TETRA TECH EC, INC.

October 30, 2012

Eric Solorio, Project Manager
California Energy Commission
Docket No. 11-AFC-3
1516 9th St.
Sacramento, CA 95814

Cogentrix Quail Brush Generation Project - Docket Number 11-AFC-03: Alternatives Analysis

Docket Clerk:

Pursuant to the provisions of Title 20, California Code of Regulations, and on behalf of Quail Brush Genco, LLC, a wholly owned subsidiary of Cogentrix Energy, LLC, Tetra Tech hereby submits the *Alternatives Analysis.* The Quail Brush Generation Project is a 100 megawatt natural gas fired electric generation peaking facility to be located in the City of San Diego, California.

The topics addressed in this letter include the following:

- Alternatives

If you have any questions regarding this submittal, please contact Rick Neff at (704) 525-3800 or me at (303) 980-3653.

Sincerely,

Constance E. Farmer
Project Manager/Tetra Tech

cc: Lori Ziebart, Cogentrix
John Collins, Cogentrix
Rick Neff, Cogentrix
Proof of Service List

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA
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1-800-822-6228 – WWW.ENERGY.CA.GOV

APPLICATION FOR CERTIFICATION FOR THE QUAIL BRUSH GENERATION PROJECT

DOCKET NO. 11-AFC-03
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(Revised 10/29/2012)

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DECLARATION OF SERVICE

I, Constance Farmer, declare that on October 30, 2012, I served and filed copies of the attached Alternatives Analysis, dated October 30, 2012. This document is accompanied by the most recent Proof of Service list, located on the web page for this project at: http://www.energy.ca.gov/sitingcases/quailbrush/index.html.

The document has been sent to the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit or Chief Counsel, as appropriate, in the following manner:

(*Check all that Apply*)

For service to all other parties:

_x_ Served electronically to all e-mail addresses on the Proof of Service list;

___ Served by delivering on this date, either personally, or for mailing with the U.S. Postal Service with first-class postage thereon fully prepaid, to the name and address of the person served, for mailing that same day in the ordinary course of business; that the envelope was sealed and placed for collection and mailing on that date to those addresses marked ***"hard copy required"** or where no e-mail address is provided.

AND

For filing with the Docket Unit at the Energy Commission:

_x_ by sending an electronic copy to the e-mail address below (preferred method); *OR*

___ by depositing an original and 12 paper copies in the mail with the U.S. Postal Service with first class postage thereon fully prepaid, as follows:

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Attn: Docket No. 11-AFC-03
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512
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OR, if filing a Petition for Reconsideration of Decision or Order pursuant to Title 20, § 1720:

___ Served by delivering on this date one electronic copy by e-mail, and an original paper copy to the Chief Counsel at the following address, either personally, or for mailing with the U.S. Postal Service with first class postage thereon fully prepaid:

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I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct, that I am employed in the county where this mailing occurred, and that I am over the age of 18 years and not a party to the proceeding.

Constance C. Farmer

Alternatives Analysis
for the
Quail Brush Generation Project
San Diego, California

October 2012

Prepared for

Quail Brush Genco, LLC

Prepared By

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1.0 ALTERNATIVES

The California Code of Regulations (CCR), Title 20, Appendix B requires that an Application for Certification (AFC) include a "discussion of the range of reasonable range of alternatives to the project, or to the location of the project, including the no project alternative, which could feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effect of the project, and an evaluation of the comparative merits of the alternatives." The determination of whether an alternative is feasible and prudent takes into consideration: (1) the ability of the alternative to meet the project objectives, particularly those which are deemed to be essential to the project purpose; (2) the ability of the alternative to avoid or minimize significant environmental impacts, (3) the cost of the alternative; and (4) any technological or logistical constraints which could prevent implementation of the alternative.

This document has been prepared to assist the California Energy Commission (CEC) in assessing whether there are any prudent and feasible alternatives to the proposed Project. After discussing the criteria utilized to identify potential alternatives to the proposed Project, this document describes the alternatives previously analyzed in the AFC and supplements thereto. It then introduces 9 alternative locations which have been identified as being potentially feasible alternatives (Figure 1.0-1). A comparison of the alternatives' potential environmental impacts is then presented as well as an assessment as to whether the alternative would be prudent and feasible. This document then analyzes whether two additional alternative technologies could potentially meet most of the project objectives.

After completing this analysis, this document concludes that there are no prudent and feasible alternatives to the proposed Project that could meet most of the project objectives and result in less environmental impacts.

1.1 PROJECT OBJECTIVES

Because both the identification of potential alternatives as well as the assessment of the feasibility of those alternatives turns, in part, on the basic project objectives, the first step in conducting an analysis of alternatives must be to identify the basic objectives of the Project. The basic objectives include factors which are essential to the project, *i.e.,* those which the failure to meet would preclude the project from proceeding in any form, as well as those which are highly desirable, *i.e.,* those which failure to obtain would render the Project more challenging to implement but would not, by itself, necessarily render the project infeasible or not prudent if it could not be met. For example, the ability to connect into the grid is an essential feature of an industrial-scale power plant and an alternative which could not meet this criterion would be per se infeasible. By contrast, a project may have the basic objective of being located on a site with compatible zoning but given that the CEC has the authority to override a zoning inconsistency, an alternative could be prudent and feasible if it could not meet this objective.

The basic project objectives for the Quail Brush Project, as described in Section 3 of the AFC and as further refined here, are to:

- Respond to San Diego Gas and Electric (SDG&E) 2009 request for offers (RFO) for generation facilities located in the San Diego service territory that could provide quick start capabilities to provide reliable energy at peak times as well as meet local Resource Adequacy (RA) requirements.

- Be located on a site that would allow for the plant to be on line by 2014.
- Provide quick start capabilities to support the incorporation of intermittent renewable energy resources into SDG&E's portfolio to enable SDG&E to achieve its 33 percent by 2020 Renewable Portfolio Standard (RPS) obligations.
- Be located on a site within SDG&E's service area near a load center that has infrastructure with available capacity and ability to reliably support Project electric transmission, fuel supply, and water needs with minimal impacts on existing infrastructure systems or require new construction.
- Be located on a site that is commercially available for development in a reasonable time.
- Be located on a site which has, or could reasonably be anticipated to have, compatible zoning, compatible adjacent land uses, and be located away from sensitive receptors.

1.2 RATIONALE FOR SELECTION OF ALTERNATIVE SITES

The first step in conducting an alternatives analysis is to identify a reasonable range of alternatives that: (1) have the potential to meet the basic project objectives and (2) have the potential to avoid or substantially lessen any significant environmental effects of the project. Based on a significant body of case law interpreting same language included in the California Environmental Quality Act (CEQA) Guidelines Section 15126.6, a "rule of reason" governs what constitutes the range of alternatives that need to be considered; it is not necessary to consider every feasible alternative only those that are necessary to allow for informed decision making.

The following screening criteria were used to identify alternatives which could potentially meet most of the project objectives:

1. Location:
    - Site must be located within the San Diego region to serve the needs of SDG&E.
    - Site must have a minimum of ten developable acres to allow for construction of the plant.
    - Site must be located in close proximity to necessary infrastructure with capacity to serve the Project, including an SDG&E substation, a high voltage transmission line and high pressure gas distribution main (minimum 6-inch diameter). For initial screening, a site was considered potentially feasible if it was within 2 miles of two of the three identified infrastructure needs.
2. Technology:
    - Technology must have quick start capability to allow for flexible integration of intermittent renewable energy into the SDG&E grid.
    - Technology must be able to reliably provide energy at peak load times, to allow for integration of intermittent renewable energy into the SDG&E grid and ensure stable power supply.
    - Technology must currently be commercially tested and capable of being installed and operational.

3. Availability:
    - Site must not currently be developed or be approved for development.
    - Site must be privately owned.
    - Site must be available for acquisition within a reasonable timeframe.

1.3 PREVIOUSLY ANALYZED ALTERNATIVE PROJECT SITES

In the AFC and the Supplements to the AFC, information was provided on the no project alternative, the proposed Project and three alternative sites. A summary of the description of each of the alternatives as well as the analysis of those alternatives is provided in this section.

1.3.1 No Project Alternative

If the No Project alternative is selected, the Applicant would not receive authorization to construct and operate a new power generation facility. As a result, the proposed Project site would not be developed and could potentially be used for some other use, consistent with current zoning. Energy that would have been produced by the proposed Project would need to be generated by another source and imported to the San Diego area and used to balance generation against load needs. Renewable energy penetration into the San Diego area, whose transmission would have been supported by the proposed Project, would have the potential to be developed at a slower pace than currently expected. Common available sources include older power generation facilities that operate less efficiently and release larger quantities of air pollutants than the proposed Project. Additionally, none of these existing sources would be able to provide local generation for the City of San Diego while allowing SDG&E to supply the greater San Diego area with additional energy from its electric transmission system.

The purpose of a power plant such as the proposed Project is to generate and provide electric power to SDG&E's customers. To generate and sell power in today's market, generating facilities need to be built and operated so as to be cost-effective and competitive with existing resources. The purpose of the Project is to provide the City of San Diego with a local source of generation (increasing local reliability) while providing voltage support for SDG&E's electric transmission system. SDG&E is adding renewable power generating facilities to its power generation portfolio. These facilities produce electricity that is highly variable and dependent on the availability of sunlight or wind to generate power. An intermediate/peaking load facility is needed to rapidly provide additional power as demand increases (*i.e.*, hot weather peak demands), or provide supplemental power during transient reductions in the power generated by these renewable plants, or operate at night with peak demand occurring at 8:00 P.M. Additionally, this Project will enhance the reliability and availability of the electrical grid in the San Diego area.

The No Project Alternative would delay SDG&E's efforts to improve the reliability and efficiency of power supply to its customers. The No Project Alternative would also forego all of the benefits associated with the proposed Project. The No Project Alternative would result in greater socioeconomic impacts (jobs and tax base) caused by electric supply shortfalls, and would increase air pollution because the new, less polluting peaking generation plants would not replace the older, less efficient peaking power plants that have higher emission levels. Additionally, the No Project Alternative would result in the import of electricity, possible

reduction of renewable energy sources to the San Diego area, and the need for additional transmission capacity to bring the electricity to the San Diego area.

In summary, the No Project Alternative would not serve the growing needs of the San Diego area and southern California's businesses and residents for efficient and reliable, generation resources that can provide peaking and load-shaping power to balance load from variable renewable generating sources. Moreover, it would deprive the region of the significant benefits (*e.g.*, low water usage, high efficiency generation) that the Project provides. Accordingly, the No Project Alternative could not potentially meet the basic objectives of the proposed Project and it therefore has been eliminated from further review or consideration.

1.3.2 Proposed Site

The Project is a nominal 100 megawatt (MW) intermediate/peaking generating facility using natural gas-fired reciprocating engine technology, which has a quick start capability and would be available on demand to serve peak demand. The power generation facility would be located on a 21.6-acre site, would include a natural gas pipeline, and would interconnect with the SDG&E 138 kilovolt (kV) grid at Carlton Hills Substation. The Project stacks would be arranged in two collinear bundles (one bundle of 6 stacks and one bundle of 5 stacks). The Project top of stack elevation would be 70 feet above ground level.

Additionally, the proposed Project would include new access/spur roads of 1,817 feet, a new 24-foot wide access road that would provide access from the Project access road to the new onsite SDG&E utility switchyard, perimeter fences around the plant and the new SDG&E utility switchyard, and a septic holding tank. The permanent power plant site footprint of the proposed Project including the switchyard and facilities would be 14 acres.

The Applicant, SDG&E, and the California Independent System Operator (CAISO), have agreed to loop the existing 138 kV line TL 13822 into a new utility switchyard located on the proposed Project site with a short generation tie line (gen tie) between the plant switchyard and utility switchyard colocated on the Project site. The existing 138 kV line TL 13822 is directly connected to the Carlton Hills Substation. Hence, with this proposed arrangement, the plant output is still delivered to SDG&E's 138 kV grid, directly connected to the Carlton Hills Substation.

The power plant would be located within the 21.6-acre plant site and the new SDG&E 138 kV utility switchyard would be constructed in the northeast corner of the property adjacent to the plant facility, and would encompass approximately 1.0 acre. SDG&E is amenable to this location and is involved in the design of this 138 kV facility to ensure coordination with the existing SDG&E 138 kV system.

The new utility switchyard would be located approximately 2,700 feet south of SDG&E's existing 138 kV transmission corridor. The 138 kV Mission-to-Carlton Hills Line TL 13822 is routed in this transmission corridor. New overhead transmission lines would be erected between the line break of TL 13822 (in the corridor) and the new SDG&E utility switchyard. The loop lines would be constructed by the Applicant to SDG&E standards.

The proposed Project would include a gen tie approximately 100 feet long fully contained within the plant site, and the proposed SDG&E 138 kV loop that are shown on Figure 1.1-1. The

approximate length of the proposed SDG&E 138 kV loop would be 2,700 feet and would require six transmission towers. Construction of the transmission towers would result in approximately 0.06 acres of permanent disturbance (with 20 feet by 20 feet for each tower). A new road to access the transmission facilities would not be required. Construction of the proposed SDG&E 138 kV loop would use existing SDG&E access roads that may require upgrades to accommodate construction equipment. It would also require construction of approximately 1,800 feet of new spur roads, which would result in approximately 0.67 acres of permanent disturbance.

1.3.3 Alternative Project Sites

1.3.3.1 AFC Alternative A

The AFC Alternative A plant site (parcel number 36608057) would be situated on property owned by the County of San Diego and under a long-term lease to Sycamore Landfill located immediately south of the existing landfill property boundary (Figure 1.3.-1). The AFC Alternative A plant site is currently zoned Heavy Industrial (IH-2-1) and would be withdrawn from the Multi-Habitat Planning Area (MHPA) as designated by the City of San Diego Multi-Species Conservation Program (MSCP) Subarea Plan per the Certification of the Sycamore Landfill Environmental Impact Report (EIR) (City of San Diego Resolution R-304352, September 17, 2012, http://docs.sandiego.gov/council_reso_ordinance/rao2012/R-307680.pdf). The AFC Alternative A switchyard is currently zoned Residential (RS 1-8) and is within the MHPA. A zone change and General Plan Amendment would be required for the AFC Alternative A switchyard and the AFC Alternative A plant site would need to be withdrawn from the MHPA. A power plant would not be consistent with the current zoning.

The AFC Alternative A plant site would be surrounded by industrial and open space uses. The closest residential uses to the plant site, which are potentially sensitive noise receptors, are located approximately 4,500 feet south of this plant site. There is a school located approximately 5,000 feet southeast of this plant site.

The AFC Alternative A gen tie route would head west from the AFC Alternative A plant site to the AFC Alternative A switchyard, for a total of 2,200 feet. The gen tie route would cross a parcel of land that contains several high voltage transmission structures and distribution structures and the gen tie would need to be placed underground through this area.

The AFC Alternative A utility switchyard would be located just west of the SDG&E Mission to Miguel 230kV transmission line as shown on Figure 1.3-1.

The AFC Alternative A gas pipeline lateral would be approximately 4,800 feet long and would run in the same easement as the access along Sycamore Landfill Road.

Access to the AFC Alternative A plant site would be from Sycamore Landfill Road. Access to this site would be approximately 4,800 feet long along the existing road.

1.3.3.2 AFC Alternative B

The AFC Alternative B plant site would be situated on privately-owned property (parcel number 36607031) within the City of San Diego (Figure 1.3-2). The site is currently zoned Residential (RS 1-8); a power plant would not be consistent with the current zoning.

The AFC Alternative B plant site would be surrounded by industrial and open space uses. The closest residential uses to the AFC Alternative B plant site, which are potentially sensitive noise receptors, are located approximately 5,600 feet southeast of this plant site. There is a school located approximately 6,300 feet southeast of this plant site. The SDG&E Mission to Miguel 230kV transmission line is adjacent to this plant site. Through preliminary negotiations with the landowner it was determined that the AFC Alternative B plant site is being proposed as mitigation for coastal disturbance for another project and site control cannot be obtained for this parcel.

AFC Alternative B would require equal or greater grading requirements (in quantity and complexity) as the proposed Project.

The AFC Alternative B gen tie route would head north from the AFC Alternative B plant site to the AFC Alternative B utility switchyard, for a total of 800 feet. The gen tie route would cross a parcel of land that contains several high voltage transmission structures and distribution structures and the gen tie would need to be undergrounded for the entire length of the route.

The AFC Alternative B utility switchyard would be located just west of the SDG&E Mission to Miguel 230kV transmission line as shown on Figure 1.3-2.

The AFC Alternative B gas pipeline lateral would be approximately 6,400 feet long and located within the same easement as the AFC Alternative B access road described below.

The AFC Alternative B plant site access road would be along the existing Sycamore Landfill Road and a new road would be created west along the south side of the Sycamore Landfill into the AFC Alternative B plant site. The total length of the AFC Alternative B plant site access road is approximately 6,400 feet.

1.3.3.3 AFC Alternative C

The AFC Alternative C plant site would be situated on property owned by the Sycamore Landfill (parcel number 36603110) within the City of San Diego (Figure 1.3-3). The AFC Alternative C plant site is currently zoned Residential (RS 1-8); a power plant would not be consistent with the zoning.

The site would be surrounded by industrial and open space uses. The closest residential uses to AFC Alternative C plant site, which are potentially sensitive noise receptors, are located approximately 7,200 feet southeast of this plant site. There is a school located approximately 7,600 feet southeast of this plant site.

The AFC Alternative C plant site would require as much or more grading (in quantity and complexity) than the Project site. The AFC Alternative C gen tie route would head north from the AFC Alternative C plant site to the AFC Alternative C utility switchyard, for a distance of 1,500 feet. The AFC Alternative C utility switchyard would be located north of AFC Alternative C and

west of the Sycamore Landfill as shown on Figure 1.3-3. The AFC Alternative C gas pipeline lateral approximately 8,700 feet long and located within the same easement as the AFC Alternative C access road described below.

The AFC Alternative C plant site access road would be along the existing Sycamore Landfill Road and a new road would be created along the south side of the Sycamore Landfill, then north along the west side of Sycamore Landfill, then west into the AFC Alternative C plant site. The total length of the AFC Alternative C plant site access road is 8,700 feet.

1.4 ADDITIONAL ALTERNATIVE PROJECT SITES

Based on the site selection criteria described above, nine additional site locations were identified as being potentially feasible. All of the alternative sites are within the SDG&E service territory. However, all of them except Alternative Site 2 would require a different Point of Interconnection (POI) than the proposed Project or Alternatives A, B, or C described above. A new POI to the transmission system in the vicinity of each of the alternate sites would likely require the Project to withdraw its original Interconnection Request (IR) and submit a new IR for the new POI to the CAISO. Submission of a new IR would force the Project into an approximately three-year delay to go through the interconnection study process again under Cluster 6. Therefore, the selection of any of these alternative sites would preclude the project from meeting its objective of being on-line by 2014 and would likely render the project therefore infeasible. However, to allow for a robust analysis of potential alternative sites, this document analyzes each of these sites for potential feasibility despite this deficiency.

In addition to the delay, there would be additional costs related to the study and likely related to the new interconnection. The figures associated with the following alternatives show distances to nearest infrastructure “as the crow flies” (direct distance) and were used for screening purposes only. Routes for transmission gen ties and natural gas lines have not been developed at this point and specific POIs were not identified at this point in the alternative selection process. Given existing uses and topographical variations present, it is likely that for many of the alternatives the actual route would be significantly longer than that shown. The descriptions presented have been developed by reviewing aerial photography and other readily available information on line, including locations of nearest existing gas and transmission facilities.

1.4.1 Alternative Site 1

Alternative Site 1 is shown on Figure 1.4-1 and is a 430-acre site located in unincorporated San Diego County and the City of Santee. See Table 1.4-1 for the Assessor Parcel Numbers (APNs) for Alternative Site 1. It located is within the Limited Agriculture (A70), Specific Plan (S88), and Single Residential (RS) zone districts within unincorporated San Diego County and is within the Park/Open Space (P/OS) and Light Industrial (IL) zone districts within the City of Santee. Within unincorporated San Diego County, the RS zone district does not allow major impact services and utilities, and the A70 and the S88 zone districts allow major impact services and utilities with a Major Use Permit.

Table 1.4-1 Alternative Site 1 Assessor Parcel Numbers

Alternative Site Number	1	
APN's	3790110100	3790221400
	3790231700	3790110700
	3790230500	3790242300
	3790230800	3790230900
	3790221300	3790303100
	3790230400	3771113200
	3790230100	3790110400
	3790231800	3790221200
	3790110200	3790221700
	3790240200	3811710800
	3790230300	3771123000
	3790230600	3790231600
	3790302400	3790402800
	3790302900	3790230700
	3790230200	3790221600
	3771123100	3790400100
	3790231000	3771121600

As stated in the City of Santee's Municipal Code, land that is zoned Park/Open Space (P/OS) permits Public Buildings and Facilities with a Conditional Use Permit (CUP); land that is zoned Light Industrial (IL) permits Public Buildings and Facilities with a CUP. Additionally, the IL and P/OS Zoning Ordinances do not state whether they allow or do not allow utilities within their respective zone designations. A power plant or electrical generating facility has not clearly been defined as a public building or facility in the City's Municipal Code. Therefore, it is unknown whether the project would be consistent with current City of Santee zoning for Alternative Site 1.

Alternative Site 1 would be surrounded by residential land uses. The closest residential uses, which are potentially sensitive noise receptors, are located approximately 15 feet south of this site. A 230 kV transmission line traverses over the northern portion of Alternative Site 1.

The shortest direct distance between Alternative Site 1 and the closest substation is approximately 0.5 miles. This substation, however, does not have capacity to serve the proposed Project and the nearest substation where interconnection could potentially occur is 1.5 miles from the Project site. Similarly, while the shortest direct distance between Alternative Site 1 and the closest natural gas pipeline is approximately 1,400 feet, the nearest location where the project could tie in is 3,500 feet from the site. Access to Alternative Site 1 would be from Princess Joann Road and dirt access roads used to access existing transmission lines on the site on the north, or Riverford Road and El Nopal and existing dirt roads crossing the site on the south.

1.4.2 Alternative Site 2

Alternative Site 2 (parcel numbers 3740500200 and 3760200300) is shown on Figure 1.4-2. Alternative Site 2 is a 31-acre site located in the City of Santee. It is zoned Planned Development (PD). It is unknown whether project would be consistent with current City of Santee zoning for Alternative Site 2.

Alternative Site 2 would be surrounded by open space to the north, east, and west and industrial land use to the south. The closest residential uses to Alternative Site 2, which are potentially sensitive noise receptors, are located 5,900 feet to the southeast of this site.

The shortest direct distance between Alternative Site 2 and the closest substation is approximately 2.4 miles. This pipeline, however, does not have sufficient capacity to serve the proposed project and the nearest pipeline with capacity to serve the Project is located 3.5 miles from the project site. The shortest, direct distance between Alternative Site 2 and the closest natural gas pipeline is approximately 2.5 miles. The shortest distance between Alternative Site 2 and a 230 kV transmission line is 0.7 mile. Access to Alternative Site 2 would be from Sycamore Canyon Road.

1.4.3 Alternative Site 3

Alternative Site 3 (parcel numbers 3951303700 and 3951304000) is shown on Figure 1.4-3. Alternative Site 3 is a 33-acre site located in unincorporated San Diego County. It is located within the Rural Residential (RR) and Single-Family Residential (RS) zone districts. The RR zone district allows for major impact services and utilities with a major use permit; however, the RS zone district does not allow major impact services and utilities.

Alternative Site 3 would be surrounded by residential land uses and open space. The closest residential uses to Alternative Site 3, which are potentially sensitive noise receptors, are located 350 feet to the north of this site. An existing substation is located adjacent and southwest of this site.

The shortest direct distance between Alternative Site 3 and the Los Coches Substation is approximately 1,300 feet. The shortest direct distance between Alternative Site 3 and the closest natural gas pipeline is 1.1 miles. Access to Alternative Site 3 would be from El Monte Road or Lake Jennings Park Road. The shortest direct distance between Alternative Site 3 and the closest natural gas pipeline is 1.1 miles. However, given capacity limitation, a new 6.5 mile gas line would be required to connect the site to an existing gas main. A 230 kV transmission line crosses the Alternative 3 Site and a 138 kV transmission line is located immediately adjacent and west of Alternative 3 Site. Access to Alternative Site 3 would be from El Monte Road.

1.4.4 Alternative Site 4

Alternative Site 4 is shown on Figure 1.4-4. See Table 1.4-2 for its APN designations. Alternative Site 4 is a 62-acre site located in unincorporated San Diego County. It is zoned General Agriculture (A72). The A72 zone district allows for major impact services and utilities with a major use permit.

Table 1.4-2 Alternative Site 4 Assessor Parcel Numbers

Alternative Site Number	4
APN	5170311300 5172501400 5172501600 5172501700 5170310800 5170310700 5172501500 5172501200 5170311700 5170311100 5170311400 5172501800 5170500300 5170311200 5172501300 5170311000 5170310200 5170310900

Alternative Site 4 would be surrounded by residential and industrial land uses. The closest residential uses to Alternative Site 4, which are potentially sensitive noise receptors, are located 200 feet to the north of this site.

The direct distance between Alternative Site 4 and the closest substation is approximately 2.8 miles. However, the closest substation would not have capacity to serve the project and the project would need to connect into the Granite Hills Substation, requiring construction of a 4 mile gen tie.

The shortest direct distance between Alternative Site 4 and the closest natural gas pipeline is approximately 1.4 miles. A 230kV and a 138 kV transmission line, traverse over the western portion of Alternative Site 4. Access to Alternative Site 4 would be from Vista Madera Lane and an existing, approximately 0.75-mile long access road for transmission towers at the top of the ridge.

1.4.5 Alternative Site 5

Alternative Site 5 is shown on Figure 1.4-5. Alternative Site 5 is a 138-acre site located in unincorporated San Diego County. See Table 1.4-3 for its APN designations. It is within the Holding Area (S90), Specific Plan (S88), and Limited Agriculture (A70) zone districts. The S90, S88 and A70 zone districts allow for major impact services and utilities upon issuance of a Major Use Permit.

Table 1.4-3 Alternative Site 5 Assessor Parcel Numbers

Alternative Site Number	5
APN	5851301300 5851310500 5851110600 5851300700 5851110700 5851300900 5851310300 5851302000 5851301500 5851300400

Alternative Site 5 would be surrounded by residential land uses and open space. The closest residential uses to Alternative Site 5, which are potentially sensitive noise receptors, are located 700 feet to the south of this site. An existing substation is adjacent to this site.

The shortest, direct distance between Alternative Site 5 and the closest substation is approximately 1,200 feet. The shortest direct distance between Alternative Site 5 and the closest natural gas pipeline is 1.7 miles. A 230 kV and a 138 kV transmission line traverse over Alternative 5 Site. Access to Alternative Site 5 would be from San Miguel Road.

1.4.6 Alternative Site 6

Alternative Site 6 (APN4560111100) is shown on Figure 1.4-6. Alternative Site 6 is a 26-acre site located in the City of San Diego. It is zoned Industrial Light (IL-2-1) and Agricultural (AR-1-1). The Industrial Light (IL-2-1) and Agriculture (AR 1-1) zone districts allow for energy generation and distribution facilities with a CUP.

Alternative Site 6 would be surrounded by residential land uses, industrial land uses, and open space. The closest residential uses to Alternative Site 6, which are potentially sensitive noise receptors, are located 50 feet to the east of this site. An existing concrete and aggregate plant is adjacent to this site.

The shortest direct distance between Alternative Site 6 and the closest substation is approximately 1 mile. The shortest direct distance between Alternative Site 6 and the closest natural gas pipeline is approximately 1.1 miles. The shortest direct distance between Alternative 6 site and the closest transmission line, which is a 230 kV line, is approximately 0.8 mile. Access to Alternative Site 6 would be from Mission Gorge Road or Mission Vista Drive.

1.4.7 Alternative Site 7

Alternative Site 7 (APN 3871900800) is shown on Figure 1.4-7. Alternative Site 7 is a 23-acre site located in the City of El Cajon. It is zoned Manufacturing (M). Utilities are allowed in the Manufacturing zone district with a CUP.

Alternative Site 7 would be surrounded by industrial and commercial land uses. The closest residential uses to Alternative Site 7, which are potentially sensitive noise receptors, are located

1,800 feet to the east of this site. Gillespie Field and the East San Diego County Fairgrounds are adjacent to this site.

The shortest direct distance between Alternative Site 7 and the closest substation is approximately 2.3 miles. The shortest direct distance between Alternative Site 7 and the closest natural gas pipeline is 0.4 miles. The shortest distance between Alternative 7 site and the closest transmission line, which is a 230 kV line, is approximately 3.7 miles. Access to Alternative Site 7 would be from Wing Avenue.

1.4.8 Alternative Site 8

Alternative Site 8 (APNs 6480700300 and 6480802700) is shown on Figure 1.4-8. Alternative Site 8 is a 166-acre site located in the Unincorporated San Diego County. It is zoned Mixed Industrial. General industrial use types are a permitted use by right in the Mixed Industrial zone district.

Alternative Site 8 would be surrounded by industrial and commercial land uses and open space. The closest residential uses to Alternative Site 8 in San Diego County that are potentially sensitive noise receptors are located 4 miles to the northwest of this site. In addition, there are two jails nearby - the Donovan Correctional Facility is 6,500 feet to the northwest and the East Mesa Juvenile Detention Facility is 7,400 feet to the north. There are also residential uses across the border in Mexico that are closer to the site.

The shortest direct distance between Alternative Site 8 and the closest substation is approximately 0.4 miles north of the site. The shortest direct distance between Alternative Site 8 and the closest natural gas pipeline is 0.6 miles. The shortest direct distance between Alternative 8 Site and the closest transmission line, which is a 230 kV transmission line, is 0.2 mile. Access to Alternative Site 8 would be from Otay Mesa Road.

1.4.9 Alternative Site 9

Alternative Site 9 (APN 2190107800) is shown on Figure 1.4-9. Alternative Site 9 is a 3-acre site located in the City of Vista. It is within the Specific Plan – Vista Business Park (SP-VBP) Planning Area B: Research Light Industrial and Business Support Group. Co-generation of energy or energy production uses are permitted subject to granting of a Special Use Permit.

Alternative Site 9 would be surrounded by industrial, commercial, and residential land uses. The closest residential uses to Alternative Site 9, which are potentially sensitive noise receptors, are located 500 feet to the northwest of this site.

The shortest direct distance between Alternative Site 9 and the closest substation is 0.3 miles. The shortest direct distance between Alternative Site 9 and the closest natural gas pipeline is 0.4 miles. The shortest direct distance between the Alternative 9 site and the closest transmission line, which is a 138 kV line, is approximately 0.1 mile. Access to Alternative Site 9 would be from Hot Spring Way.

1.5 COMPARATIVE ANALYSIS OF ALTERNATIVE PROJECT SITES

This section assesses the feasibility of the alternative project sites. To allow for a comparison of each alternative, this section first describes the environmental issues associated with each alternative site and analyzes the ability of each alternative to meet the overall project objectives, as well as the cost considerations associated with each. Alternatives A, B, and C have been previously described in the AFC (11-AFC-3) and Supplements 1, 2, and 3, and are described again below. Alternative Sites 1 through 9 identified in the screening process are presented as new alternatives. The analysis of these alternatives was carried out as a desktop study using readily available information in the public domain, as well as data derived from GIS mapping exercises. For the issue areas of biological resources and cultural resources, records searches were carried out, with queries of the California Natural Diversity Database (CNDDB) (Appendix A) and a file search at the South Coastal Information Center (SCIC), respectively. Land use information was obtained by reviewing the local land use policies that would apply to any given parcel. In addition, SDG&E provided approximate distances to transmission lines and gas lines with the appropriate capacities to adequately service the project, but did not provide a map showing these POIs. These distances are different than those nearest direct distances used for screening purposes and in most cases are longer than shown in the figures in Section 1.4 of this document.

For the issue areas including public health, hazardous materials, worker health and safety, waste management, and water resources it was assumed that the impacts of each alternative site would be similar to the proposed Project. For the issue areas including traffic and transportation, agriculture and soils, paleontological resources, and geologic hazards and resources, the impacts of each alternative site are unknown as technical studies were not conducted for each of the alternative sites for the purposes of this analysis.

After assessing the potential environmental impacts of each alternative, this document then analyzes whether the alternative could meet the basic project objectives and provides a conclusion regarding the feasibility of the various alternatives.

1.5.1 AFC Alternative A

1.5.1.1 Topography/Engineering Constraints

AFC Alternative A would require a longer gas lateral than the proposed Project and would require construction of a new access road to the site. AFC Alternative A would require construction of a separate SDG&E utility switchyard; the SDG&E utility switchyard for the proposed Project would be co-located with the power plant site. AFC Alternative A would require a shorter gen tie than the proposed Project. AFC Alternative A would require significantly more grading (in quantity and complexity) than the proposed Project.

1.5.1.2 Biological Resources

Based upon the CNDDB search conducted for the proposed Project, AFC Alternative A is within the potential habitat range of two Special Status Species, the San Diego barrel cactus (*Ferocactus viridescens)* and the Variegated dudleya (*Dudleya variegata*). AFC Alternative A plant site contains San Diego barrel cactus that would need to be translocated if found within the area of disturbance of the site (see discussion in Section 4.12 of the AFC). It is not

anticipated that AFC Alternative A would directly affect threatened or endangered species from development of the Project.

The linear routes would generally follow roads and rights-of-way (ROWs) that are partly disturbed and any additional construction would avoid sensitive plants wherever possible. Small sites can be avoided if discovered through small changes within the transmission line corridor and span length, minor changes to linear routes, or translocation of plants. The switchyard would be sited to minimize impacts to sensitive plants. To minimize the impacts to sensitive plants, a Sensitive Plant Relocation plan would be prepared similar to the existing plan currently approved for the adjacent Sycamore Landfill. The sensitive plants would be relocated to the existing Sycamore Landfill relocation site or to the proposed exchange parcel or other suitable habitat area as deemed appropriate by the City of San Diego.

The Applicant would use Avian Power Line Interaction Committee (APLIC) guidelines in the design of the gen tie to prevent impacts to bird species from electrocutions or collision during operation of the gen tie.

AFC Alternative A would not directly impact wetlands or waters of the U.S. and would not adversely impact wildlife habitat.

1.5.1.3 Land Use

The AFC Alternative A plant site is located within the City of San Diego in areas currently zoned Residential (RS 1-8), but will be changed to Industrial per the Certification of the Sycamore Landfill Environmental Impact Report (EIR) (City of San Diego Resolution R-304352, September 17, 2012, http://docs.sandiego.gov/council_reso_ordinance/rao2012/R-307680.pdf). The site will be withdrawn from the MHPA as designated by the City of San Diego MSCP Subarea Plan per the Certification of the Sycamore Landfill EIR (City of San Diego Resolution R-304352, September 17, 2012). The AFC Alternative A switchyard is currently zoned Residential (RS 1-8) and is within the MHPA. A zone change and General Plan Amendment would be required for the AFC Alternative A switchyard and the AFC Alternative A plant site would need to be withdrawn from the MHPA. As the San Diego City Council denied initiation of an amendment to the East Elliot Community Plan to redesignate land from open space to industrial for the Quail Brush Generation Project (City of San Diego Resolution R-307694, October 11, 2012, http://docs.sandiego.gov/council_reso_ordinance/rao2012/R-307694.pdf), it is unlikely that the City of San Diego would consider a zone change, General Plan Amendment, and MHPA boundary line adjustment for the AFC Alternative A switchyard. In addition, the Applicant has approached Sycamore Landfill regarding the availability of this parcel and the landfill has indicated that the parcel would not be available for the Project.

1.5.1.4 Noise

The closest residence to the proposed Project site is 3,700 feet to the southeast of the site across Mast Boulevard. Sources of environmental noise in the Project area include the industrial landfill operations and vehicle traffic on local roads. Construction noise may be periodically audible at several residential receptor locations; construction will be largely limited to daytime hours. The facility will be designed to comply with the City of San Diego, City of Santee, and CEC's requirements.

AFC Alternative A is located further from residences than the proposed Project site. Sources of environmental noise for AFC Alternative A would be the same as the proposed Project site.

1.5.1.5 Visual Resources

The potential for visual resource impacts associated with each of the sites varies depending on the relative visibility of the sites from roads, residences, and recreational users of the Mission Trails Regional Park, and the length and potential visibility of any new transmission lines that the power plant would require. Visual impacts are also a function of the surrounding facilities.

The proposed Project and AFC Alternative A are located in the City of San Diego near the Sycamore Landfill. Land within 1 mile of the proposed Project site and AFC Alternative A are primarily used for industrial purposes, particularly the Sycamore Landfill, or for informal recreation. The proposed Project and AFC Alternative A are located close to Mission Trails Regional Park. The proposed Project and AFC Alternative A are also located west of the Santee Boulders, a popular rock climbing spot on private lands. Though not modeled, it is anticipated that the Visual Sphere of Influence of AFC Alternative A would be greater than the proposed Project due to higher elevations for all facilities. The two sites are less than 1 mile apart. Visual impacts of AFC Alternative A during construction and operation would be greater than the proposed Project.

1.5.1.6 Air Quality

The power plant's configuration and operation would be essentially the same for AFC Alternative A. The type and quantity of air emissions from the proposed Project and AFC Alternative A would be identical. However, the impacts on the human population and the environment may differ slightly because of the location of residences and other human uses in the project vicinity. Local terrain is similar between AFC Alternative A and the proposed Project and not likely to significantly change impacts. However, this site is adjacent to the 4 MW power plant and landfill gas flares located on the landfill, and would result in greater air quality impacts than the proposed Project. AFC Alternative A is in the same air district and air basin as the proposed Project and any required mitigation acquired by the Applicant would be equally appropriate for AFC Alternative A.

1.5.1.7 Cultural Resources

AFC Alternative A was included within the cultural resources survey area for the proposed Project and no historic resources were identified. A cultural resources record search was conducted at the SCIC, with supplemental information provided by the San Diego Museum of Man and the Santee Historical Society. This search determined that cultural resource sensitivity is generally low to moderate.

The linear routes for AFC Alternative A were sited in previously disturbed areas wherever possible. Small cultural resources, if discovered, can be avoided through small route changes within the linear corridors (gen tie, gas line, and access road), and by altering span length. Mitigation measures described in AFC Section 4.1 would reduce or mitigate potential significant impacts on significant cultural resources.

1.5.1.8 Socioeconomics

The socioeconomic impacts of the proposed Project and all alternative relative to the number of jobs created as a result of construction and operations, the tax base that the plant would create, and the impacts to public services are assumed to be essentially the same. However, the potential for impacts relative to environmental justice issues may be different depending on the location of the alternative. The analysis presented herein focuses on the potential for environmental justice issues, as reflected in the following discussion.

Executive Order 12896, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires each Federal agency to make the achievement of environmental justice part of its mission by identifying and addressing disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low income populations. The Order further stipulates that the agencies conduct their programs and activities in a manner that does not have the effect of excluding persons from participation in, denying persons the benefits of, or subjecting persons to discrimination because of their race, color, or national origin. Because the CEC receives federal funds, it is subject to the Order.

Guidelines provided by the Council on Environmental Quality (CEQ) (1997) and United States Environmental Protection Agency (USEPA) (1998) indicate that a minority community may be defined as either: (1) where the minority population comprises more than 50 percent of the total population, or (2) where the minority population of the affected area is meaningfully greater than the minority population in the general population of an appropriate benchmark region used for comparison. Minority communities may consist of a group of individuals living in geographic proximity to one another, or a geographically dispersed set of individuals show experience common conditions of environmental effect. Further, a minority population exists if there is "more than one minority group present and the minority percentage, as calculated by aggregating all minority persons, meets one of the above-stated thresholds".

The CEQ and USEPA guidelines indicate that low income populations should be identified based on the annual statistical poverty thresholds established by the U.S. Census Bureau. Like minority populations, low income communities may consist of individuals living in geographic proximity to one another, or a geographically dispersed set of individuals who would be similarly affected by the proposed action or program. The U.S. Census Bureau defines a poverty area as a census tract or other area where at least 20 percent of the residents are below the poverty level.

As shown in Figure 1.5-1, minority populations within the vicinity of Alternative Site A or Census Block range from 20 percent to 30 percent of the total population. Minority populations for Alternative Site A and vicinity are less than 50 percent of the total population.

As shown in Figure 1.5-2, the percent of the population within the vicinity of Alternative A below the poverty line in 1999 ranged from 0 to 10 percent. This poverty level falls below the U.S. Census Bureau's threshold for a poverty area. Environmental justice impacts during construction and operation would be similar for the proposed Project and AFC Alternative A.

1.5.1.9 Project Objectives

AFC Alternative A could meet the most of the project basic objectives, as follows:

- Alternative A is located with the San Diego service territory and could allow for the construction of a power plant that could provide quick start capabilities to provide reliable energy at peak times as well as meet local RA requirements.
- Alternative A would interconnect into the Carlton Hills Substation and therefore could be constructed and on-line by 2014.
- A power plant could be constructed on Alternative A site which could provide quick start capabilities to support the incorporation of intermittent renewable energy resources into SDG&E's portfolio to enable SDG&E to achieve its 33% by 2020 Renewable Portfolio Standard obligations.
- Alternative A is located within SDG&E's service area near a load center that has infrastructure with available capacity and ability to reliably support Project electric transmission, fuel supply, and water needs with minimal impacts on existing infrastructure systems or require new construction.
- Alternative A is owned by Sycamore Landfill and may be available for development in a reasonable timeframe.

The Alternative A switchyard would require a zone change and it is unlikely that the City of San Diego would grant such a request. Therefore, Laws, Ordinances, Regulations, and Standards (LORS) override would likely be necessary for Alternative A.

1.5.1.10 Conclusion

AFC Alternative A is a feasible alternative as it would meet most of the project objectives. Alternative A would result in increased engineering and construction costs as compared to the proposed Project.

AFC Alternative A would generally have similar environmental impacts as the proposed Project, however, impacts to air quality and visual resources would be greater. All impacts would be less than significant with mitigation. Therefore, although AFC Alternative A may be feasible, it would not reduce any environmental impacts as compared to the proposed Project. As noted above, the landfill has indicated that this parcel is not available to the Applicant for the purposes of constructing a power plant.

1.5.2 AFC Alternative B

1.5.2.1 Topography/Engineering Constraints

AFC Alternative B would require a longer gas lateral than the proposed Project and would require construction of a new access road to the site. AFC Alternative B would require construction of a separate SDG&E utility switchyard; the SDG&E utility switchyard for the proposed Project would be co-located with the power plant site. AFC Alternative B would require the shortest gen tie, though the gen tie would need to be entirely undergrounded. AFC Alternative B would require equal or greater grading requirements (in quantity and complexity) than the proposed Project.

1.5.2.2 Biological Resources

Based upon the CNDDB search conducted for the proposed Project, AFC Alternative B is within the potential habitat range of two Special Status Species, the San Diego barrel cactus and the Variegated dudleya. AFC Alternative B plant site contains San Diego barrel cactus that would need to be translocated if within the area of disturbance of the site (see discussion in Section 4.12 of the AFC). AFC Alternative B plant site also contains Variegated dudleya that would need to be translocated if within the area of disturbance of the site. It is not anticipated that AFC Alternative B would directly affect threatened or endangered species from development of the Project.

The linear routes would generally follow roads and ROWs that are partly disturbed and any additional construction would avoid sensitive plants wherever possible. Small sites can be avoided if discovered through small changes within the transmission line corridor and span length, minor changes to linear routes, or translocation of plants. The switchyard would be sited to minimize impacts to sensitive plants. There is a slight possibility of bird collisions with the gen tie; the risk of collision would not be significantly different between the proposed and alternative gen ties.

To minimize the impacts to sensitive plants, a Sensitive Plant Relocation plan would be prepared similar to the existing plan currently approved for the adjacent Sycamore Landfill. The sensitive plants would be relocated to the existing Sycamore Landfill relocation site or to the proposed exchange parcel or other suitable habitat area as deemed appropriate by the City of San Diego.

The Applicant would use APLIC guidelines in the design of the gen tie to prevent impacts to bird species from electrocutions or collision during operation of the gen tie.

AFC Alternative B would not directly impact wetlands or waters of the U.S. and would not adversely impact wildlife habitat.

Impacts to biological resources from AFC Alternative B would be greater than the proposed Project.

1.5.2.3 Land Use

The AFC Alternative B plant site is currently zoned Residential (RS 1-8) and is within the MHPA. A zone change and General Plan Amendment will be required for the AFC Alternative B plant site and will need to be withdrawn from the MHPA. As the San Diego City Council denied initiation of an amendment to the East Elliot Community Plan to redesignate land from open space to industrial for the Quail Brush Generation Project (City of San Diego Resolution R-307694, October 11, 2012, http://docs.sandiego.gov/council_reso_ordinance/rao2012/R-307694.pdf), it is unlikely that the City of San Diego would consider a zone change, General Plan Amendment, and MHPA boundary line adjustment for the AFC Alternative B plant site. Through preliminary negotiations with the landowner it was determined that the AFC Alternative B plant site is being proposed as mitigation for coastal disturbance for another project and therefore may not be available for development.

1.5.2.4 Noise

The closest residence to the proposed Project site is 5,300 feet to the southeast of the site across Mast Boulevard. Sources of environmental noise in the Project area include the industrial landfill operations and vehicle traffic on local roads. Construction noise may be periodically audible at several residential receptor locations; construction will be largely limited to daytime hours. The facility will be designed to comply with the City of San Diego, City of Santee, and CEC's requirements.

AFC Alternative B is located further from residences than the proposed Project site. Sources of environmental noise for AFC Alternative B would be the same as the proposed Project site.

1.5.2.5 Visual Resources

The potential for visual resource impacts associated with each of the sites varies depending on the relative visibility of the sites from roads, residences, and recreational users of the Mission Trails Park, and the length and potential visibility of any new transmission lines that the power plant would require. Visual impacts are also a function of the surrounding facilities.

The proposed Project and AFC Alternative B are located in the City of San Diego near the Sycamore Landfill. Land within 1 mile of the proposed Project site and AFC Alternative B are primarily used for industrial purposes, particularly the Sycamore Landfill, or for informal recreation. The proposed Project and AFC Alternative B are located close to Mission Trails Regional Park. The proposed Project and AFC Alternative B are also located west of the Santee Boulders, a popular rock climbing spot on private lands. Though not modeled, it is anticipated that the Visual Sphere of Influence of the proposed Project and AFC Alternative B would be similar as the sites are less than 1 mile apart. However, the 138kV gen tie is concealed from the highway and the park in large measure by the topography to the east, whereas the 230kV gen tie would have been visible from both vantage points. Visual impacts during construction and operation would be greater than the proposed Project.

1.5.2.6 Air Quality

The power plant's configuration and operation would be essentially the same for AFC Alternative B. The type and quantity of air emissions from the proposed Project and AFC Alternative B would be identical. However, the impacts on the human population and the environment may differ slightly because of the location of residences and other human uses in the project vicinity. Local terrain is similar between AFC Alternative B and the proposed Project and not likely to significantly change impacts. AFC Alternative B is in the same air district and air basin as the proposed Project and any required mitigation acquired by the Applicant would be equally appropriate for AFC Alternative B.

1.5.2.7 Cultural Resources

AFC Alternative B was included within the cultural resources survey area for the proposed Project and no historic resources were identified. A cultural resources record search was conducted at the SCIC, with supplemental information provided by the San Diego Museum of Man and the Santee Historical Society. This search determined that cultural resource sensitivity is generally low to moderate.

The linear routes for AFC Alternative B were sited in previously disturbed areas wherever possible. Small cultural resources, if discovered, can be avoided through small route changes within the linear corridors (gen tie, gas line, and access road), and by altering span length. Mitigation measures described in AFC Section 4.1 would reduce or mitigate potential significant impacts on significant cultural resources.

1.5.2.8 Socioeconomics

As noted above in Section 1.5.1.8, Executive Order 12896, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, would apply.

As shown in Figure 1.5-1, minority populations within the vicinity of Alternative Site B range from 20 percent to 30 percent of the total population. Minority populations for Alternative B and vicinity are less than 50 percent of the total population.

As shown in Figure 1.5-2, the percent of the population within the vicinity of Alternative B that is below the poverty line ranged from 0 to 10 percent. This poverty level falls below the U.S. Census Bureau's threshold a poverty area. Environmental justice impacts during construction and operation would be similar for the proposed Project and AFC Alternative B.

1.5.2.9 Project Objectives

Alternative B would be able to meet the following project objectives:

- Alternative B is located with the San Diego service territory and could allow for the construction of a power plant that could provide quick start capabilities to provide reliable energy at peak times as well as meet local RA requirements.
- Alternative B would interconnect into the Carlton Hills Substation and therefore could be constructed and on-line by 2014.
- A power plant could be constructed on Alternative B site which could provide quick start capabilities to support the incorporation of intermittent renewable energy resources into SDG&E's portfolio to enable SDG&E to achieve its 33% by 2020 Renewable Portfolio Standard obligations.
- Alternative B is located within SDG&E's service area near a load center that has infrastructure with available capacity and ability to reliably support Project electric transmission, fuel supply, and water needs with minimal impacts on existing infrastructure systems or require new construction.
- AFC Alternative B would not be able to meet the following project objectives:
    - Alternative B may not be available for development in a reasonable timeframe because it is being proposed for mitigation for another development.
    - Alternative B is not zoned in a manner that allows development of the proposed project and it is unlikely that the City of San Diego would change the zoning. Therefore, a LORS override would likely be necessary for Alternative B.

1.5.2.10 Conclusion

AFC Alternative B is not a feasible alternative as it is not likely to be available for development in the near term. Although the site would result in increased engineering and construction costs as compared to the proposed Project,

AFC Alternative B would have greater visual impacts and potentially greater biological and cultural impacts. It is assumed, however, that all potentially significant impacts could be reduced to a less than significant level through implementation of the mitigation measures in the AFC.

1.5.3 AFC Alternative C

1.5.3.1 Topography/Engineering Constraints

AFC Alternative C would require the longest gas lateral of all the AFC alternatives and would require construction of a new access road to the site. AFC Alternative C would require construction of a separate SDG&E utility switchyard; the SDG&E utility switchyard for the proposed Project would be co-located with the power plant site. Alternative C is the only transmission route of the three AFC alternatives that would not need to be undergrounded. Alternative C would have greater grading requirements (in quantity and complexity) than the proposed Project.

1.5.3.2 Biological Resources

Based upon the CNDDB search conducted for the proposed Project, AFC Alternative C is within the potential habitat range of two Special Status Species, the San Diego barrel cactus and the Variegated dudleya. AFC Alternative C plant site contains San Diego barrel cactus that would need to be translocated if within the area of disturbance of the site (see discussion in Section 4.12 of the AFC). It is not anticipated that AFC Alternative C would directly affect threatened or endangered species from development of the Project.

The linear routes would generally follow roads and ROWs that are partly disturbed and any additional construction would avoid sensitive plants wherever possible. Small sites can be avoided if discovered through small changes within the transmission line corridor and span length, minor changes to linear routes, or translocation of plants. The switchyard would be sited to minimize impacts to sensitive plants. There is a slight possibility of bird collisions with the gen tie; the risk of collision would not be significantly different between the proposed and alternative gen ties.

To minimize the impacts to sensitive plants, a Sensitive Plant Relocation plan will be prepared similar to the existing plan currently approved for the adjacent Sycamore Landfill. The sensitive plants will be relocated to the existing Sycamore Landfill relocation site or to the proposed exchange parcel or other suitable habitat area as deemed appropriate by the City of San Diego.

The Applicant would use APLIC guidelines in the design of the gen tie to prevent impacts to bird species from electrocutions or collision during operation of the gen tie.

AFC Alternative C would not directly impact wetlands or waters of the U.S. and would not adversely impact wildlife habitat.

1.5.3.3 Land Use

The AFC Alternative C plant site is currently zoned Residential (RS 1-8) and is within the MHPA. A zone change and General Plan Amendment will be required for the AFC Alternative C plant site and the project will need to be withdrawn from the MHPA. The AFC Alternative C switchyard is located in an Industrial zone (IH 2-1) and is not within the MHPA; the AFC Alternative C switchyard would be consistent with existing land uses and policies and would not require any changes in land use. As the San Diego City Council denied initiation of an amendment to the East Elliot Community Plan to redesignate land from open space to industrial for the Quail Brush Generation Project (City of San Diego Resolution R-307694, October 11, 2012, http://docs.sandiego.gov/council_reso_ordinance/rao2012/R-307694.pdf), it is unlikely that the City of San Diego would consider a zone change, General Plan Amendment, and MHPA boundary line adjustment for the AFC Alternative C plant site.

1.5.3.4 Noise

The closest residence to the proposed Project site is 7,000 feet to the southeast of the site across Mast Boulevard. Sources of environmental noise in the Project area include the industrial landfill operations and vehicle traffic on local roads. Construction noise may be periodically audible at several residential receptor locations; construction will be largely limited to daytime hours. The facility will be designed to comply with the City of San Diego, City of Santee, and CEC's requirements.

AFC Alternative C is located further from residences than the proposed Project site. Sources of environmental noise for AFC Alternative C would be the same as the proposed Project site.

1.5.3.5 Visual Resources

The potential for visual resource impacts associated with each of the sites varies depending on the relative visibility of the sites from roads, residences, and recreational users of the Mission Trails Regional Park, and the length and potential visibility of any new transmission lines that the power plant would require. Visual impacts are also a function of the surrounding facilities.

The proposed Project and AFC Alternative C are located in the City of San Diego near the Sycamore Landfill. Land within 1 mile of the proposed Project site and AFC Alternative C are primarily used for industrial purposes, particularly the Sycamore Landfill, or for informal recreation. The proposed Project and AFC Alternative C are located close to Mission Trails Regional Park. The proposed Project and AFC Alternative C are also located west of the Santee Boulders, a popular rock climbing spot on private lands. Though not modeled, it is anticipated that the Visual Sphere of Influence of the proposed Project and AFC Alternative C would be similar as the sites are less than 1 mile apart. However, the 138kV gen tie is concealed from the highway and the park in large measure by the topography to the east, whereas the 230kV gen tie would have been visible from both vantage points. Visual impacts during construction and operation would be greater than the proposed Project.

1.5.3.6 Air Quality

The power plant's configuration and operation would be essentially the same for AFC Alternative C. The type and quantity of air emissions from the proposed Project and AFC Alternative C would be identical. However, the impacts on the human population and the

environment may differ slightly because of the location of residences and other human uses in the project vicinity. Local terrain is similar between AFC Alternative C and the proposed Project and not likely to significantly change impacts. AFC Alternative C is in the same air district and air basin as the proposed Project and any required mitigation acquired by the Applicant would be equally appropriate for AFC Alternative C.

1.5.3.7 Cultural Resources

AFC Alternative C was included within the cultural resources survey area for the proposed Project and no historic resources were identified. A cultural resources record search was conducted at the SCIC, with supplemental information provided by the San Diego Museum of Man and the Santee Historical Society. This search determined that cultural resource sensitivity is generally low to moderate.

The linear routes for Alternative C were sited in previously disturbed areas wherever possible. Small cultural resources, if discovered, can be avoided through small route changes within the linear corridors (gen tie, gas line, and access road), and by altering span length. Mitigation measures described in AFC Section 4.1 would reduce or mitigate potential significant impacts on significant cultural resources.

1.5.3.8 Socioeconomics

As noted above in Section 1.5.1.8, Executive Order 12896, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, would apply.

As shown in Figure 1.5-1, minority populations in the vicinity or Census Block for Alternative C range from 20 to 30 percent of the total population. Minority populations for Alternative C and vicinity are less than 50 percent of the total population.

As shown in Figure 1.5-2, the percent of the population within the vicinity of Alternative C that is below the poverty line ranged from 0 to 10 percent. This poverty level falls below the U.S. Census Bureau's threshold for a poverty area. Environmental justice impacts during construction and operation would be similar for the proposed Project and AFC Alternative C.

1.5.3.9 Project Objectives

AFC Alternative C could meet the most of the project basic objectives, as follows:

- Alternative C is located with the San Diego service territory and could allow for the construction of a power plant that could provide quick start capabilities to provide reliable energy at peak times as well as meet local RA requirements.
- Alternative C would interconnect into the Carlton Hills Substation and therefore could be constructed and on-line by 2014.
- A power plant could be constructed on Alternative C site which could provide quick start capabilities to support the incorporation of intermittent renewable energy resources into SDG&E's portfolio to enable SDG&E to achieve its 33% by 2020 Renewable Portfolio Standard obligations.
- Alternative C is located within SDG&E's service area near a load center that has infrastructure with available capacity and ability to reliably support Project electric

transmission, fuel supply, and water needs with minimal impacts on existing infrastructure systems or require new construction.

- Alternative C is owned by Sycamore Landfill and may be available for development in a reasonable timeframe.

AFC Alternative C would not meet the following project objective:

- The Alternative C plant site would require a zone change and a General Plan Amendment, which the City of San Diego is unlikely to grant. Therefore, a LORS override would likely be necessary for AFC Alternative C.

1.5.3.10 Conclusion

AFC Alternative C is a feasible alternative as it is capable of meeting most of the project's basic objectives. Although the site would result in increased engineering and construction costs as compared to the proposed Project, those costs are presumed to be feasible when considered as a percentage of the overall project cost.

AFC Alternative C would have greater visual impacts as the proposed Project, and all impacts would be less than significant with mitigation. Therefore, although AFC Alternative C may be feasible, it would not reduce any environmental impacts as compared to the proposed Project.

1.5.4 Alternative Site 1

1.5.4.1 Topography/Engineering Constraints

Alternative Site 1 is located in open lands with a network of trails and high voltage transmission lines running through the northern area of the site. The site is located on or near a ridge top. Access to the site would be via existing roads such as Princess Joann Road and the dirt access roads used to access existing transmission lines on the site on the north or Riverford Road and El Nopal and the existing dirt roads crossing the site on the south. A section of these roads would require improvements such as paving to accommodate the site access requirements.

An approximately 1.5-mile long gen tie from the power plant to the Santee substation located to the southwest of the site would be required. A new 8-inch diameter natural gas line would be required, which would be approximately 3 miles long, depending on the actual route selected and final site location. Topography and engineering constraints for Alternative Site 1 would be greater than the proposed Project site.

1.5.4.2 Biological Resources

Based upon the CNDDB search conducted for the proposed Project, Alternative Site 1 is within the potential habitat range of five Special Status Species, coastal California gnatcatcher (*Polioptila californica californica*), orange-throated whiptail (*Aspidoscelis hyperythra*), San Diego barrel cactus (*Ferocactus viridescens),* San Diego black-tailed jackrabbit (*Lepus californica bennettii*), southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*) and Variegated dudleya. These CNDDB occurrences were recorded prior to 2002. However, due to the high quality Diegan coastal sage scrub that remains on the site, it is highly likely that all of these sensitive plant and wildlife species would occur within Alternative Site 1.

The linear routes would generally follow roads and existing ROWs that are partly disturbed, and any additional construction would avoid sensitive plants wherever possible. Small areas could be avoided if present through minor changes within the transmission line corridor and span length, minor changes to linear routes, or through translocation of plants. The facility would be sited to minimize impacts to sensitive plants.

The Applicant would use APLIC guidelines in the design of the gen tie to prevent impacts to bird species from electrocutions or collision during operation of the gen tie.

Alternative Site 1 would not directly impact wetlands or waters of the U.S. and would not adversely impact any wildlife movement corridor. In addition, Alternative Site 1 is not located within an existing MHPA, Endangered Species Act (ESA), or United States Fish and Wildlife Service (USFWS)-designated critical habitat.

Alternative Site 1 is located immediately adjacent to residential development to the northeast and southwest. There are open space areas to the northwest. The San Diego River is located immediately south of Alternative Site 1. Overall, Alternative Site 1 contains higher quality habitat than the proposed Project, therefore there would be greater impact for Alternative Site 1 as compared to the proposed Project site.

1.5.4.3 Land Use

Alternative Site 1 is within the Limited Agriculture (A70), Specific Plan (S88), and Single Residential (RS) zone districts within unincorporated San Diego County and is within the Park/Open Space (P/OS) and Light Industrial (IL) zone districts within the City of Santee. One parcel for Alternative Site 1 is located within Planning Area I of the Upper San Diego River Improvement Project Riverway Specific Plan. The proposed use for Planning Area I is Single Family Residential; a power plant would not be consistent with this proposed use. Within unincorporated San Diego County, the RS zone district does not allow major impact services and utilities, and the A70 and the S88 zone districts allow major impact services and utilities with a Major Use Permit.

As stated in the City of Santee's Municipal Code, public buildings and facilities are permitted within the P/OS and IL zone districts upon issuance of a CUP. Additionally, the P/OS and IL zoning ordinances do not state whether utilities are allowed within their respective zone designations. A power plant or electrical generating facility has not clearly been defined as a public building or facility in the City's Municipal Code. Therefore, it is unknown whether the proposed Project would be consistent with current zoning for Alternative Site 1.

1.5.4.4 Noise

Alternative Site 1 is surrounded by residences on all sides except to the northeast. Sources of environmental noise in the Project area include vehicle traffic on local roads. Construction noise may be periodically audible at many residential receptor locations; construction will be largely limited to daytime hours. The facility will be designed to comply with all applicable requirements.

Alternative Site 1 is located closer to residences than the proposed Project site. Sources of environmental noise for Alternative Site 1 would be greater than the proposed Project site.

1.5.4.5 Visual Resources

Alternative Site 1 is located on an undisturbed site on a ridge top. Alternative Site 1 is surrounded by residential neighborhoods with the exception of open lands to the northeast. Alternative Site 1 and its associated gen tie would be highly visible from the adjacent residential areas, residential streets in the area, and Highway 67.

Because of the site topography and its location on a ridge top, visual impacts of Alternative Site 1 during construction and operation would be greater than the proposed Project.

1.5.4.6 Air Quality

The power plant's configuration and operation would be essentially the same for Alternative Site 1. The type and quantity of air emissions from the proposed Project and Alternative Site 1 would be identical. However, the impacts on the human population and the environment could differ slightly because of the location of residences and other human uses in the project vicinity. Local terrain is similar between Alternative Site 1 and the proposed Project and not likely to significantly change impacts. Alternative Site 1 is in the same air district and air basin as the proposed Project and any required mitigation acquired by the Applicant would be equally appropriate for Alternative Site 1.

1.5.4.7 Cultural Resources

A cultural resources record search was conducted at the SCIC for Alternative Site 1 and the one-mile area surrounding it. This search showed that 20 previous cultural resources surveys have been conducted within this area, and that 22 sites had been recorded there. This search indicates that cultural resource sensitivity is generally low to moderate for Alternative Site 1, which is equal to the proposed Project.

1.5.4.8 Socioeconomics

As noted above in Section 1.5.1.8, Executive Order 12896, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, would apply.

As shown in Figure 1.5-1, minority populations within the vicinity of Alternative Site 1 range from 10 percent to 20 percent of the total population. Minority populations for Alternative Site 1 and vicinity do not exceed 50 percent of the total population and a minority population has not been defined.

As shown in Figure 1.5-2, the percent of the population within the vicinity of Alternative Site 1 that is below the poverty line ranged from 0 to 10 percent. This poverty level falls below the U.S. Census Bureau's threshold for a poverty area. Environmental justice impacts during construction and operation would be similar to the proposed Project.

1.5.4.9 Project Objectives

Alternative Site 1 would be able to meet the following project objectives:

- Alternative Site 1 is located with the San Diego service territory and could allow for the construction of a power plant that could provide quick start capabilities to provide reliable energy at peak times as well as meet local RA requirements.
- A power plant could be constructed on Alternative Site 1 which could provide quick start capabilities to support the incorporation of intermittent renewable energy resources into SDG&E's portfolio to enable SDG&E to achieve its 33% by 2020 Renewable Portfolio Standard obligations.

Alternative Site 1 would not be able to meet the following project objectives:

- Alternative B may not be available for development in a reasonable timeframe because it would not be able to interconnect into the Carlton Hills Substation and would therefore require a change in the point of interconnection. This change would preclude the Project from coming on line by 2014.
- Although Alternative Site 1 is located within SDG&E's service area near a load center, it is not located in the immediate vicinity of necessary infrastructure. Development of the project on Alternative Site 1 would require the construction of a 1.5-mile long gen tie as well as a 3-mile long gas line. The construction of these facilities would add significant cost to the project as well as result in additional environmental impacts.
- It is unclear whether the proposed Project could be constructed on Alternative Site 1 under existing zoning. Portions of the site are zoned in a manner that would not allow for construction of a power plant but it is uncertain whether it could be allowed in other portions of the site. It is also unclear whether a change in zoning could be obtained. In addition, a LORS override could possibly be required. The increased length of interconnections that would be required would result in increased construction costs. It appears that engineering cost would also be greater that the proposed Project.

1.5.4.10 Conclusion

Alternative Site 1 would not meet most of the Project's basic objectives as it could not be constructed in the necessary time frame and it would require the construction of significant infrastructure. Alternative Site 1 would have increased topographic and engineering constraints than the proposed Project. Environmental impacts would generally be similar to the proposed Project, although the site would result in increased impacts related to biological resources, visual resources, and noise. These impacts would be mitigable. However, the topographic and engineering constraints would result in increased construction costs. This site does not support the Project objectives because it would require a different POI that would result in an approximate 3-year delay in the schedule and increased costs associated with the CAISO studies that would be required to determine a new POI for the Project.

1.5.5 Alternative Site 2

1.5.5.1 Topography/Engineering Constraints

Alternative Site 2 is located on open lands that are relatively flat. Access to the site would be via access off of the existing Sycamore Canyon Road. Depending on the route, the gen tie would extend from the power plant along the west side of Sycamore Canyon Road approximately 2.4 miles to the Carlton Hills Substation. A new, 8-inch diameter natural gas line would be required, and would be approximately 3.5 miles long, depending on the actual route selected and final site location. The site is relatively level and is located toward the bottom of Sycamore

Canyon. The overall slope on the site is from the north to the south, and east to west. A wide drainage channel runs north to south along the western side of the site and the watershed draining through the site may be considerably larger and contribute more stormwater runoff than the drainages associated with the proposed Project. Possible flooding of the site during large storm events could require raising the power plant elevation and/or other flood protection measures. Construction of stormwater controls in the drainage channel may be restricted by the USACE. Topographic constraints would be less than the proposed Project but the engineering constraints for Alternative Site 2 are anticipated to be equivalent to the proposed Project site.

1.5.5.2 Biological Resources

Based upon the CNDDB search conducted for the proposed Project, Alternative Site 2 is within the potential habitat range of fourteen Special Status Species, coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*), coastal California gnatcatcher, Copper's hawk (*Accipiter cooperi*i), orange-throated whiptail, Palmer's grapplinghook (*Harpagonella palmeri*), red-diamond rattlesnake (*Crotalus ruber*), San Diego barrel cactus, San Diego black-tailed jackrabbit, San Diego desert woodrat (*Neotoma lepida intermedia*), San Diego goldstar (*Bloomeria clevelandii*), two-striped garter snake (*Thamnophis hammondii),* Variegated dudleya, western spadefoot (*Spea hammondii*), white-tailed kite (*Elanus leucurus*), and willowy monardella (*Monardella linoides* ssp. *viminea*). Alternative Site 2 is also located within the vicinity of Southern Sycamore Alder Riparian Forest.

These CNDDB occurrences were recorded prior to 2002, with the exception of the white-tailed kite (2010) and two-striped garter snake (2007). However, due to the low quality Diegan coastal sage scrub that remains on the site, these sensitive plant and wildlife species have a moderate potential to occur within Alternative Site 2.

The linear routes would generally follow roads and existing ROWs that are partly disturbed and any additional construction would avoid sensitive plants wherever possible. Small areas could be avoided if present through minor changes within the transmission line corridor and span length, minor changes to linear routes, or through translocation of plants. The facility would be sited to minimize impacts to sensitive plants.

The Applicant would use APLIC guidelines in the design of the gen tie to prevent impacts to bird species from electrocutions or collision during operation of the gen tie.

Alternative Site 2 could directly impact wetlands or waters of the U.S. and could also adversely impact a wildlife movement corridor. Although Alternative Site 2 is not located within an existing MHPA, it is located within an ESA and within USFWS-designated critical habitat for coastal California gnatcatcher and willowy mondarella. Consequently, there would be a greater impact to biological resources from Alternative Site 2 as compared to the proposed Project.

Alternative Site 2 is located immediately adjacent to undeveloped open space in all directions. Residential development is approximately 1 mile to the south and southeast. The drainage feature that flows through Alternative Site 2 is part of the groundwater recharging system in the City of Santee. Overall, Alternative Site 2 contains higher quality habitat when compared to that of the proposed Project.

1.5.5.3 Land Use

Alternative Site 2 is zoned Planned Development (PD). As stated in the City of Santee's Municipal Code, public buildings and facilities are permitted within the PD zone district upon issuance of a CUP. Additionally, the PD zoning ordinance does not state whether utilities are allowed within their respective zone designations. A power plant or electrical generating facility has not clearly been defined as a public building or facility in the City's Municipal Code. Therefore, it is unknown whether the proposed Project would be consistent with current zoning for Alternative Site 2.

1.5.5.4 Noise

The closest residence to Alternative Site 2 is 5,900 feet to the southeast. Sources of environmental noise in the Project area include the vehicle traffic on local roads. Construction noise may be periodically audible at several residential receptor locations; construction will be largely limited to daytime hours. The facility will be designed to comply with all applicable noise regulations.

Alternative Site 2 is located further from residences than the proposed Project site. Sources of environmental noise for Alternative Site 2 would be less than the proposed Project site.

1.5.5.5 Visual Resources

A ridge separates the residences to the southeast from view of Alternative Site 2 and several ridges separate the Alternative Site 2 from the closest residences to the northwest, over 1.5 miles away. Based on local topography and locations of sensitive receptors, it is assumed that visual impacts during construction and operation would be less than the proposed Project, but a visual resources analysis has not been conducted to confirm that assumption.

1.5.5.6 Air Quality

The power plant's configuration and operation would be essentially the same for Alternative Site 2 as that of the proposed Project. The type and quantity of air emissions from the proposed Project and Alternative Site 2 would be identical. However, the impacts on the human population and the environment may differ slightly because of the location of residences and other human uses in the project vicinity. Local terrain is similar between Alternative Site 2 and the proposed Project and not likely to significantly change impacts. Alternative Site 2 is in the same air district and air basin as the proposed Project and any required mitigation acquired by the Applicant would be equally appropriate for Alternative Site 2.

1.5.5.7 Cultural Resources

A cultural resources record search was conducted at the SCIC for Alternative Site 2 and the one-mile area surrounding it. This search showed that eight previous cultural resources surveys have been conducted within this area and that 21 sites have been recorded there. This search indicates that cultural resource sensitivity for Alternative Site 2 is generally moderate to high, which is higher than the proposed Project, therefore the impacts for Alternative Site 2 would be greater than the proposed Project.

1.5.5.8 Socioeconomics

As noted above in Section 1.5.1.8, Executive Order 12896, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, would apply.

As shown in Figure 1.5-1, minority populations within the vicinity of Alternative Site 2 range from 10 to 20 percent of the total population. Minority populations for Alternative Site 2 and vicinity are less than 50 percent of the total population.

As shown in Figure 1.5-2, the percent of the population within the vicinity of Alternative Site 2 that is below the poverty line ranged from 0 to 10 percent. This poverty level falls below the U.S. Census Bureau's threshold for a poverty area. Environmental justice impacts during construction and operation would be similar for the proposed Project and Alternative Site 2.

1.5.5.9 Project Objectives

Alternative Site 2 would be able to meet the following project objectives:

- Alternative Site 2 is located with the San Diego service territory and could allow for the construction of a power plant that could provide quick start capabilities to provide reliable energy at peak times as well as meet local RA requirements.
- Alternative Site 2 could be able to be developed in a reasonable timeframe because it would be able to interconnect into the Carlton Hills Substation and could therefore possibly come on line by 2014.
- A power plant could be constructed on Alternative Site 2 which could provide quick start capabilities to support the incorporation of intermittent renewable energy resources into SDG&E's portfolio to enable SDG&E to achieve its 33% by 2020 Renewable Portfolio Standard obligations.

Alternative Site 2 would not be able to meet the following project objectives:

- Although Alternative Site 2 is located within SDG&E's service area near a load center, it is not located in the immediate vicinity of necessary infrastructure. Development of the project on Alternative Site 2 would require the construction of a 2.4-mile gen tie as well as a 3.5-mile gas line. The construction of these facilities would add significant cost to the project as well as result in additional environmental impacts. .
- It is unclear whether the proposed Project could be constructed on Alternative Site 2 under existing zoning or whether it would be possible to obtain a change of zoning from the City of Santee if necessary. A LORS override could possibly be required.

1.5.5.10 Conclusion

Alternative Site 2 would not meet most of the project objectives because it would require the construction of additional infrastructure. Alternative Site 2 would have similar topographic constraints as the proposed Project, but engineering constraints would be higher. Environmental impacts would be generally similar to the proposed Project, although the site would result in increased construction costs and impacts related to cultural resources. Engineering constraints would result in higher construction costs. The environmental impacts would be mitigable. This site does not support the Project objectives because it would require a different POI that would

result in an approximate 3-year delay in the schedule and increased costs associated with the CAISO studies that would be required to determine a new POI for the Project.

1.5.6 Alternative Site 3

1.5.6.1 Topography/Engineering Constraints

Alternative Site 3 is located on previously undisturbed lands approximately 0.25 miles east of the existing Los Coches Substation. Alternative Site 3 is moderately sloped and several rolling ridges extend from east to west across the site. Access to the site would be via existing paved roads with a short new access road to the power plant site. Several high voltage transmission lines cross Alternative Site 3 and siting a power plant within this area would be difficult from an engineering perspective without rerouting the existing lines. The gen tie would likely extend southwest from the power plant approximately 1,300 feet to the Los Coches substation. A new, 8-inch diameter natural gas line would be required, likely extending approximately 6.5 miles from the existing gas main to the site, depending on the actual route selected and final site location. Topography constraints for Alternative Site 3 would be generally similar to the proposed Project site, although the presence of the existing transmission lines would increase the complexity of the site design.

1.5.6.2 Biological Resources

Based upon the CNDDB search conducted for the proposed Project, Alternative Site 3 is within the potential habitat range of eight Special Status Species, coastal cactus wren, coastal California gnatcatcher, Coronado Island skink (*Plestiodon skiltonianus interparietalis*), orange-throated whiptail, pocketed free-tailed bat (*Nyctinomops femorosaccus*), San Diego black-tailed jackrabbit, silvery leg-less lizard (*Anniella pulchra pulchra*), and southern California rufous-crowned sparrow.

These CNDDB occurrences were recorded prior to 2002. However, due to the moderate quality of Diegan coastal sage scrub within the southern portion of the Alternative Site 3, these sensitive plant and wildlife species have a moderate potential to occur.

The linear routes would generally follow roads and existing ROWs that are partly disturbed and any additional construction would avoid sensitive plants wherever possible. Small areas can be avoided if discovered through minor changes within the transmission line corridor and span length, minor changes to linear routes, or through translocation of plants. The facility would be sited to minimize impacts to sensitive plants.

The Applicant would use APLIC guidelines in the design of the gen tie to prevent impacts to bird species from electrocutions or collision during operation of the gen tie.

Alternative Site 3 would not directly impact wetlands or waters of the U.S. but could likely adversely impact a wildlife movement corridor. Although Alternative Site 3 is not located within an existing MHPA, it is located within an ESA but not within any USFWS-designated critical habitat.

Alternative Site 3 is located immediately adjacent to undeveloped open space to the north and east. Residential development occurs to the west and south. Lake Jennings is located

immediately southeast of the Alternative Site 3. Overall, Alternative Site 3 contains similar quality habitat than the proposed Project and would result in similar impacts to biological resources as the proposed Project.

1.5.6.3 Land Use

Alternative Site 3 is located within Unincorporated San Diego County within the Rural Residential (RR) zone district. The RR zone district allows for major impact services and utilities with a Major Use Permit.

1.5.6.4 Noise

The closest residence to Alternative Site 3 is 350 feet to the north of the site, and additional residences are less than 500 feet to the east and south of the site. Sources of environmental noise in the Project area include the vehicle traffic on local roads. Construction noise may be periodically audible at several residential receptor locations; construction will be largely limited to daytime hours. The facility will be designed to comply with all applicable noise regulations.

Alternative Site 3 is located closer to residences than the proposed Project site. Sources of environmental noise for Alternative Site 3 would be the greater than the proposed Project site.

1.5.6.5 Visual Resources

Alternative Site 3 is located on an undisturbed site on a hill. Alternative Site 3 is surrounded by residential neighborhoods. Alternative Site 3 would be highly visible from the adjacent residential areas and travelers along Lake Jennings Park Road and El Monte Road. Alternative Site 3 is separated from Lake Jennings by a ridge, but stacks may be visible from users of Lake Jennings Park. As the Alternative 3 site is adjacent to an existing substation, transmission line impacts would be negligible.

Visual impacts during construction and operation would be greater than the proposed Project.

1.5.6.6 Air Quality

The power plant's configuration and operation would be essentially the same for Alternative Site 3. The type and quantity of air emissions from the proposed Project and Alternative Site 3 would be identical. However, the impacts on the human population and the environment may differ slightly because of the location of residences and other human uses in the project vicinity. Local terrain is similar between Alternative Site 3 and the proposed Project and not likely to significantly change impacts. Alternative Site 3 is in the same air district and air basin as the proposed Project and any required mitigation acquired by the Applicant would be equally appropriate for Alternative Site 3.

1.5.6.7 Cultural Resources

A cultural resources record search was conducted at the SCIC for Alternative 3 and the one mile area surrounding it. This search showed that nine previous cultural resources surveys have been conducted within this area and that 11 sites have been recorded. This search indicates that cultural resource sensitivity for Alternative Site 3 is generally moderate to high, which is

higher than the proposed Project. Alternative Site 3 would thus have greater impacts to cultural resources than the proposed Project.

1.5.6.8 Socioeconomics

As noted above in Section 1.5.1.8, Executive Order 12896, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, would apply.

As shown in Figure 1.5-1, minority populations within the vicinity of Alternative Site 3 range from 10 percent to 20 percent of the total population. Minority populations for Alternative Site 3 and vicinity do not exceed 50 percent of the total population and a minority population has not been defined.

As shown in Figure 1.5-2, the percent of the population within the vicinity of Alternative Site 3 that is below the poverty line ranged from 0 to 10 percent. This poverty level falls below the U.S. Census Bureau's threshold for a poverty area. Environmental justice impacts during construction and operation would be similar to the proposed Project.

1.5.6.9 Project Objectives

Alternative Site 3 would be able to meet the following project objectives:

- Alternative Site 3 is located with the San Diego service territory and could allow for the construction of a power plant that could provide quick start capabilities to provide reliable energy at peak times as well as meet local RA requirements.
- A power plant could be constructed on Alternative Site 3 which could provide quick start capabilities to support the incorporation of intermittent renewable energy resources into SDG&E's portfolio to enable SDG&E to achieve its 33% by 2020 Renewable Portfolio Standard obligations.
- It appears that a power plant could be authorized on Alternative Site 3 under existing zoning with a major use permit.

AFC Alternative Site 3 would not be able to meet the following project objectives:

- Alternative Site 3 may not be available for development in a reasonable timeframe because it would not be able to interconnect into the Carlton Hills Substation and would therefore require a change in the point of interconnection. This change would preclude the Project from coming on line by 2014.
- Although Alternative Site 3 is located within SDG&E's service area near a load center, it is not located in the immediate vicinity of necessary infrastructure. Development of the project on Alternative Site 3 would require the construction of a 6.5 mile gas line. Additionally, development of the site would likely require rerouting of existing transmission lines that cross the site. The construction of these facilities would add significant cost to the project as well as result in additional environmental impacts. .

1.5.6.10 Conclusion

Alternative Site 3 would not meet most of the project's basic objectives and therefore is not a feasible alternative. Alternative Site 3 would have increased engineering constraints due to the

drainages present on the site. Environmental impacts would be similar to the proposed Project, although the site would result in increased impacts related to noise, visual resources, and cultural resources. These impacts would be mitigable, but construction costs could be much higher than the proposed Project due to the need for flood control elements in the design. This site does not support the Project objectives because it would require a different POI that would result in an approximate 3-year delay in the schedule and increased costs associated with the CAISO studies that would be required to determine a new POI for the Project.

1.5.7 Alternative Site 4

1.5.7.1 Topography/Engineering Constraints

Alternative Site 4 is located on previously undisturbed lands. The site is located on a ridge top and would require significant grading to provide a level area for the power plant. Access to the site would be from Via Madera Lane and an existing, dirt access road for the transmission towers at the top of the ridge. The existing access road would require paving to meet power plant access requirements. Depending on the route, the gen tie would likely extend northwest from the power plant approximately 4 miles to the Granite Hills Substation. A new, 8-inch natural gas line would be required, likely extending approximately 7 miles from the existing gas main to the site, depending on the actual route selected and final site location. Topography and engineering constraints for Alternative Site 4 would be greater than the proposed Project site.

1.5.7.2 Biological Resources

Based upon the CNDDB search conducted for the proposed Project, Alternative Site 4 is within the potential habitat range of eight Special Status Species, coastal California gnatcatcher, Cooper's hawk, Dean's milk-vetch (*Astragalus deanei*), orange-throated whiptail, pocketed free-tailed bat, red-diamond rattlesnake, San Diego black-tailed jackrabbit, and southern California rufous-crowned sparrow.

These CNDDB occurrences were recorded prior to 2002. However, due to the moderate quality Diegan coastal sage scrub within the southern portion of the Alternative 4 site, these sensitive plant and wildlife species have a moderate potential to occur.

The linear routes would generally follow roads and existing ROWs that are partly disturbed and any additional construction would avoid sensitive plants wherever possible. Small areas could be avoided if discovered through small changes within the transmission line corridor and span length, minor changes to linear routes, or through translocation of plants. The facility would be sited to minimize impacts to sensitive plants.

The Applicant wouldl use APLIC guidelines in the design of the gen tie to prevent impacts to bird species from electrocutions or collision during operation of the gen tie.

Alternative Site 4 would not directly impact wetlands or waters of the U.S. and would not adversely impact a wildlife movement corridor. Although Alternative Site 4 is not located within an existing MHPA, it is located within an ESA but not within any USFWS-designated critical habitat.

Alternative Site 4 is located immediately adjacent to undeveloped open space to the south and east. Residential development occurs to the north and west. Overall, Alternative Site 4 contains higher quality habitat than the proposed Project, and therefore impacts to biological resources would be greater than the proposed Project.

1.5.7.3 Land Use

Alternative Site 4 is located within Unincorporated San Diego County within the General Agriculture (A72) zone district. The A72 zone district allows for major impact services and utilities with a Major Use Permit.

1.5.7.4 Noise

The closest residence to Alternative Site 4 is 200 feet to the north of the site, and additional residences are 350 feet to the west of the site; additional residences are 400 feet to the south of the site. Sources of environmental noise in the Project area include the vehicle traffic on local roads. Construction noise may be periodically audible at several residential receptor locations; construction will be largely limited to daytime hours. The facility will be designed to comply with all applicable noise regulations.

Alternative Site 4 is located closer to residences than the proposed Project site. Sources of environmental noise for Alternative Site 4 would be greater than the proposed Project site.

1.5.7.5 Visual Resources

Alternative Site 4 is located on an undisturbed site on a ridge top. Alternative Site 4 is surrounded by residential neighborhoods with the exception of a construction materials recycling and aggregate facility to the southwest. The Sycuan Golf and Tennis Resort is located 800 feet to the east of this site. Alternative Site 4, including the power plant and gen tie, would be highly visible from the adjacent residential areas, the Sycuan Golf and Tennis Resort, and travelers along Willow Glen Drive. Visual impacts during construction and operation would be greater than the proposed Project.

1.5.7.6 Air Quality

The power plant's configuration and operation would be essentially the same for Alternative Site 4. The type and quantity of air emissions from the proposed Project and Alternative Site 4 would be identical. However, the impacts on the human population and the environment may differ slightly because of the location of residences and other human uses in the project vicinity. Local terrain is similar between Alternative Site 4 and the proposed Project and not likely to significantly change impacts. Alternative Site 4 is in the same air district and air basin as the proposed Project and any required mitigation acquired by the Applicant would be equally appropriate for Alternative Site 4.

1.5.7.7 Cultural Resources

A cultural resources record search was conducted at the SCIC for Alternative 4 and the one mile area surrounding it. This search showed that 24 previous cultural resources surveys have been conducted within this area and that 14 sites have been recorded. This search indicates that cultural resource sensitivity of Alternative Site 4 is generally moderate to high, which is

higher than that of the proposed Project. Alternative Site 4 would thus have greater impacts to cultural resources than the proposed Project.

1.5.7.8 Socioeconomics

As noted above in Section 1.5.1.8, Executive Order 12896, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, would apply.

As shown in Figure 1.5-1, minority populations within the vicinity of Alternative Site 4 range from 10 percent to 20 percent of the total population. Minority populations for Alternative Site 1 and vicinity do not exceed 50 percent of the total population.

As shown in Figure 1.5-2, the percent of the population within the vicinity of Alternative Site 4 that is below the poverty line ranged from 0 to 10 percent. This poverty level falls below the U.S. Census Bureau's threshold for a poverty area. Environmental justice impacts during construction and operation would be similar to the proposed Project.

1.5.7.9 Project Objectives

Alternative Site 4 would be able to meet the following project objectives:

- Alternative Site 4 is located with the San Diego service territory and could allow for the construction of a power plant that could provide quick start capabilities to provide reliable energy at peak times as well as meet local RA requirements.
- A power plant could be constructed on Alternative Site 4 which could provide quick start capabilities to support the incorporation of intermittent renewable energy resources into SDG&E's portfolio to enable SDG&E to achieve its 33% by 2020 Renewable Portfolio Standard obligations.
- It appears that a power plant could be authorized on Alternative Site 4 under existing zoning with a Major Use Permit.

AFC Alternative Site 4 would not be able to meet the following project objectives:

- Alternative Site 4 may not be available for development in a reasonable timeframe because it would not be able to interconnect into the Carlton Hills Substation and would therefore require a change in the point of interconnection. This change would preclude the Project from coming on line by 2014.
- Although Alternative Site 4 is located within SDG&E's service area near a load center, it is not located in the immediate vicinity of necessary infrastructure. Development of the project on Alternative Site 3 would require the construction of a 4 mile gen tie and a 7 mile 8 inch diameter gas line. The construction of these facilities would add significant cost to the project as well as result in additional environmental impacts.

1.5.7.10 Conclusion

Alternative Site 4 does not meet most of the Project's basic objectives. Alternative Site 4 would have similar environmental impacts as the proposed Project, although the site would result in increased topographic and engineering constraints and impacts related to biological resources, noise, visual resources, and cultural resources. These construction constraints and environmental impacts would be mitigable, but construction costs could be considerable higher

than the proposed Project. This site does not support the Project objectives because it would require a different POI that would result in an approximate 3-year delay in the schedule and increased costs associated with the CAISO studies that would be required to determine a new POI for the Project.

1.5.8 Alternative Site 5

1.5.8.1 Topography/Engineering Constraints

Alternative Site 5 is located on previously undisturbed lands adjacent to the SDG&E San Miguel Substation. Topography of the site is hilly and several stormwater drainage gullies and channels run through the site. Access to the site would be via existing roads. Numerous high voltage transmission lines cross this site and siting a power plant within this area would be difficult from an engineering perspective without rerouting the existing lines. The existing access road is paved and may be sufficient to meet power plant access requirements. The gen tie would likely extend west from the power plant approximately 1,200 feet to the existing substation. A new natural gas line would be required, likely extending north from the existing gas main approximately 3 miles to the site, depending on the actual route selected and final site location. Due to the existing drainage channels and transmission lines, the topography and engineering constraints for Alternative Site 7 would be greater than the proposed Project site.

1.5.8.2 Biological Resources

Based upon the CNDDB search conducted for the proposed Project, Alternative Site 5 is within the potential habitat range of sixteen Special Status Species, California adolphia (*Adolphia californica*), coastal cactus wren, coastal California gnatcatcher, Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*), desert bedstraw (*Galium proliferum*), least Bell's vireo, mud nama (*Nama stenocarpum*), Munz's sage (*Salvia munzii*), Otay tarplant (*Deinandra conjugens*), Palmer's grapplinghook, San Diego barrel cactus, San Diego black-tailed jackrabbit, San Diego marsh-elder (*Iva hayesiana*), San Diego ringneck snake (*Diadophis punctatus similis*), spreading navarretia (*Navarretia fossalis*), and western spadefoot. The Alternative Site 5 is also located within the vicinity of San Diego Mesa Claypan Vernal Pool.

These CNDDB occurrences were recorded prior to 2002, with the exception of the least Bell's vireo (2006). However, due to the low quality Diegan coastal sage scrub that remains on the site, these sensitive plant and wildlife species have a low to moderate potential to occur within Alternative Site 5.

The linear routes would generally follow roads and existing ROWs that are partly disturbed and any additional construction would avoid sensitive plants wherever possible. Small areas could be avoided if discovered, through small changes within the transmission line corridor and span length, minor changes to linear routes, or through translocation of plants. The facility would be sited to minimize impacts to sensitive plants.

The Applicant would use APLIC guidelines in the design of the gen tie to prevent impacts to bird species from electrocutions or collision during operation of the gen tie.

Alternative Site 5 would not directly impact wetlands or waters of the U.S. and would not adversely impact a wildlife movement corridor. Although Alternative Site 5 is not located within

an existing MHPA, it is located within an ESA but not within any USFWS-designated critical habitat.

The Alternative Site 5 is located immediately adjacent to undeveloped open space to the north and east. Residential development occurs to the south and west. The Sweetwater Reservoir occurs immediately north. Overall, Alternative Site 5 contains similar habitat to that of the proposed Project and therefore the impacts to biological resources would be similar for Alternative Site 5 and the proposed Project.

1.5.8.3 Land Use

Alternative Site 5 is located within Unincorporated San Diego County within the Holding Area (S90), Specific Plan (S88), and Limited Agriculture (A70) zone districts. The S90, S88, and A70 zone districts allow for major impact services and utilities upon issuance of a Major Use Permit.

1.5.8.4 Noise

The closest residence to Alternative Site 5 is 700 feet to the south of the site, and additional residences are approximately 700 feet to the west of the site across Highway 125. Sources of environmental noise in the Project area include the vehicle traffic on local roads. Construction noise may be periodically audible at several residential receptor locations; construction will be largely limited to daytime hours. The facility will be designed to comply with all applicable noise regulations.

Alternative Site 5 is located closer to residences than the proposed Project site. Sources of environmental noise for Alternative Site 5 would be greater than the proposed Project site.

1.5.8.5 Visual Resources

Alternative Site 5 is located on a previously disturbed site that includes an existing SDG&E substation. Residential neighborhoods are 700 feet to the south and west. Alternative Site 6 would be highly visible from the adjacent residential areas and travelers along Highway 125. As Alternative Site 5 is located adjacent to an existing substation, visual impacts of the gen tie would be negligible. Visual impacts during construction and operation of the plant would be greater than for the proposed Project.

1.5.8.6 Air Quality

The power plant's configuration and operation would be essentially the same for Alternative Site 5. The type and quantity of air emissions from the proposed Project and Alternative Site 5 would be identical. However, the impacts on the human population and the environment may differ slightly because of the location of residences and other human uses in the project vicinity. Local terrain is similar between Alternative Site 5 and the proposed Project and not likely to significantly change impacts. Alternative Site 5 is in the same air district and air basin as the proposed Project and any required mitigation acquired by the Applicant would be equally appropriate for Alternative Site 5.

1.5.8.7 Cultural Resources

A cultural resources record search was conducted at the SCIC for Alternative Site 5 and the one mile area surrounding it. This search showed that 31 previous cultural resources surveys have been conducted within this area and that 55 sites have been recorded there. This search indicates that cultural resource sensitivity of Alternative Site 5 is very high as compared to the proposed Project, therefore the impacts to cultural resources would be greater for Alternative Site 5 as compared to the proposed Project.

1.5.8.8 Socioeconomics

As noted above in Section 1.5.1.8, Executive Order 12896, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, would apply.

As shown in Figure 1.5-1, minority populations within the vicinity of Alternative Site 5 range from 40 percent to 50 percent of the total population. Minority populations for Alternative Site 5 and vicinity do not exceed 50 percent of the total population.

As shown in Figure 1.5-2, the percent of the population within the vicinity of Alternative Site 5 that is below the poverty line ranged from 0 to 10 percent. This poverty level falls below the U.S. Census Bureau's threshold for a poverty area. Environmental justice impacts during construction and operation would be similar to the proposed Project.

1.5.8.9 Project Objectives

Alternative Site 5 would be able to meet the following project objectives:

- Alternative Site 5 is located with the San Diego service territory and could allow for the construction of a power plant that could provide quick start capabilities to provide reliable energy at peak times as well as meet local RA requirements.
- A power plant could be constructed on Alternative Site 5 which could provide quick start capabilities to support the incorporation of intermittent renewable energy resources into SDG&E's portfolio to enable SDG&E to achieve its 33% by 2020 Renewable Portfolio Standard obligations.
- It appears that a power plant could be authorized on Alternative Site 5 under existing zoning with a Major Use Permit.

AFC Alternative Site 5 would not be able to meet the following project objectives:

- Alternative Site 5 may not be available for development in a reasonable timeframe because it would not be able to interconnect into the Carlton Hills Substation and would therefore require a change in the point of interconnection. This change would preclude the Project from coming on line by 2014.
- Although Alternative Site 5 is located within SDG&E's service area near a load center, it is not located in the immediate vicinity of necessary infrastructure. Development of the project on Alternative Site 3 would require the construction of a 3 mile gas line. Construction of the gas line would add significant cost to the project as well as result in additional environmental impacts.

1.5.8.10 Conclusion

Alternative Site 5 does not meet most of the Project's basic objectives. Alternative Site 5 would have similar environmental impacts as the proposed Project, although the site would result in increased topographic and engineering constraints and environmental impacts related to noise, visual resources, and cultural resources. These impacts would be mitigable, but construction costs could be significantly higher than the proposed Project. This site does not support the Project objectives because it would require a different POI that would result in an approximate 3-year delay in the schedule and increased costs associated with the CAISO studies that would be required to determine a new POI for the Project.

1.5.9 Alternative Site 6

1.5.9.1 Topography/Engineering Constraints

Alternative Site 6 is located on previously disturbed and open lands adjacent to an existing concrete and aggregate plant. Access to the site would be via existing paved roads with a short new access road. Extensive grading would be required to site a power plant in this location as the site is on a hill. Depending on the route selected, the gen tie from the power plant to the existing Elliot Substation would likely be approximately 1.7 miles long. A new, 8-inch natural gas line would be required, and would likely extend from the existing gas main approximately 3.5 miles to the site, depending on the actual route selected and final site location. Topography and engineering constraints for Alternative Site 6 would be greater than the proposed Project site.

1.5.9.2 Biological Resources

Based upon the CNDDB search conducted for the proposed Project, Alternative Site 6 is within the potential habitat range of seventeen Special Status Species, big free-tailed bat, California adolphia, coastal California gnatcatcher, hoary bat (*Lasiurus cinereus*), least Bell's vireo, orange-throated whiptail, pocketed free-tailed bat, prairie falcon (*Falco mexicanus*), Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*), San Diego barrel cactus, San Diego fairy shrimp (*Branchinecta sandiegonensis*), San Diego thorn-mint (*Acanthomintha ilicifolia*), southern California rufous-crowned sparrow, summer holly (*Comarostaphylis diversifolia* ssp. *diversifolia*), western mastiff bat (*Eumops perotis californicus*), western red bat (*Lasiurus blossevillii*), western spadefoot, and Yuma myotis. The Alternative Site 6 is also located within the vicinity of Southern cottonwood willow riparian forest.

These CNDDB occurrences were recorded prior to 2002, with the exception of Yuma myotis (2005) and least Bell's vireo (2006). However, due to the low quality Diegan coastal sage scrub that remains on the site, these sensitive plant and wildlife species have a low to moderate potential to occur within Alternative Site 6.

The linear routes would generally follow roads and existing ROWs that are partly disturbed and any additional construction would avoid sensitive plants wherever possible. Small areas could be avoided if discovered through small changes within the transmission line corridor and span length, minor changes to linear routes, or through translocation of plants. The facility would be sited to minimize impacts to sensitive plants.

The Applicant would use APLIC guidelines in the design of the gen tie to prevent impacts to bird species from electrocutions or collision during operation of the gen tie.

Alternative Site 6 would likely impact wetlands or waters of the U.S. and would adversely impact a wildlife movement corridor associated with San Diego Creek. Alternative Site 6 is located within an existing MHPA as well as an ESA but not within any USFWS-designated critical habitat.

Alternative Site 6 is located immediately adjacent to undeveloped open space to the northwest. Residential development occurs to the north and south, with an existing golf course to the west. Overall, Alternative Site 6 contains higher quality habitat than the proposed Project, therefore the impacts to biological resources would be greater for Alternative Site 6.

1.5.9.3 Land Use

Alternative Site 6 is located within the City of San Diego and is zoned Industrial Light (IL-2-1) and Agricultural (AR-1). The Industrial Light (IL-2-1) and Agriculture (AR 1-1) zone districts allow for energy generation and distribution facilities with a CUP.

1.5.9.4 Noise

The closest residence to Alternative Site 6 is 50 feet to the east of the site, immediately adjacent to the site boundary. Alternative Site 6 is bordered by residences to the north, east, and south. Alternative Site 6 is separated from residences to the south by Mission Gorge Road. Sources of environmental noise in the Project area include the vehicle traffic on local roads and the operational gravel pit. Construction noise may be periodically audible at several residential receptor locations; construction will be largely limited to daytime hours. The facility will be designed to comply with all applicable noise regulations.

Alternative Site 6 is located closer to residences than the proposed Project site. Sources of environmental noise for Alternative Site 6 would be greater than the proposed Project site.

1.5.9.5 Visual Resources

Alternative Site 6 is located on a previously disturbed site and open space. Alternative Site 6 is bordered by residences to the north, east, and south. Alternative Site 6, including the power plant and the gen tie, would be highly visible from the adjacent residential areas and travelers along Mission Gorge Road. Visual impacts during construction and operation would be greater than the proposed Project.

1.5.9.6 Air Quality

The power plant's configuration and operation would be essentially the same for Alternative Site 6. The type and quantity of air emissions from the proposed Project and Alternative Site 6 would be identical. However, the impacts on the human population and the environment may differ slightly because of the location of residences and other human uses in the project vicinity. Local terrain is similar between Alternative Site 6 and the proposed Project and not likely to significantly change impacts. Alternative Site 6 is in the same air district and air basin as the proposed Project and any required mitigation acquired by the Applicant would be equally appropriate for Alternative Site 6.

1.5.9.7 Cultural Resources

A cultural resources record search was conducted at the SCIC for Alternative Site 6 and the one mile area surrounding it. This search showed that 17 previous cultural resources surveys have been conducted within this area and that 8 sites have been recorded. This search indicates that cultural resource sensitivity of Alternative Site 6 is generally low to moderate, as is the proposed Project site, therefore the impacts to cultural resources would be similar for Alternative Site 6 and the proposed Project site.

1.5.9.8 Socioeconomics

As noted above in Section 1.5.1.8, Executive Order 12896, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, would apply.

As shown in Figure 1.5-1, minority populations within the vicinity of Alternative Site 6 range from 20 percent to 30 percent of the total population. Minority populations for Alternative Site 6 and vicinity do not exceed 50 percent of the total population.

As shown in Figure 1.5-2, the percent of the population within the vicinity of Alternative Site 6 that is below the poverty line ranged from 10 to 20 percent. This poverty level falls below the U.S. Census Bureau's threshold for a poverty area. Environmental justice impacts during construction and operation would be similar to the proposed Project.

1.5.9.9 Project Objectives

Alternative Site 6 would be able to meet the following project objectives:

- Alternative Site 6 is located with the San Diego service territory and could allow for the construction of a power plant that could provide quick start capabilities to provide reliable energy at peak times as well as meet local RA requirements.
- A power plant could be constructed on Alternative Site 6 which could provide quick start capabilities to support the incorporation of intermittent renewable energy resources into SDG&E's portfolio to enable SDG&E to achieve its 33% by 2020 Renewable Portfolio Standard obligations.
- It appears that a power plant could be authorized on Alternative Site 6 under existing zoning with a Conditional Use Permit.

AFC Alternative Site 6 would not be able to meet the following project objectives:

- Alternative Site 6 may not be available for development in a reasonable timeframe because it would not be able to interconnect into the Carlton Hills Substation and would therefore require a change in the point of interconnection. This change would preclude the Project from coming on line by 2014.
- Although Alternative Site 6 is located within SDG&E's service area near a load center, it is not located in the immediate vicinity of necessary infrastructure. Development of the project on Alternative Site 6 would require the construction of a 1.7 mile gen tie and a 3.5 mile new 8 inch diameter gas line. The construction of these facilities would add significant cost to the project as well as result in additional environmental impacts.

1.5.9.10 Conclusion

Alternative Site 6 does not meet most of the Project's basic objectives. Alternative Site 6 would have similar environmental impacts as the proposed Project, although the site would result in increased impacts related to topography and engineering constraints, biological resources, noise, and visual resources. These constraints and impacts would be mitigable, but would result in increased construction costs. This site does not support the Project objectives because it would require a different POI that would result in an approximate 3-year delay in the schedule and increased costs associated with the CAISO studies that would be required to determine a new POI for the Project.

1.5.10 Alternative Site 7

1.5.10.1 Topography/Engineering Constraints

The gen tie for Alternative Site 7 would likely extend east from the power plant to North Magnolia Avenue and then run north along North Magnolia Avenue to Mast Boulevard, approximately 2.9 miles, to the existing Santee Substation. The gen tie could require underground placement in the vicinity of Gillespie Field, due to FAA height restrictions. FAA clearances for construction and power plant equipment would be required. A new, 8-inch natural gas line would be required, and would likely extend from the existing gas main approximately 0.5 miles to the site, depending on the actual route selected and final site location. Height restrictions during construction could impact the use of cranes or other tall equipment. Access to the site will be limited to the north and west of the site due to runways and airport facilities. This may increase the length of utilities that must be run in these directions, as routing the utilities across the airport will not be possible. In general, the topography and engineering constraints for Alternative Site 7 would be less than the proposed Project site, however, the impact of the FAA height restrictions on the power plant structures and gen tie may result in the overall constructability being more difficult than the proposed Project site.

1.5.10.2 Biological Resources

Based upon the CNDDB search conducted for the proposed Project, Alternative Site 7 is within the potential habitat range of one Special Status Species, San Diego ambrosia (*Ambrosia pumila*). The CNDDB occurrences were recorded prior to 1998. However, due to the low quality habitat that remains on the site, this sensitive plant species have a low potential to occur within Alternative Site 7.

The linear routes would generally follow roads and existing ROWs that are partly disturbed and any additional construction would avoid sensitive plants wherever possible. Small areas could be avoided if discovered through small changes within the transmission line corridor and span length, minor changes to linear routes, or through translocation of plants. The facility would be sited to minimize impacts to sensitive plants.

The Applicant would use APLIC guidelines in the design of the gen tie to prevent impacts to bird species from electrocutions or collision during operation of the gen tie.

Alternative Site 7 would not impact wetlands or waters of the U.S. and would not impact a wildlife movement corridor. Alternative Site 7 is not located within an existing MHPA, an ESA, or within any USFWS-designated critical habitat.

Alternative Site 7 is located immediately adjacent to development in all directions. Commercial development occurs to the south, east, and west. Gillespie Field, an existing airport, occurs to the north. Overall, Alternative Site 7 contains lower quality habitat than the proposed Project.

1.5.10.3 Land Use

Alternative Site 7 is located within the City of El Cajon. It is zoned Manufacturing (M). Utilities are allowed in the Manufacturing zoning district with a Conditional Use Permit. Alternative Site 7 is located on vacant land adjacent to Gillespie Field and the East San Diego County Fairgrounds. Alternative Site 7 is within the Gillespie Field Airport Influence Area (San Diego County Regional Airport Authority, 2004). An industrial land use is compatible with the Gillespie Field 70-75 community noise equivalent level (CNEL); Alternative Site 7 would comply with this requirement as it is located outside of the 70-75 CNEL. Alternative Site 7 would not be located in a runway protection zone.

1.5.10.4 Noise

The closest residence to Alternative Site 7 is 1,800 feet to the east of the site across Highway 67. There are commercial buildings between Alternative Site 7 and the residences. Sources of environmental noise in the Project area include the vehicle traffic on local roads and air traffic associated with Gillespie Field. Construction noise may be periodically audible at several residential receptor locations; construction will be largely limited to daytime hours. The facility will be designed to comply with all applicable noise regulations.

Alternative Site 7 is located closer to residences than the proposed Project site. Sources of environmental noise for Alternative Site 7 would be greater than the proposed Project site.

1.5.10.5 Visual Resources

Alternative Site 7 is located on a previously disturbed site in an industrial area. The nearest residences are 1,800 feet to the east of the site across Highway 67. Alternative Site 7 would be visible from residential subdivisions. However, the adjacent land uses surrounding Alternative Site 7 include industrial and commercial buildings and Gillespie Field; the addition of a natural gas power plant and gen tie to this already disturbed landscape would not significantly impact the viewshed. Alternative Site 7 is adjacent to the East San Diego County Fairgrounds and would not be shielded by topography from the fairgrounds, and during times when the fairgrounds facilities are in use, a high number of sensitive receptors would be present. Regardless, visual impacts during construction and operation would be less than the proposed Project.

1.5.10.6 Air Quality

The power plant's configuration and operation would be essentially the same for Alternative Site 7. The type and quantity of air emissions from the proposed Project and Alternative Site 7 would be identical. However, the impacts on the human population and the environment may differ slightly because of the location of residences and other human uses in the project vicinity. Local terrain is similar between Alternative Site 7 and the proposed Project and not likely to significantly change impacts. Alternative Site 7 is in the same air district and air basin as the proposed Project and any required mitigation acquired by the Applicant would be equally

appropriate for Alternative Site 7. The Project's exhaust stacks would be within about 0.5 miles or less of runways at Gillespie Field, but would be oriented perpendicular to obvious glide paths and, as noted above, would not be located in a runway protection zone. The thermal plume associated with the exhaust would likely not present a potential hazard to aviation because the approach and takeoff zones of the airport would not intersect with the stacks.

1.5.10.7 Cultural Resources

A cultural resources record search was conducted at the SCIC for Alternative Site 7 and the one mile area surrounding it. This search showed that 33 previous cultural resources surveys have been conducted within this area and that eight sites have been recorded. This search indicates that cultural resource sensitivity of Alternative Site 7 is generally low to moderate, as is the proposed Project site, therefore the impacts to cultural resources from Alternative Site 7 and the proposed Project would be similar.

1.5.10.8 Socioeconomics

As noted above in Section 1.5.1.8, Executive Order 12896, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, would apply.

As shown in Figure 1.5-1, minority populations within the vicinity of Alternative Site 7 range from 40 percent to 50 percent of the total population. Minority populations for Alternative Site 7 and vicinity do not exceed 50 percent of the total population.

As shown in Figure 1.5-2, the percent of the population within the vicinity of Alternative Site 7 that is below the poverty line ranged from 20 to 30 percent. This area is defined by the Census Bureau's as a poverty area. Alternative Site 7 impacts during construction and operation would create impacts to poverty areas within the immediate vicinity of Alternative Site 7.

1.5.10.9 Project Objectives

Alternative Site 7 would be able to meet the following project objectives:

- Alternative Site 7 is located with the San Diego service territory and could allow for the construction of a power plant that could provide quick start capabilities to provide reliable energy at peak times as well as meet local RA requirements.
- A power plant could be constructed on Alternative Site 7 which could provide quick start capabilities to support the incorporation of intermittent renewable energy resources into SDG&E's portfolio to enable SDG&E to achieve its 33% by 2020 Renewable Portfolio Standard obligations.
- It appears that a power plant could be authorized on Alternative Site 7 under existing zoning with a Major Use Permit.

AFC Alternative Site 7 would not be able to meet the following project objectives:

- Alternative Site 7 may not be available for development in a reasonable timeframe because it would not be able to interconnect into the Carlton Hills Substation and would therefore require a change in the point of interconnection. This change would preclude the Project from coming on line by 2014.

- Although Alternative Site 7 is located within SDG&E's service area near a load center, it is not located in the immediate vicinity of necessary infrastructure. Development of the project on Alternative Site 7 would require the construction of a 2.9 mile gen tie. The construction of these facilities would add significant cost to the project as well as result in additional environmental impacts.

1.5.10.10 Conclusion

Alternative Site 7 does not meet most of the Project's basic objectives. Alternative Site 7 would have similar environmental impacts as the proposed Project, although the site would result in increased impacts related to noise and is within a poverty area as defined by the U.S. Census Bureau. With the exception of socioeconomics, these impacts would be mitigable. While environmental impacts may be generally similar to the proposed Project, this site does not support the Project objectives because it would require a different POI that would result in an approximate 3-year delay in the schedule and increased costs associated with the CAISO studies that would be required to determine a new POI for the Project.

1.5.11 Alternative Site 8

1.5.11.1 Topography/Engineering Constraints

Alternative Site 8 is located on undeveloped lands that are relatively flat. Two existing drainage channels run from north to south across the site, with the larger drainage near the center of the site. The watershed that drains to this larger channel is larger than the drainage areas associated with the proposed Project site. Construction of stormwater controls in the drainage channel may be restricted by the United States Army Corps of Engineers (USACE). Access to the site would be via existing, paved roads, with a short internal access road added onsite. Depending on the route selected, the gen tie from the power plant to the existing substation at the Otay Mesa Generating Project Substation would be approximately 0.6 miles long. A new, 8-inch natural gas line would be required, and would likely extend from the existing gas main approximately 1.5 miles to the site, depending on the actual route selected and final site location. Depending on the final site location within the parcels, the topography and engineering constraints for Alternative Site 8 could be less than the proposed Project site.

1.5.11.2 Biological Resources

Based upon the CNDDB search conducted for the proposed Project, Alternative Site 8 is within the potential habitat range of seventeen Special Status Species, burrowing owl (*Athene cunicularia*), coast horned lizard (*Phrynosoma blainvillii*), coastal California gnatcatcher, Gander's pitcher sage (*Lepechinia ganderi*), Lakeside ceanothus (*Ceanothus cyaneus*), Munz's sage, Otay tarplant, quino checkerspot butterfly (*Euphydryas editha quino*), Robinson's pepper-grass, San Diego barrel cactus, San Diego black-tailed jackrabbit, San Diego button-celery, San Diego fairy shrimp, San Diego goldenstar, San Diego marsh-elder, southern California rufous-crowned sparrow, and Variegated dudleya.

These CNDDB occurrences were recorded prior to 2002, with the exception of coast horned lizard (2004). However, due to the low quality Diegan coastal sage scrub that remains on the site, these sensitive plant and wildlife species have a low potential to occur within Alternative Site 8.

The linear routes would generally follow roads and existing ROWs that are partly disturbed and any additional construction would avoid sensitive plants wherever possible. Small areas could be avoided if discovered through small changes within the transmission line corridor and span length, minor changes to linear routes, or through translocation of plants. The facility would be sited to minimize impacts to sensitive plants.

The Applicant would use APLIC guidelines in the design of the gen tie to prevent impacts to bird species from electrocutions or collision during operation of the gen tie.

Alternative Site 8 would likely impact wetlands or waters of the U.S. but would not adversely impact a wildlife movement corridor. Alternative Site 8 is not located within an existing MHPA, an ESA, or within any USFWS-designated critical habitat.

Alternative Site 8 is located immediately adjacent to undeveloped open space in all directions. There is some minor commercial development to the northeast and southwest. Overall, Alternative Site 8 contains lower quality habitat than the proposed Project, and impacts would be less than the proposed Project.

1.5.11.3 Land Use

Alternative Site 8 is located within Otay Mesa in unincorporated San Diego County within the East Otay Mesa Business Park Specific Plan. It is zoned mixed industrial. General industrial use types are a permitted use by right in the mixed industrial zone district. However, Alternative Site 8 is within the State Route 11 right-of-way for the future alignment of State Route 11 as designated in the East Otay Mesa Business Park Specific Plan (County of San Diego, 2010). It is unlikely that the land would be available for purchase and siting a power plant on this land would not be compatible with the goals of the East Otay Mesa Business Park Specific Plan.

1.5.11.4 Noise

The closest residence to Alternative Site 8 is 4 miles to the northwest of the site in Chula Vista, California and 3,600 feet to the south of the site in Mexico. The Donovan Correctional Facility is 6,500 feet to the northwest and the East Mesa Juvenile Detention Facility is 7,400 feet to the north. Construction noise may be periodically audible at residential receptor locations in Mexico but will not be audible at the residential receptor locations in Chula Vista; construction will be largely limited to daytime hours. The facility will be designed to comply with all applicable noise regulations.

Alternative Site 8 is located further from residences than the proposed Project site. Sources of environmental noise for Alternative Site 8 would be less than the proposed Project site.

1.5.11.5 Visual Resources

Alternative Site 8 is located on a previously undisturbed site in an industrial area. The nearest residences are 4 miles northwest of the site in California and 3,600 feet south of the site in Mexico. Alternative Site 8 would be visible from residential subdivisions. However, the adjacent land uses surrounding Alternative Site 8 include industrial and commercial buildings and the addition of a natural gas power plant to this already disturbed landscape would not significantly

impact the viewshed. Visual impacts during construction and operation would be less than the proposed Project.

1.5.11.6 Air Quality

The power plant's configuration and operation would be essentially the same for Alternative Site 8 as the proposed Project. The type and quantity of air emissions from the proposed Project and Alternative Site 8 would be identical. However, the impacts on the human population and the environment may differ slightly because of the location of residences and other human uses in the project vicinity. Local terrain is similar between Alternative Site 8 and the proposed Project and not likely to significantly change impacts. However, this site is located in close proximity to the Otay Mesa Generating Plant and the recently approved Pio Pico Power Plant. Consequently, the potential for increased cumulative impacts on air quality is substantially higher for Alternative Site 8 than the proposed Project. Alternative Site 8 is in the same air district and air basin as the proposed Project and any required mitigation acquired by the Applicant would be equally appropriate for Alternative Site 8.

1.5.11.7 Cultural Resources

A cultural resources record search was conducted at the SCIC for Alternative 8 and the one mile area surrounding it. This search showed that 63 previous cultural resources surveys have been conducted within this area and that 52 sites have been recorded. This search indicates that cultural resource sensitivity of Alternative Site 8 is very high, which is much higher than the proposed Project, therefore the impacts to cultural resources would be greater for Alternative Site 8 than the proposed Project.

1.5.11.8 Socioeconomics

As noted above in Section 1.5.1.8, Executive Order 12896, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, would apply.

As shown in Figure 1.5-1, minority populations within the vicinity of Alternative Site 8 range from 70 percent to 90 percent of the total population. Minority populations for Alternative Site 8 and vicinity are more than 50 percent of the total population; Alternative Site 8 would impact minority populations within its immediate vicinity.

As shown in Figure 1.5-2, the percent of the population within the vicinity of Alternative Site 8 that is below the poverty line ranged from 20 to 30 percent. This area is defined by the U.S. Census Bureau as a poverty area. Alternative Site 8 impacts during construction and operation would create impacts to poverty areas within the immediate vicinity of Alternative Site 8.

1.5.11.9 Project Objectives

Alternative Site 8 would be able to meet the following project objectives:

- Alternative Site 8 is located with the San Diego service territory and could allow for the construction of a power plant that could provide quick start capabilities to provide reliable energy at peak times as well as meet local RA requirements.

- A power plant could be constructed on Alternative Site 8 which could provide quick start capabilities to support the incorporation of intermittent renewable energy resources into SDG&E's portfolio to enable SDG&E to achieve its 33% by 2020 Renewable Portfolio Standard obligations.

- It appears that a power plant could be authorized on Alternative Site 8 under existing zoning.

AFC Alternative Site 8 would not be able to meet the following project objectives:

- Alternative Site 8 may not be available for development in a reasonable timeframe because it would not be able to interconnect into the Carlton Hills Substation and would therefore require a change in the point of interconnection. This change would preclude the Project from coming on line by 2014.
- Alternative Site 8 is located within SDG&E's service area, however it is not near a load center.

1.5.11.10 Conclusion

Alternative Site 8 does not meet most of the Project's basic objectives. Alternative Site 8 would have similar environmental impacts as the proposed Project, although the site would result in increased impacts related to land use, air quality, visual resources and cultural resources. Alternative Site 8 is and is within a minority area and poverty area as defined by the U.S. Census Bureau. However, with the exception of air quality and socioeconomics, these impacts would be mitigable. While environmental impacts may be generally similar to the proposed Project, this site does not support the Project objectives because it would require a different POI that would result in an approximate 3-year delay in the schedule and increased costs associated with the CAISO studies that would be required to determine a new POI for the Project.

1.5.12 Alternative Site 9

1.5.12.1 Topography/Engineering Constraints

Alternative Site 9 is located on a previously disturbed site that is relatively flat. Access to the site would be via existing paved roads, with a short internal access road. Depending on the route selected, the gen tie from the power plant to the existing Shadow Ridge Substation would be approximately 0.5 miles long. However, an existing transmission line corridor is located just east of the substation, which would require that the gen tie be routed underground where it crosses these existing transmission lines.

A new 8-inch natural gas line would be required for the project, and would require a line extending from the existing gas main approximately 1.0 mile to the site, depending on the actual route selected and final plant location. Topography constraints would be less than the proposed Project site but the engineering constraints for Alternative Site 9 would be similar to the proposed Project, due to the existing transmission line corridor crossing.

1.5.12.2 Biological Resources

Based upon the CNDDB search conducted for the proposed Project, Alternative Site 9 is within the potential habitat range of three Special Status Species, coastal California gnatcatcher, least Bell's vireo, and thread-leaved brodiaea (*Brodiaea filifolia*).

These CNDDB occurrences were recorded prior to 2002, with the exception of least Bell's vireo (2006). However, due to the low quality disturbed habitat onsite, these sensitive plant and wildlife species have a low potential to occur within Alternative Site 9.

The linear routes would generally follow roads and existing ROWs that are partly disturbed and any additional construction would avoid sensitive plants wherever possible. Small areas could be avoided if discovered through small changes within the transmission line corridor and span length, minor changes to linear routes, or through translocation of plants. The facility would be sited to minimize impacts to sensitive plants.

The Applicant would use APLIC guidelines in the design of the gen tie to prevent impacts to bird species from electrocutions or collision during operation of the gen tie.

Alternative Site 9 would not likely impact any wetlands or waters of the U.S. and would not adversely impact a wildlife movement corridor. Alternative Site 9 is not located within an existing MHPA, an ESA, or within any USFWS-designated critical habitat.

Alternative Site 9 is located immediately adjacent to development to the south, east, and west. The disturbed habitat extends further to north. Overall, Alternative Site 9 contains lower quality habitat than the proposed Project.

1.5.12.3 Land Use

Alternative Site 9 is located within the City of Vista. It is zoned Specific Plan – Vista Business Park (SP-VBP) and is within Planning Area B: Research Light Industrial and Business Support Group. Co-generation of energy or energy production is a permitted use in this zone district subject to granting of a Special Use Permit.

1.5.12.4 Noise

The closest residence to Alternative Site 9 is 500 feet to the northwest of the site across Sycamore Avenue. This residential subdivision is bordered to the east and south by commercial and industrial land uses. Sources of environmental noise in the Project area include the vehicle traffic on local roads. Construction noise may be periodically audible at several residential receptor locations; construction will be largely limited to daytime hours. The facility will be designed to comply with all applicable noise regulations.

Alternative Site 9 is located closer to residences than the proposed Project site. Sources of environmental noise for Alternative Site 9 would be greater than the proposed Project site, therefore noise impacts from Alternative Site 9 would be greater than the proposed Project.

1.5.12.5 Visual Resources

Alternative Site 9 is located on a previously disturbed site. A residential subdivision is located 500 feet to the northwest of the site across Sycamore Avenue. This residential subdivision is bordered to the east and south by commercial and industrial land uses. Alternative Site 9 would be highly visible from the adjacent residential subdivision and travelers along Sycamore Avenue and South Melrose Drive. However, with the exception of the residential subdivision to the north, the adjacent land uses surrounding Alternative Site 9 include industrial and commercial buildings. Visual impacts during construction and operation would be similar for the proposed Project and Alternative Site 9.

1.5.12.6 Air Quality

The power plant's configuration and operation would be essentially the same for Alternative Site 9. The type and quantity of air emissions from the proposed Project and Alternative Site 9 would be identical. However, the impacts on the human population and the environment may differ slightly because of the location of residences and other human uses in the project vicinity. Local terrain is similar between Alternative Site 9 and the proposed Project and not likely to significantly change impacts. Alternative Site 9 is in the same air district and air basin as the proposed Project and any required mitigation acquired by the Applicant would be equally appropriate for Alternative Site 9.

1.5.12.7 Cultural Resources

A cultural resources record search was conducted at the SCIC for Alternative Site 9 and the one mile area surrounding it. This search showed that 26 previous cultural resources surveys have been conducted within this area and that 54 sites have been recorded. This search indicates that cultural resource sensitivity for Alternative Site 9 is very high, which is much higher than the proposed Project, therefore impacts to cultural resources would be greater for Alternative Site 9 as compared to the proposed Project.

1.5.12.8 Socioeconomics

As noted above in Section 1.5.1.8, Executive Order 12896, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, would apply.

As shown in Figure 1.5-1, minority populations within the vicinity of Alternative Site 9 range from 40 percent to 50 percent of the total population. Minority populations for Alternative Site 9 and vicinity do not exceed 50 percent of the total population.

As shown in Figure 1.5-2, the percent of the population within the vicinity of Alternative Site 9 that is below the poverty line ranged from 0 to 10 percent. The poverty level does not meet the U.S. Census Bureau's threshold for a poverty area. Environmental justice impacts during construction and operation would be similar to the proposed Project.

1.5.12.9 Project Objectives

Alternative Site 9 would be able to meet the following project objectives:

- Alternative Site 9 is located with the San Diego service territory and could allow for the construction of a power plant that could provide quick start capabilities to provide reliable energy at peak times as well as meet local RA requirements.
- A power plant could be constructed on Alternative Site 9 which could provide quick start capabilities to support the incorporation of intermittent renewable energy resources into SDG&E's portfolio to enable SDG&E to achieve its 33% by 2020 Renewable Portfolio Standard obligations.
- Alternative Site 9 is located within SDG&E's service area near a load center and is in close proximity to existing infrastructure,
- It appears that a power plant could be authorized on Alternative Site 9 under existing zoning with a Special Use Permit.

AFC Alternative Site 9 would not be able to meet the following project objectives:

- Alternative Site 9 may not be available for development in a reasonable timeframe because it would not be able to interconnect into the Carlton Hills Substation and would therefore require a change in the point of interconnection. This change would preclude the Project from coming on line by 2014.

1.5.12.10 Conclusion

Alternative Site 9 does not meet most of the Project's basic objectives because it would not allow for the Project to come on line as necessary. Alternative Site 9 would have similar environmental impacts as the proposed Project, although the site would result in increased impacts to noise and cultural resources. These impacts would be mitigable. While environmental impacts may be less than the proposed Project, this site does not support the Project objectives because it would require a different POI that would result in an approximate 3-year delay in the schedule and increased costs associated with the CAISO studies that would be required to determine a new POI for the Project.

1.5.13 Summary of Alternative Site Feasibility as Compared to the Proposed Project

Table 1.5-1 presents a summary of the alternatives as compared to the proposed Project with regard to the project objectives and environmental impacts. The project objectives are provided again here:

1.5.13.1 Summary of Environmental Impacts from Alternative Sites Meeting Feasibility Criteria and Project Objectives

- Respond to SDG&E 2009 request for offers (RFO) for generation facilities located in the San Diego service territory that could provide quick start capabilities to provide reliable energy at peak times as well as meet local Resource Adequacy (RA) requirements.
- Be located on a site which would allow for the plant to be on line by 2014.
- Provide quick start capabilities to support the incorporation of intermittent renewable energy resources into SDG&E's portfolio to enable SDG&E to achieve its 33% by 2020 Renewable Portfolio Standard obligations.

Table 1.5-1 Comparison of the Proposed Project and Alternatives

Characteristic	Proposed Project	AFC Alternative A	AFC Alternative B	AFC Alternative C	Alternative Site 1	Alternative Site 2	Alternative Site 3	Alternative Site 4	Alternative Site 5	Alternative Site 6	Alternative Site 7	Alternative Site 8	Alternative Site 9
Meets Project Objectives													
Respond to SDG&E 2009 RFO	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Located on site allowing for online date in 2014	Yes	Yes	Yes	Yes	No	Yes	No	No	No	No	No	No	No
Quick start capabilities to support RPS 33% goal	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Located in SDG&E's service area near load center, on site with infrastructure and available capacity	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	Yes
On site that is commercially available for development in reasonable time	Yes	Yes	No	Yes	No	Yes	No	No	No	No	No	No	No
On site which could have compatible zoning / land uses, and away from sensitive receptors	No	No	No	No	Uncertain	Uncertain	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Environmental Factors[1]													
Cultural resources impacts	–	Equal to	Equal to	Equal to	Equal to	Greater than	Greater than	Greater than	Greater than	Equal to	Equal to	Greater than	Greater than
Land use impacts	–	Equal to	Greater than	Greater than	Unknown	Unknown	Less than	Less than	Less than	Less than	Less than	Greater than	Less than
Noise impacts	–	Equal to	Equal to	Equal to	Greater than	Less than	Greater than	Greater than	Greater than	Greater than	Greater than	Less than	Greater than
Visual resources impacts	–	Greater than	Greater than	Greater than	Greater than	Less than	Greater than	Greater than	Greater than	Greater than	Greater than	Less than	Equal to
Socioeconomics impacts	–	Equal to	Equal to	Equal to	Equal to	Equal to	Equal to	Equal to	Equal to	Equal to	Equal to	Greater than	Equal to
Air quality impacts	–	Greater than	Equal to	Equal to	Equal to	Equal to	Equal to	Equal to	Equal to	Equal to	Equal to	Greater than	Equal to
Biological resources impacts with mitigation	–	Equal to	Greater than	Equal to	Greater than	Greater than	Greater than	Greater than	Equal to	Greater than	Less than	Less than	Less than

Notes:

1. Environmental impacts of alternative sites categorized as greater than, equal to, or less than the proposed Project.

- Be located on a site within SDG&E's service area near a load center that has infrastructure with available capacity and ability to reliably support Project electric transmission, fuel supply, and water needs with minimal impacts on existing infrastructure systems or require new construction.
- Be located on a site that is commercially available for development in a reasonable time.
- Be located on a site which has, or could reasonably be anticipated to have, compatible zoning, compatible adjacent land uses, and be located away from sensitive receptors.

None of the alternative sites considered would meet all of the feasibility criteria and Project objectives. In addition, the majority of the alternatives would have the same or greater environmental impacts than the proposed Project. For these reasons, all alternative sites were eliminated from consideration as viable alternatives for the proposed Project.

1.6 ALTERNATIVE TECHNOLOGIES

The configuration of the proposed Project was selected from a wide array of technology alternatives. Generation technology alternatives included renewable energy technologies, simple-cycle gas turbines, combined-cycle gas turbines, and reciprocating engines as described in Section 3.5 of the AFC. In addition to power generating technologies, fuel technology alternatives, NO_x control alternatives, inlet air cooling alternatives, and heat rejection alternatives were considered (see Section 3.5 of the AFC).

Alternative technologies were evaluated with respect to commercial availability, their ability to achieve the Project's objectives of providing highly efficient, dispatchable peaking and load-shaping power to support the integration of variable renewable sources, environmental merits and comparative impacts (*i.e.*, land/space requirements, water consumption, emissions control, visual impacts, waste generation), and cost-effectiveness.

1.6.1 Additional Alternative Technologies

This section provides an analysis of two additional alternative technologies that were not considered in Section 3.5 of the AFC: rooftop solar and battery storage. The analysis of each of these alternative technologies is included in the subsequent sections of this document.

1.6.1.1 Rooftop Solar

The State of California has a 33 percent RPS to be achieved by the year 2020. As the State public utilities continue to add significant renewal generation toward this goal, system wide reliability and supply challenges present themselves. As a result, electrical generation peaking facilities are needed to meet the growing demand for clean and reliable power.

For rooftop solar to be a viable alternative to a natural gas fired peaking facility it would need to fulfill two basic requirements:

1. Provide grid stabilization during dips in renewable energy production, and
2. Provide reliable capacity at times of peak load.

Regarding Item 1 above, renewables such as wind and solar energy are not always available when power is needed most due to changes in the weather and time of day. Rooftop solar is an

intermittent renewable resource that produces power only approximately 22 percent of the time on average during any given day. This low and variable power generation profile is not only inconsistent with the purpose of grid stabilization; it contributes to the reason why high-efficiency reliable peaking facilities are needed.

Regarding Item 2 above, SDG&E states, “Power from rooftop solar facilities typically provide their peak performance in the June time frame and between the hours of 12 noon and 1:00 p.m. SDG&E’s system typically peaks in late August to early October between the hours of 4:00 p.m. and 8:00 p.m. It follows that typical rooftop solar production does not coincide with the times when people use the most electricity.” (SDG&E 2012). Therefore, rooftop solar will not provide reliable capacity at times of peak load.

The performance mismatch between rooftop solar and peaking facility need could be mitigated with large scale electrical storage capability and increased distributed generation on the supply side, and/or increased efficiency and conservation measures on the demand side. However, no commercially viable method of utility scale electrical storage yet exists and, demand side contributions will not be enough on their own to accommodate future needs due to growth. According to the San Diego Association of Governments (SANDAG), the population in the region is expected to increase by 40 percent between now and 2050. As the population grows over the next few decades, there would be a significant increase in power usage expected. SDG&E states, “While improved energy efficiency and conservation measures can help offset part of future demand, additional generation would be needed in order for SDG&E to continue providing load centers such as San Diego with a reliable power supply.” (SDG&E 2012).

An estimate of how much rooftop solar would be required to match the electric output for the Project was made. The estimate shows that approximately 63,300 rooftop solar installations (each at 500 kilowatt hours [kW-hrs] month output) would be required to equal the Project output; see Table 1.6-1. The estimated cost for these rooftop solar installations is $1.5-billion; see Table 1.6-1 and Appendix B for details.

Based on this information, rooftop solar on the scale required to match the electric output for the Project would not be feasible because it could not meet the project objectives or alternative technology selection criteria.

1.6.1.2 Battery Storage

Conventional, established battery technologies (lead-acid, lithium-ion, nickel-cadmium) are proven, reliable methods for energy storage and regulated energy dispatch for many applications, principally motive power, electronics and Uninterruptible Power Supply (UPS) backup. Of these technologies, the 2020 Strategic Analysis of Energy Storage in California prepared for the CEC in November 2011 (Andres Abele, et al. 2011) identified that the most commercially mature rechargeable battery is the lead-acid battery. However, extending current battery technologies to meet the demands of utility scale power transmission and distribution to support and perhaps supplant existing power generation equipment is not currently viable, either economically or operationally. Large utility scale battery systems have been slow to develop, due to inherent technological limitations, the performance demands and costs of delivering utility scale power, on demand, for use on the grid. Recent research indicates that utility scale battery systems have finally reached a point in technological development where they can be integrated into the grid for select applications to ensure a constant, regulated power

supply over short periods of time (typically less than 15 minutes continuously), such as frequency regulation, limited load shifting and/or transient ride-through.

Table 1.6-1 Estimate of Rooftop Solar Installations Required to Replace Project Electric Energy Production

Item	Value	Units
Assumed average single family house monthly electric use	1,000	kW-hrs/month
Percent of average monthly output supplied by rooftop solar	50%	
Assumed output per rooftop solar installation (monthly average)	500	kW-hrs/month
Assumed output per rooftop solar installation (annual basis)	6,000	kW-hrs/year
Project generating capability	100,000	kW
Annual operating hours maximum	3,800	hours/year
Maximum annual electric energy output	380,000,000	kW-hrs/year
Rooftop solar installations needed to equal Project output	63,333	rooftop solar installations
Estimated gross installation cost per rooftop	$24,379	per rooftop installation
Cost of all rooftop solar installations required to equal Project output	$1,544,003,333	

Notes:
1. Estimated gross installation cost per rooftop solar installation is for Zip Code 92071 (Santee, CA) using the web-based calculator found at: http://www.solar-estimate.org; see Appendix RS for a full print out of the estimate.
2. Please go to: http://www.solar-estimate.org/?page=about for additional information regarding their calculator, and the calculator's assumptions and limitations.
3. These estimates do not include considerations for time-of-day production profiles.

According to the Electric Power Research Institute (EPRI), the cost of lead-acid batteries for bulk energy storage ranges from $420 to $660 per kW ($330 to $480 per kWh) based on a 4-hour storage capacity. Total Capital costs are estimated to range from $1,740 to $2,580 per kW (Rastler 2009). These costs do not include the replacement costs of the lead-acid batteries, which are dependent on the battery life. The discharge rate, number of deep discharge cycles and frequency of discharge cycles can significantly impact the battery life.

In 2010, the CEC awarded Pacific Gas and Electric (PG&E) $2 million for a 36-month demonstration project to study a 4 MW sodium sulfur battery energy storage system. Sodium sulfur energy storage is an advanced battery storage technology, and this 3 year study is the first large scale demonstration project in California. This demonstration project will evaluate the potential for this technology to provide emergency power during outages, level the energy demand load or provide energy reserves. However, while this technology may ultimately become commercially available, it is not presently considered to be suitable for utility scale application.

Southern California Edison has been working on an energy storage demonstration project since 2010 that will evaluate an 8 MW 32 MW-hour lithium ion battery system at the Tehachapi Wind Energy Storage project. The field testing on this demonstration project will run through 2014, and a final evaluation is scheduled to be issued in 2014.

Battery technology has not reached the point of commercialization where it can be used for dispatching utility-scale power (multi-MW application) over a period of many hours to serve a base load or to provide load leveling and peak shaving grid support. Future development will

hopefully allow large amounts of electricity generated by intermittent renewable sources (such as wind and solar) to be stored and used when necessary over longer periods of time (i.e., greater than a few hours). Utility scale battery systems are starting to be tested in localized applications, such as military bases, and if they prove both reliable and cost effective in providing electricity in these areas, then large capacity batter systems are sure to be used in many more utility scale applications in the future. Currently, utility scale battery storage is not commercially viable for transmission and distribution applications.

The most notable risks/issues associated with utility scale battery storage technology are the cost of raw materials, long charging time, low energy density, and competition with electric vehicle applications for government and private research and development grants.

Other environmental issues associated with the deployment of utility scale battery systems, including the transportation of the large, and generally heavy battery systems, exposures to and control of hazardous materials found in the batteries (heavy metals, acids and other electrolytes), disposal and the recycling of spent batteries, would all require additional evaluation as the use of battery storage technology evolves in the utility scale arena.

At this time, battery storage technology would not be commercially feasible and would not meet the proposed Project objectives or the technology selection criteria.

For in-depth discussion on the research and development status of battery and other energy storage technologies, refer to the following references:

Andris Abele, Ethan Elkind, Jessica Intrator, Byron Washom, et al (University of California, Berkeley School of Law; University of California, Los Angeles; and University of California, San Diego) 2011, 2020 Strategic Analysis of Energy Storage in California, California Energy Commission. Publication Number: CEC-500-2011-047.

Rastler, Dan 2009. Overview of Electric Energy Storage Options for the Electric Enterprise. Electric Power Research Institute.

Energy Storage Activities in the United States Electricity Grid, dated May 2011prepared by the Energy Advisory Committee (EAC).

EPRI-DOE Handbook of Energy Storage for Transmission & Distribution Applications, dated December 2003, prepared by EPRI and the U.S. Department of Energy.

1.7 CONCLUSION

None of the alternative sites considered would meet all of the feasibility criteria and Project objectives. The majority of the alternatives would have the same or greater environmental impacts than the proposed Project. For these reasons, all alternative sites were eliminated from consideration as viable alternative sites for the proposed Project.

The additional alternative technologies considered were rooftop solar and battery storage. Neither of these technologies would achieve the Project objectives of providing highly efficient, dispatchable peaking and load-shaping power to support the integration of variable renewable sources, environmental merits and comparative impacts (*i.e.*, land/space requirements, water

consumption, emissions control, visual impacts, waste generation), and cost-effectiveness. For these reasons, both alternative technologies were eliminated from consideration as viable alternative technologies for the proposed Project.

None of the alternatives evaluated herein would be prudent and feasible alternatives to the proposed Project that could meet most of the Project objectives and result in less environmental impacts.

1.8 REFERENCES

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County of San Diego. 2010. East Otay Mesa Business Park Specific Plan. Available at http://www.sdcounty.ca.gov/pds/docs/East_Otay_Mesa_Business_Park_Specific_Plan.pdf. Accessed October 24, 2012.

San Diego County Regional Airport Authority. 2004. Airport Land Use Compatibility Plan Gillespie Field El Cajon, California. Amended October 2004. Available at http://www.san.org/documents/aluc/Gillespie%20ALUCP.pdf. Accessed October 24, 2012.

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FIGURES

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Cogentrix

QUAIL BRUSH GENERATION PROJECT

Legend

- Quail Brush Generation Project
- Alternatives

Transportation Features

- Primary Limited Access or Interstate
- Primary US and State Highways
- Secondary State and County Highway
- County Boundary

FIGURE 1.0-1

QUAIL BRUSH GENERATION PROJECT ALTERNATIVE SITE LOCATIONS

0 2.25 4.5 9
Miles

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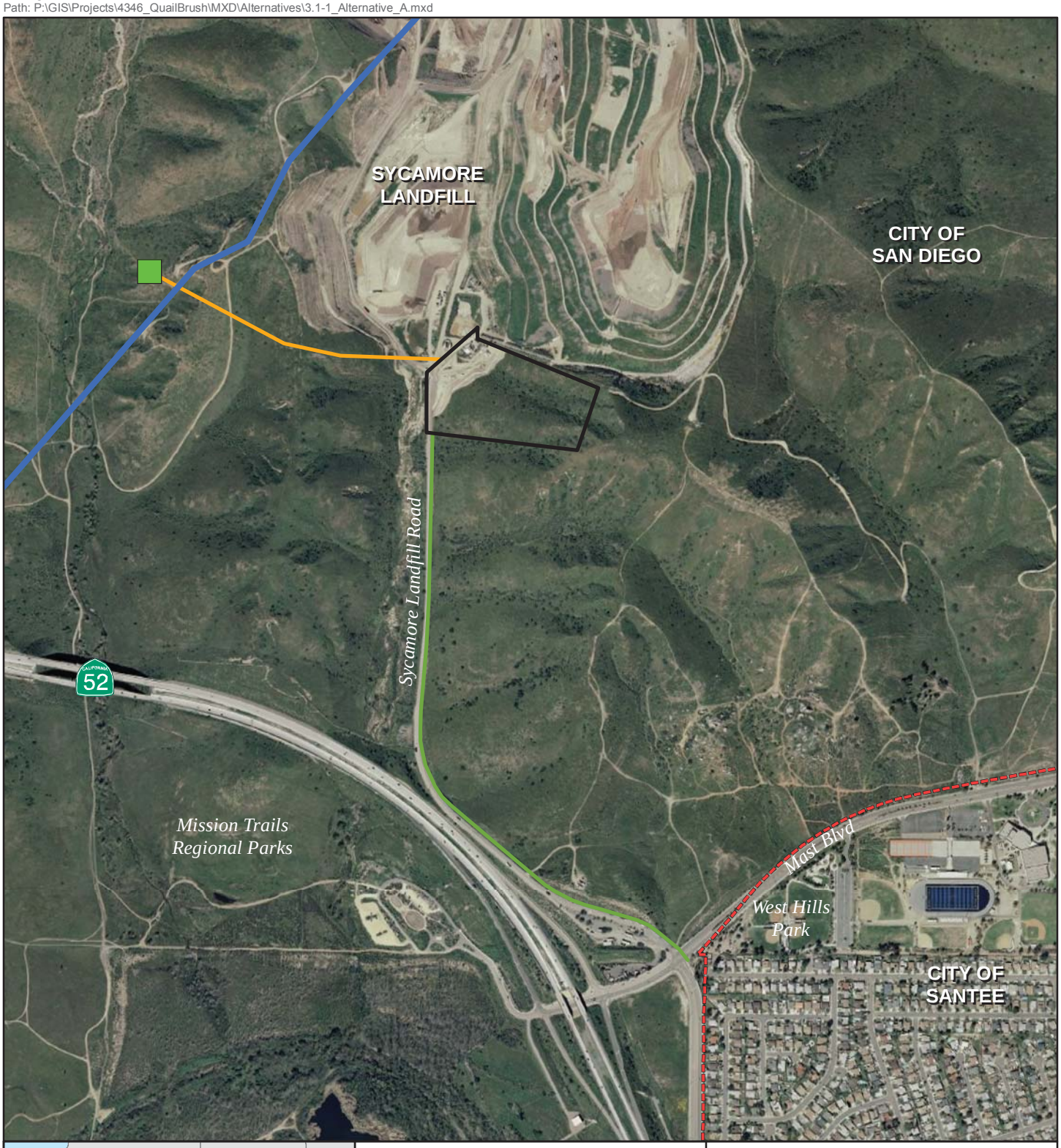

Legend

- Alternative A Plant Site
- Alternative A Switchyard
- Alternative A Gen Tie
- Alternative A Gas Lateral and Access Road
- Existing 230 kV T-Lines (2)

Cogentrix

QUAIL BRUSH GENERATION PROJECT

FIGURE 1.3-1

AFC ALTERNATIVE A

0 500 1,000 2,000

Feet

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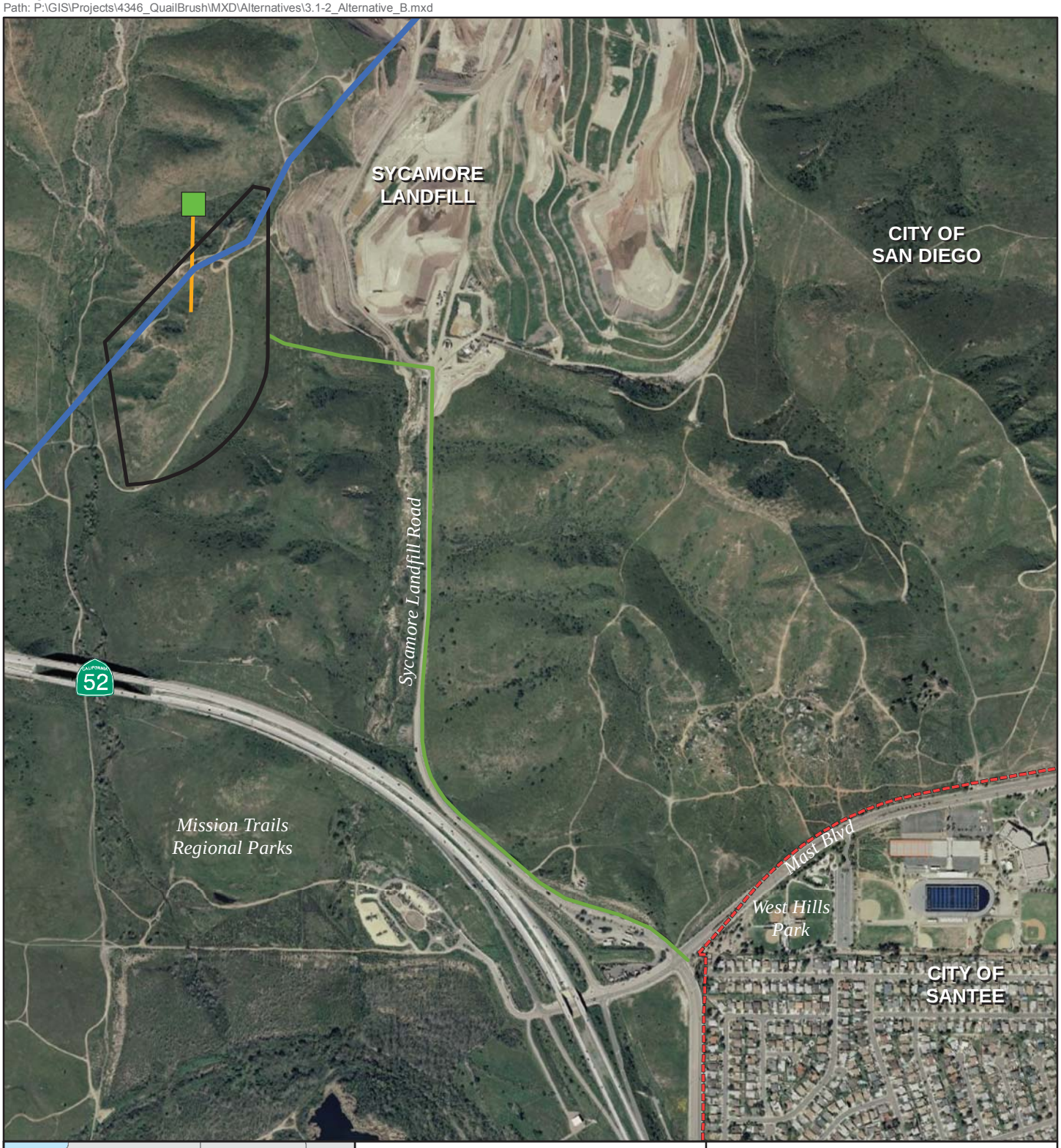

Legend

- Alternative B Plant Site
- Alternative B Switchyard
- Alternative B Gen Tie
- Alternative B Gas Lateral and Access Road
- Existing 230 kV T-Lines (2)

Cogentrix

QUAIL BRUSH GENERATION PROJECT

FIGURE 1.3-2

AFC ALTERNATIVE B

0 500 1,000 2,000

Feet

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Legend

- Alternative C Plant Site
- Alternative C Switchyard
- Alternative C Gen Tie
- Alternative C Gas Lateral and Access Road
- Existing 230 kV T-Lines (2)

Cogentrix

QUAIL BRUSH GENERATION PROJECT

FIGURE 1.3-3

AFC ALTERNATIVE C

0 500 1,000 2,000

Feet

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Legend

- Alternative 1
- Existing SDG&E Substation
- 230 kV Transmission Line
- High Pressure Gas Distribution Main (10" Diameter)

Cogentrix

QUAIL BRUSH GENERATION PROJECT

FIGURE 1.4-1

ALTERNATIVE SITE 1

0 1,000 2,000 4,000

Feet

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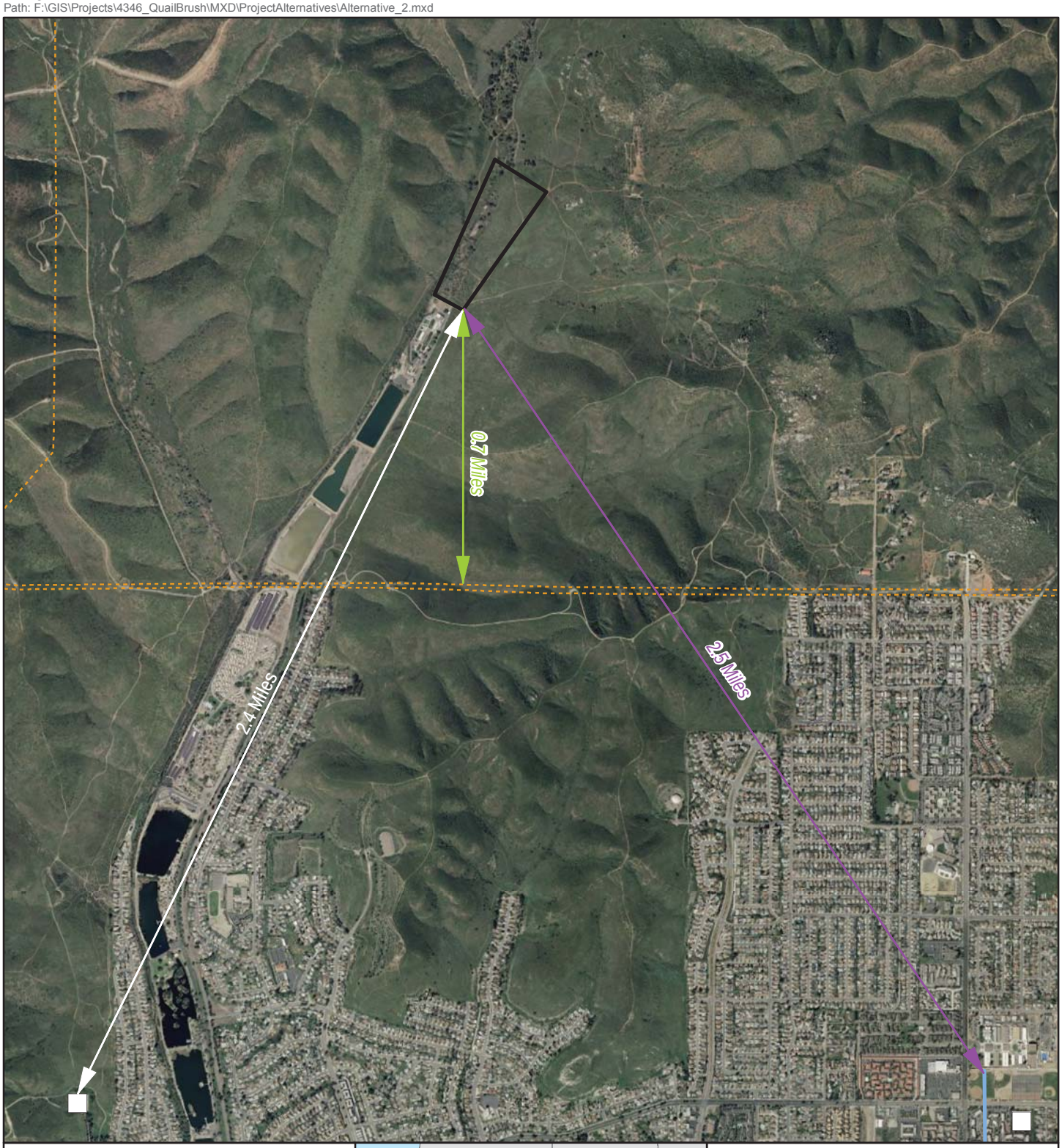

Legend

- Alternative 2
- Existing SDG&E Substation
- 230 kV Transmission Line
- High Pressure Gas Distribution Main (6" Diameter)

Cogentrix

QUAIL BRUSH GENERATION PROJECT

FIGURE 1.4-2

ALTERNATIVE SITE 2

0 1,000 2,000 4,000

Feet

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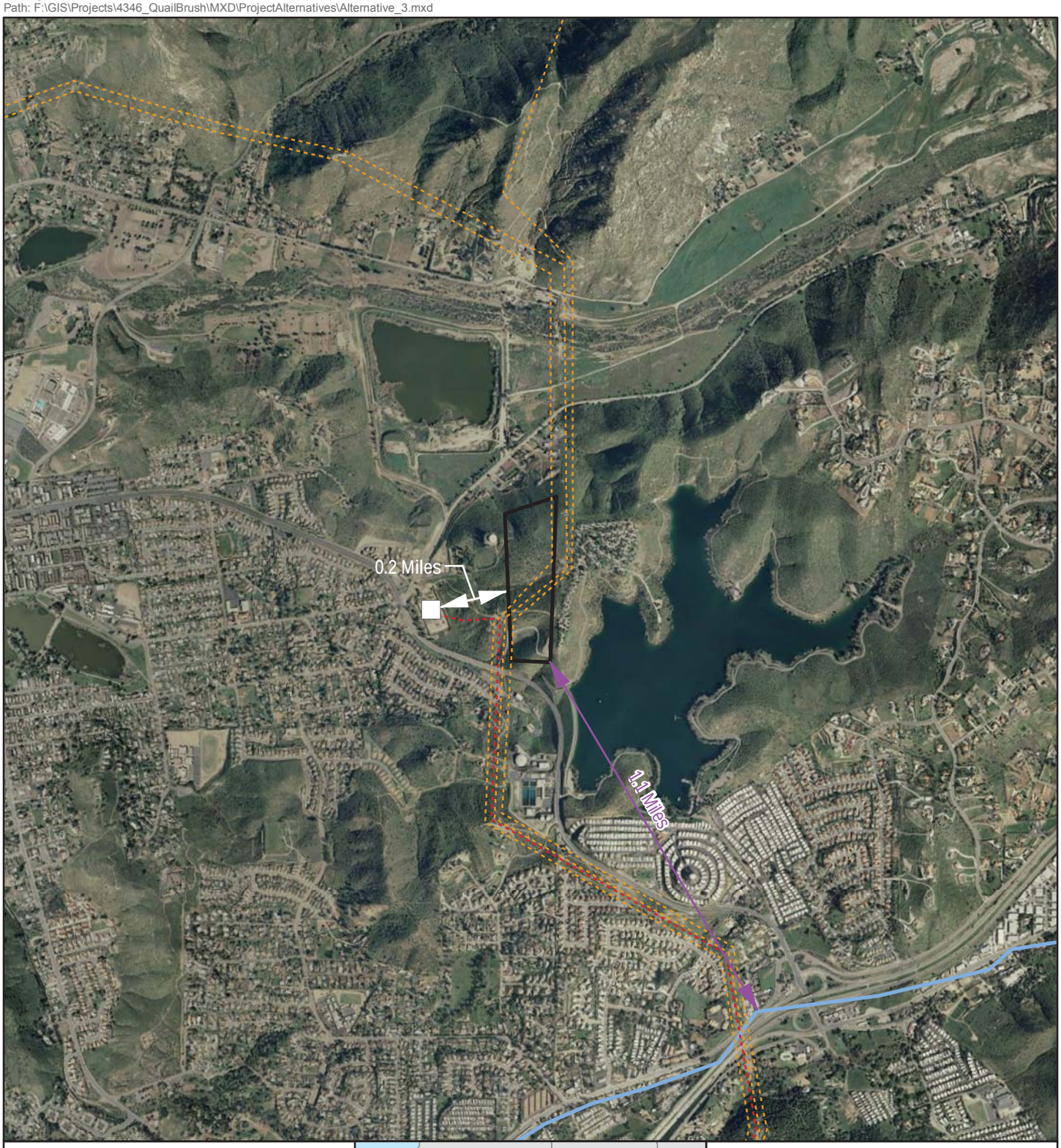


Legend

- Alternative 3
- Existing SDG&E substation
- 138 kV Transmission Line
- 230 kV Transmission Line
- High Pressure Gas Distribution Main (6" Diameter)

Cogentrix

QUAIL BRUSH GENERATION PROJECT

FIGURE 1.4-3

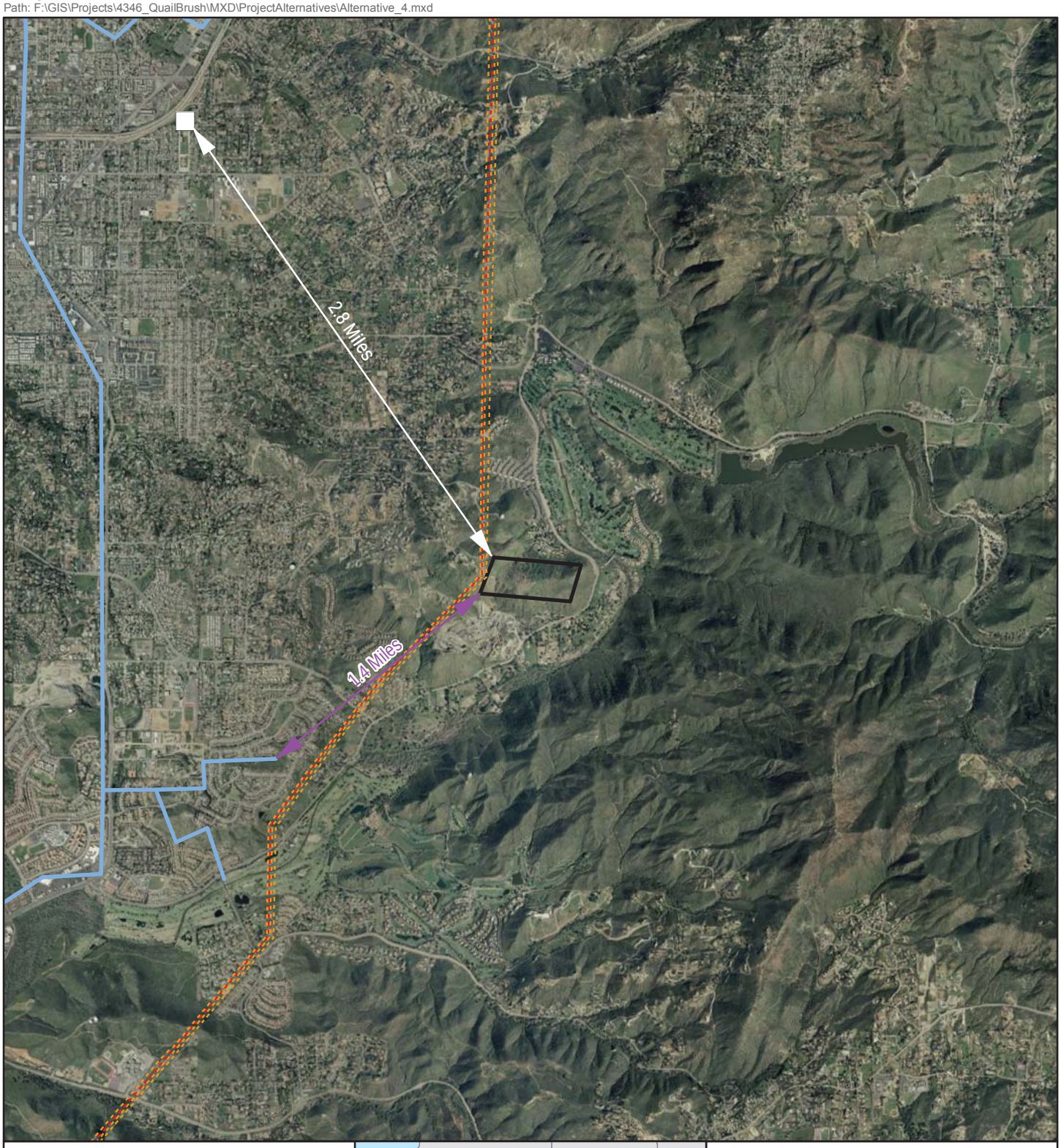
ALTERNATIVE SITE 3

0 1,000 2,000 4,000

Feet

TETRA TECH EC, INC.

Printing Date: 10/25/2012 5:20:07 PM
Path: F:\GIS\Projects\4346_QuailBrush\MXD\ProjectAlternatives\Alternative_4.mxd



Legend

- Alternative 4
- Existing SDG&E Substation
- 138 kV Transmission Line
- 230 kV Transmission Line
- High Pressure Gas Distribution Main (6" Diameter)

Cogentrix

QUAIL BRUSH GENERATION PROJECT

FIGURE 1.4-4

ALTERNATIVE SITE 4

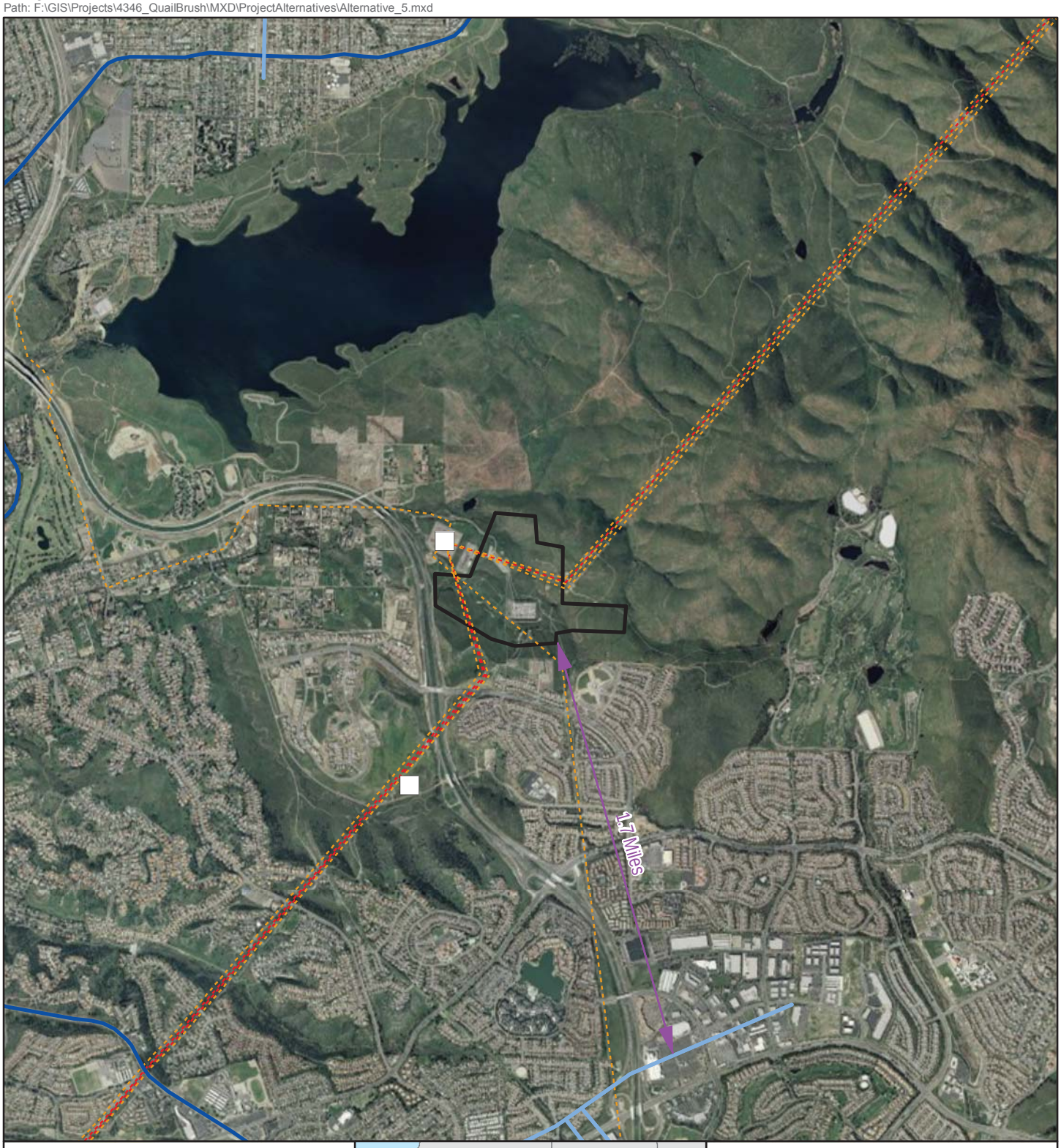
0 2,000 4,000 8,000

Feet

TETRA TECH EC, INC.

N

Printing Date: 10/25/2012 9:01:59 PM
Path: F:\GIS\Projects\4346_QuailBrush\MXD\ProjectAlternatives\Alternative_5.mxd



Legend

- Alternative 5
- Existing SDG&E Substation
- 138 kV Transmission Line
- 230 kV Transmission Line
- High Pressure Gas Distribution Main (8" Diameter)

Cogentrix

QUAIL BRUSH GENERATION PROJECT

FIGURE 1.4-5

ALTERNATIVE SITE 5

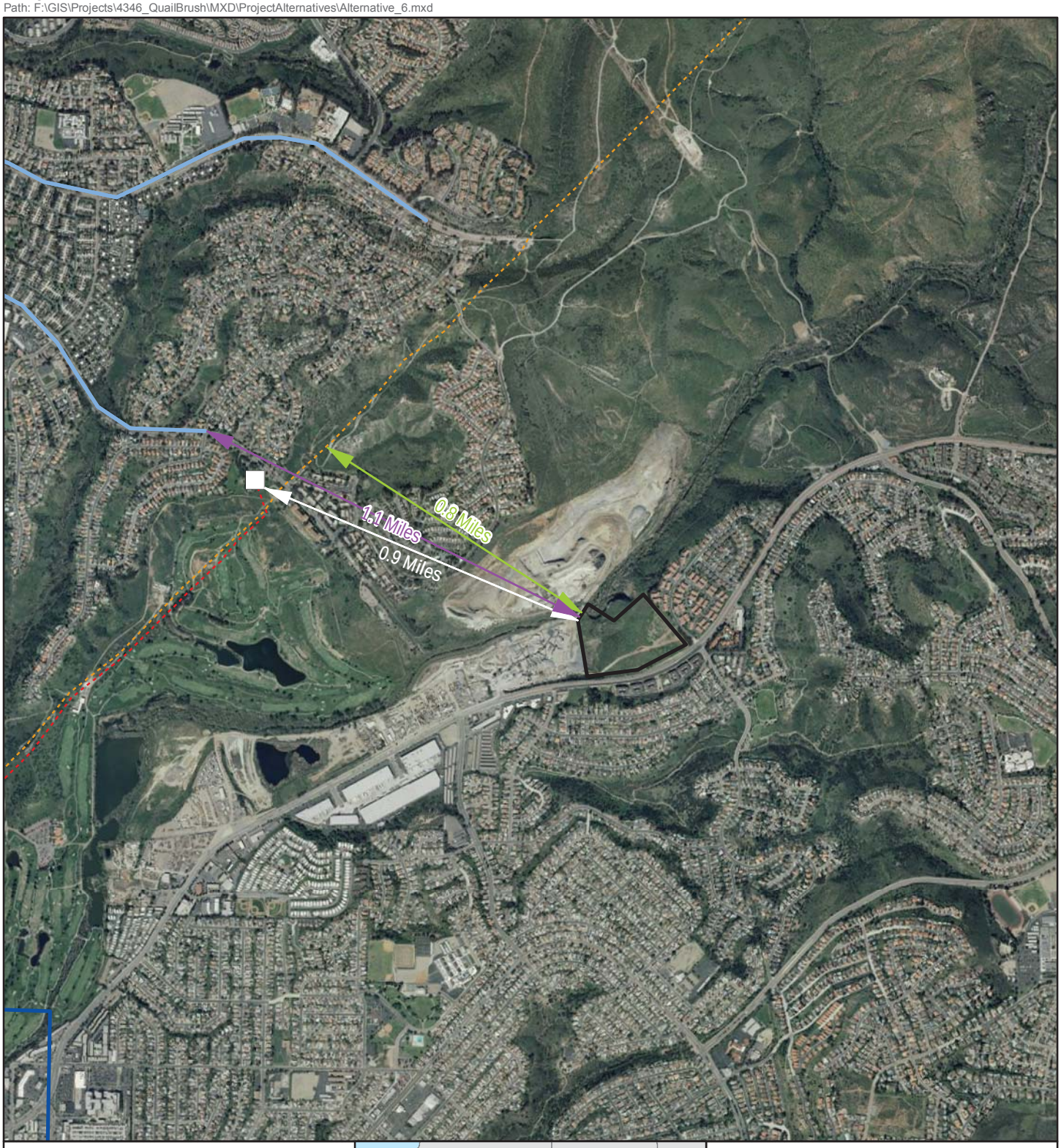
0 1,500 3,000 6,000

Feet

TETRA TECH EC, INC.

N

Printing Date: 10/25/2012 9:15:20 PM
Path: F:\GIS\Projects\4346_QuailBrush\MXD\ProjectAlternatives\Alternative_6.mxd



Legend

- Alternative 6
- Existing SDG&E Substation
- 138 kV Transmission Line
- 230 kV Transmission Line
- High Pressure Gas Distribution Main (8" Diameter)

Cogentrix

QUAIL BRUSH GENERATION PROJECT

FIGURE 1.4-6

ALTERNATIVE SITE 6

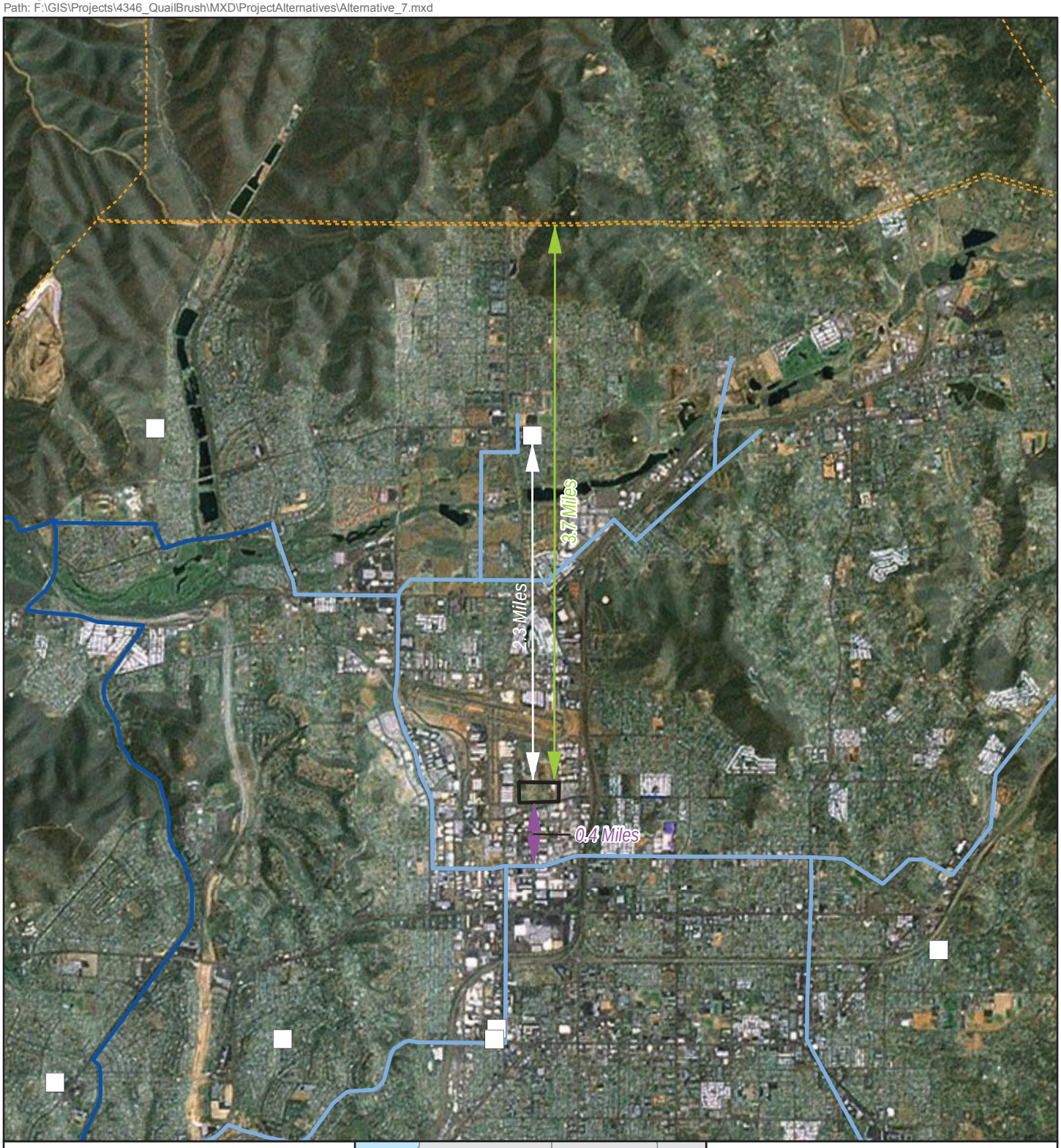
0 1,000 2,000 4,000

Feet

TETRA TECH EC, INC.

N

Printing Date: 10/25/2012 11:55:40 PM
Path: F:\GIS\Projects\4346_QuailBrush\MXD\ProjectAlternatives\Alternative_7.mxd



Legend

- Alternative 7
- Existing SDG&E Substation
- 138 kV Transmission Line
- 230 kV Transmission Line
- High Pressure Gas Distribution Main (8" Diameter)

Cogentrix

QUAIL BRUSH GENERATION PROJECT

FIGURE 1.4-7

ALTERNATIVE SITE 7

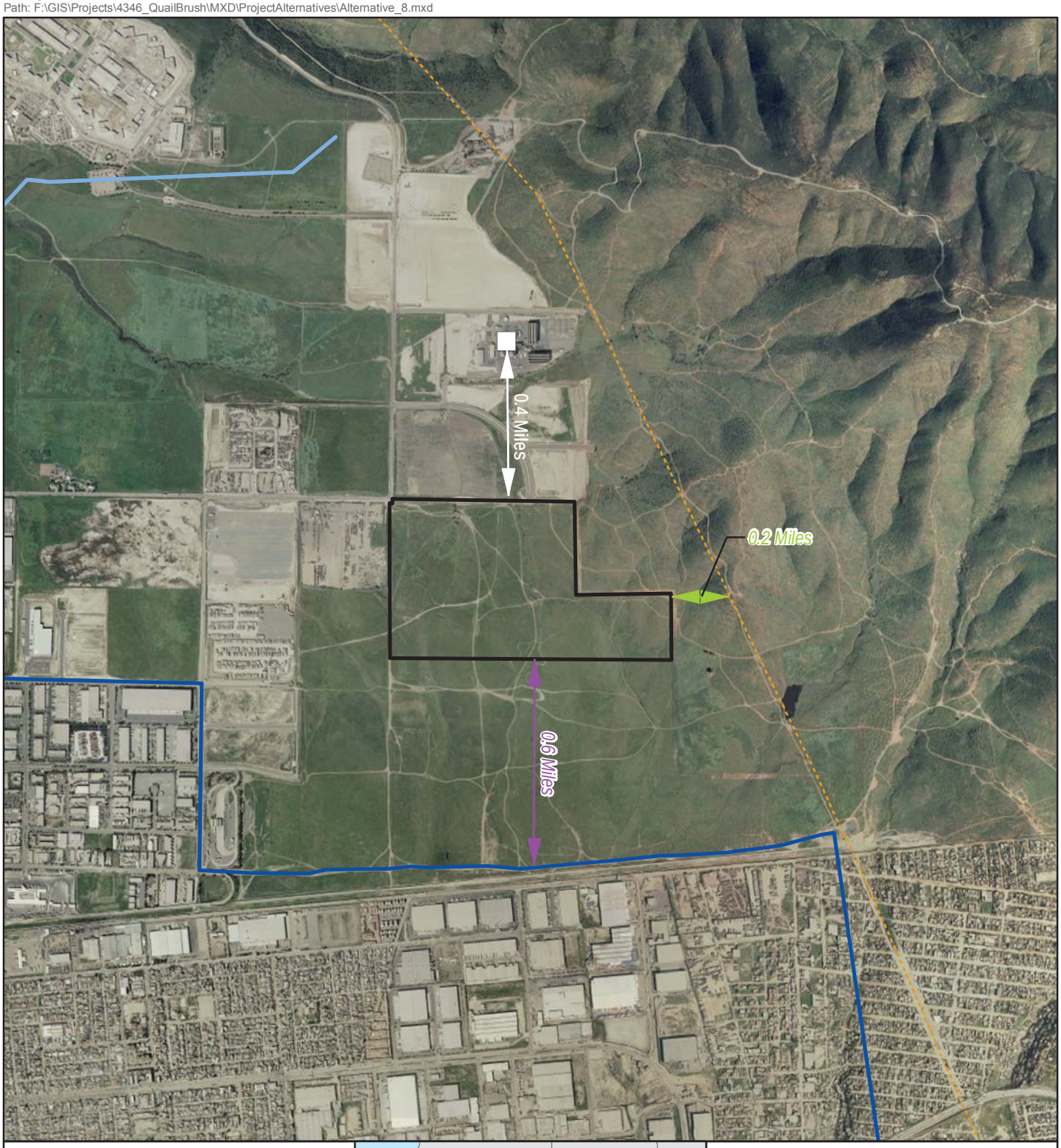
0 2,500 5,000 10,000

Feet

TETRA TECH EC, INC.

N

Printing Date: 10/26/2012 12:01:47 AM
Path: F:\GIS\Projects\4346_QuailBrush\MXD\ProjectAlternatives\Alternative_8.mxd



Legend

- Alternative 8
- Existing SDG&E Substation
- 230 kV Transmission Line
- Gas Transmission Pipeline (30" Diameter)

Cogentrix

QUAIL BRUSH GENERATION PROJECT

FIGURE 1.4-8

ALTERNATIVE SITE 8

0 1,000 2,000 4,000

Feet

TETRA TECH EC, INC.

N

Printing Date: 10/26/2012 12:15:09 AM
Path: F:\GIS\Projects\4346_QuailBrush\MXD\ProjectAlternatives\Alternative_9.mxd

Legend

- Alternative 9
- Existing SDG&E Substation
- 138 kV Transmission Line
- High Pressure Gas Distribution Main (8" Diameter)

Cogentrix

QUAIL BRUSH GENERATION PROJECT

FIGURE 1.4-9

ALTERNATIVE SITE 9

0 500 1,000 2,000

Feet

TETRA TECH EC, INC.

N

Printing Date: 10/26/2012 2:25:02 PM
Path: P:\GIS\Projects\4346_QuailBrush\MXD\ProjectAlternatives\Minority.mxd

Pacific Ocean

Alternative 9
Alternative 1
Alternative 2
Alternative C
Alternative B
Alternative A
Alternative 3
Alternative 6
Alternative 7
Alternative 4
Alternative 5
Alternative 8

Cogentrix

QUAIL BRUSH GENERATION PROJECT

Legend

- Quail Brush Generation Project
- Alternatives
- 6 Mile Radius
- County Boundary

Minority Population

- 0 - 10%
- 10.1 - 20%
- 20.1 - 30%
- 30.1 - 40%
- 40.1 - 50%
- 50.1 - 60%
- 60.1 - 70%
- 70.1 - 80%
- 80.1 - 90%
- 90.1 - 100%

N

FIGURE 1.5-1

MINORITY POPULATION
PROJECT ALTERNATIVES

0 2.5 5 10
Miles

TETRA TECH EC, INC.

Printing Date: 10/26/2012 3:14:27 PM
Path: P:\GIS\Projects\4346_QuailBrush\MXD\ProjectAlternatives\Poverty.mxd

Pacific Ocean

Alternative 9
Alternative 1
Alternative 2
Alternative C
Alternative A
Alternative B
Alternative 3
Alternative 6
Alternative 7
Alternative 4
Alternative 5
Alternative 8

Cogentrix

QUAIL BRUSH GENERATION PROJECT

Legend

- Quail Brush Generation Project
- Alternatives
- 6 Mile Radius
- County Boundary

Income Below Poverty

- 0 - 9.9%
- 10 - 19.9%
- 20 - 29.9%
- 30 - 39.9%
- 40 - 49.9%
- 50 - 59.9%
- 60 - 69.9%
- 70 - 79.9%
- 80 - 89.9%

N

FIGURE 1.5-2

INCOME AND POVERTY LEVELS
PROJECT ALTERNATIVES

0 2.5 5 10
Miles

TETRA TECH EC, INC.

APPENDIX A

CNDDB FOR ALTERNATIVE SITES 1 THROUGH 9

CNDDB
ALTERNATIVE SITES 1, 3, 4, AND 7

CA.GOV DEPARTMENT OF FISH AND GAME

Quad is (El Cajon (3211678))

CNDDB Element Query Results

ScientificName	CommonName	ElementCode	OccCount	GlobalRank	StateRank	FederalListingStatus	StateListingStatus	CNPSList	OtherStatus	Habitat
Acanthomintha ilicifolia	San Diego thorn-mint	PDLAM01010	82	G2	S2	Threatened	Endangered	1B.1	USFS_S-Sensitive	Chaparral | Coastal scrub | Valley and foothill grassland | Vernal pool | Wetland
Accipiter cooperii	Cooper's hawk	ABNKC12040	102	G5	S3	None	None		DFG_WL-Watch List | IUCN_LC-Least Concern	Cismontane woodland | Riparian forest | Riparian woodland | Upper montane coniferous forest
Aimophila ruficeps canescens	southern California rufous-crowned sparrow	ABPBX91091	185	G5T2T4	S2S3	None	None		DFG_WL-Watch List	Chaparral | Coastal scrub
Ambrosia pumila	San Diego ambrosia	PDAST0C0M0	55	G1	S1	Endangered	None	1B.1		Chaparral | Coastal scrub | Valley and foothill grassland
Ammodramus savannarum	grasshopper sparrow	ABPBXA0020	16	G5	S2	None	None		DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern	Valley and foothill grassland
Anniella pulchra pulchra	silvery legless lizard	ARACC01012	91	G3G4T3T4Q	S3	None	None		DFG_SSC-Species of Special Concern | USFS_S-Sensitive	Chaparral | Coastal dunes | Coastal scrub
Antrozous pallidus	pallid bat	AMACC10010	402	G5	S3	None	None		BLM_S-Sensitive | DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFS_S-Sensitive | WBWG_H-High Priority	Chaparral | Coastal scrub | Desert wash | Great Basin grassland | Great Basin scrub | Mojavean desert scrub | Riparian woodland | Sonoran desert scrub | Upper montane coniferous forest | Valley and foothill grassland
Artemisia palmeri	San Diego sagewort	PDAST0S160	36	G3	S3.2	None	None	4.2		Chaparral | Coastal scrub | Riparian forest | Riparian woodland
Aspidoscelis hyperythra	orangethroat whiptail	ARACJ02060	346	G5	S2	None	None		DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern	Chaparral | Cismontane woodland | Coastal scrub
Aspidoscelis tigris stejnegeri	coastal whiptail	ARACJ02143	112	G5T3T4	S2S3	None	None			

ScientificName	CommonName	ElementCode	OccCount	GlobalRank	StateRank	FederalListingStatus	StateListingStatus	CNPSList	OtherStatus	Habitat
Astragalus deanei	Dean's milk-vetch	PDFAB0F2R0	18	G2	S2.1	None	None	1B.1	BLM_S-Sensitive | USFS_S-Sensitive	Chaparral | Coastal scrub | Riparian forest
Bloomeria clevelandii	San Diego goldenstar	PMLIL1H010	68	G2	S2	None	None	1B.1	BLM_S-Sensitive	Chaparral | Coastal scrub | Valley and foothill grassland | Vernal pool | Wetland
Brodiaea orcuttii	Orcutt's brodiaea	PMLIL0C0B0	105	G1	S1	None	None	1B.1	BLM_S-Sensitive | USFS_S-Sensitive	Chaparral | Cismontane woodland | Closed-cone coniferous forest | Meadow and seep | Ultramafic | Valley and foothill grassland | Vernal pool | Wetland
Campylorhynchus brunneicapillus sandiegensis	coastal cactus wren	ABPBG02095	150	G5T3Q	S3	None	None		DFG_SSC-Species of Special Concern | USFS_S-Sensitive | USFWS_BCC-Birds of Conservation Concern	Coastal scrub
Ceanothus cyaneus	Lakeside ceanothus	PDRHA04070	26	G2	S2.2	None	None	1B.2	BLM_S-Sensitive | USFS_S-Sensitive	Chaparral | Closed-cone coniferous forest
Centromadia pungens ssp. laevis	smooth tarplant	PDAST4R0R4	104	G3G4T2	S2.1	None	None	1B.1		Alkali playa | Chenopod scrub | Meadow and seep | Riparian woodland | Valley and foothill grassland | Wetland
Chaetodipus californicus femoralis	Dulzura pocket mouse	AMAFD05021	55	G5T3	S2?	None	None		DFG_SSC-Species of Special Concern	Chaparral | Coastal scrub | Valley and foothill grassland
Chaetodipus fallax fallax	northwestern San Diego pocket mouse	AMAFD05031	94	G5T3	S2S3	None	None		DFG_SSC-Species of Special Concern	Chaparral | Coastal scrub
Choeronycteris mexicana	Mexican long-tongued bat	AMACB02010	14	G4	S1	None	None		DFG_SSC-Species of Special Concern | IUCN_NT-Near Threatened | WBWG_H-High Priority	Pinon and juniper woodlands | Riparian scrub | Sonoran thorn woodland
Crotalus ruber	red-diamond rattlesnake	ARADE02090	148	G4	S2?	None	None		DFG_SSC-Species of Special Concern	Chaparral | Mojavean desert scrub | Sonoran desert scrub
Dudleya variegata	variegated dudleya	PDCRA040R0	59	G2	S2.2	None	None	1B.2	BLM_S-Sensitive	Chaparral | Cismontane woodland | Coastal scrub | Valley and foothill grassland
Ericameria palmeri var. palmeri	Palmer's goldenbush	PDAST3L0C1	16	G4T2T3	S1	None	None	1B.1	BLM_S-Sensitive	Chaparral | Coastal scrub

ScientificName	CommonName	ElementCode	OccCount	GlobalRank	StateRank	FederalListingStatus	StateListingStatus	CNPSList	OtherStatus	Habitat
Eumops perotis californicus	western mastiff bat	AMACD02011	293	G5T4	S3?	None	None		BLM_S-Sensitive | DFG_SSC-Species of Special Concern | WBWG_H-High Priority	Chaparral | Cismontane woodland | Coastal scrub | Valley and foothill grassland
Ferocactus viridescens	San Diego barrel cactus	PDCAC08060	154	G4	S2	None	None	2.1		Chaparral | Coastal scrub | Valley and foothill grassland
Harpagonella palmeri	Palmer's grapplinghook	PDBOR0H010	57	G4	S3.2	None	None	4.2		Chaparral | Coastal scrub | Valley and foothill grassland
Horkelia truncata	Ramona horkelia	PDROS0W0G0	31	G3	S2.3	None	None	1B.3	USFS_S-Sensitive	Chaparral | Cismontane woodland
Icteria virens	yellow-breasted chat	ABPBX24010	84	G5	S3	None	None		DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern	Riparian forest | Riparian scrub | Riparian woodland
Lasiurus xanthinus	western yellow bat	AMACC05070	57	G5	S3	None	None		DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern | WBWG_H-High Priority	Desert wash
Lepus californicus bennettii	San Diego black-tailed jackrabbit	AMAEB03051	96	G5T3?	S3?	None	None		DFG_SSC-Species of Special Concern	Coastal scrub
Lycaena hermes	Hermes copper butterfly	IILEPC1160	18	G1G2	S1S2	None	None		IUCN_VU-Vulnerable	Chaparral | Coastal scrub
Neotoma lepida intermedia	San Diego desert woodrat	AMAFF08041	115	G5T3?	S3?	None	None		DFG_SSC-Species of Special Concern	Coastal scrub
Nyctinomops femorosaccus	pocketed free-tailed bat	AMACD04010	90	G4	S2S3	None	None		DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern | WBWG_M-Medium Priority	Joshua tree woodland | Pinon and juniper woodlands | Riparian scrub | Sonoran desert scrub
Nyctinomops macrotis	big free-tailed bat	AMACD04020	32	G5	S2	None	None		DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern | WBWG_MH-Medium-High Priority	
Phrynosoma blainvillii	coast horned lizard	ARACF12100	680	G4G5	S3S4	None	None		BLM_S-Sensitive | DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFS_S-Sensitive	Chaparral | Cismontane woodland | Coastal bluff scrub | Coastal scrub | Desert wash | Pinon and juniper woodlands | Riparian scrub | Riparian woodland | Valley and foothill grassland

ScientificName	CommonName	ElementCode	OccCount	GlobalRank	StateRank	FederalListingStatus	StateListingStatus	CNPSList	OtherStatus	Habitat
Plestiodon skiltonianus interparietalis	Coronado Island skink	ARACH01114	33	G5T2T3Q	S1S2	None	None		BLM_S-Sensitive | DFG_SSC-Species of Special Concern	Chaparral | Cismontane woodland | Pinon and juniper woodlands
Polioptila californica californica	coastal California gnatcatcher	ABPBJ08081	804	G3T2	S2	Threatened	None		ABC_WLBCC-Watch List of Birds of Conservation Concern | DFG_SSC-Species of Special Concern	Coastal bluff scrub | Coastal scrub
Quercus dumosa	Nuttall's scrub oak	PDFAG050D0	97	G1G2	S1.1	None	None	1B.1	USFS_S-Sensitive	Chaparral | Closed-cone coniferous forest | Coastal scrub
Taxidea taxus	American badger	AMAJF04010	454	G5	S4	None	None		DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern	Alkali marsh | Alkali playa | Alpine | Alpine dwarf scrub | Bog and fen | Brackish marsh | Broadleaved upland forest | Chaparral | Chenopod scrub | Cismontane woodland | Closed-cone coniferous forest | Coastal bluff scrub | Coastal dunes | Coastal prairie | Coastal scrub | Desert dunes | Desert wash | Freshwater marsh | Great Basin grassland | Great Basin scrub | Interior dunes | Ione formation | Joshua tree woodland | Limestone | Lower montane coniferous forest | Marsh and swamp | Meadow and seep | Mojavean desert scrub | Montane dwarf scrub | North coast coniferous forest | Oldgrowth | Pavement plain | Redwood | Riparian forest | Riparian scrub | Riparian woodland | Salt marsh | Sonoran desert scrub | Sonoran thorn woodland |

ScientificName	CommonName	ElementCode	OccCount	GlobalRank	StateRank	FederalListingStatus	StateListingStatus	CNPSList	OtherStatus	Habitat
										Ultramafic | Upper montane coniferous forest | Upper Sonoran scrub | Valley and foothill grassland
Thamnophis hammondii	two-striped garter snake	ARADB36160	143	G3	S2	None	None		BLM_S-Sensitive | DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFS_S-Sensitive	Marsh and swamp | Riparian scrub | Riparian woodland | Wetland
Vireo bellii pusillus	least Bell's vireo	ABPBW01114	248	G5T2	S2	Endangered	Endangered		ABC_WLBCC-Watch List of Birds of Conservation Concern | IUCN_NT-Near Threatened	Riparian forest | Riparian scrub | Riparian woodland

CNDDB
ALTERNATIVE SITE 2

DEPARTMENT OF FISH AND GAME

Quad is (San Vicente Reservoir (3211688))

CNDDB Element Query Results

ScientificName	CommonName	ElementCode	OccCount	GlobalRank	StateRank	FederalListingStatus	StateListingStatus	CNPSList	OtherStatus	Habitat
Acanthomintha ilicifolia	San Diego thorn-mint	PDLAM01010	82	G2	S2	Threatened	Endangered	1B.1	USFS_S-Sensitive	Chaparral | Coastal scrub | Valley and foothill grassland | Vernal pool | Wetland
Accipiter cooperii	Cooper's hawk	ABNKC12040	102	G5	S3	None	None		DFG_WL-Watch List | IUCN_LC-Least Concern	Cismontane woodland | Riparian forest | Riparian woodland | Upper montane coniferous forest
Aimophila ruficeps canescens	southern California rufous-crowned sparrow	ABPBX91091	185	G5T2T4	S2S3	None	None		DFG_WL-Watch List	Chaparral | Coastal scrub
Ammodramus savannarum	grasshopper sparrow	ABPBXA0020	16	G5	S2	None	None		DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern	Valley and foothill grassland
Amphispiza belli belli	Bell's sage sparrow	ABPBX97021	57	G5T2T4	S2?	None	None		ABC_WLBCC-Watch List of Birds of Conservation Concern | DFG_WL-Watch List | USFWS_BCC-Birds of Conservation Concern	Chaparral | Coastal scrub
Anaxyrus californicus	arroyo toad	AAABB01230	137	G2G3	S2S3	Endangered	None		DFG_SSC-Species of Special Concern | IUCN_EN-Endangered	Desert wash | Riparian scrub | Riparian woodland | South coast flowing waters | South coast standing waters
Aquila chrysaetos	golden eagle	ABNKC22010	141	G5	S3	None	None		BLM_S-Sensitive | CDF_S-Sensitive | DFG_FP-Fully Protected | DFG_WL-Watch List | IUCN_LC-Least Concern | USFWS_BCC-Birds of Conservation Concern	Broadleaved upland forest | Cismontane woodland | Coastal prairie | Great Basin grassland | Great Basin scrub | Lower montane coniferous forest | Pinon and juniper woodlands | Upper montane coniferous forest | Valley and foothill grassland
Artemisia palmeri	San Diego sagewort	PDAST0S160	36	G3	S3.2	None	None	4.2		Chaparral | Coastal scrub | Riparian forest |

ScientificName	CommonName	ElementCode	OccCount	GlobalRank	StateRank	FederalListingStatus	StateListingStatus	CNPSList	OtherStatus	Habitat
Aspidoscelis hyperythra	orangethroat whiptail	ARACJ02060	346	G5	S2	None	None		DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern	Riparian woodland | Chaparral | Cismontane woodland | Coastal scrub
Aspidoscelis tigris stejnegeri	coastal whiptail	ARACJ02143	112	G5T3T4	S2S3	None	None			
Bloomeria clevelandii	San Diego goldenstar	PMLIL1H010	68	G2	S2	None	None	1B.1	BLM_S-Sensitive	Chaparral | Coastal scrub | Valley and foothill grassland | Vernal pool | Wetland
Brodiaea orcuttii	Orcutt's brodiaea	PMLIL0C0B0	105	G1	S1	None	None	1B.1	BLM_S-Sensitive | USFS_S-Sensitive	Chaparral | Cismontane woodland | Closed-cone coniferous forest | Meadow and seep | Ultramafic | Valley and foothill grassland | Vernal pool | Wetland
Campylorhynchus brunneicapillus sandiegensis	coastal cactus wren	ABPBG02095	150	G5T3Q	S3	None	None		DFG_SSC-Species of Special Concern | USFS_S-Sensitive | USFWS_BCC-Birds of Conservation Concern	Coastal scrub
Ceanothus cyaneus	Lakeside ceanothus	PDRHA04070	26	G2	S2.2	None	None	1B.2	BLM_S-Sensitive | USFS_S-Sensitive	Chaparral | Closed-cone coniferous forest
Chaetodipus californicus femoralis	Dulzura pocket mouse	AMAFD05021	55	G5T3	S2?	None	None		DFG_SSC-Species of Special Concern	Chaparral | Coastal scrub | Valley and foothill grassland
Chaetodipus fallax fallax	northwestern San Diego pocket mouse	AMAFD05031	94	G5T3	S2S3	None	None		DFG_SSC-Species of Special Concern	Chaparral | Coastal scrub
Charina trivirgata	rosy boa	ARADA01020	48	G4G5	S3S4	None	None		IUCN_LC-Least Concern | USFS_S-Sensitive	Chaparral | Mojavean desert scrub | Sonoran desert scrub
Clarkia delicata	delicate clarkia	PDONA050D0	31	G2	S2.2	None	None	1B.2	USFS_S-Sensitive	Chaparral | Cismontane woodland
Clinopodium chandleri	San Miguel savory	PDLAM08030	21	G2	S2	None	None	1B.2	USFS_S-Sensitive	Chaparral | Cismontane woodland | Coastal scrub | Riparian woodland | Ultramafic | Valley and foothill grassland
Comarostaphylis diversifolia ssp. diversifolia	summer holly	PDERI0B011	87	G3T2	S2	None	None	1B.2		Chaparral
Crotalus ruber	red-diamond rattlesnake	ARADE02090	148	G4	S2?	None	None		DFG_SSC-Species of Special Concern	Chaparral | Mojavean desert scrub | Sonoran desert scrub
Diadophis punctatus similis	San Diego ringneck snake	ARADB1001A	10	G5T2T3	S2?	None	None		USFS_S-Sensitive	

ScientificName	CommonName	ElementCode	OccCount	GlobalRank	StateRank	FederalListingStatus	StateListingStatus	CNPSList	OtherStatus	Habitat
Dudleya variegata	variegated dudleya	PDCRA040R0	59	G2	S2.2	None	None	1B.2	BLM_S-Sensitive	Chaparral | Cismontane woodland | Coastal scrub | Valley and foothill grassland
Elanus leucurus	white-tailed kite	ABNKC06010	157	G5	S3	None	None		BLM_S-Sensitive | DFG_FP-Fully Protected | IUCN_LC-Least Concern	Cismontane woodland | Marsh and swamp | Riparian woodland | Valley and foothill grassland | Wetland
Eumops perotis californicus	western mastiff bat	AMACD02011	293	G5T4	S3?	None	None		BLM_S-Sensitive | DFG_SSC-Species of Special Concern | WBWG_H-High Priority	Chaparral | Cismontane woodland | Coastal scrub | Valley and foothill grassland
Ferocactus viridescens	San Diego barrel cactus	PDCAC08060	154	G4	S2	None	None	2.1		Chaparral | Coastal scrub | Valley and foothill grassland
Githopsis diffusa ssp. filicaulis	Mission Canyon bluecup	PDCAM07023	3	G5T2T3	S1.1	None	None	3.1	USFS_S-Sensitive	Chaparral
Harpagonella palmeri	Palmer's grapplinghook	PDBOR0H010	57	G4	S3.2	None	None	4.2		Chaparral | Coastal scrub | Valley and foothill grassland
Horkelia truncata	Ramona horkelia	PDROS0W0G0	31	G3	S2.3	None	None	1B.3	USFS_S-Sensitive	Chaparral | Cismontane woodland
Icteria virens	yellow-breasted chat	ABPBX24010	84	G5	S3	None	None		DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern	Riparian forest | Riparian scrub | Riparian woodland
Lasiurus blossevillii	western red bat	AMACC05060	119	G5	S3?	None	None		DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFS_S-Sensitive | WBWG_H-High Priority	Cismontane woodland | Lower montane coniferous forest | Riparian forest | Riparian woodland
Lepechinia cardiophylla	heart-leaved pitcher sage	PDLAM0V020	18	G2	S2.2	None	None	1B.2	USFS_S-Sensitive	Chaparral | Cismontane woodland | Closed-cone coniferous forest
Lepidium virginicum var. robinsonii	Robinson's pepper-grass	PDBRA1M114	134	G5T3	S3	None	None	1B.2		Chaparral | Coastal scrub
Lepus californicus bennettii	San Diego black-tailed jackrabbit	AMAEB03051	96	G5T3?	S3?	None	None		DFG_SSC-Species of Special Concern	Coastal scrub
Monardella hypoleuca ssp. lanata	felt-leaved monardella	PDLAM180A2	43	G4T2	S2.2	None	None	1B.2	USFS_S-Sensitive	Chaparral | Cismontane woodland
Monardella viminea	willowy monardella	PDLAM180D4	28	G1	S1	Endangered	Endangered	1B.1		Chaparral | Coastal scrub | Riparian forest | Riparian scrub | Riparian woodland

ScientificName	CommonName	ElementCode	OccCount	GlobalRank	StateRank	FederalListingStatus	StateListingStatus	CNPSList	OtherStatus	Habitat
Myotis ciliolabrum	western small-footed myotis	AMACC01140	81	G5	S2S3	None	None		BLM_S-Sensitive | IUCN_LC-Least Concern | WBWG_M-Medium Priority	
Myotis yumanensis	Yuma myotis	AMACC01020	256	G5	S4?	None	None		BLM_S-Sensitive | IUCN_LC-Least Concern | WBWG_LM-Low-Medium Priority	Lower montane coniferous forest | Riparian forest | Riparian woodland | Upper montane coniferous forest
Neotoma lepida intermedia	San Diego desert woodrat	AMAFF08041	115	G5T3?	S3?	None	None		DFG_SSC-Species of Special Concern	Coastal scrub
Nyctinomops femorosaccus	pocketed free-tailed bat	AMACD04010	90	G4	S2S3	None	None		DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern | WBWG_M-Medium Priority	Joshua tree woodland | Pinon and juniper woodlands | Riparian scrub | Sonoran desert scrub
Packera ganderi	Gander's ragwort	PDAST8H1F0	14	G2	S2.2	None	Rare	1B.2	BLM_S-Sensitive | USFS_S-Sensitive	Chaparral | Ultramafic
Phrynosoma blainvillii	coast horned lizard	ARACF12100	680	G4G5	S3S4	None	None		BLM_S-Sensitive | DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFS_S-Sensitive	Chaparral | Cismontane woodland | Coastal bluff scrub | Coastal scrub | Desert wash | Pinon and juniper woodlands | Riparian scrub | Riparian woodland | Valley and foothill grassland
Polioptila californica californica	coastal California gnatcatcher	ABPBJ08081	804	G3T2	S2	Threatened	None		ABC_WLBCC-Watch List of Birds of Conservation Concern | DFG_SSC-Species of Special Concern	Coastal bluff scrub | Coastal scrub
Salvadora hexalepis virgultea	coast patch-nosed snake	ARADB30033	22	G5T3	S2S3	None	None		DFG_SSC-Species of Special Concern	Coastal scrub
Southern Coast Live Oak Riparian Forest	Southern Coast Live Oak Riparian Forest	CTT61310CA	246	G4	S4	None	None			Riparian forest
Southern Sycamore Alder Riparian Woodland	Southern Sycamore Alder Riparian Woodland	CTT62400CA	230	G4	S4	None	None			Riparian woodland
Spea hammondii	western spadefoot	AAABF02020	422	G3	S3	None	None		BLM_S-Sensitive | DFG_SSC-Species of Special Concern | IUCN_NT-Near Threatened	Cismontane woodland | Coastal scrub | Valley and foothill grassland | Vernal pool | Wetland
Tetracoccus dioicus	Parry's tetracoccus	PDEUP1C010	46	G3	S2.2	None	None	1B.2	BLM_S-Sensitive |	Chaparral | Coastal

ScientificName	CommonName	ElementCode	OccCount	GlobalRank	StateRank	FederalListingStatus	StateListingStatus	CNPSList	OtherStatus	Habitat
									USFS_S-Sensitive	scrub | Ultramafic
Thamnophis hammondii	two-striped garter snake	ARADB36160	143	G3	S2	None	None		BLM_S-Sensitive | DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFS_S-Sensitive	Marsh and swamp | Riparian scrub | Riparian woodland | Wetland
Triquetrella californica	coastal triquetrella	NBMUS7S010	11	G1	S1	None	None	1B.2	USFS_S-Sensitive	Coastal bluff scrub | Coastal scrub | Valley and foothill grassland

CNDDB
ALTERNATIVE SITE 5

DEPARTMENT OF FISH AND GAME

Quad is (Jamul Mountains (3211668))

CNDDB Element Query Results

ScientificName	CommonName	ElementCode	OccCount	GlobalRank	StateRank	FederalListingStatus	StateListingStatus	CNPSList	OtherStatus	Habitat
Acanthomintha ilicifolia	San Diego thorn-mint	PDLAM01010	82	G2	S2	Threatened	Endangered	1B.1	USFS_S-Sensitive	Chaparral | Coastal scrub | Valley and foothill grassland | Vernal pool | Wetland
Accipiter cooperii	Cooper's hawk	ABNKC12040	102	G5	S3	None	None		DFG_WL-Watch List | IUCN_LC-Least Concern	Cismontane woodland | Riparian forest | Riparian woodland | Upper montane coniferous forest
Adolphia californica	California adolphia	PDRHA01010	84	G3G4	S2	None	None	2.1		Chaparral | Coastal scrub | Valley and foothill grassland
Agelaius tricolor	tricolored blackbird	ABPBXB0020	428	G2G3	S2	None	None		ABC_WLBCC-Watch List of Birds of Conservation Concern | BLM_S-Sensitive | DFG_SSC-Species of Special Concern | IUCN_EN-Endangered | USFWS_BCC-Birds of Conservation Concern	Freshwater marsh | Marsh and swamp | Swamp | Wetland
Aimophila ruficeps canescens	southern California rufous-crowned sparrow	ABPBX91091	185	G5T2T4	S2S3	None	None		DFG_WL-Watch List	Chaparral | Coastal scrub
Ambrosia monogyra	singlewhorl burrobrush	PDAST50010	16	G5	S2.2	None	None	2.2		Chaparral | Sonoran desert scrub
Ambrosia pumila	San Diego ambrosia	PDAST0C0M0	55	G1	S1	Endangered	None	1B.1		Chaparral | Coastal scrub | Valley and foothill grassland
Amphispiza belli belli	Bell's sage sparrow	ABPBX97021	57	G5T2T4	S2?	None	None		ABC_WLBCC-Watch List of Birds of Conservation Concern | DFG_WL-Watch List | USFWS_BCC-Birds of Conservation Concern	Chaparral | Coastal scrub
Anaxyrus californicus	arroyo toad	AAABB01230	137	G2G3	S2S3	Endangered	None		DFG_SSC-Species of Special Concern | IUCN_EN-Endangered	Desert wash | Riparian scrub | Riparian woodland | South coast flowing waters | South coast standing waters
Arctostaphylos otayensis	Otay manzanita	PDERI040Y0	18	G2	S2.1	None	None	1B.2	BLM_S-Sensitive	Chaparral | Cismontane woodland
Artemisia palmeri	San Diego sagewort	PDAST0S160	36	G3	S3.2	None	None	4.2		Chaparral | Coastal scrub | Riparian

ScientificName	CommonName	ElementCode	OccCount	GlobalRank	StateRank	FederalListingStatus	StateListingStatus	CNPSList	OtherStatus	Habitat
										forest | Riparian woodland
Aspidoscelis hyperythra	orangethroat whiptail	ARACJ02060	346	G5	S2	None	None		DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern	Chaparral | Cismontane woodland | Coastal scrub
Aspidoscelis tigris stejnegeri	coastal whiptail	ARACJ02143	112	G5T3T4	S2S3	None	None			
Astragalus deanei	Dean's milk-vetch	PDFAB0F2R0	18	G2	S2.1	None	None	1B.1	BLM_S-Sensitive | USFS_S-Sensitive	Chaparral | Coastal scrub | Riparian forest
Atriplex pacifica	south coast saltscale	PDCHE041C0	77	G3G4	S2	None	None	1B.2		Chenopod scrub | Coastal bluff scrub | Coastal scrub
Bloomeria clevelandii	San Diego goldenstar	PMLIL1H010	68	G2	S2	None	None	1B.1	BLM_S-Sensitive	Chaparral | Coastal scrub | Valley and foothill grassland | Vernal pool | Wetland
Branchinecta sandiegonensis	San Diego fairy shrimp	ICBRA03060	67	G1	S1	Endangered	None		IUCN_EN-Endangered	Chaparral | Coastal scrub | Vernal pool | Wetland
Brodiaea orcuttii	Orcutt's brodiaea	PMLIL0C0B0	105	G1	S1	None	None	1B.1	BLM_S-Sensitive | USFS_S-Sensitive	Chaparral | Cismontane woodland | Closed-cone coniferous forest | Meadow and seep | Ultramafic | Valley and foothill grassland | Vernal pool | Wetland
Callophrys thornei	Thorne's hairstreak	IILEPE2150	6	G1	S1	None	None		BLM_S-Sensitive	
Calochortus dunnii	Dunn's mariposa-lily	PMLIL0D0C0	25	G2	S2.1	None	Rare	1B.2	BLM_S-Sensitive | USFS_S-Sensitive	Chaparral | Closed-cone coniferous forest | Ultramafic
Campylorhynchus brunneicapillus sandiegensis	coastal cactus wren	ABPBG02095	150	G5T3Q	S3	None	None		DFG_SSC-Species of Special Concern | USFS_S-Sensitive | USFWS_BCC-Birds of Conservation Concern	Coastal scrub
Ceanothus otayensis	Otay Mountain ceanothus	PDRHA04430	4	G1	S1	None	None	1B.2		Chaparral | Ultramafic
Charina trivirgata	rosy boa	ARADA01020	48	G4G5	S3S4	None	None		IUCN_LC-Least Concern | USFS_S-Sensitive	Chaparral | Mojavean desert scrub | Sonoran desert scrub
Clarkia delicata	delicate clarkia	PDONA050D0	31	G2	S2.2	None	None	1B.2	USFS_S-Sensitive	Chaparral | Cismontane woodland
Clinopodium chandleri	San Miguel savory	PDLAM08030	21	G2	S2	None	None	1B.2	USFS_S-Sensitive	Chaparral | Cismontane woodland | Coastal scrub | Riparian woodland | Ultramafic | Valley and foothill grassland
Comarostaphylis diversifolia ssp. diversifolia	summer holly	PDERI0B011	87	G3T2	S2	None	None	1B.2		Chaparral

ScientificName	CommonName	ElementCode	OccCount	GlobalRank	StateRank	FederalListingStatus	StateListingStatus	CNPSList	OtherStatus	Habitat
Corynorhinus townsendii	Townsend's big-eared bat	AMACC08010	237	G4	S2S3	None	None		BLM_S-Sensitive | DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFS_S-Sensitive | WBWG_H-High Priority	Broadleaved upland forest | Chaparral | Chenopod scrub | Great Basin grassland | Great Basin scrub | Joshua tree woodland | Lower montane coniferous forest | Meadow and seep | Mojavean desert scrub | Riparian forest | Riparian woodland | Sonoran desert scrub | Sonoran thorn woodland | Upper montane coniferous forest | Valley and foothill grassland
Crotalus ruber	red-diamond rattlesnake	ARADE02090	148	G4	S2?	None	None		DFG_SSC-Species of Special Concern	Chaparral | Mojavean desert scrub | Sonoran desert scrub
Cylindropuntia californica var. californica	snake cholla	PDCAC0D2Y1	17	G3T2	S1	None	None	1B.1		Chaparral | Coastal scrub
Deinandra conjugens	Otay tarplant	PDAST4R070	36	G1	S1	Threatened	Endangered	1B.1		Coastal scrub | Valley and foothill grassland
Dendroica petechia brewsteri	yellow warbler	ABPBX03018	48	G5T3?	S2	None	None		DFG_SSC-Species of Special Concern | USFWS_BCC-Birds of Conservation Concern	Riparian woodland
Diadophis punctatus similis	San Diego ringneck snake	ARADB1001A	10	G5T2T3	S2?	None	None		USFS_S-Sensitive	
Dicranostegia orcuttiana	Orcutt's bird's-beak	PDSCR0J0G0	6	G2?	S1	None	None	2.1		Coastal scrub
Dudleya variegata	variegated dudleya	PDCRA040R0	59	G2	S2.2	None	None	1B.2	BLM_S-Sensitive	Chaparral | Cismontane woodland | Coastal scrub | Valley and foothill grassland
Empidonax traillii extimus	southwestern willow flycatcher	ABPAE33043	70	G5T1T2	S1	Endangered	Endangered		ABC_WLBCC-Watch List of Birds of Conservation Concern	Riparian woodland
Eremophila alpestris actia	California horned lark	ABPAT02011	77	G5T3Q	S3	None	None		DFG_WL-Watch List | IUCN_LC-Least Concern	Marine intertidal and splash zone communities | Meadow and seep
Ericameria palmeri var. palmeri	Palmer's goldenbush	PDAST3L0C1	16	G4T2T3	S1	None	None	1B.1	BLM_S-Sensitive	Chaparral | Coastal scrub
Eryngium aristulatum var. parishii	San Diego button-celery	PDAPI0Z042	69	G5T1	S1	Endangered	Endangered	1B.1		Coastal scrub | Valley and foothill grassland | Vernal pool | Wetland
Eumops perotis californicus	western mastiff bat	AMACD02011	293	G5T4	S3?	None	None		BLM_S-Sensitive | DFG_SSC-	Chaparral | Cismontane woodland |

ScientificName	CommonName	ElementCode	OccCount	GlobalRank	StateRank	FederalListingStatus	StateListingStatus	CNPSList	OtherStatus	Habitat
									Species of Special Concern | WBWG_H-High Priority	Coastal scrub | Valley and foothill grassland
Euphydryas editha quino	quino checkerspot butterfly	IILEPK405L	95	G5T1	S1	Endangered	None		XERCES_CI-Critically Imperiled	Chaparral | Coastal scrub
Ferocactus viridescens	San Diego barrel cactus	PDCAC08060	154	G4	S2	None	None	2.1		Chaparral | Coastal scrub | Valley and foothill grassland
Fremontodendron mexicanum	Mexican flannelbush	PDSTE03020	8	G1	S1	Endangered	Rare	1B.1	USFS_S-Sensitive	Chaparral | Cismontane woodland | Closed-cone coniferous forest | Ultramafic
Galium proliferum	desert bedstraw	PDRUB0N1V0	15	G5	S2	None	None	2.2		Joshua tree woodland | Limestone | Mojavean desert scrub | Pinon and juniper woodlands
Harpagonella palmeri	Palmer's grapplinghook	PDBOR0H010	57	G4	S3.2	None	None	4.2		Chaparral | Coastal scrub | Valley and foothill grassland
Hesperocyparis forbesii	Tecate cypress	PGCUP040C0	25	G2	S1.1	None	None	1B.1	BLM_S-Sensitive | USFS_S-Sensitive	Chaparral | Closed-cone coniferous forest
Icteria virens	yellow-breasted chat	ABPBX24010	84	G5	S3	None	None		DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern	Riparian forest | Riparian scrub | Riparian woodland
Isocoma menziesii var. decumbens	decumbent goldenbush	PDAST57091	9	G3G5T2T3	S2.2	None	None	1B.2		Coastal scrub
Iva hayesiana	San Diego marsh-elder	PDAST580A0	58	G3?	S2.2?	None	None	2.2		Alkali playa | Marsh and swamp | Wetland
Lasiurus blossevillii	western red bat	AMACC05060	119	G5	S3?	None	None		DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFS_S-Sensitive | WBWG_H-High Priority	Cismontane woodland | Lower montane coniferous forest | Riparian forest | Riparian woodland
Lasiurus cinereus	hoary bat	AMACC05030	235	G5	S4?	None	None		IUCN_LC-Least Concern | WBWG_M-Medium Priority	Broadleaved upland forest | Cismontane woodland | Lower montane coniferous forest | North coast coniferous forest
Lasiurus xanthinus	western yellow bat	AMACC05070	57	G5	S3	None	None		DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern | WBWG_H-High Priority	Desert wash
Lasthenia glabrata ssp. coulteri	Coulter's goldfields	PDAST5L0A1	87	G4T3	S2.1	None	None	1B.1	BLM_S-Sensitive	Alkali playa | Marsh and swamp | Salt marsh | Valley and foothill

ScientificName	CommonName	ElementCode	OccCount	GlobalRank	StateRank	FederalListingStatus	StateListingStatus	CNPSList	OtherStatus	Habitat
										grassland | Vernal pool | Wetland
Lepechinia ganderi	Gander's pitcher sage	PDLAM0V040	16	G2	S2.2	None	None	1B.3	BLM_S-Sensitive	Chaparral | Closed-cone coniferous forest | Coastal scrub | Valley and foothill grassland
Lepidium virginicum var. robinsonii	Robinson's pepper-grass	PDBRA1M114	134	G5T3	S3	None	None	1B.2		Chaparral | Coastal scrub
Lepus californicus bennettii	San Diego black-tailed jackrabbit	AMAEB03051	96	G5T3?	S3?	None	None		DFG_SSC-Species of Special Concern	Coastal scrub
Lycaena hermes	Hermes copper butterfly	IILEPC1160	18	G1G2	S1S2	None	None		IUCN_VU-Vulnerable	Chaparral | Coastal scrub
Monardella hypoleuca ssp. lanata	felt-leaved monardella	PDLAM180A2	43	G4T2	S2.2	None	None	1B.2	USFS_S-Sensitive	Chaparral | Cismontane woodland
Myosurus minimus ssp. apus	little mousetail	PDRAN0H031	24	G5T2Q	S2.2	None	None	3.1		Vernal pool | Wetland
Myotis ciliolabrum	western small-footed myotis	AMACC01140	81	G5	S2S3	None	None		BLM_S-Sensitive | IUCN_LC-Least Concern | WBWG_M-Medium Priority	
Myotis evotis	long-eared myotis	AMACC01070	107	G5	S4?	None	None		BLM_S-Sensitive | IUCN_LC-Least Concern | WBWG_M-Medium Priority	
Myotis yumanensis	Yuma myotis	AMACC01020	256	G5	S4?	None	None		BLM_S-Sensitive | IUCN_LC-Least Concern | WBWG_LM-Low-Medium Priority	Lower montane coniferous forest | Riparian forest | Riparian woodland | Upper montane coniferous forest
Nama stenocarpum	mud nama	PDHYD0A0H0	22	G4G5	S1S2	None	None	2.2		Marsh and swamp | Wetland
Navarretia fossalis	spreading navarretia	PDPLM0C080	65	G1	S1	Threatened	None	1B.1		Alkali playa | Chenopod scrub | Marsh and swamp | Vernal pool | Wetland
Nyctinomops femorosaccus	pocketed free-tailed bat	AMACD04010	90	G4	S2S3	None	None		DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern | WBWG_M-Medium Priority	Joshua tree woodland | Pinon and juniper woodlands | Riparian scrub | Sonoran desert scrub
Nyctinomops macrotis	big free-tailed bat	AMACD04020	32	G5	S2	None	None		DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern | WBWG_MH-Medium-High Priority	
Phalacrocorax auritus	double-crested cormorant	ABNFD01020	37	G5	S3	None	None		DFG_WL-Watch List | IUCN_LC-	Riparian forest | Riparian scrub |

ScientificName	CommonName	ElementCode	OccCount	GlobalRank	StateRank	FederalListingStatus	StateListingStatus	CNPSList	OtherStatus	Habitat
									Least Concern	Riparian woodland
Phrynosoma blainvillii	coast horned lizard	ARACF12100	680	G4G5	S3S4	None	None		BLM_S-Sensitive | DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFS_S-Sensitive	Chaparral | Cismontane woodland | Coastal bluff scrub | Coastal scrub | Desert wash | Pinon and juniper woodlands | Riparian scrub | Riparian woodland | Valley and foothill grassland
Plestiodon skiltonianus interparietalis	Coronado Island skink	ARACH01114	33	G5T2T3Q	S1S2	None	None		BLM_S-Sensitive | DFG_SSC-Species of Special Concern	Chaparral | Cismontane woodland | Pinon and juniper woodlands
Polioptila californica californica	coastal California gnatcatcher	ABPBJ08081	804	G3T2	S2	Threatened	None		ABC_WLBCC-Watch List of Birds of Conservation Concern | DFG_SSC-Species of Special Concern	Coastal bluff scrub | Coastal scrub
Salvia munzii	Munz's sage	PDLAM1S140	27	G3	S2.2	None	None	2.2		Chaparral | Coastal scrub
San Diego Mesa Claypan Vernal Pool	San Diego Mesa Claypan Vernal Pool	CTT44322CA	19	G2	S2.1	None	None			Vernal pool | Wetland
Senecio aphanactis	chaparral ragwort	PDAST8H060	47	G3?	S1.2	None	None	2.2		Cismontane woodland | Coastal scrub
Southern Interior Cypress Forest	Southern Interior Cypress Forest	CTT83230CA	24	G2	S2.1	None	None			Closed-cone coniferous forest
Spea hammondii	western spadefoot	AAABF02020	422	G3	S3	None	None		BLM_S-Sensitive | DFG_SSC-Species of Special Concern | IUCN_NT-Near Threatened	Cismontane woodland | Coastal scrub | Valley and foothill grassland | Vernal pool | Wetland
Stemodia durantifolia	purple stemodia	PDSCR1U010	19	G5	S2.1?	None	None	2.1		Sonoran desert scrub
Streptanthus bernardinus	Laguna Mountains jewel-flower	PDBRA2G060	22	G3	S3	None	None	4.3	USFS_S-Sensitive	Chaparral | Lower montane coniferous forest | Upper montane coniferous forest
Taxidea taxus	American badger	AMAJF04010	454	G5	S4	None	None		DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern	Alkali marsh | Alkali playa | Alpine | Alpine dwarf scrub | Bog and fen | Brackish marsh | Broadleaved upland forest | Chaparral | Chenopod scrub | Cismontane woodland | Closed-cone coniferous forest | Coastal bluff scrub | Coastal dunes | Coastal prairie | Coastal scrub

ScientificName	CommonName	ElementCode	OccCount	GlobalRank	StateRank	FederalListingStatus	StateListingStatus	CNPSList	OtherStatus	Habitat
										| Desert dunes | Desert wash | Freshwater marsh | Great Basin grassland | Great Basin scrub | Interior dunes | Ione formation | Joshua tree woodland | Limestone | Lower montane coniferous forest | Marsh and swamp | Meadow and seep | Mojavean desert scrub | Montane dwarf scrub | North coast coniferous forest | Oldgrowth | Pavement plain | Redwood | Riparian forest | Riparian scrub | Riparian woodland | Salt marsh | Sonoran desert scrub | Sonoran thorn woodland | Ultramafic | Upper montane coniferous forest | Upper Sonoran scrub | Valley and foothill grassland
Tetracoccus dioicus	Parry's tetracoccus	PDEUP1C010	46	G3	S2.2	None	None	1B.2	BLM_S-Sensitive | USFS_S-Sensitive	Chaparral | Coastal scrub | Ultramafic
Thamnophis hammondii	two-striped garter snake	ARADB36160	143	G3	S2	None	None		BLM_S-Sensitive | DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFS_S-Sensitive	Marsh and swamp | Riparian scrub | Riparian woodland | Wetland
Vireo bellii pusillus	least Bell's vireo	ABPBW01114	248	G5T2	S2	Endangered	Endangered		ABC_WLBCC-Watch List of Birds of Conservation Concern | IUCN_NT-Near Threatened	Riparian forest | Riparian scrub | Riparian woodland

CNDDB
ALTERNATIVE SITE 6

DEPARTMENT OF FISH AND GAME

Quad is (La Mesa (3211771))

CNDDB Element Query Results

ScientificName	CommonName	ElementCode	OccCount	GlobalRank	StateRank	FederalListingStatus	StateListingStatus	CNPSList	OtherStatus	Habitat
Acanthomintha ilicifolia	San Diego thorn-mint	PDLAM01010	82	G2	S2	Threatened	Endangered	1B.1	USFS_S-Sensitive	Chaparral | Coastal scrub | Valley and foothill grassland | Vernal pool | Wetland
Adolphia californica	California adolphia	PDRHA01010	84	G3G4	S2	None	None	2.1		Chaparral | Coastal scrub | Valley and foothill grassland
Aimophila ruficeps canescens	southern California rufous-crowned sparrow	ABPBX91091	185	G5T2T4	S2S3	None	None		DFG_WL-Watch List	Chaparral | Coastal scrub
Ambrosia monogyra	singlewhorl burrobrush	PDAST50010	16	G5	S2.2	None	None	2.2		Chaparral | Sonoran desert scrub
Ambrosia pumila	San Diego ambrosia	PDAST0C0M0	55	G1	S1	Endangered	None	1B.1		Chaparral | Coastal scrub | Valley and foothill grassland
Arctostaphylos glandulosa ssp. crassifolia	Del Mar manzanita	PDERI040E8	45	G5T2	S2	Endangered	None	1B.1		Chaparral | Closed-cone coniferous forest
Aspidoscelis hyperythra	orangethroat whiptail	ARACJ02060	346	G5	S2	None	None		DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern	Chaparral | Cismontane woodland | Coastal scrub
Athene cunicularia	burrowing owl	ABNSB10010	1808	G4	S2	None	None		BLM_S-Sensitive | DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFWS_BCC-Birds of Conservation Concern	Coastal prairie | Coastal scrub | Great Basin grassland | Great Basin scrub | Mojavean desert scrub | Sonoran desert scrub | Valley and foothill grassland
Bloomeria clevelandii	San Diego goldenstar	PMLIL1H010	68	G2	S2	None	None	1B.1	BLM_S-Sensitive	Chaparral | Coastal scrub | Valley and foothill grassland | Vernal pool | Wetland
Branchinecta sandiegonensis	San Diego fairy shrimp	ICBRA03060	67	G1	S1	Endangered	None		IUCN_EN-Endangered	Chaparral | Coastal scrub | Vernal pool | Wetland
Brodiaea orcuttii	Orcutt's brodiaea	PMLIL0C0B0	105	G1	S1	None	None	1B.1	BLM_S-Sensitive | USFS_S-Sensitive	Chaparral | Cismontane woodland | Closed-cone coniferous forest | Meadow and seep | Ultramafic | Valley and foothill grassland | Vernal pool | Wetland
Campylorhynchus brunneicapillus sandiegensis	coastal cactus wren	ABPBG02095	150	G5T3Q	S3	None	None		DFG_SSC-Species of Special Concern |	Coastal scrub

ScientificName	CommonName	ElementCode	OccCount	GlobalRank	StateRank	FederalListingStatus	StateListingStatus	CNPSList	OtherStatus	Habitat
									USFS_S-Sensitive | USFWS_BCC-Birds of Conservation Concern	
Ceanothus verrucosus	wart-stemmed ceanothus	PDRHA041J0	44	G3	S2.2	None	None	2.2		Chaparral
Chaetodipus californicus femoralis	Dulzura pocket mouse	AMAFD05021	55	G5T3	S2?	None	None		DFG_SSC-Species of Special Concern	Chaparral | Coastal scrub | Valley and foothill grassland
Chaetodipus fallax fallax	northwestern San Diego pocket mouse	AMAFD05031	94	G5T3	S2S3	None	None		DFG_SSC-Species of Special Concern	Chaparral | Coastal scrub
Chorizanthe polygonoides var. longispina	long-spined spineflower	PDPGN040K1	99	G5T3	S3	None	None	1B.2	USFS_S-Sensitive	Chaparral | Coastal scrub | Meadow and seep | Ultramafic | Valley and foothill grassland
Comarostaphylis diversifolia ssp. diversifolia	summer holly	PDERI0B011	87	G3T2	S2	None	None	1B.2		Chaparral
Crotalus ruber	red-diamond rattlesnake	ARADE02090	148	G4	S2?	None	None		DFG_SSC-Species of Special Concern	Chaparral | Mojavean desert scrub | Sonoran desert scrub
Dendroica petechia brewsteri	yellow warbler	ABPBX03018	48	G5T3?	S2	None	None		DFG_SSC-Species of Special Concern | USFWS_BCC-Birds of Conservation Concern	Riparian woodland
Dudleya variegata	variegated dudleya	PDCRA040R0	59	G2	S2.2	None	None	1B.2	BLM_S-Sensitive	Chaparral | Cismontane woodland | Coastal scrub | Valley and foothill grassland
Ericameria palmeri var. palmeri	Palmer's goldenbush	PDAST3L0C1	16	G4T2T3	S1	None	None	1B.1	BLM_S-Sensitive	Chaparral | Coastal scrub
Eryngium aristulatum var. parishii	San Diego button-celery	PDAPI0Z042	69	G5T1	S1	Endangered	Endangered	1B.1		Coastal scrub | Valley and foothill grassland | Vernal pool | Wetland
Eumops perotis californicus	western mastiff bat	AMACD02011	293	G5T4	S3?	None	None		BLM_S-Sensitive | DFG_SSC-Species of Special Concern | WBWG_H-High Priority	Chaparral | Cismontane woodland | Coastal scrub | Valley and foothill grassland
Euphydryas editha quino	quino checkerspot butterfly	IILEPK405L	95	G5T1	S1	Endangered	None		XERCES_CI-Critically Imperiled	Chaparral | Coastal scrub
Falco mexicanus	prairie falcon	ABNKD06090	456	G5	S3	None	None		DFG_WL-Watch List | IUCN_LC-Least Concern | USFWS_BCC-Birds of Conservation Concern	Great Basin grassland | Great Basin scrub | Mojavean desert scrub | Sonoran desert scrub | Valley and foothill grassland
Ferocactus viridescens	San Diego barrel cactus	PDCAC08060	154	G4	S2	None	None	2.1		Chaparral | Coastal scrub | Valley and foothill grassland
Harpagonella palmeri	Palmer's grapplinghook	PDBOR0H010	57	G4	S3.2	None	None	4.2		Chaparral | Coastal

ScientificName	CommonName	ElementCode	OccCount	GlobalRank	StateRank	FederalListingStatus	StateListingStatus	CNPSList	OtherStatus	Habitat
										scrub | Valley and foothill grassland
Iva hayesiana	San Diego marsh-elder	PDAST580A0	58	G3?	S2.2?	None	None	2.2		Alkali playa | Marsh and swamp | Wetland
Ixobrychus exilis	least bittern	ABNGA02010	9	G5	S1	None	None		DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFWS_BCC-Birds of Conservation Concern	Marsh and swamp | Wetland
Lasiurus blossevillii	western red bat	AMACC05060	119	G5	S3?	None	None		DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFS_S-Sensitive | WBWG_H-High Priority	Cismontane woodland | Lower montane coniferous forest | Riparian forest | Riparian woodland
Lasiurus cinereus	hoary bat	AMACC05030	235	G5	S4?	None	None		IUCN_LC-Least Concern | WBWG_M-Medium Priority	Broadleaved upland forest | Cismontane woodland | Lower montane coniferous forest | North coast coniferous forest
Lasiurus xanthinus	western yellow bat	AMACC05070	57	G5	S3	None	None		DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern | WBWG_H-High Priority	Desert wash
Lepidium virginicum var. robinsonii	Robinson's pepper-grass	PDBRA1M114	134	G5T3	S3	None	None	1B.2		Chaparral | Coastal scrub
Lepus californicus bennettii	San Diego black-tailed jackrabbit	AMAEB03051	96	G5T3?	S3?	None	None		DFG_SSC-Species of Special Concern	Coastal scrub
Lycaena hermes	Hermes copper butterfly	IILEPC1160	18	G1G2	S1S2	None	None		IUCN_VU-Vulnerable	Chaparral | Coastal scrub
Monardella viminea	willowy monardella	PDLAM180D4	28	G1	S1	Endangered	Endangered	1B.1		Chaparral | Coastal scrub | Riparian forest | Riparian scrub | Riparian woodland
Myosurus minimus ssp. apus	little mousetail	PDRAN0H031	24	G5T2Q	S2.2	None	None	3.1		Vernal pool | Wetland
Myotis yumanensis	Yuma myotis	AMACC01020	256	G5	S4?	None	None		BLM_S-Sensitive | IUCN_LC-Least Concern | WBWG_LM-Low-Medium Priority	Lower montane coniferous forest | Riparian forest | Riparian woodland | Upper montane coniferous forest
Navarretia prostrata	prostrate vernal pool navarretia	PDPLM0C0Q0	60	G2	S2	None	None	1B.1		Coastal scrub | Valley and foothill grassland | Vernal pool | Wetland

ScientificName	CommonName	ElementCode	OccCount	GlobalRank	StateRank	FederalListingStatus	StateListingStatus	CNPSList	OtherStatus	Habitat
Neotoma lepida intermedia	San Diego desert woodrat	AMAFF08041	115	G5T3?	S3?	None	None		DFG_SSC-Species of Special Concern	Coastal scrub
Nyctinomops femorosaccus	pocketed free-tailed bat	AMACD04010	90	G4	S2S3	None	None		DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern | WBWG_M-Medium Priority	Joshua tree woodland | Pinon and juniper woodlands | Riparian scrub | Sonoran desert scrub
Nyctinomops macrotis	big free-tailed bat	AMACD04020	32	G5	S2	None	None		DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern | WBWG_MH-Medium-High Priority	
Phrynosoma blainvillii	coast horned lizard	ARACF12100	680	G4G5	S3S4	None	None		BLM_S-Sensitive | DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFS_S-Sensitive	Chaparral | Cismontane woodland | Coastal bluff scrub | Coastal scrub | Desert wash | Pinon and juniper woodlands | Riparian scrub | Riparian woodland | Valley and foothill grassland
Plestiodon skiltonianus interparietalis	Coronado Island skink	ARACH01114	33	G5T2T3Q	S1S2	None	None		BLM_S-Sensitive | DFG_SSC-Species of Special Concern	Chaparral | Cismontane woodland | Pinon and juniper woodlands
Pogogyne abramsii	San Diego mesa mint	PDLAM1K010	27	G1	S1	Endangered	Endangered	1B.1		Vernal pool | Wetland
Pogogyne nudiuscula	Otay Mesa mint	PDLAM1K040	14	G1	S1	Endangered	Endangered	1B.1		Vernal pool | Wetland
Polioptila californica californica	coastal California gnatcatcher	ABPBJ08081	804	G3T2	S2	Threatened	None		ABC_WLBCC-Watch List of Birds of Conservation Concern | DFG_SSC-Species of Special Concern	Coastal bluff scrub | Coastal scrub
Quercus dumosa	Nuttall's scrub oak	PDFAG050D0	97	G1G2	S1.1	None	None	1B.1	USFS_S-Sensitive	Chaparral | Closed-cone coniferous forest | Coastal scrub
Salvadora hexalepis virgultea	coast patch-nosed snake	ARADB30033	22	G5T3	S2S3	None	None		DFG_SSC-Species of Special Concern	Coastal scrub
San Diego Mesa Hardpan Vernal Pool	San Diego Mesa Hardpan Vernal Pool	CTT44321CA	38	G2	S2.1	None	None			Vernal pool | Wetland
Senecio aphanactis	chaparral ragwort	PDAST8H060	47	G3?	S1.2	None	None	2.2		Cismontane woodland | Coastal scrub
Southern Cottonwood Willow Riparian Forest	Southern Cottonwood Willow Riparian Forest	CTT61330CA	111	G3	S3.2	None	None			Riparian forest
Southern Riparian Scrub	Southern Riparian Scrub	CTT63300CA	56	G3	S3.2	None	None			Riparian scrub
Southern Sycamore Alder Riparian Woodland	Southern Sycamore Alder Riparian Woodland	CTT62400CA	230	G4	S4	None	None			Riparian woodland

ScientificName	CommonName	ElementCode	OccCount	GlobalRank	StateRank	FederalListingStatus	StateListingStatus	CNPSList	OtherStatus	Habitat
Spea hammondii	western spadefoot	AAABF02020	422	G3	S3	None	None		BLM_S-Sensitive | DFG_SSC-Species of Special Concern | IUCN_NT-Near Threatened	Cismontane woodland | Coastal scrub | Valley and foothill grassland | Vernal pool | Wetland
Stemodia durantifolia	purple stemodia	PDSCR1U010	19	G5	S2.1?	None	None	2.1		Sonoran desert scrub
Stylocline citroleum	oil neststraw	PDAST8Y070	79	G2	S2	None	None	1B.1	BLM_S-Sensitive	Chenopod scrub | Coastal scrub
Texosporium sancti-jacobi	woven-spored lichen	NLTEST7980	19	G3	S1.1	None	None			Chaparral
Thamnophis hammondii	two-striped garter snake	ARADB36160	143	G3	S2	None	None		BLM_S-Sensitive | DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFS_S-Sensitive	Marsh and swamp | Riparian scrub | Riparian woodland | Wetland
Valley Needlegrass Grassland	Valley Needlegrass Grassland	CTT42110CA	45	G3	S3.1	None	None			Valley and foothill grassland
Vireo bellii pusillus	least Bell's vireo	ABPBW01114	248	G5T2	S2	Endangered	Endangered		ABC_WLBCC-Watch List of Birds of Conservation Concern | IUCN_NT-Near Threatened	Riparian forest | Riparian scrub | Riparian woodland

CNDDB
ALTERNATIVE SITE 8

CA.GOV DEPARTMENT OF FISH AND GAME

Quad is (Otay Mesa (3211658))

CNDDB Element Query Results

ScientificName	CommonName	ElementCode	OccCount	GlobalRank	StateRank	FederalListingStatus	StateListingStatus	CNPSList	OtherStatus	Habitat
Acanthomintha ilicifolia	San Diego thorn-mint	PDLAM01010	82	G2	S2	Threatened	Endangered	1B.1	USFS_S-Sensitive	Chaparral | Coastal scrub | Valley and foothill grassland | Vernal pool | Wetland
Adolphia californica	California adolphia	PDRHA01010	84	G3G4	S2	None	None	2.1		Chaparral | Coastal scrub | Valley and foothill grassland
Aimophila ruficeps canescens	southern California rufous-crowned sparrow	ABPBX91091	185	G5T2T4	S2S3	None	None		DFG_WL-Watch List	Chaparral | Coastal scrub
Ambrosia chenopodiifolia	San Diego bur-sage	PDAST0C080	12	G3?	S2.1	None	None	2.1		Coastal scrub
Ambrosia monogyra	singlewhorl burrobrush	PDAST50010	16	G5	S2.2	None	None	2.2		Chaparral | Sonoran desert scrub
Aspidoscelis hyperythra	orangethroat whiptail	ARACJ02060	346	G5	S2	None	None		DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern	Chaparral | Cismontane woodland | Coastal scrub
Aspidoscelis tigris stejnegeri	coastal whiptail	ARACJ02143	112	G5T3T4	S2S3	None	None			
Athene cunicularia	burrowing owl	ABNSB10010	1808	G4	S2	None	None		BLM_S-Sensitive | DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFWS_BCC-Birds of Conservation Concern	Coastal prairie | Coastal scrub | Great Basin grassland | Great Basin scrub | Mojavean desert scrub | Sonoran desert scrub | Valley and foothill grassland
Atriplex pacifica	south coast saltscale	PDCHE041C0	77	G3G4	S2	None	None	1B.2		Chenopod scrub | Coastal bluff scrub | Coastal scrub
Bergerocactus emoryi	golden-spined cereus	PDCAC11010	32	G2G3	S2.1	None	None	2.2		Chaparral | Coastal scrub
Bloomeria clevelandii	San Diego goldenstar	PMLIL1H010	68	G2	S2	None	None	1B.1	BLM_S-Sensitive	Chaparral | Coastal scrub | Valley and foothill grassland | Vernal pool | Wetland
Branchinecta sandiegonensis	San Diego fairy shrimp	ICBRA03060	67	G1	S1	Endangered	None		IUCN_EN-Endangered	Chaparral | Coastal scrub | Vernal pool | Wetland
Brodiaea orcuttii	Orcutt's brodiaea	PMLIL0C0B0	105	G1	S1	None	None	1B.1	BLM_S-Sensitive | USFS_S-Sensitive	Chaparral | Cismontane woodland | Closed-cone coniferous forest | Meadow and seep | Ultramafic | Valley and foothill grassland | Vernal pool | Wetland

ScientificName	CommonName	ElementCode	OccCount	GlobalRank	StateRank	FederalListingStatus	StateListingStatus	CNPSList	OtherStatus	Habitat
California macrophylla	round-leaved filaree	PDGER01070	155	G2	S2	None	None	1B.1	BLM_S-Sensitive	Cismontane woodland | Valley and foothill grassland
Callophrys thornei	Thorne's hairstreak	IILEPE2150	6	G1	S1	None	None		BLM_S-Sensitive	
Calochortus dunnii	Dunn's mariposa-lily	PMLIL0D0C0	25	G2	S2.1	None	Rare	1B.2	BLM_S-Sensitive | USFS_S-Sensitive	Chaparral | Closed-cone coniferous forest | Ultramafic
Campylorhynchus brunneicapillus sandiegensis	coastal cactus wren	ABPBG02095	150	G5T3Q	S3	None	None		DFG_SSC-Species of Special Concern | USFS_S-Sensitive | USFWS_BCC-Birds of Conservation Concern	Coastal scrub
Ceanothus cyaneus	Lakeside ceanothus	PDRHA04070	26	G2	S2.2	None	None	1B.2	BLM_S-Sensitive | USFS_S-Sensitive	Chaparral | Closed-cone coniferous forest
Chaetodipus fallax fallax	northwestern San Diego pocket mouse	AMAFD05031	94	G5T3	S2S3	None	None		DFG_SSC-Species of Special Concern	Chaparral | Coastal scrub
Comarostaphylis diversifolia ssp. diversifolia	summer holly	PDERI0B011	87	G3T2	S2	None	None	1B.2		Chaparral
Cylindropuntia californica var. californica	snake cholla	PDCAC0D2Y1	17	G3T2	S1	None	None	1B.1		Chaparral | Coastal scrub
Deinandra conjugens	Otay tarplant	PDAST4R070	36	G1	S1	Threatened	Endangered	1B.1		Coastal scrub | Valley and foothill grassland
Dicranostegia orcuttiana	Orcutt's bird's-beak	PDSCR0J0G0	6	G2?	S1	None	None	2.1		Coastal scrub
Dudleya variegata	variegated dudleya	PDCRA040R0	59	G2	S2.2	None	None	1B.2	BLM_S-Sensitive	Chaparral | Cismontane woodland | Coastal scrub | Valley and foothill grassland
Eremophila alpestris actia	California horned lark	ABPAT02011	77	G5T3Q	S3	None	None		DFG_WL-Watch List | IUCN_LC-Least Concern	Marine intertidal and splash zone communities | Meadow and seep
Eryngium aristulatum var. parishii	San Diego button-celery	PDAPI0Z042	69	G5T1	S1	Endangered	Endangered	1B.1		Coastal scrub | Valley and foothill grassland | Vernal pool | Wetland
Eumops perotis californicus	western mastiff bat	AMACD02011	293	G5T4	S3?	None	None		BLM_S-Sensitive | DFG_SSC-Species of Special Concern | WBWG_H-High Priority	Chaparral | Cismontane woodland | Coastal scrub | Valley and foothill grassland
Euphorbia misera	cliff spurge	PDEUP0Q1B0	34	G5	S1	None	None	2.2		Coastal bluff scrub | Coastal scrub | Mojavean desert scrub
Euphydryas editha quino	quino checkerspot butterfly	IILEPK405L	95	G5T1	S1	Endangered	None		XERCES_CI-Critically Imperiled	Chaparral | Coastal scrub
Ferocactus viridescens	San Diego barrel cactus	PDCAC08060	154	G4	S2	None	None	2.1		Chaparral | Coastal scrub | Valley and foothill grassland
Fremontodendron mexicanum	Mexican flannelbush	PDSTE03020	8	G1	S1	Endangered	Rare	1B.1	USFS_S-Sensitive	Chaparral | Cismontane woodland |

ScientificName	CommonName	ElementCode	OccCount	GlobalRank	StateRank	FederalListingStatus	StateListingStatus	CNPSList	OtherStatus	Habitat
										Closed-cone coniferous forest | Ultramafic
Harpagonella palmeri	Palmer's grapplinghook	PDBOR0H010	57	G4	S3.2	None	None	4.2		Chaparral | Coastal scrub | Valley and foothill grassland
Hesperocyparis forbesii	Tecate cypress	PGCUP040C0	25	G2	S1.1	None	None	1B.1	BLM_S-Sensitive | USFS_S-Sensitive	Chaparral | Closed-cone coniferous forest
Icteria virens	yellow-breasted chat	ABPBX24010	84	G5	S3	None	None		DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern	Riparian forest | Riparian scrub | Riparian woodland
Iva hayesiana	San Diego marsh-elder	PDAST580A0	58	G3?	S2.2?	None	None	2.2		Alkali playa | Marsh and swamp | Wetland
Lasiurus blossevillii	western red bat	AMACC05060	119	G5	S3?	None	None		DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFS_S-Sensitive | WBWG_H-High Priority	Cismontane woodland | Lower montane coniferous forest | Riparian forest | Riparian woodland
Lepechinia ganderi	Gander's pitcher sage	PDLAM0V040	16	G2	S2.2	None	None	1B.3	BLM_S-Sensitive	Chaparral | Closed-cone coniferous forest | Coastal scrub | Valley and foothill grassland
Lepidium virginicum var. robinsonii	Robinson's pepper-grass	PDBRA1M114	134	G5T3	S3	None	None	1B.2		Chaparral | Coastal scrub
Lepus californicus bennettii	San Diego black-tailed jackrabbit	AMAEB03051	96	G5T3?	S3?	None	None		DFG_SSC-Species of Special Concern	Coastal scrub
Maritime Succulent Scrub	Maritime Succulent Scrub	CTT32400CA	10	G2	S1.1	None	None			Coastal scrub
Monardella stoneana	Jennifer's monardella	PDLAM180Y0	9	G1	S1.2	None	None	1B.2	BLM_S-Sensitive	Chaparral | Closed-cone coniferous forest | Coastal scrub | Riparian scrub
Myosurus minimus ssp. apus	little mousetail	PDRAN0H031	24	G5T2Q	S2.2	None	None	3.1		Vernal pool | Wetland
Myotis ciliolabrum	western small-footed myotis	AMACC01140	81	G5	S2S3	None	None		BLM_S-Sensitive | IUCN_LC-Least Concern | WBWG_M-Medium Priority	
Myotis yumanensis	Yuma myotis	AMACC01020	256	G5	S4?	None	None		BLM_S-Sensitive | IUCN_LC-Least Concern | WBWG_LM-Low-Medium Priority	Lower montane coniferous forest | Riparian forest | Riparian woodland | Upper montane coniferous forest
Nama stenocarpum	mud nama	PDHYD0A0H0	22	G4G5	S1S2	None	None	2.2		Marsh and swamp | Wetland

ScientificName	CommonName	ElementCode	OccCount	GlobalRank	StateRank	FederalListingStatus	StateListingStatus	CNPSList	OtherStatus	Habitat
Navarretia fossalis	spreading navarretia	PDPLM0C080	65	G1	S1	Threatened	None	1B.1		Alkali playa | Chenopod scrub | Marsh and swamp | Vernal pool | Wetland
Neotoma lepida intermedia	San Diego desert woodrat	AMAFF08041	115	G5T3?	S3?	None	None		DFG_SSC-Species of Special Concern	Coastal scrub
Nyctinomops femorosaccus	pocketed free-tailed bat	AMACD04010	90	G4	S2S3	None	None		DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern | WBWG_M-Medium Priority	Joshua tree woodland | Pinon and juniper woodlands | Riparian scrub | Sonoran desert scrub
Orcuttia californica	California Orcutt grass	PMPOA4G010	37	G1	S1	Endangered	Endangered	1B.1		Vernal pool | Wetland
Phrynosoma blainvillii	coast horned lizard	ARACF12100	680	G4G5	S3S4	None	None		BLM_S-Sensitive | DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFS_S-Sensitive	Chaparral | Cismontane woodland | Coastal bluff scrub | Coastal scrub | Desert wash | Pinon and juniper woodlands | Riparian scrub | Riparian woodland | Valley and foothill grassland
Pogogyne nudiuscula	Otay Mesa mint	PDLAM1K040	14	G1	S1	Endangered	Endangered	1B.1		Vernal pool | Wetland
Polioptila californica californica	coastal California gnatcatcher	ABPBJ08081	804	G3T2	S2	Threatened	None		ABC_WLBCC-Watch List of Birds of Conservation Concern | DFG_SSC-Species of Special Concern	Coastal bluff scrub | Coastal scrub
Quercus dumosa	Nuttall's scrub oak	PDFAG050D0	97	G1G2	S1.1	None	None	1B.1	USFS_S-Sensitive	Chaparral | Closed-cone coniferous forest | Coastal scrub
Salvadora hexalepis virgultea	coast patch-nosed snake	ARADB30033	22	G5T3	S2S3	None	None		DFG_SSC-Species of Special Concern	Coastal scrub
Salvia munzii	Munz's sage	PDLAM1S140	27	G3	S2.2	None	None	2.2		Chaparral | Coastal scrub
San Diego Mesa Claypan Vernal Pool	San Diego Mesa Claypan Vernal Pool	CTT44322CA	19	G2	S2.1	None	None			Vernal pool | Wetland
Senecio aphanactis	chaparral ragwort	PDAST8H060	47	G3?	S1.2	None	None	2.2		Cismontane woodland | Coastal scrub
Southern Interior Cypress Forest	Southern Interior Cypress Forest	CTT83230CA	24	G2	S2.1	None	None			Closed-cone coniferous forest
Spea hammondii	western spadefoot	AAABF02020	422	G3	S3	None	None		BLM_S-Sensitive | DFG_SSC-Species of Special Concern | IUCN_NT-Near Threatened	Cismontane woodland | Coastal scrub | Valley and foothill grassland | Vernal pool | Wetland
Stemodia durantifolia	purple stemodia	PDSCR1U010	19	G5	S2.1?	None	None	2.1		Sonoran desert scrub
Streptanthus bernardinus	Laguna Mountains jewel-flower	PDBRA2G060	22	G3	S3	None	None	4.3	USFS_S-Sensitive	Chaparral | Lower montane coniferous forest | Upper

ScientificName	CommonName	ElementCode	OccCount	GlobalRank	StateRank	FederalListingStatus	StateListingStatus	CNPSList	OtherStatus	Habitat
										montane coniferous forest
Streptocephalus woottoni	Riverside fairy shrimp	ICBRA07010	25	G1	S1	Endangered	None		IUCN_EN-Endangered	Coastal scrub | Valley and foothill grassland | Vernal pool | Wetland
Taxidea taxus	American badger	AMAJF04010	454	G5	S4	None	None		DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern	Alkali marsh | Alkali playa | Alpine | Alpine dwarf scrub | Bog and fen | Brackish marsh | Broadleaved upland forest | Chaparral | Chenopod scrub | Cismontane woodland | Closed-cone coniferous forest | Coastal bluff scrub | Coastal dunes | Coastal prairie | Coastal scrub | Desert dunes | Desert wash | Freshwater marsh | Great Basin grassland | Great Basin scrub | Interior dunes | Ione formation | Joshua tree woodland | Limestone | Lower montane coniferous forest | Marsh and swamp | Meadow and seep | Mojavean desert scrub | Montane dwarf scrub | North coast coniferous forest | Oldgrowth | Pavement plain | Redwood | Riparian forest | Riparian scrub | Riparian woodland | Salt marsh | Sonoran desert scrub | Sonoran thorn woodland | Ultramafic | Upper montane coniferous forest | Upper Sonoran scrub | Valley and foothill grassland
Tetracoccus dioicus	Parry's tetracoccus	PDEUP1C010	46	G3	S2.2	None	None	1B.2	BLM_S-Sensitive | USFS_S-Sensitive	Chaparral | Coastal scrub | Ultramafic

ScientificName	CommonName	ElementCode	OccCount	GlobalRank	StateRank	FederalListingStatus	StateListingStatus	CNPSList	OtherStatus	Habitat
Thamnophis hammondii	two-striped garter snake	ARADB36160	143	G3	S2	None	None		BLM_S-Sensitive | DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFS_S-Sensitive	Marsh and swamp | Riparian scrub | Riparian woodland | Wetland
Vireo bellii pusillus	least Bell's vireo	ABPBW01114	248	G5T2	S2	Endangered	Endangered		ABC_WLBCC-Watch List of Birds of Conservation Concern | IUCN_NT-Near Threatened	Riparian forest | Riparian scrub | Riparian woodland

CNDDB
ALTERNATIVE SITE 9

DEPARTMENT OF FISH AND GAME

Quad is (San Luis Rey (3311723))

CNDDB Element Query Results

ScientificName	CommonName	ElementCode	OccCount	GlobalRank	StateRank	FederalListingStatus	StateListingStatus	CNPSList	OtherStatus	Habitat
Acanthomintha ilicifolia	San Diego thorn-mint	PDLAM01010	82	G2	S2	Threatened	Endangered	1B.1	USFS_S-Sensitive	Chaparral | Coastal scrub | Valley and foothill grassland | Vernal pool | Wetland
Accipiter cooperii	Cooper's hawk	ABNKC12040	102	G5	S3	None	None		DFG_WL-Watch List | IUCN_LC-Least Concern	Cismontane woodland | Riparian forest | Riparian woodland | Upper montane coniferous forest
Adolphia californica	California adolphia	PDRHA01010	84	G3G4	S2	None	None	2.1		Chaparral | Coastal scrub | Valley and foothill grassland
Aimophila ruficeps canescens	southern California rufous-crowned sparrow	ABPBX91091	185	G5T2T4	S2S3	None	None		DFG_WL-Watch List	Chaparral | Coastal scrub
Ambrosia pumila	San Diego ambrosia	PDAST0C0M0	55	G1	S1	Endangered	None	1B.1		Chaparral | Coastal scrub | Valley and foothill grassland
Antrozous pallidus	pallid bat	AMACC10010	402	G5	S3	None	None		BLM_S-Sensitive | DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFS_S-Sensitive | WBWG_H-High Priority	Chaparral | Coastal scrub | Desert wash | Great Basin grassland | Great Basin scrub | Mojavean desert scrub | Riparian woodland | Sonoran desert scrub | Upper montane coniferous forest | Valley and foothill grassland
Arctostaphylos glandulosa ssp. crassifolia	Del Mar manzanita	PDERI040E8	45	G5T2	S2	Endangered	None	1B.1		Chaparral | Closed-cone coniferous forest
Aspidoscelis hyperythra	orangethroat whiptail	ARACJ02060	346	G5	S2	None	None		DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern	Chaparral | Cismontane woodland | Coastal scrub
Atriplex pacifica	south coast saltscale	PDCHE041C0	77	G3G4	S2	None	None	1B.2		Chenopod scrub | Coastal bluff scrub | Coastal scrub
Atriplex serenana var. davidsonii	Davidson's saltscale	PDCHE041T1	23	G5T2?	S2?	None	None	1B.2		Coastal bluff scrub | Coastal scrub
Brodiaea filifolia	thread-leaved brodiaea	PMLIL0C050	79	G1	S1	Threatened	Endangered	1B.1	USFS_S-Sensitive	Chaparral | Cismontane woodland | Coastal scrub | Valley and foothill grassland | Vernal pool | Wetland
Campylorhynchus brunneicapillus sandiegensis	coastal cactus wren	ABPBG02095	150	G5T3Q	S3	None	None		DFG_SSC-Species of Special Concern | USFS_S-Sensitive | USFWS_BCC-Birds of Conservation Concern	Coastal scrub
Ceanothus verrucosus	wart-stemmed ceanothus	PDRHA041J0	44	G3	S2.2	None	None	2.2		Chaparral

ScientificName	CommonName	ElementCode	OccCount	GlobalRank	StateRank	FederalListingStatus	StateListingStatus	CNPSList	OtherStatus	Habitat
Centromadia pungens ssp. laevis	smooth tarplant	PDAST4R0R4	104	G3G4T2	S2.1	None	None	1B.1		Alkali playa | Chenopod scrub | Meadow and seep | Riparian woodland | Valley and foothill grassland | Wetland
Chaenactis glabriuscula var. orcuttiana	Orcutt's pincushion	PDAST20095	23	G5T1	S1	None	None	1B.1		Coastal bluff scrub | Coastal dunes
Chaetodipus fallax fallax	northwestern San Diego pocket mouse	AMAFD05031	94	G5T3	S2S3	None	None		DFG_SSC-Species of Special Concern	Chaparral | Coastal scrub
Charadrius alexandrinus nivosus	western snowy plover	ABNNB03031	120	G4T3	S2	Threatened	None		ABC_WLBCC-Watch List of Birds of Conservation Concern | DFG_SSC-Species of Special Concern | USFWS_BCC-Birds of Conservation Concern	Great Basin standing waters | Sand shore | Wetland
Circus cyaneus	northern harrier	ABNKC11010	43	G5	S3	None	None		DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern	Coastal scrub | Great Basin grassland | Marsh and swamp | Riparian scrub | Valley and foothill grassland | Wetland
Comarostaphylis diversifolia ssp. diversifolia	summer holly	PDERI0B011	87	G3T2	S2	None	None	1B.2		Chaparral
Crotalus ruber	red-diamond rattlesnake	ARADE02090	148	G4	S2?	None	None		DFG_SSC-Species of Special Concern	Chaparral | Mojavean desert scrub | Sonoran desert scrub
Danaus plexippus	monarch butterfly	IILEPP2010	334	G5	S3	None	None			Closed-cone coniferous forest
Dendroica petechia brewsteri	yellow warbler	ABPBX03018	48	G5T3?	S2	None	None		DFG_SSC-Species of Special Concern | USFWS_BCC-Birds of Conservation Concern	Riparian woodland
Dipodomys stephensi	Stephens' kangaroo rat	AMAFD03100	214	G2	S2	Endangered	Threatened		IUCN_EN-Endangered	Coastal scrub | Valley and foothill grassland
Dudleya blochmaniae ssp. blochmaniae	Blochman's dudleya	PDCRA04051	41	G2T2	S2.1	None	None	1B.1		Coastal bluff scrub | Coastal scrub | Ultramafic | Valley and foothill grassland
Dudleya viscida	sticky dudleya	PDCRA040T0	23	G2	S2.2	None	None	1B.2	USFS_S-Sensitive	Chaparral | Coastal bluff scrub | Coastal scrub
Elanus leucurus	white-tailed kite	ABNKC06010	157	G5	S3	None	None		BLM_S-Sensitive | DFG_FP-Fully Protected | IUCN_LC-Least Concern	Cismontane woodland | Marsh and swamp | Riparian woodland | Valley and foothill grassland | Wetland
Empidonax traillii extimus	southwestern willow flycatcher	ABPAE33043	70	G5T1T2	S1	Endangered	Endangered		ABC_WLBCC-Watch List of Birds of Conservation Concern	Riparian woodland
Eremophila alpestris actia	California horned lark	ABPAT02011	77	G5T3Q	S3	None	None		DFG_WL-Watch List | IUCN_LC-Least Concern	Marine intertidal and splash zone communities | Meadow and seep

ScientificName	CommonName	ElementCode	OccCount	GlobalRank	StateRank	FederalListingStatus	StateListingStatus	CNPSList	OtherStatus	Habitat
Eryngium aristulatum var. parishii	San Diego button-celery	PDAPI0Z042	69	G5T1	S1	Endangered	Endangered	1B.1		Coastal scrub | Valley and foothill grassland | Vernal pool | Wetland
Erysimum ammophilum	sand-loving wallflower	PDBRA16010	28	G2	S2.2	None	None	1B.2	BLM_S-Sensitive	Chaparral | Coastal dunes | Coastal scrub
Eucyclogobius newberryi	tidewater goby	AFCQN04010	117	G3	S2S3	Endangered	None		AFS_EN-Endangered | DFG_SSC-Species of Special Concern | IUCN_VU-Vulnerable	Aquatic | Klamath/North coast flowing waters | Sacramento/San Joaquin flowing waters | South coast flowing waters
Euphorbia misera	cliff spurge	PDEUP0Q1B0	34	G5	S1	None	None	2.2		Coastal bluff scrub | Coastal scrub | Mojavean desert scrub
Harpagonella palmeri	Palmer's grapplinghook	PDBOR0H010	57	G4	S3.2	None	None	4.2		Chaparral | Coastal scrub | Valley and foothill grassland
Icteria virens	yellow-breasted chat	ABPBX24010	84	G5	S3	None	None		DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern	Riparian forest | Riparian scrub | Riparian woodland
Lasiurus xanthinus	western yellow bat	AMACC05070	57	G5	S3	None	None		DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern | WBWG_H-High Priority	Desert wash
Lepidium virginicum var. robinsonii	Robinson's pepper-grass	PDBRA1M114	134	G5T3	S3	None	None	1B.2		Chaparral | Coastal scrub
Leptosyne maritima	sea dahlia	PDAST2L0L0	27	G3	S2.2	None	None	2.2		Coastal bluff scrub | Coastal scrub
Lepus californicus bennettii	San Diego black-tailed jackrabbit	AMAEB03051	96	G5T3?	S3?	None	None		DFG_SSC-Species of Special Concern	Coastal scrub
Nama stenocarpum	mud nama	PDHYD0A0H0	22	G4G5	S1S2	None	None	2.2		Marsh and swamp | Wetland
Nemacaulis denudata var. denudata	coast woolly-heads	PDPGN0G011	37	G3G4T3?	S2.2	None	None	1B.2		Coastal dunes
Nemacaulis denudata var. gracilis	slender cottonheads	PDPGN0G012	20	G3G4T3?	S2	None	None	2.2		Coastal dunes | Desert dunes | Sonoran desert scrub
Neotoma lepida intermedia	San Diego desert woodrat	AMAFF08041	115	G5T3?	S3?	None	None		DFG_SSC-Species of Special Concern	Coastal scrub
Nyctinomops femorosaccus	pocketed free-tailed bat	AMACD04010	90	G4	S2S3	None	None		DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern | WBWG_M-Medium Priority	Joshua tree woodland | Pinon and juniper woodlands | Riparian scrub | Sonoran desert scrub
Passerculus sandwichensis beldingi	Belding's savannah sparrow	ABPBX99015	36	G5T3	S3	None	Endangered			Marsh and swamp | Wetland
Phrynosoma blainvillii	coast horned lizard	ARACF12100	680	G4G5	S3S4	None	None		BLM_S-Sensitive | DFG_SSC-Species of Special Concern | IUCN_LC-Least Concern |	Chaparral | Cismontane woodland | Coastal bluff scrub | Coastal scrub | Desert wash | Pinon and juniper woodlands |

ScientificName	CommonName	ElementCode	OccCount	GlobalRank	StateRank	FederalListingStatus	StateListingStatus	CNPSList	OtherStatus	Habitat
									USFS_S-Sensitive	Riparian scrub | Riparian woodland | Valley and foothill grassland
Plegadis chihi	white-faced ibis	ABNGE02020	20	G5	S1	None	None		DFG_WL-Watch List | IUCN_LC-Least Concern	Marsh and swamp | Wetland
Polioptila californica californica	coastal California gnatcatcher	ABPBJ08081	804	G3T2	S2	Threatened	None		ABC_WLBCC-Watch List of Birds of Conservation Concern | DFG_SSC-Species of Special Concern	Coastal bluff scrub | Coastal scrub
Quercus dumosa	Nuttall's scrub oak	PDFAG050D0	97	G1G2	S1.1	None	None	1B.1	USFS_S-Sensitive	Chaparral | Closed-cone coniferous forest | Coastal scrub
Rallus longirostris levipes	light-footed clapper rail	ABNME05014	30	G5T1T2	S1	Endangered	Endangered		ABC_WLBCC-Watch List of Birds of Conservation Concern | DFG_FP-Fully Protected	Marsh and swamp | Salt marsh | Wetland
Riparia riparia	bank swallow	ABPAU08010	268	G5	S2S3	None	Threatened		BLM_S-Sensitive | IUCN_LC-Least Concern	Riparian scrub | Riparian woodland
Salvadora hexalepis virgultea	coast patch-nosed snake	ARADB30033	22	G5T3	S2S3	None	None		DFG_SSC-Species of Special Concern	Coastal scrub
San Diego Mesa Hardpan Vernal Pool	San Diego Mesa Hardpan Vernal Pool	CTT44321CA	38	G2	S2.1	None	None			Vernal pool | Wetland
Southern Coastal Salt Marsh	Southern Coastal Salt Marsh	CTT52120CA	24	G2	S2.1	None	None			Marsh and swamp | Wetland
Southern Cottonwood Willow Riparian Forest	Southern Cottonwood Willow Riparian Forest	CTT61330CA	111	G3	S3.2	None	None			Riparian forest
Southern Maritime Chaparral	Southern Maritime Chaparral	CTT37C30CA	26	G1	S1.1	None	None			Chaparral
Southern Riparian Forest	Southern Riparian Forest	CTT61300CA	20	G4	S4	None	None			Riparian forest
Southern Riparian Scrub	Southern Riparian Scrub	CTT63300CA	56	G3	S3.2	None	None			Riparian scrub
Southern Sycamore Alder Riparian Woodland	Southern Sycamore Alder Riparian Woodland	CTT62400CA	230	G4	S4	None	None			Riparian woodland
Sternula antillarum browni	California least tern	ABNNM08103	67	G4T2T3Q	S2S3	Endangered	Endangered		ABC_WLBCC-Watch List of Birds of Conservation Concern | DFG_FP-Fully Protected	Alkali playa | Wetland
Thamnophis sirtalis ssp.	south coast garter snake	ARADB3613F	3	G5T1T2	S1S2	None	None		DFG_SSC-Species of Special Concern	Artificial standing waters | Marsh and swamp | Riparian scrub | Riparian woodland | South coast flowing waters | South coast standing waters | Wetland
Tryonia imitator	mimic tryonia (=California brackishwater snail)	IMGASJ7040	33	G2G3	S2S3	None	None		IUCN_DD-Data Deficient	Aquatic | Brackish marsh | Estuary | Lagoon | Marsh and swamp | Salt marsh | Wetland

ScientificName	CommonName	ElementCode	OccCount	GlobalRank	StateRank	FederalListingStatus	StateListingStatus	CNPSList	OtherStatus	Habitat
Vireo bellii pusillus	least Bell's vireo	ABPBW01114	248	G5T2	S2	Endangered	Endangered		ABC_WLBCC-Watch List of Birds of Conservation Concern | IUCN_NT-Near Threatened	Riparian forest | Riparian scrub | Riparian woodland

APPENDIX B

ESTIMATE FOR SOLAR ROOFTOP COST

Your Solar Electric Estimate

YOUR SOLAR RATING

The solar rating of your area is **Great** for adopting a solar system. (5.84 kWh/m^2 per day).

You may want to change some of the information to better match your situation.

Customize Your Assumptions

Price Installed $ 6.11 per watt DC.

Provide 50 % of my electricity, on average, over the course of a year.

Electric Rate: $ 0.187 /kWh More

Monthly Electric Usage: 1,000 kWh/Month More

Utility Annual Inflation Rate: 3.78 %

Utility Savings Method: Net Metering (common) help

Calculate Financial Ratios with Utility Savings As: Pre-Tax Dollars (Gross Income)

Federal ITC Based Upon: Gross Cost help

Federal Income Tax Rate: 28% help

State Income Tax Rate: 7.7 % (Low: 1.00% - High: 9.30%) help

Loan Modeling: Borrow 0 % of $17,065 estimated cost
at 6.5 % interest (apr) re-paid over 30 years

Considering a Solar Lease? » Learn more about solar leases

» Update My Assumptions

If you agree **this is a smart investment**, we encourage you to work with a Professional to help you install your very own system.

Click on the More buttons to learn about our assumptions and other important information used to generate your estimate. Also, please review the Notes below.

Help us improve. We rely on feedback from our users to help keep our service accurate and useful:
» Send us your Feedback

Your Solar Electric Estimate by the Numbers

Building Type:	Residential	
State & County:	CA - San Diego	
Utility:	San Diego Gas & Electric Co	
Utility Type:	Investor-Owned Utility	
Your Average Monthly Electricity Bill: (Assumed rate x average monthly useage)	$ 187 / Month	
Tiered Rates Apply:	Yes - See Notes, below!	
Time-of-Use Metering Offered:	Yes - See Notes, below!	
Net-Metering Available:	Yes - See Notes, below!	More

ESTIMATED SYSTEM SIZE

The system size best for your situation will vary based upon product, building, geographic and other variables. We encourage you to work with a Solar Pro who can better estimate the system size best for your situation. We estimate your building will need a system sized between 3.19 kW and 4.79 kW of peak power. This estimate assumes the mid-point of this range.

Solar Rating:	**Great** 5.84 kWh/sq-m/day	More
Solar System Capacity Required:	3.99 kW of peak power (DC watts)	More
Roof Area Needed:	399 sq-ft	More
Equivalent Annual Production:	6,000 kWh electricity	

ESTIMATED SYSTEM COST

This is only an estimate based upon many assumptions. Installation costs can vary considerably. We encourage you to work with a Solar Pro who can provide you with a more detailed cost estimate. We estimate that a 4 kW peak DC power system will cost between $19,503 and $29,255. This estimate assumes the mid-point of this cost range.

Assumed Installation Gross Cost:	**$24,379**

"Gross Cost" is the cost before any rebates, incentives, tax credits, etc. are applied. See the Cost Notes, below! assuming $6.11 per watt DC More

FINANCIAL INCENTIVES

Financial incentives shown are totals across all years. So, if an incentive spans multiple years then the value shown is the total of all years. For details, please refer to the table below "Cash Flow by Year and Cumulative Across Years"

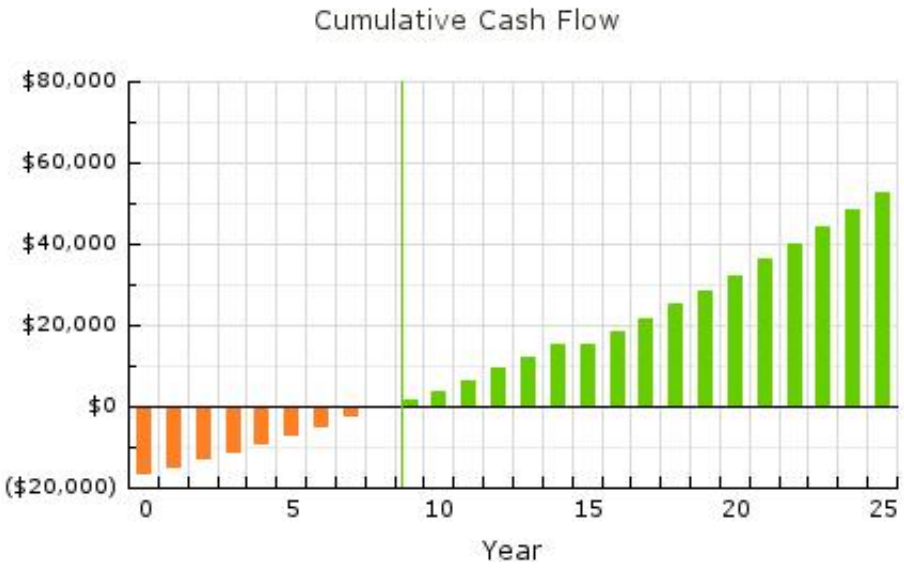
Federal Tax Credit (30% of Gross Cost at Installation) » link $ 7,314

ESTIMATED NET COST: **$ 17,065** More

Cash & Loan Amounts: $ 17,065 Cash
$ 0 Borrowed

Loan Monthly Payment (6.5% apr, 30 years): $ 0

CASH FLOW



Cash Flow Breakeven is where the chart crosses the $0 point - this is when your investment has paid itself back in cash.

The chart above is a summary of the net cash flow you can expect over time. Net Cash Flow is the total cash after all costs (out-flows of cash) are reduced by financial incentives, annual utility savings and tax effects (in-flows of cash).

Average values are used together with your assumed income tax rate (36%). Any property appreciation has not been included, as this is generally not a cash flow (it's an investment). The loan modeled, if any, is included. Because individual tax situations vary, we have not included Federal income tax liabilities that may result from having received non-federal incentives, if any (e.g. state rebate programs) as they are usually not taxed as earned income.

SAVINGS & BENEFITS

First-year Utility Savings: **$1,122 to $2,538** More

Average Monthly Utility Savings: *over 25-year expected life of system*	**$157 to $355**	More
Average Annual Utility Savings: *over 25-year expected life of system*	**$1,883 to $4,260**	More
25-year Utility Savings:	**$47,081 to $106,490**	More
Levelized Cost of your Solar Energy: $17,065 cost / 150,000 kWh electricity replaced by solar	**$0.11 per kWh**	More

Utility savings shown above do not take income tax effects into account (they use "Post-Tax" dollars). The financial ratios shown below are based upon the cash flow values shown in the Cash Flow table, below, which include income tax effects, as noted.

Appreciation (Increase) in Property Value:	**$22,440 to $50,756**	More
Return on Investment (ROI):	**313% - 796%**	More
Internal Rate of Return (IRR):	**12.9% - 27.6%**	More
Net Present Value (NPV):	**$19,199 - $63,708**	More
Profitability Index:	**2.1 - 4.7**	More
Greenhouse Gas (CO2) Saved: *over 25-year system life*	**123 tons** **246,000 auto miles**	More

Cash Flow by Year and Cumulative Across Years

This cash flow table includes tax effects applied to utility savings and loan interest payments (if any). You have elected (above) to show utility savings in **Pre-Tax (Gross Income) dollars** ("pre-tax" or what you earned). Therefore for every dollar saved on utility bills, the pre-tax savings will be higher: Pre-tax Utility Savings = ($'s saved on utility bill) / (1 - Income Tax Rate). You may also earn compounding interest tax free (not shown). Because individual tax situations vary, we have not included Federal income tax liabilities that may result from having received non-federal incentives, if any (e.g. state rebate programs) as they are usually not taxed as earned income. Any income from your system (e.g. performance-based incentives and "SREC's") may be taxed as income (also not shown).

Year of Operation:	at Install	1	2	3	4	5
Gross Cost	($24,379)					
Federal Tax Credit (30% of Gross Cost at Installation)	$7,314	$0	$0	$0	$0	$0
Utility Savings	$0	$1,811	$1,879	$1,950	$2,024	$2,101
ANNUAL CASH FLOW	$-17,065	$1,811	$1,879	$1,950	$2,024	$2,101
Cumulative Cash Flow	$-17,065	$-15,254	$-13,375	$-11,425	$-9,401	$-7,300

Year of Operation:	6	7	8	9	10	11
Gross Cost						
Federal Tax Credit (30% of Gross Cost at Installation)	$0	$0	$0	$0	$0	$0
Utility Savings	$2,180	$2,262	$2,348	$2,437	$2,529	$2,624

ANNUAL CASH FLOW	$2,180	$2,262	$2,348	$2,437	$2,529	$2,624
Cumulative Cash Flow	$-5,120	$-2,858	$-510	$**1,927** **Breakeven**	$4,456	$7,080

Year of Operation:	12	13	14	15	16	17
Gross Cost				($2,793) Inverter Replaced		
Federal Tax Credit (30% of Gross Cost at Installation)	$0	$0	$0	$0	$0	$0
Utility Savings	$2,724	$2,827	$2,933	$3,044	$3,159	$3,279
ANNUAL CASH FLOW	$2,724	$2,827	$2,933	$251	$3,159	$3,279
Cumulative Cash Flow	$9,804	$12,631	$15,564	$15,815	$18,974	$22,253

Year of Operation:	18	19	20	21	22	23	24	25
Gross Cost								
Federal Tax Credit (30% of Gross Cost at Installation)	$0	$0	$0	$0	$0	$0	$0	$0
Utility Savings	$3,403	$3,531	$3,665	$3,803	$3,947	$4,096	$4,251	$4,412
ANNUAL CASH FLOW	$3,403	$3,531	$3,665	$3,803	$3,947	$4,096	$4,251	$4,412
Cumulative Cash Flow	$25,656	$29,187	$32,852	$36,655	$40,602	$44,698	$48,949	$53,361

FAQ's: Frequently Asked Questions for CA:

- California Solar Initiative (CSI) Rebate Amounts
- What about the Palm Desert, CA Energy Independence Program to help finance solar and energy efficiency?
- What about the Sonoma County, CA Energy Independence Program to help finance solar and energy efficiency?

Notes & Assumptions: Solar Electric (PV) Systems

* HOW TO REDUCE THE SYSTEM SIZE NEEDED & INCREASE SAVINGS

The estimate provided above assumes "base" electric rates apply. Other taxes and surcharges may be applied to your utility bill. We suggest you review a recent utility bill and change the "Assumed Electric Rate", above, as needed to better match your situation.

You may have other metered-rate options with your utility. Options such as Tiered billing rates, Time-Of-Use (TOU) metering, and

Net-Metering, if available, can help reduce the system size you need to provide a "net-zero" energy bill. Sometimes people also reduce the size of their solar system to accommodate planned improvements in their building's energy efficiency, or to match a budget and/or the available space for installing a solar system.

Energy production from a solar electric (PV) system is a function of several factors, including the following. Our assumptions are:

Factor	Assumption
Solar resources	Assumed solar availability: As per Solar Radiance chart
Soiling or contamination of the PV panels	Clean, washed frequently: 100% design sunlight transmission
Temperature	25C, calm wind
System configuration (battery or non-battery)	Non-battery
Orientation to the sun	South facing, tilted at latitude, full sun
Shading	None
PV Energy delivered as % of manufacturer's rating	95%
Soiling, wiring & power point tracking losses	9% (91% delivered)
Inverter Efficiency	90%
Total Energy Delivered	95% x 91% x 90% = 78%

Energy Efficiency: Improving your building's energy efficiency will reduce the system size you need to attain a "net-zero" energy bill.

Tiered Rates: Often people are paying a "Tiered" rate for their electricity. This is a higher rate (higher than the "Base" rate) for electricity charged when a home or building uses more that a "Base" amount allocated for the building. Installing a solar system will reduce your electrical demand from the utility. This can result in a lower utility rate because you stay within the "Base" rate level. In this case, the more expensive "Tiered" rate electricity is eliminated, reducing your average electricity rate.

TOU Metering: Many utilities offer Time-of-Use (TOU) meters. This allows the price of electricity to vary by time of day (called "Peak" or "Off-Peak" periods) and by season (usually "Winter" versus "Summer" rates). If TOU metering is offered by your utility, a solar system may result in additional savings. This is because peak (more expensive electricity) rates often occur during the daytime. This is usually when a solar system is producing the most output, thus reducing your demand for peak-rate electricity from the utility.

Most utilities do charge for the purchase and installation of a time-of-use meter (normally a few hundred dollars). We have assumed the cost for this is part of the "Estimated Installation cost" shown above.

Net-Metering: With Net-Metering, surplus electricity generated by your renewable energy system will be credited back to your utility account. So if your solar system makes more electricity than you are using, the "meter spins backwards". You are not actually

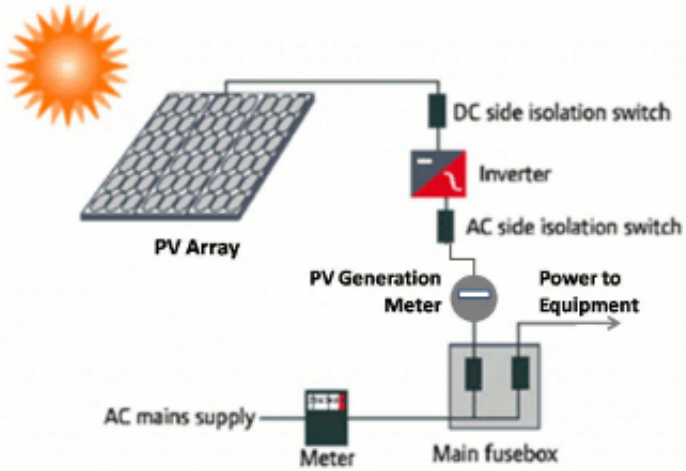
"selling" electricity, since in most states the utility will not reimburse you for excess electricity. But, if your utility offers "Net-Metering" you may be able to get credit for electricity provided back to the grid during peak periods. Combined with TOU metering, Net-Metering can result in multiplied savings since your electricity account may be gaining electricity credits during the time of peak utility rates -- Think of a hot, sunny summer day ... your solar system is producing power, spinning your electric meter backwards, and supplying the grid with electricity to run other people's air conditioners -- you're "spinning back" cost at peak rates! That's the savings power of Net-metering, combined with TOU rates.

Solar Power "Fixes" Energy Costs: The cost of sunshine is free. While the sun rises every morning, the cost of sunshine does not. Utility rates, on the other hand, tend to rise steadily in cost. So, the value of your savings from a solar system are likely to increase as time goes on. If you are on a fixed income (e.g. nearing or in retirement) this may be of particular interest to you.

THE COST TO GO SOLAR

This is only an estimate based upon many assumptions and limited data entered by you: Installation costs can vary considerably. The cost to purchase and install a complete grid-tied solar photovoltaic (PV) system on a residential home is typically as further defined in the table, below. This includes the PV array, inverter and associated balance of system costs. It does not include the cost of options you may select, such as battery backup power storage, or the costs of building preparation work, like new shingles. Costs can also be higher if you add other features or have special installation needs (such as application over tile roofing) or you choose to use special mounting systems (such as sun tracking systems). Other factors may also affect price, including, but not limited to, your location, the building condition, type and location, its wiring, and warrantees offered.

	Assumed Cost, per Watt DC	
Item	**System Size 1 kW**	**System Size 10 kW**
Assumed Total	$7 per watt DC (+/- 20%)	$5 per watt DC (+/- 20%)



OTHER ASSUMPTIONS

This summary is based upon many assumptions and the limited data you entered. An actual site assessment by a qualified solar system retailer or contractor will be needed to determine the actual costs and benefits of installing a solar electric system.

HELPFUL PDF's & Links

Payback & Other Financial Test for Solar on Your Home

The Dept. of Energy's: **PVWatts Online PV Calculator**

Natural Resources Canada's: **RETScreen Renewable Energy Calculators**

A Free Public Service of the Solar & Wind Communities since 2000

contractorcheck.com℠

Contractor verification assisted by » **ContractorCheck.com**

Pre-Screened SOLAR PRO

Pre-screened, Customer-recommended Solar Pros
See: » **How it Works**

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for their location, run financial analysis and help find and verify the experience, quality and business status of certified solar contractors, and other professionals who can design, install and service renewable and solar energy and energy efficient power systems. (See How It Works). As a business verification service, we maintain the largest directory of current local solar installer and solar contractor profiles including extensive customer reviews and ratings of these professionals. Profiles are not limited to solar energy professionals, but include many other renewable energy, design, engineering and support professional services. We also serve as a consolidator of national and region-specific solar and energy efficiency programs, and utility information about renewable energy, solar energy and energy efficient measures. Our software tools and content include: Online solar estimator (solar calculator, analysis) to help you determine the costs and benefits of a renewable or solar energy system for your particular location and building needs, including financial analysis tools. We also provide a trusted means by which you, as a consumer, can review and access solar panel installers, solar contractors, solar pros and other solar, renewable energy and energy efficiency professional services. And we offer answers to frequently asked questions about renewable and solar power, links and resources to current information about solar power, solar energy, renewable energy, energy bill savings, energy efficiency data, solar incentives, tax credits, rebates and other programs and helpful information so you can learn about solar energy, help us promote renewable and solar power adoption and, hopefully, install a solar system for your home, building, company or community and/or improve your energy efficiency and use. **Site Map**

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