CHAPTER 4 PROJECT ALTERNATIVES

Section 15126.6 of the California Environmental Quality Act (CEQA) requires that an Environmental Impact Report (EIR) describe a reasonable range of alternatives to the Proposed Project or to the Proposed Project location that would feasibly attain most of the Proposed Project objectives, but would avoid or lessen any significant environmental impacts. An EIR should evaluate the environmental impacts of the alternatives compared to the Proposed Project. This chapter of the EIR describes and evaluates project alternatives and is intended to implement the requirements set forth in the CEQA Guidelines (14 CCR 15000 et seq.). This chapter also identifies the Environmentally Superior Project Alternative as required by CEQA Guidelines Section 15126.6(e)(2).

4.1 Rationale for Alternatives Selection

The following discussion covers a reasonable range of feasible alternatives that focuses on avoiding or substantially lessening any significant effects of the Proposed Project, even if these alternatives would not attain all of the Proposed Project objectives or would be more costly. The discussion shall focus on alternatives to the Proposed Project that are capable of meeting most of the Proposed Project objectives identified in Chapter 1, Project Description, of this EIR and also included below. According to the CEQA Guidelines, many factors may be taken into account when addressing the feasibility of alternatives, such as environmental impacts, site suitability as it pertains to various land use designations, economic viability, availability of infrastructure, regulatory limitations, and jurisdictional boundaries. Also according to CEQA Guidelines Section 15126.6(d), discussion of each alternative should be sufficient "to allow meaningful evaluation, analysis, and comparison with the Proposed Project." Therefore, the significant effects of each alternative are discussed in less detail than those of the Proposed Project, but in enough detail to provide decision makers with perspective and a reasoned choice among alternatives to the Proposed Project.

Additionally, a No Project Alternative is required to be included in the range of alternatives. An EIR need not consider an alternative whose effects cannot be reasonably identified, whose implementation is remote or speculative, or one that would not achieve most of the basic Proposed Project objectives. Finally, the Environmentally Superior Alternative shall be identified and if it is the No Project Alternative, the next Environmentally Superior Alternative shall be identified.

The Proposed Project would result in potentially significant and unavoidable adverse impacts for which feasible mitigation measures would not reduce the impacts to below a level of significance for aesthetics. Implementation of feasible mitigation measures would reduce potentially significant impacts to the following issue areas to less than significant: biological resources; cultural resources; hazards and hazardous materials; noise; paleontological resources; and public

services. Potential impacts to the following issue areas were determined not to be significant after further evaluation: air quality; geology, soils, and seismicity; greenhouse gas (GHG) emissions; hydrology and water quality; land use and planning; transportation and traffic; and utilities and service systems. The following issues were determined to not be significant or have no impact in the Initial Study process: agriculture and forestry resources, mineral resources, population and housing, and recreation.

The project alternatives evaluated are addressed in Sections 4.3, 4.4, and 4.5 in this chapter and include the following:

- Alternative 1: Reduced 15 MW Project Alternative
- Alternative 2: North Layout Project Alternative
- Alternative 3: No Project Alternative

The above alternatives were selected to avoid or lessen significant impacts associated with the Proposed Project while still meeting the majority of the Proposed Project objectives. The alternatives are compared to the impacts of the Proposed Project. A qualitative summary of the alternatives that compares their potential impacts is provided in Table 4-1, Summary of Alternatives to the Proposed Project. As described in Chapter 1, the Proposed Project objectives are as follows:

1. Develop approximately 20 megawatts (MW) of renewable solar energy that can operate during on-peak power periods to indirectly reduce the need to emit greenhouse gases (GHGs) caused by the generation of similar quantities of electricity from either existing or future non-renewable sources to meet existing and future electricity demands.
2. Develop a solar energy project that can meet the criteria to achieve the maximum federal solar Investment Tax Credit which is intended to decrease the cost of renewable energy generation and delivery, promote the diversity of energy supply, decrease dependence of the United States on foreign energy supplies and improve United States security.
3. Balance the development of the solar energy facility with the protection of resources, which may include preservation of on-site biological and cultural resources and the establishment of a wildlife movement corridor.
4. Develop a utility-scale solar energy project that improves local electrical reliability for the San Diego region by providing a source of local generation as near as possible to the East County (ECO) Substation and other recent regional transmission improvements.
5. Provide a new source of energy storage that assists the state in achieving or exceeding the energy storage target of 1.3 gigawatts of energy by 2020, consistent with the terms of Assembly Bill (AB) 2514.

6. Assist in directly achieving or exceeding the state's Renewable Portfolio Standard (RPS) and GHG emissions reduction objectives by developing and constructing California RPS-qualified solar generation, approved under Senate Bill (SB) X1 2, which established renewable energy targets of 20% total electricity sold to retail customers by the end of 2013, 25% by the end of 2016, and 33% of total electricity sold to retail customers by 2020.
7. Site solar power plant facilities in areas within the County of San Diego (County) that have excellent solar attributes, including but not limited to high direct normal irradiance (DNI), in order to maximize productivity.
8. Develop a utility-scale solar facility within San Diego County supporting the economy by investing in the local community, creating local construction jobs, and increasing property tax revenue.

4.2 Alternatives Considered but Rejected

As noted previously, the purpose of an alternatives analysis is to develop alternatives to the Proposed Project that substantially lessen at least one of the significant environmental effects identified as a result of the Proposed Project, while still meeting most, if not all, of the basic Project objectives. Here, the Proposed Project results in impacts that, in the absence of mitigation, would be significant. Project alternatives that would avoid or reduce the severity of impacts identified under the Proposed Project are addressed later in this chapter.

In addition to the project alternatives listed above, the Project Applicant and County went through an extensive site planning exercise to identify and avoid constraints that included analysis of numerous land use plans. This exercise was intended to create a project that was optimal at energy generation and optimally sensitive to environmental constraints, and ultimately resulted in the Proposed Project. Successive site plans explored through this exercise were considered but rejected from further analysis in the EIR because they did not accomplish most of the basic Proposed Project objectives or would result in greater impacts than the Proposed Project.

Specifically, two alternatives were evaluated in more detail (Option 1 and Option 2) that included the disturbance of over 120 acres and proposed a development footprint that impacted additional areas of high sensitivity for cultural resources and biological resources, including potential waterways, would be more visible, and resulted in increased demand for water supply. The number of solar arrays under Option 1 was estimated at 115,920 panels capable of generating 30 MW, and 84,240 panels capable of generating 26 MW under Option 2. The increased impacts to cultural resources and biological resources, compared to the Proposed Project, would have resulted from an increased footprint, grading, and disturbance area and would have inhibited the ability of the Project to balance development with the protection of resources. In addition, under these alternatives the amount of water required for washing the

arrays as well as for annual soil stabilization was greater than under the Proposed Project because of the increased disturbance area and number of panels. The length of project construction and the number of truck trips and construction workers was extended compared to the Proposed Project for similar reasons. The increased construction and disturbance increases dust and air pollutant emissions compared to the Proposed Project. The options maximize the potential for energy generation on the property. However, because these two alternatives would result in greater environmental effects compared to the Proposed Project, they were dismissed from further analysis.

Energy Efficiency Ordinance Alternative

Energy Conservation and Demand-Side Management programs are designed to reduce customer energy consumption. Regulatory requirements dictate that supply-side and demand-side resource options should be considered on an equal basis in a utility's plan to acquire the lowest cost resources. These programs are designed to either reduce the overall use of energy or to shift the consumption of energy to off-peak times.

Under the direction of the California Public Utilities Commission (CPUC), San Diego Gas & Electric, Southern California Edison and other local utilities offer a number of energy conservation programs for customers, including financial incentives for installing specific energy-efficient appliances or taking other measures to conserve energy. Local utilities also provide programs, such as inline energy profiling and in-home energy audits, to make customers more aware of their energy usage and of ways to conserve, as well as a variety of free brochures on improving energy efficiency. Under this alternative, the Proposed Project would not be built. Instead, the need for the electricity to be generated by the Proposed Project would be met through increased conservation and load-management activities.

The Energy Efficiency Ordinance Alternative would result in a significant reduction in impacts as compared with the Proposed Project. However, while energy efficiency would reduce energy demand and overall GHG emissions, it would not meet the Proposed Project objectives related to directly achieving the state RPS, creating utility-scale solar energy in the San Diego region, or provide a new source of energy storage that assists the state in achieving or exceeding the renewable energy storage target. This alternative could not be implemented by the Project Applicant in a reasonable period of time. Therefore, because this alternative would not meet the basic Proposed Project objectives, it was eliminated from further consideration in this EIR.

Distributed Generation Policy – Rooftop Solar Panels and Other Alternative Fuel Supplies Alternative

Under this alternative the Proposed Project would not be built. Instead, distributed generation including but not limited to residential and commercial roof-top solar panels, biofuels, hydrogen

fuel cells, and other renewable distributed energy sources would be installed throughout San Diego County in place of the Proposed Project. While this alternative, including rooftop solar, would result in a significant net reduction in project impacts as compared with the Proposed Project, it is outside the control of, and could not be implemented by, the Project Applicant within a reasonable period of time. The County has adopted a Property Assessed Clean Energy (PACE) program that enables property owners to finance energy reduction improvements, for which fees and interest rates apply.

This alternative would not meet the Proposed Project objectives since it would not create utility-scale solar energy facilities or directly assist in achieving or exceeding the state's RPS and GHG reduction objectives of obtaining 33% of electricity from renewable resources by 2020 or the state's renewable energy storage target. Although this alternative would result in increased generation of renewable energy sources, at present, most rooftop solar is ineligible to contribute toward the RPS. Additionally, current trading mechanisms by which distributed generation facilities could contribute indirectly to the RPS target are either impractical for small-scale systems or ineligible for utility participation. While a 2010 CPUC decision was issued authorizing the use of tradable renewable energy credits (CPUC Decision 10-03-021), the market is in its infancy, with limited activity. As a consequence, the lack of a market for tradable renewable energy credits means that no agreed mechanism currently exists to allow developers to purchase or trade small-scale distributed generation that could displace the development of utility-scale solar facilities, which directly contribute to the RPS goals. Therefore, any market and consequently any distributed generation solution as an alternative to the Proposed Project would be infeasible. This alternative could not be implemented by the Project Applicant in a reasonable period of time because the Applicant would have to take years to obtain site control and to install the tens of thousands of solar panels necessary to generate 20 MW of energy from solar. Therefore, because this alternative would not meet the basic Proposed Project objectives, it was eliminated from further consideration in this EIR.

Feasibility—Distributed Solar Photovoltaic Alternative

As a rough approximation, 100 square feet of solar photovoltaic (PV) panels deliver 1 kilowatt (kW) capacity, and the average size of a domestic system in San Diego is about 4.5 kW (San Diego Regional Renewable Energy Study Group 2005). Therefore, to deliver the equivalent capacity of 20 MW of the Proposed Project, the Project Applicant would need approximately 4,450 domestic systems to secure the equivalent capacity and energy proposed by the Proposed Project.

The CPUC reports annually on the number of new solar installations and the cumulative installed capacity in California through its California Solar Initiative Program, which provides incentives for installation of individual solar PV systems within the service territories of California investor-owned utilities (CPUC 2014). The California Solar Initiative Program does not include

wholesale solar power plants, which are designed to serve the electric grid, nor does it contribute toward the utilities' RPS obligations. At the end of 2013, California had installed 1,982 MW of solar capacity at 207,931 sites in the investor-owned utilities territories. Within San Diego Gas & Electric territory, 31,955 systems, providing 235 MW, were connected by the end of 2013 (CPUC 2014). In contrast the Proposed Project can develop a high level of PV because it contains an energy storage component to provide stored power when there is a sharp drop in localized voltage. Distributed generation does not have feasible energy storage because energy storage devices come in large containers that are not compatible with installation on a rooftop or in a residential yard. Given recent averages for rooftop solar installations, the sheer number of new installations required to deliver up to an additional 20 MW of solar electricity by 2016 render this alternative infeasible from a practical timing perspective. In addition, as yet undefined technical hurdles associated with high levels of distributed generation development exist that create imbalances in the grid system. The intermittent performance characteristics of PV result in rapid localized voltage drops. As a consequence, extensive upgrading to substations may be required to cope with such variation. Accordingly, this alternative would not be feasible, as it could not be implemented by the Project Applicant in a reasonable period of time and would not meet the basic Proposed Project Objectives.

Technical Feasibility—Other Generation Technologies Alternative

Other generation technologies are as yet unproven or have limited potential growth. For example, fuel cell technologies, including the Bloom Box, have only been installed in a few pilot projects and/or have a limited development potential. Such technology only qualifies as a renewable energy resource if run on biogas. Biogas capacity in California is both limited and expensive. Of the 704 MW potentially available (Rickerson et al. 2008), 35% has already been developed, leaving no more than 451 MW for future development. Replacing the proposed 20 MW of solar generation with biogas would not be feasible for the following reasons: (a) the technology is not within the control of the proponent and it could not be implemented by the Project Applicant in a reasonable period of time and (b) approximately 37% of the known available capacity would be needed to offset the solar capacity proposed by the Proposed Project.

This alternative would not meet the Proposed Project objectives related to achieving or exceeding the state RPS or creating utility-scale solar energy in the San Diego region, nor would it provide a new source of renewable energy storage that assists the state in achieving or exceeding the energy storage target.

Wind Energy Alternative

In some circumstances, wind projects are a viable alternative to solar projects; however, there is very little land available within San Diego County that has wind resources suitable for utility-scale wind energy facility development (approximately 1.5% of the unincorporated areas of San

Diego County). The Applicant lacks site control over land with such wind power potential in San Diego County and it would take years to negotiate site control and conduct due diligence on such an alternative site. In addition, wind energy projects would likely have greater significant impacts related to aesthetics, biological resources, noise, and land use and planning, as compared to the Proposed Project.

Although the Wind Energy Alternative would help the state meet renewable energy goals, would be a utility-scale energy project, and would likely be able to assist the state in meeting energy storage goals, it would not meet most of the Proposed Project objectives related to developing solar energy resources in San Diego County. Since this alternative would likely result in greater significant impacts than the Proposed Project, would not meet several of the objectives, and could not be implemented within a reasonable period of time, it was eliminated from further consideration in this EIR.

Alternative Locations

Section 15126.6(f)(2) of the CEQA Guidelines addresses alternative locations for a project. The key question and first step in the analysis is whether any of the significant effects of the Proposed Project would be avoided or substantially lessened by putting the Proposed Project in another location. Only locations that would avoid or substantially lessen any of the significant effects of the project need to be considered for inclusion in the EIR. Further, CEQA Guidelines Section 15126.6(f)(1) lists several factors that may be taken into account when addressing feasibility of alternatives (any alternative, not just alternative locations) and states that "No one of these factors establishes a fixed limit on the scope of reasonable alternatives." The site has been selected in accordance with Objective 4, locating solar facilities near existing or planned electrical transmission facilities. The Proposed Project Applicants do not own or have the ability to easily acquire other sites in the San Diego region that meet this objective. The Proposed Project site has been selected in accordance with Objective 7, which calls for solar power plant facilities to be sited in areas with excellent solar attributes, including but not limited to high DNI, in order to maximize productivity. The Proposed Project site location also provides high DNI, both because of its elevation and because the Jacumba area climate zone provides hot summers and mild winters with minimal coastal marine influence, which is also beneficial for solar energy production. The Applicant and County have explored a number of alternative locations throughout San Diego County and have screened these locations for their capability to meet the Project objectives, including the presence of excellent solar attributes. There are no other known available parcels of undeveloped land of similar size in the eastern portion of the County that could accommodate development of the Proposed Project that have not already been considered and rejected for development of a similar solar project, provide adequate site accessibility, and/or could be acquired by the Applicant within a reasonable period of time. In addition, the proposed site is zoned and suitable for solar generation with a Major Use Permit. Therefore, an off-site or

alternate project location was dismissed from further evaluation because a suitable site was not identified within the County that would fulfill the basic Project objectives, would avoid or substantially lessen an environmental effect, and/or would be potentially feasible.

4.3 Analysis of the Reduced 15 MW Project Alternative (Alternative 1)

4.3.1 Alternative 1 Description and Setting

The Reduced 15 MW Project Alternative (Alternative 1) would consist of approximately 61,000 PV modules fitted on 1,700 fixed-tilt rack panels. This is approximately 20,000 fewer PV modules and 550 fixed-tilt rack panels compared to the Proposed Project. This alternative would be developed on approximately 75 acres, at two distinct array sites: one in the eastern portion of the property and one in the western portion, with a collector line and road connecting the two array sites across the property, as shown on Figure 4-1. This alternative would generate approximately 15 MW of renewable solar energy. Battery storage for 5 MW would be included in this alternative adjacent to the substation site on the northeast portion of the solar facility site. The gen-tie line connection to the ECO Substation would be located below grade (underground), along the same alignment as the Proposed Project.

The length of project construction would essentially remain the same as the Proposed Project (6 months), as would site access and number of employees.

4.3.2 Comparison of the Effects of Alternative 1 to the Proposed Project

Aesthetics

As described in Section 2.1, Aesthetics, of this EIR, the Proposed Project would result in significant impacts related to visual character or quality and less than significant impacts for scenic vistas and recreation users (see Table 4-1 and Table 4-2, Analysis for Alternatives to the Proposed Project). The Proposed Project would result in a significant impact associated with glare, for which mitigation (**M-AE-1. M-AE-2, and M-AE-4**) is provided that reduces the level of impact to less than significant. The Proposed Project's potentially significant impact to visual character and quality would only be partially mitigated by **M-AE-1**, resulting in a significant unmitigated aesthetic impact.

The Proposed Project would result in less than significant impacts related to scenic vistas. Under Alternative 1, the project viewshed would encompass a reduced area located adjacent to the eastern boundary of the site. Views of the site from Old Highway 80 and Interstate 8 (I-8) would essentially be the same as the Proposed Project because this alternative includes the same site area as the Proposed Project. However, components most visible on the southeast side of the on-site hillside of the Proposed Project would be absent under this alternative, substantially reducing

the visibility and related effects compared to the Proposed Project. The linear aspect of the solar facility would be broken up by having the two distinct sites. This could substantially reduce visual impacts by reducing the length of linear landscape interruption and affording a visual break in the facility. Furthermore, the undergrounding of the gen-tie line would eliminate overhead lines and transmission poles. This would be a substantial reduction in the visual impacts but would not mitigate the impact to below a level of significance even with implementation of **M-AE-1** because it would still introduce an industrial scale solar facility that would introduce a line and color contrast from the perimeter access road. Views of the majority of project site would be blocked by terrain and vegetation under this alternative, the same as the Proposed Project. Views of the project site from recreation areas would result in impacts similar to the Proposed Project: **less than significant**.

Increase in light and glare associated with this alternative would be similar to the Proposed Project and implementation of **M-AE-1, M-AE-2, and M-AE-4** would still be required. The solar panels would be oriented to the south, the same as the Proposed Project, and would be non-reflective; therefore, daytime glare would not be generated. However, similar to the Proposed Project, other reflective materials could be introduced that could be visible to motorists passing by the site, resulting in a potentially significant impact. This impact would be reduced under this alternative with the layout excluding from the hillside present within the project site. Significant and unmitigable impacts triggered by the vertical components (poles) necessary for the gen-tie line identified for the Proposed Project would be avoided by undergrounding the gen-tie line under this alternative, which is a substantial reduction. The potential for impacts associated with vacating the site upon termination of the Project would result to a reduced area but with the same significance conclusion under this alternative compared to the Proposed Project and mitigation measure **M-AE-3** would be required. Mitigation measures **M-AE-1 through M-AE-4** would be required for this alternative and impacts would not be less than significant, similar to the Proposed Project, because the line and color contrasts would remain unmitigated. Impacts overall from Alternative 1 would be substantially reduced compared to those associated with the Proposed Project.

Biological Resources

Alternative 1 would result in impacts to approximately 6.3 acres of disturbed land, approximately 12.4 acres of Peninsular juniper woodland and scrub, and approximately 56.3 acres of semi-desert chaparral. Mitigation acreages necessary would be approximately 37.2 acres of Peninsular juniper woodland and scrub and approximately 56.3 acres of semi-desert chaparral. The acreages of impacts for this alternative would be reduced compared to the Proposed Project, both overall and for each vegetation community. The overall disturbance footprint for this alternative would be reduced, reducing acreage impacts to semi-desert chaparral and Sonoran mixed woody scrub habitat communities. Biological impacts to Peninsular juniper woodland and

scrub associated with the gen-tie would be increased as a consequence of the increased distance and necessary trenching construction activities to install the line. Overall, the biological impacts of Alternative 1 would be reduced in severity compared to the Proposed Project but the same in significance conclusion compared to the Proposed Project. While substantially reduced in severity, impacts to biological resources under this alternative would be significant, requiring similar mitigation as that described for the Proposed Project. Furthermore, impacts to non-wetland waters of the United States, excluding the gen-tie, would be increased as a consequence of this alternative site layout with approximately 0.16 acre of non-wetland waters impacted, compared to the 0.14 impacted by the Proposed Project. .

Cultural Resources

Alternative 1 would result in a reduced area of ground disturbance for the solar facility, which would reduce the potential for disturbance of unknown cultural resources. However, the cultural impacts associated with the gen-tie would be increased as a consequence of the necessary subsurface construction activities to install the line underground by trenching or drilling through the area containing known sensitive resources. Overall impacts to cultural resources would be similar to those identified for the Proposed Project.

Hazards and Hazardous Materials

As described in Section 2.4, Hazards and Hazardous Materials, the Proposed Project would result in significant impacts related to risks of wildfires. Although Alternative 1 would be reduced in size, the introduction of new ignition sources would result in the same impacts as the Proposed Project. The requirement for a fire protection plan and mitigation measure **M-HZ-1** to develop a construction fire prevention plan building off the provided conceptual construction fire prevention plan and **M-HZ-2** to contribute funding for emergency responses would apply to this alternative, as they do to the Proposed Project. All other impacts associated with hazards and hazardous materials would be similar to the Proposed Project: **less than significant**.

Noise

As described in Section 2.5, Noise, the Proposed Project would result in a potentially significant impact related to operational noise. Incorporation of mitigation measure **M-N-1** would reduce potential impacts to less than significant.

Alternative 1 would reduce construction and operational noise and vibration by reducing the number of panel rack(s) constructed on the site and the overall amount of construction equipment, as well as potentially the sizing of components for the substation and battery storage. Similar to the Proposed Project, this alternative would incorporate mitigation measures to reduce potential noise impacts to less than significant. The operation of the on-site heating, ventilation,

and air-conditioning (HVAC) system and power inverters would also exceed the County's Noise Ordinance along portions of the boundary of the project site, requiring implementation of **M-N-1**. Compliance with this measure would reduce significant noise impacts to less than significant. Therefore, although impacts under this alternative would be reduced compared to the Proposed Project, both the Reduced 15 MW Project Alternative and the Proposed Project would result in **less than significant** noise impacts with mitigation incorporated. Although reduced in severity compared to impacts associated with the Proposed Project, impacts from Alternative 1 would have the same significance conclusion, though initial impacts would be substantially reduced in severity compared to those associated with the Proposed Project..

Paleontological Resources

Alternative 1 would result in a reduced area of ground disturbance for the solar facility, which would reduce the potential for disturbance of unknown paleontological resources. Though reduced in disturbance area, the area of high sensitivity for paleontological resources would not be avoided. Impacts from this alternative would be reduced but have the same significance conclusion compared to those associated with the Proposed Project.

Other Resource Topics

Impacts associated with the Reduced 15 MW Project Alternative (Alternative 1) related to air quality; geology, soils, and seismicity; GHG emissions; hydrology and water quality; public services; recreation; traffic and transportation; and utilities and service systems would be the same as or less than those associated with the Proposed Project. This alternative would include the same technologies and location as the Proposed Project but would have a reduced footprint, reduced number of components (solar panels, inverters, etc.), and reduced MW generation compared to the Proposed Project.

4.4 Analysis of the North Layout Project Alternative (Alternative 2)

4.4.1 Alternative 2 Description and Setting

The North Layout Project Alternative (Alternative 2) would include reduced disturbance in the southern portion of the property and increased disturbance in the northern portion, with a modest overall footprint reduction of less than 10 acres compared to the Proposed Project. The reduced available footprint acreage under this alternative would prohibit the development of a battery storage facility. Battery storage would not be included in this alternative.

Under Alternative 2, approximately 100 acres would be disturbed and approximately 76,000 PV modules fitted on approximately 2,120 fixed-tilt rack panels would be developed. This is approximately 5,100 fewer PV modules and 133 fixed-tilt panels than the Proposed Project. The

footprint or area of disturbance would be limited to the mid and the eastern portion of the property, as shown in Figure 4-2. The total number of solar arrays developed on site would be comparable to the Proposed Project. This alternative would generate 20 MW of renewable solar energy. This alternative would retain a 50-foot fuel modification zone along the edge of the perimeter solar arrays. Under this alternative, the total disturbed acreage would be approximately 100 acres and is designed to avoid the larger known cultural resources to the maximum extent feasible. The gen-tie connection to the ECO Substation would be constructed above grade under this alternative, along the same alignment as the Proposed Project.

The length of project construction would essentially remain the same as the Proposed Project, as would site access and number of employees.

4.4.2 Comparison of the Effects of Alternative 2 to the Proposed Project

Aesthetics

As described in Section 2.1, Aesthetics, the Proposed Project would result in significant impacts related to visual character or quality and glare. The Proposed Project would result in less than significant impacts related to scenic vistas and certain recreation users. Under Alternative 2, the project viewshed would encompass more of the project site from Old Highway 80 and it would be more visible to motorists because it would be located considerably closer to the highway compared to the Proposed Project. Under this alternative, the existing topography that obstructs the view to the Proposed Project site from Old Highway 80 would be in the background; therefore, this alternative would be more visible to motorists on Old Highway 80, as it would not be blocked by terrain and vegetation. The panoramic views along this segment of the highway are not considered highly valued because they are not continuous along this segment and are instead available as motorists pass over several small ridges; however, locating the project in close proximity to Old Highway 80 would change the viewshed and would create impacts more severe than those under the Proposed Project. Views of the project site from recreation areas would result in impacts greater than the Proposed Project.

The introduction of the project site in this area with solar panels and other equipment would alter the visual character of the existing undeveloped environment, resulting in a potentially significant impact, the same as the Proposed Project, but the impacts would be more severe. The components of Alternative 2 would be more visible from the key observation points because they would be on the viewer-facing side of the existing topography (hills). This would result in this alternative presenting a clearer visible extension of the linear disturbance to the landscape. Impacts to aesthetics from this alternative would be significant. Although implementation of **M-AE-1 through M-AE-3** would provide partial mitigation, there is no feasible mitigation that would reduce the visual character impacts to below the level of significance. The visual character

impact would be significant and unavoidable for this alternative as a consequence of the vertical (pole) components for the aboveground gen-tie line similar to that identified for the Proposed Project and because the line and color contrast from the perimeter access road would remain unmitigated. In addition, the visual character impact would be significant and unmitigated as a consequence of increased visibility of solar arrays, substation, and other proposed components being brought into the foreground of potential views.

Under Alternative 2, the project could detract from a valued focal and/or panoramic vista from Old Highway 80; however, panoramic views along this segment of the highway are not considered valued due to existing infrastructure that exists in the project vicinity. Locating the project closer to Old Highway 80 under this alternative would create impacts more severe than those under the Proposed Project due to the greater visibility from the roadway. Increase in light and glare associated with this alternative would be similar to the Proposed Project, although increased in terms of the proportion of the Project visible, and implementation of mitigation measures **M-AE-1 and M-AE-2** would still be necessary. Because of the exclusion of batter storage, mitigation measure **M-AE 4** would not be required under this alternative. The potential for impacts associated with vacating the site upon termination of the Project would result in a reduced area but with increased severity due to the increased visibility form public vantages of the site. The significance conclusion would be the same under this alternative compared to the Proposed Project and mitigation measure **M-AE-3** would be required. The solar panels would be oriented to the south, the same as the Proposed Project, and would be designed to absorb sunlight and treated with a non-reflective coating; therefore, daytime glare would not be generated that would be visible from I-8 or Old Highway 80. However, similar to the Proposed Project, other reflective materials could be introduced that would be visible to motorists passing by the site, resulting in a potentially significant impact. Implementation of **M-AE-1 and M-AE-2** would reduce glare impacts to **less than significant** for this alternative as it would for the Proposed Project. Overall impacts to aesthetics would be increased in severity, although the same in significance conclusion compared to the Proposed Project.

Biological Resources

Alternative 2 would result in impacts to approximately 2.1 acres of disturbed land, approximately 41.5 acres of Peninsular juniper woodland and scrub, and approximately 56.2 acres of semi-desert chaparral. Mitigation acreages necessary would be approximately 124.5 acres of Peninsular juniper woodland and scrub and approximately 56.2 acres of semi-desert chaparral. The acreages of impacts for this alternative would be substantially reduced compared to the Proposed Project, both overall and for each vegetation community, with the exception of the sensitive Peninsular juniper woodland scrub. Impacts to this vegetation community would increase by approximately 16.9 acres, necessitating increased mitigation. Impacts attributed to the Proposed Project associated with biological resources, including sensitive species such as

Quino checkerspot butterfly (*Euphydryas editha quino*), would also result from this project alternative. In addition, impacts to non-wetland waters of the United States would increase by approximately 0.28 acre compared to the Proposed Project, totaling approximately 0.42 acre. Although altered in the composition of impacts to biological resources under Alternative 2, impacts would remain significant, requiring similar mitigation measures as those described for the Proposed Project. Overall impacts to biological resources would be increased compared to the Proposed Project as a result of increased impacts to non-wetland waters and higher sensitivity habitat communities.

Cultural Resources

Alternative 2 adjusts the disturbance footprint for the project northwards, closer to Old Highway 80, and in doing so reduces the potential impacts to larger sites of identified cultural resources, reducing the overall severity of impacts to cultural resources, although it does not change the conclusion regarding the level of significance. The potential impacts to cultural resources would be substantially reduced by avoiding all of the known recorded large cultural sites within the 304-acre property, reducing the known cultural resources sites present within the footprint, which would substantially reduce the potential for the discovery of sensitive archaeological resources. Overall impacts to cultural resources would be substantially decreased in severity, but would remain the same in significance level, compared to the Proposed Project.

Hazards and Hazardous Materials

As described in Section 2.4, Hazards and Hazardous Materials, the Proposed Project would result in significant impacts related to risks of wildfires. Although Alternative 2 would be modestly reduced in size and no battery component is included, thereby reducing the ignition sources, the introduction of new ignition sources would still result in the same impacts as the Proposed Project. The requirement for a fire protection plan and implementation of mitigation measure **M-HZ-1** to develop a construction fire prevention plan building off the provided conceptual construction fire prevention plan and **M-HZ-2** to contribute funding for emergency responses would apply to this alternative as they do to the Proposed Project. All other impacts associated with hazards and hazardous materials would be similar to the Proposed Project: **less than significant**. The severity of impacts that would result from Alternative 2 would be reduced compared to the Proposed Project, as this alternative does not include a battery storage component.

Noise

As described in Section 2.5, Noise, the Proposed Project would result in potentially significant impacts related to Project operation noise. However, incorporation of mitigation measure **M-N-1** would reduce potential impacts to less than significant.

Alternative 2 would have a comparable number of panel racks on the site and would generally include the same equipment. However, this alternative would not include a battery storage component and as such would avoid impacts associated with the operation of the on-site HVAC system and power inverters that are assumed would exceed the County's Noise Ordinance along the eastern boundary of the Project site under the Proposed Project, requiring implementation of mitigation measure **M-N-1**. Inverters across the project would be included and the potential noise levels associated with those would be the same as the Proposed Project along portions of the Project boundary and mitigation measure **M-N-**1 would be required to ensure those levels are reduced to below the level of significance. All less than significant impacts identified under the Proposed Project would be the same for this alternative. Since the number of panel racks are comparable to the Proposed Project, as is the area to be disturbed, impacts under this alternative would be similar to those of the Proposed Project, with the exception of avoidance of impacts associated with battery storage, as battery storage and associated HVAC noise sources is not a component under this alternative. Both Alternative 2 and the Proposed Project would result in **less than significant** noise impacts with mitigation incorporated, but the North Layout Alternative would have substantially less severe noise impacts due to the absence of a HVAC system associated with the battery storage component of the Proposed Project.

Paleontological Resources

Alternative 2 would result in a modest reduction in the area of ground disturbance and an adjustment in the location of that disturbance for the solar facility, which would reduce the potential for disturbance of unknown paleontological resources. An area of high sensitivity for paleontological resources would be avoided under this alternative. Impacts from this alternative would be substantially reduced compared to those associated with the Proposed Project. Because the potential for the discovery of unknown paleontological resources would still exit, though likely substantially reduced, in areas of low sensitivity the impact conclusion is the same compared to the Proposed Project and mitigation measure **M-PR-1** would be required for this alternative.

Other Resource Topics

Impacts associated with the North Layout Project Alternative (Alternative 2) related to air quality; geology, soils, and seismicity; GHG emissions; hydrology and water quality; public services; recreation; traffic and transportation; and utilities and service systems would be the same as or less than those associated with the Proposed Project. This alternative would include the same solar power generation technologies and location as the Proposed Project but would have a reduced footprint, reduced number of components (solar panels, inverters, etc.), reduced MW generation, and eliminate the battery storage compared to the Proposed Project.

4.5 Analysis of the No Project Alternative (Alternative 3)

4.5.1 Alternative 3 Description and Setting

CEQA requires an evaluation of the No Project Alternative so that decision makers can compare the impacts of approving the Proposed Project with the impacts of not approving the Proposed Project. According to CEQA Guidelines, Section 15126.6(e), the No Project Alternative must include the assumption that conditions at the time of the Notice of Preparation (i.e., baseline environmental conditions) would not be changed because the Proposed Project would not be installed. The No Project Alternative must also describe the events or actions that would be reasonably expected to occur in the foreseeable future if the Proposed Project were not approved.

The No Project Alternative assumes that the Proposed Project would not be developed and the existing conditions would remain.

4.5.2 Comparison of the Effects of the Alternative 3 to the Proposed Project

Aesthetics

Under the No Project Alternative (Alternative 3), the visual character of the Proposed Project site would be unchanged. Therefore, no impacts to visual character or quality or lighting and glare would occur under this alternative. When compared to the Proposed Project, Alternative 3 would avoid all impacts to aesthetics.

Biological Resources

Under the Alternative 3, the biological resources on the Proposed Project site would be unchanged. Therefore, no impacts to biological resources would occur under this alternative. When compared to the Proposed Project, the No Project Alternative would avoid all impacts to biological resources. However, the approximately 184 acres of proposed Open Space Preserve would not be set aside in perpetuity for the protection of resources.

Cultural Resources

Under Alternative 3, the cultural resources on the Proposed Project site would be unchanged. Therefore, no impacts to cultural resources would occur under this alternative. When compared to the Proposed Project, Alternative 3 would avoid all impacts to cultural resources.

Hazards and Hazardous Materials

Under Alternative 3, no potentially hazardous materials or wildfire ignition sources would be introduced to the Proposed Project site. Therefore, no impacts to hazards and hazardous materials

would occur under this alternative. When compared to the Proposed Project, Alternative 3 would avoid all impacts to hazards and hazardous materials.

Noise

Alternative 3 would result in no impacts related to noise since no development would occur on the Proposed Project site. There would be no construction or operational noise generated at the site under this alternative. As a result, Alternative 3 would avoid all impacts related to noise associated with the Proposed Project.

Paleontological Resources

Under Alternative 3, the paleontological resources on the Proposed Project site would be unchanged. Therefore, no impacts to paleontological resources would occur under this alternative. When compared to the Proposed Project, Alternative 3 would avoid all impacts to paleontological resources.

Other Resource Topics

Impacts related to air quality; geology, soils, and seismicity; GHG emissions; hydrology and water quality; public services; recreation; traffic and transportation; and utilities and service systems would not occur as a result of implementation of the No Project Alternative (Alternative 3). This alternative would not include development of solar power generation or storage technologies.

4.6 Summary of Alternatives

A summary of impacts of the alternatives compared to the Proposed Project by resource topic is included in Table 4-1 and a summary of impacts of the alternatives compared to the Proposed Project by significance threshold is included in Table 4-2, pursuant to CEQA Guidelines Section 15126.6(D).

4.7 Environmentally Superior Alternative

CEQA Guidelines Section 15126.6(a) states that an EIR shall describe a range of reasonable alternatives. As evaluated in Chapter 2 of this EIR, the significant impacts of the Proposed Project would affect aesthetics (glare and visual character); biological resources (sensitive vegetation communities and non-wetland waters of the United States); cultural resources (avoidance of human remains and potential for undiscovered resources); hazards and hazardous materials (wildfire); noise (HVAC and inverter operations near the property line); and paleontological resources (discovery). As it would avoid impacts to each of these issue topics, the No Project Alternative (Alternative 3) would be the environmentally superior alternative.

However, CEQA Guidelines Section 15126.6(e)(2) also states that if the environmentally superior alternative is the "no project" alternative, the EIR shall also identify an environmentally superior alternative from among the other alternatives. The Reduced 15 MW Project Alternative (Alternative 1) would be the environmentally superior alternative from the remaining alternatives, as it would substantially reduce the severity of each of these impacts whereas the North Layout Alternative has increased aesthetic and biological impacts. Even so Alternative 1 would not reduce the significance conclusion for any of the significant impact categories associated with the Proposed Project and would not meet Objective 1.

Table 4-1
Summary of Alternatives to the Proposed Project

Issue Areas	Proposed Project	Alternatives		
		1	*2*	*3*
		Reduced 15 MW (Alternative 1)	*North Layout (Alternative 2)*	*No Project*
2.1 Aesthetics	SU	▼	▲	▼
2.2 Biological Resources	LTS	▼	▲	▼
2.3 Cultural Resources	LTS	—	▼	▼
2.4 Hazards and Hazardous Materials	LTS	—	—	▼
2.5 Noise	LTS	▼	▼	▼
2.6 Paleontological Resources	LTS	▼	▼	▼
3.1.1 Air Quality	NS	—	—	▼
3.1.2 Geology, Soils, and Seismicity	NS	—	—	▼
3.1.3 Greenhouse Gas Emissions	NS	—	—	—
3.1.4 Hydrology and Water Quality	NS	—	—	▼
3.1.5 Land Use and Planning	NS	—	—	▼
3.1.6 Public Services	NS	—	—	▼
3.1.7 Transportation and Traffic	NS	—	—	▼
3.1.8 Utilities and Service Systems	NS	—	—	▼

▲ Alternative is likely to result in greater impacts to issue when compared to Proposed Project.
— Alternative is likely to result in similar impacts to issue when compared to Proposed Project.
▼ Alternative is likely to result in reduced impacts to issue when compared to Proposed Project.
NS = not a potentially significant impact; LTS = less than significant with mitigation measures; SU = potentially significant and unavoidable impact.

Table 4-2
Analysis for Alternatives to the Proposed Project

Issue Areas	Significant Impacts of the Proposed Project	Alternatives to the Proposed Project		
	Proposed Project	*Reduced 15 MW(Alternative 1)*	*North Layout (Alternative 2)*	*No Project*
2.1 Aesthetics				
Scenic Vistas	NS	—	▲	▼
Visual Character or Quality	SU	▼	▲	▼
Light and Glare	LTS	—	▲	▼
2.2 Biological Resources				
Candidate, Sensitive, or Special-Status Species	LTS	—	—	▼
Riparian Habitat or Sensitive Natural Community	LTS	▼	▲	▼
Federally Protected Wetlands	LTS	—	▲	▼
Wildlife Movement	LTS	—	▲	—
Local Policies, Ordinances, Adopted Plans	LTS	—	—	—
2.3 Cultural Resources				
Historical Resources	LTS	—	—	▼
Archaeological Resources	LTS	—	▼	▼
Human Remains	LTS	—	▼	▼
2.4 Hazards and Hazardous Materials				
Hazardous Materials	NS	—	▼	—
Airport Hazards	NS	—	—	—
Wildfire Hazards	LTS	—	▼	▼
Hazards Associated with Interference of Emergency Responses	LTS	—	—	▼
2.5 Noise				
Operational Noise	LTS	▼	▼	▼
Construction Noise	NS	▼	—	▼
Vibration	NS	▼	—	▼
Corona Noise	NS	—	—	—
2.6 Paleontological Resources				
Paleontological Resources	LTS	▼	▼	▼

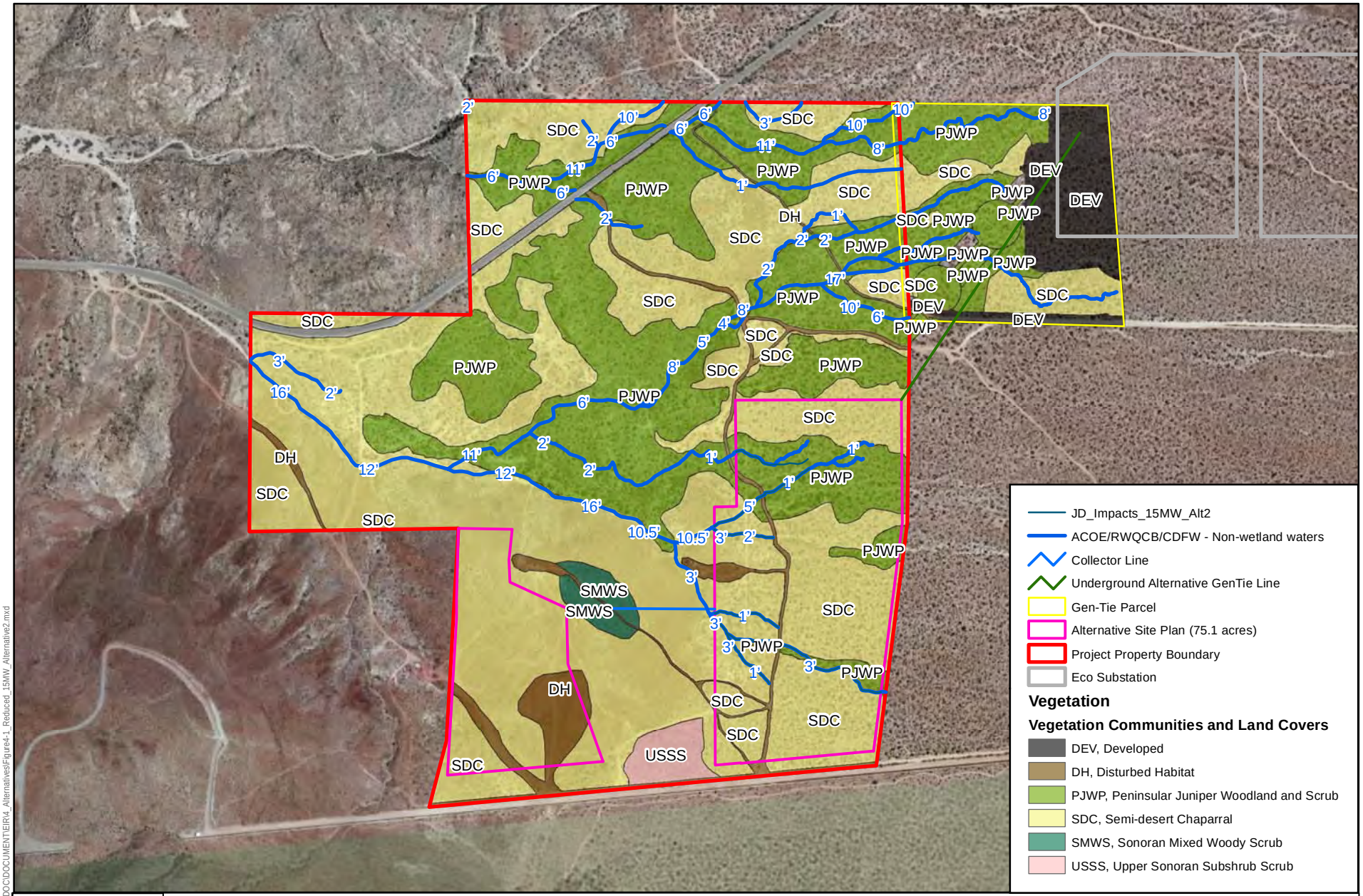
Table 4-2
Analysis for Alternatives to the Proposed Project

Issue Areas	Significant Impacts of the Proposed Project	Alternatives to the Proposed Project		
	Proposed Project	*Reduced 15 MW(Alternative 1)*	*North Layout (Alternative 2)*	*No Project*
3.1.1 Air Quality				
Conformance to the RAQS and SIP	NS	—	—	—
Conformance to Federal and State Air Quality Standards	NS	—	—	▼
Sensitive Receptors	NS	—	—	▼
Odors	NS	—	—	—
3.1.2 Geology, Soils, and Seismicity				
Fault Rupture	NS	—	—	—
Ground Shaking	NS	—	—	—
Liquefaction	NS	—	—	—
Landslides	NS	—	—	—
Expansive Soils	NS	—	—	—
Adequate Soils for Septic Systems or other On-Site Wastewater Systems	NS	—	—	—
3.1.3 Greenhouse Gas Emissions				
Generation of greenhouse gas emissions	NS	—	—	—
Conflict with Plan, Policy, or Regulation	NS	—	—	—
3.1.4 Hydrology and Water Quality				
Hydrology and Drainage Patterns	NS	—	—	▼
Flood Hazards	NS	—	—	▼
Surface Water and Groundwater Quality	NS	—	—	▼
Groundwater Resources	NS	—	—	▼
3.1.5 Land Use and Planning				
Physically Divide a Community	NS	—	—	—
Conflict with Plans, Policies, and Regulations	NS	—	—	▼
3.1.6 Public Services				
Fire Protection	NS	—	—	▼

Table 4-2
Analysis for Alternatives to the Proposed Project

Issue Areas	Significant Impacts of the Proposed Project	Alternatives to the Proposed Project		
	Proposed Project	*Reduced 15 MW(Alternative 1)*	*North Layout (Alternative 2)*	*No Project*
Police Protection	NS	—	—	—
Schools	NS	—	—	—
Other Public Services	NS	—	—	—
3.1.7 Traffic and Transportation				
Conflict with Transportation Plans, Ordinances, or Policies	NS	—	—	—
Conflict with a Congestion Management Plan	NS	—	—	—
Air Traffic Patterns	NS	—	—	—
Road Safety Hazards	NS	—	—	▼
Emergency Access	NS	—	—	—
Alternative Transportation	NS	—	—	—
3.1.8 Utilities and Service Systems				
Water	NS	—	—	▼
Wastewater Treatment	NS	—	—	—
Solid Waste	NS	—	—	▼

▲ Alternative is likely to result in greater impacts to issue when compared to Proposed Project.
— Alternative is likely to result in similar impacts to issue when compared to Proposed Project.
▼ Alternative is likely to result in reduced impacts to issue when compared to Proposed Project.
NS = not a potentially significant impact; LTS = less than significant with mitigation measures; SU = potentially significant and unavoidable impact.



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SOURCE: Bing 2014

FIGURE 4-1

Reduced 15 MW Project Alternative

Jacumba Solar Energy Project

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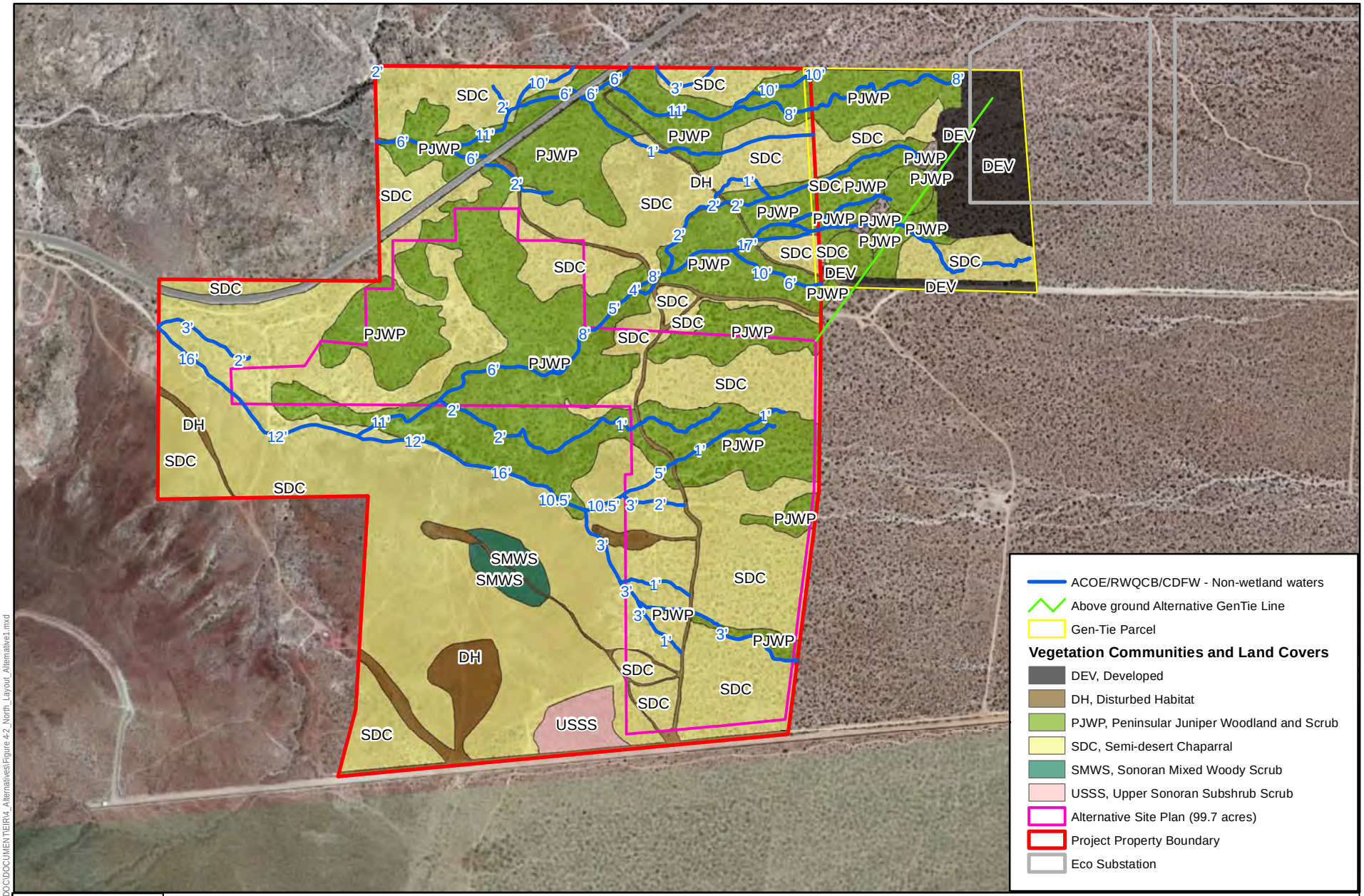

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SOURCE: Bing 2014

FIGURE 4-2

North Layout Project Alternative

Jacumba Solar Energy Project

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