential traffic conflicts related to lines of sight. Based on this analysis, the Sunset Alignment alternative, while feasible and able to meet all the proposed Project objectives, would not eliminate or substantially reduce the temporary but significant impacts related to air quality, noise, or traffic during construction identified for the proposed Project.

4.2.4 No Project Alternative

A discussion of a No Project Alternative is required under CEQA. Under this alternative, the proposed Project would not be implemented in any manner, including through any of the alternatives discussed above. The No Project Alternative is technically feasible since no action would be taken. The No Project Alternative would eliminate the impacts directly associated with implementation of the proposed Project since no construction activities would occur. However, it would not meet any of the objectives identified for the proposed Project related to maintaining the reliability and stability of the power generation and delivery system for Southern California; continuing to meet current and projected demand for power; and helping increase the available share of renewable resource energy.

The No Project Alternative would effectively result in the eventual removal of the PDCI transmission line from service as the existing electrode component degrades and becomes unsafe or physically inoperable. As discussed in Chapter 2 of this Draft EIR, the PDCI's 3,100-MW capacity is shared among the PDCI partners, which in addition to LADWP, include Southern California Edison (SCE), and the cities of Burbank, Glendale, and Pasadena. LADWP owns a 40 percent share or approximately 1,240 MW, SCE owns a 50 percent share or approximately 1,550 MW, and the other partners own the remaining 10 percent share or approximately 310 MW of the PDCI capacity. Based on their allocation of the line's capacity, the PDCI provides approximately 20 percent of LADWP's peak demand for electrical energy, approximately 6.5 percent of SCE's peak demand, and a major portion of peak demand for the cities of Glendale, Burbank, and Pasadena.

The loss of the PDCI that would result from the No Project Alternative could not be, as discussed above, feasibly offset through the conservation of energy equal to the capacity of the line. The energy provided by the PDCI could not be replaced by other existing generation or transmission sources without substantial new construction or renovation of existing facilities, which would be counter to the concept of a No Project Alternative. Therefore, because the energy provided by the existing PDCI is essential to meet the demand for electricity in Southern California and ensure the reliability of the regional power generation and transmission system, the No Project Alternative is effectively infeasible, and it has been dismissed from further detailed discussion in the Draft EIR.

4.2.6 Summary

Table 4-9 provides with a summary of the Project Alternatives described above.

TABLE 4-9 COMPARISON OF THE ALTERNATIVES

ALTERNATIVE	FEASIBILITY	MEET PROJECT OBJECTIVES	AVOID OR LESSEN SIGNIFICANT ENVIRONMENTAL IMPACTS	RESULT IN IMPACTS NOT CREATED BY PROPOSED PROJET
Energy Conservation	Technically infeasible	N/A due to infeasibility	N/A due to infeasibility	N/A due to infeasibility
PDCI Replacement	Economically infeasible	N/A due to infeasibility	N/A due to infeasibility	N/A due to infeasibility
Existing Underground Electrode Alignment	Technically infeasible	N/A due to infeasibility	N/A due to infeasibility	N/A due to infeasibility
Topanga State Park Alignment	Infeasible due lack of jurisdiction and land ownership	N/A due to infeasibility	N/A due to infeasibility	N/A due to infeasibility
Sunset Alignment	Feasible	Would meet all Project objectives	No	May create additional traffic conflicts during construction due to curvature of portions of Sunset Boulevard and restricted sight lines.
No Project	Technically feasible but effectively infeasible due to consequences to regional electrical energy generation and transmission system	N/A due to infeasibility	N/A due to infeasibility	N/A due to infeasibility

4.3 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

In accordance with Section 15126.6(e)(2) of the CEQA Guidelines, an EIR shall identify an environmentally superior alternative among the alternatives, including the proposed Project. Environmental impacts related to the Sunset Alignment Alternative (including temporary but significant impacts related to air quality, noise, and traffic created during construction) would be similar to those created by the proposed Project. However, the Sunset Alignment may create additional traffic conflicts during construction due to the curvature of portions of Sunset Boulevard and the associated restricted sight lines. In addition, although the Sunset Alignment Alternative is essentially similar to the proposed Project (in terms of meeting objectives, the existing setting, the nature of construction procedures, and the type of impacts), the landside portion of the alternative is approximately six miles in length compared to five miles for the proposed Project. In this regard, the overall area of disturbance and the total duration of construction would be greater under the Sunset Alignment Alternative. Therefore, the proposed Project is considered the environmentally superior alternative.

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