DOCKETED

Docket Number:	15-AFC-01
Project Title:	Puente Power Project
TN #:	213675
Document Title:	California Coastal Commission 30413(d) Report -- Substantive File Documents PART 1
Description:	N/A
Filer:	System
Organization:	California Coastal Commission
Submitter Role:	Public Agency
Submission Date:	9/15/2016 2:44:27 PM
Docketed Date:	9/15/2016

Comment Received From: Joseph Street
Submitted On: 9/15/2016
Docket Number: 15-AFC-01

California Coastal Commission 30413(d) Report -- Substantive File Documents PART 1

Additional submitted attachment is included below.

Coastal Commission 30413(d) Report – List of Substantive File Documents

Articles, Permits, Reports & Other Documents

(1) Adams, C.B. (1976). Case history of Ventura Marina, CA. *Shore and Beach* 44(2): 32-36. **[provided]**

(2) AECOM (2016). Puente Power Project – Wetland Technical Studies Summary (with attachments), August 31, 2016. Submitted to CCC staff September 2, 2016. **[not provided – already in docket]**

(3) Beller, E.E., R.M. Grossinger, M.N. Salomon, S.J. Dark, E.D. Stein, B.K. Orr, P.W. Downs, T.R. Longcore, G.C. Coffman, A.A. Whipple, R.A. Askevold, B. Stanford, J.R. Beagle (2011). *Historical Ecology of the Lower Santa Clara River, Ventura River, and Oxnard Plain: An Analysis of Terrestrial, Riverine, and Coastal Habitats.* Prepared for the State Coastal Conservancy. San Francisco Estuary Institute Historical Ecology Program, SFEI Publication #641. **[not provided, already cited in PSA]**

(4) California Coastal Commission, Appeal No. A-4-OXN-07-096, Southern California Edison Company, April 9. 2009, Adopted Findings on Appeal, De Novo Review. **[provided]**

(5) California Coastal Commission (2015). *California Coastal Commission Sea Level Rise Policy Guidance: Interpretive Guidelines for Addressing Sea Level Rise in Local Coastal Programs and Coastal Development Permits*. Adopted August 12, 2015. **[not provided, already cited in PSA]**

(6) California Emergency Management Agency (CalEMA), California Geological Survey (CGS) and University of Southern California (2009). *Tsunami Inundation Map for Emergency Planning (Oxnard Quadrangle)*. http://www.conservation.ca.gov/cgs/geologic_hazards/Tsunami/Pages/Index.aspx.

(7) California Emergency Management Agency, California Natural Resources Agency, and Federal Emergency Management Agency (2012). *California Adaption Planning Guide: Planning For Adaptive Communities*, September 2012. **[provided]**

(8) California Energy Commission, *Opportunities to Expand Coastal Power Plants in California*, Staff Report P700-80-001, June 1980, Sacramento, CA. **[not provided – available CEC Report]**

(9) California Energy Commission (2016), *Preliminary Staff Assessment* and associated docketed documents for 12-AFC-02, Application for Certification for NRG Oxnard Energy Center, LLC Puente Power Project (filed April 15, 2015). [**not provided – already in docket]**

(10) City of Oxnard Coastal Land Use Plan **[not provided, already cited in PSA]**

(11) City of Oxnard Coastal Zoning Ordinance **[not provided, already cited in PSA]**

(12) City of Oxnard Emergency CDP No. PZ 15-000-17, granted on April 6, 2015 **[provided]**

(13) Coastal and Ocean Working Group of the California Climate Action Team (CO-CAT) (2013). State of California Sea-Level Rise Guidance Document, March 2013 update. **[not provided, already cited in PSA]**

(14) Dooling, R., and A. Popper (2007). *The Effects of Highway Noise on Birds*, prepared for California Department of Transportation, September 2007. **[not provided, already cited in PSA]**

(15) ESA PWA (2013). *Coastal Resilience Ventura – Technical Report for Coastal Hazards Mapping*. Prepared for the Nature Conservancy, July 31, 2013, 59 pp. http://maps.coastalresilience.org/ventura/methods/CRV_Hazards_Mapping_Technical_Report.pdf **[not provided, already cited in PSA]**

(16) Everest International Consultants (2015). *Sea level Rise Vulnerability Assessment: Tsunami Analysis Mandalay Bay Generating Station*. Prepared for the City of Oxnard, April 8, 2015. [**not provided – already in docket]**

(17) Federal Emergency Management Agency (2007). *Design Guide for Improving Critical Facility Safety from Flooding and High Winds*, FEMA Publication 543, January 2007. **[provided]**

(18) Federal Emergency Management Agency (2012). *Guidelines for Design of Structures for Vertical Evacuation from Tsunamis*, FEMA Publication 646, April 2012. **[provided]**

(19) Heberger, M., H. Cooley, P. Herrera, P.H. Gleick, E. Moore (2009). The Impacts of Sea-Level Rise on the California Coast. Pacific Institute, Oakland, CA. Prepared for the California Climate Change Center, March 2009. Report # CEC-500-2009-024-F. **[provided]**

(20) Lichvar, R.W., M. Butterwick, N.C. Melvin, and W.N. Kirchner (2014). The National Wetland Plant List: 2014 update of wetland ratings. *Phytoneuron* 2014-41: 1–42. **[not provided, already cited in PSA]**

(21) Los Angeles Regional Water Quality Control Board Order No. R4-2015-0201, adopted October 8, 2015. **[not provided, already cited in PSA]**

(22) Los Angeles Regional Water Quality Control Board, "Response to Comments for the Tentative Time Schedule Order (TSO) for NRG California South LP Mandalay Generating Station, Oxnard, CA. (NPDES No. CA0001180, CI No. 2093)", December 21, 2015. (15-AFC-01 TN# 207118, submitted 12/24/15) **[not provided, already in docket]**

(23) National Research Council (NRC) (2012). *Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future*. The National Academy Press, Washington, D.C., 202 pp. **[not provided, already cited in PSA]**

(24) NRG California South LP, Coastal Development Permit application, submitted to the City of Oxnard, May 4, 2015. **[provided]**

(25) Revell, D. (2015). *Vulnerabilities of the Proposed Mandalay Generating Station to Existing and Future Coastal Hazards and Sea Level Rise*. Revell Coastal, LLC, April 6, 2015. **[not provided, already in docket]**

(26) Ryan, K.J., Geist, E.L., Barall, M., and Oglesby, D.D (2015). Dynamic models of an earthquake and tsunami offshore Ventura, California. *Geophysical Research Letters* 42: 6599–6606. *doi:*10.1002/2015GL064507. **[not provided, already cited in PSA]**

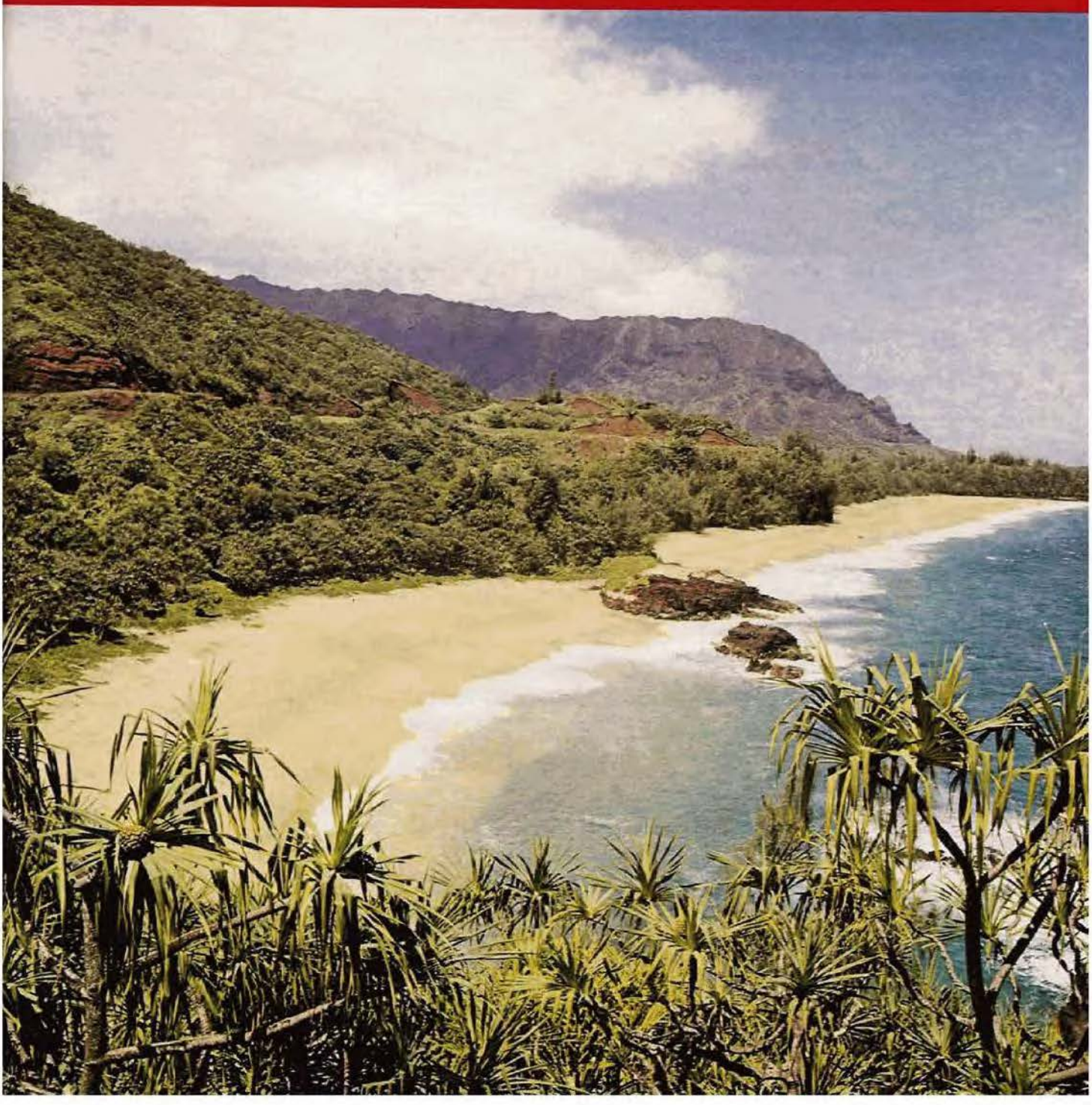
(27) Stillwater Sciences (2011). *Santa Clara River Parkway: Levee Setback Assessment of the Lower Santa Clara River, Ventura County, California*. Prepared for the California State Coastal Conservancy, September 2011, 72 pp. **[provided]**

(28) Wood, N., Ratliff, J., and Peters, J. (2013). Community Exposure to Tsunami Hazards in California. U.S. Geological Survey Scientific Investigations Report 2012-5222. **[not provided, already cited in PSA]**

Shore & Beach

VOL. 44, NO. 2, JULY, 1976

Journal of the American Shore and Beach Preservation Association



Case History of Ventura Marina, California

By Clark B. Adams*
Bechtel Corporation
Houston, Texas

INTRODUCTION

The Ventura Marina is a manmade harbor located in the City of Ventura about 65 miles northwest of Los Angeles (Fig. 1). It is situated at the southern end of Pierpont Bay which extends from the Ventura River four miles south to the Santa Clara River. The Santa Clara River delta forms the southern boundary of the harbor. The harbor consists of: a detached breakwater, two rock and concrete tribar jetties, an entrance channel, a middle groin, a turning basin, and three basins with berthing and launching facilities (Fig. 2). The depth in the entrance channel is 20 feet while the depth in the inner basins and at the berthing slips range from 10 to 15 feet. Ventura Keys is a private residential marina adjacent to the harbor on the north and connects to the ocean through the Ventura Marina entrance. A small wash enters the marina system at the boundary between the Ventura Keys and the Ventura Marina.

The mean range of tides at the Ventura Marina is 3.7 feet. Between mean-lower-low water and mean-higher-high water, the range is 5.4 feet. The extreme range is 10.2 feet.

The average wave height at the marina is 3 feet but ranges from 1 to 23 feet. The predominant wave period of the breaking wave is 14 to 15 seconds. Offshore islands and the adjacent coast partially shelter the marina so that swells approach the harbor through three principal corridors. (Fig. 1). The first is from the west through the Santa Barbara Channel. The second is from the southwest between Santa Cruz Island and Anacapa Island. The third is from the south between Anacapa Island and the mainland. The waves from the west predominate, but in winter waves from the south occur. Wave characteristics at the Ventura Marina are shown in Table 1.

There is a predominate littoral drift from north to south in the area from the Ventura River south past the marina and continuing downcoast. Occasionally, storm waves from the south cause a slight northward drift from the Santa Clara River delta.

The construction of reservoirs on the tributary drainage basins has resulted in an annual reduction in material contributed to the shoreline from river runoff. This, combined with below-normal rainfall and the littoral transport, has led to overall long term erosion. In the period between 1948 and 1959 the mean-high water and mean-lower-low water lines, as well as the offshore bottom contours to a depth of 30 feet, all show a shoreward movement over the entire area from north of the Ventura River southward to the Santa Clara River. The average movement of the mean-high-water shoreline during the entire period was 300 feet shoreward. Consequently, a series of groins was constructed in the Pierpont Bay area in an effort to retard the erosion of the beaches (Fig. 2). At the same time, plans were being made for the construction of a small craft harbor.

INITIAL DEVELOPMENT

During the first increment of the marina development, the basic features of the project were constructed. These features included the jetties, excavation, slope protection, and berthing for 520 boats. The entrance channel as constructed was about 300 feet wide and about 1,750 feet long. It was protected by two jetties. The north jetty was 1,489 feet long, and the south jetty was 1,071 feet long. The work was completed sufficiently for the marina to become operational in June 1963. Boat occupancy increased rapidly until 300 slips were rented. At that time it became apparent that shoaling problems at the harbor entrance existed and the growth rate then declined.

The Ventura Port District had anticipated that littoral drift would necessitate the need for sand bypassing. However, it was believed that the sand moving downcoast would accumulate north of the north jetty and could be bypassed every two or three years. In reality it was found that dredging had to be maintained annually at an average rate of about 190,000 cubic yards per year. The cost to the Port District averaged $81,000 annually and proved to be an excessive burden on the budget. Other maintenance had to be neglected; that is, the northern jetty head suffered progressive damage in winter storms and went unrepaired. Despite the dredging operation, shoaling of the entrance was severe each year. As a result of the shoaling, breaking waves created undesirable boating conditions which in turn discouraged the growth of the marina. It was estimated that the height of a typical wave breaking across the entrance at low tide was 8 feet. On the average, the marina was effectively closed for 66 days each year. Nine accidents occurred in the first five years as a result of the hazardous conditions. No lives were lost, but injuries were sustained and the property damage amounted to over $35,000.

It also appeared that the marina had an effect on the littoral processes which was more than just local. There was evidence that serious beach erosion problems existed downcoast at the Oxnard Shores area following construction of the marina. During construction, sand was deposited on shore in the area south of the harbor entrance to act as protection against erosion due to the littoral currents in that area and to provide replenishment to the downcoast system. This plan performed well in providing protection in the area, but the stockpile was not replenished in the annual dredging program, and conditions in some areas later became critical. The stockpiled sand apparently was enough to retard the erosion in the southern portion of the Ventura Marina but was unable to negate the disruption caused by the marina to the littoral process further downcoast.

In 1967, because of the shoaling and navigation diffi-

* *Formerly graduate student, Department of Civil Engineering, University of California, Berkeley, California*

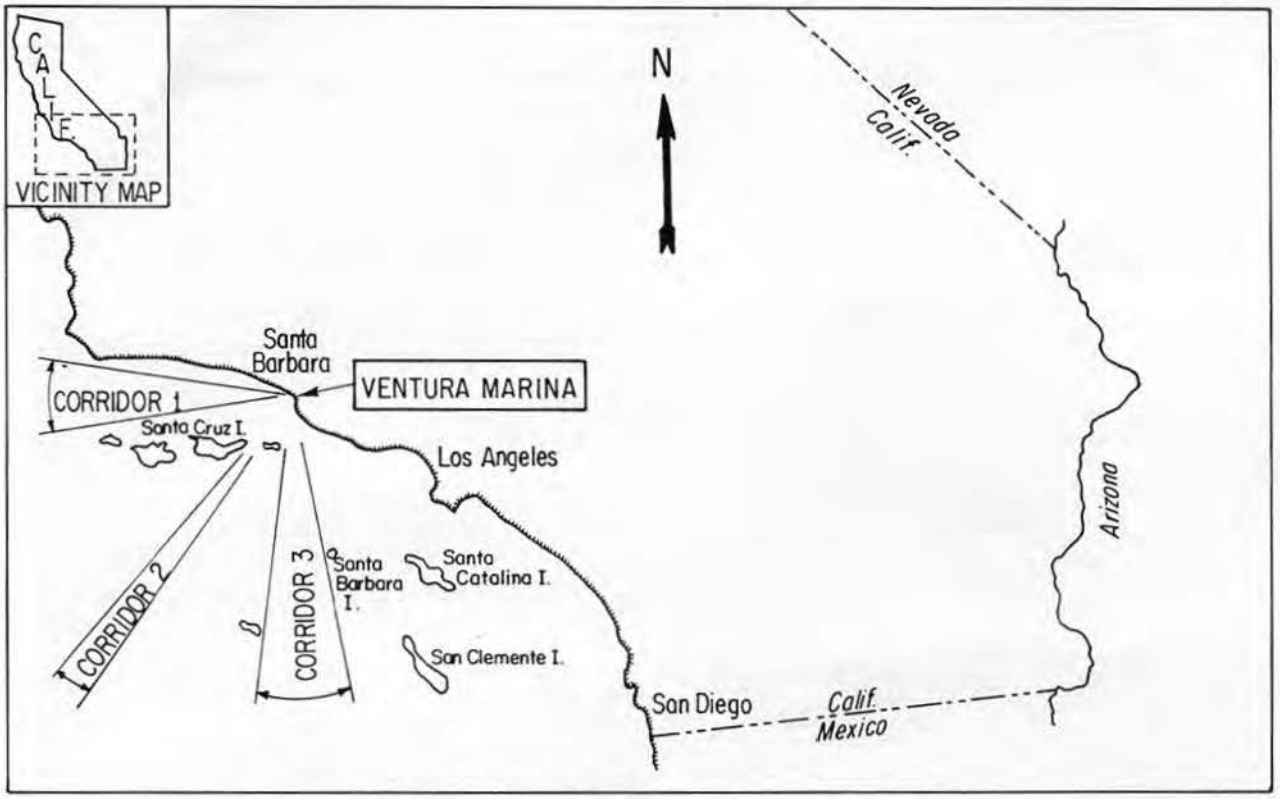


Fig. 1. Wave exposure and location map of Ventura Marina.

culties, the Ventura Port District requested assistance from the Federal government to provide harbor improvements. The government was to assume maintenance of the jetties and entrance channel, construct a 1,000 foot long detached breakwater, construct a sand trap upcoast of the north jetty, and provide for sand bypassing by dredging. Before construction began on these harbor improvements, storms in early 1969 caused heavy flooding in the rivers of Ventura County resulting in major damage to the marina.

FLOODS OF 1969

The 1969 flood damage in the Santa Clara River watershed was the greatest in the history of Ventura County. In many channels discharges exceeded estimated 100-year flows. In the first stage of the flood, record rainfall amounts and intensities saturated the ground. During the second stage, heavy rain fell on the saturated watershed, causing record runoff and sediment accumulation in the channels. In the third stage, more rainfall caused the flood-choked channels to overflow their banks, resulting in tremendous damage throughout the county.

On January 25, 1969, the second stage of the flood breached the north bank of the Santa Clara River about one mile upstream of the Ventura Marina (Fig. 2). About 1200 feet of rip-rapped side slope was damaged as well as several floating platforms and gangways, 1200 feet of watermain, and two boats. The damage was estimated at $300,000, and repair work was in progress when the third stage of the flood occurred. This flood began discharging from the Santa Clara River into the marina on February 25 at about 2:30 a.m. This time the damage was much more severe than before. The flow continued until late afternoon. The velocity was very high and floating debris carried into the harbor did considerable damage to the

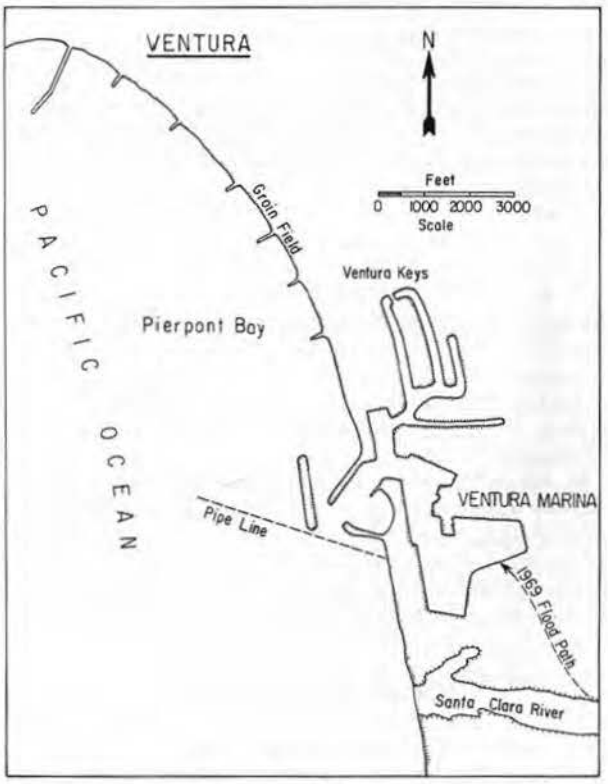


Fig. 2. Layout of Ventura Marina and breakwater system.

TABLE 1

WAVE CHARACTERISTICS 2600 FEET NORTHWEST OF THE VENTURA MARINA NORTH JETTY, VENTURA MARINA, CALIFORNIA

a. Non-breaking waves

Height feet	Time percent	Days Per Year	Period seconds	Time percent	Days Per Year	Direction degrees	Time percent	Days Per Year
0-1	3	11	Less than 9.9	1	4	260	39	142
1-2	18	66	10 to 11.9	9	33	270	46	168
2-3	54	197	12 to 13.9	37	135	280	15	55
3-5	20	73	14 to 15.9	40	146			
5-8	5	18	16 to 17.9	8	29			
			Greater than 18.0	5	18			

b. Breaking waves

Height feet	Time percent	Days Per Year	Period seconds	Time percent	Days Per Year	Direction degrees	Time percent	Days Per Year
2-3	1	4	Less than 9.9	0.1	1	260	9	33
3-5	8	29	10 to 11.9	1.1	4	270	6	22
5-8	8	29	12 to 13.9	6.8	25	280	4	15
8-12	2	7	14 to 15.9	8.0	29			
			16 to 17.9	2.2	8			
			Greater than 18.0	0.9	3			

docks and boats. All but two of the docks were completely destroyed, and 490 of the 540 existing slips were destroyed or severly damaged. Of the 295 boats which were berthed in the marina, 88 were lost and many of the others damaged. Five 20,000 gallon tanks filled with gasoline from a nearby tank farm were washed into the harbor. All of the emergency work done on the basin side slopes was washed away, and additional damage was done as well. Main sewer trunks leading into a nearby sewage treatment plant were destroyed and raw sewage flowed into the harbor for more than two weeks at the rate of four million gallons per day. The marina was silted in to the mean-lower-low-water level throughout the harbor. In some locations the silting occurred to an elevation of +3 feet.

In the subsequent clean-up program, the entrance channel was dredged to the depth specified in the harbor improvement plans which were being prepared by the Corps of Engineers before the flood occured. The dredged material was placed in the area south of the harbor entrance which was severely eroded by the flood. This work was completed in December 1969.

MARINA IMPROVEMENTS

The 1969 flood created several problems for the harbor improvement plans which had been completed before the flood occurred. The main problem was the delta that had formed at the mouth of the Santa Clara River. From 7 to 14 feet of material had been deposited on the site of the proposed offshore breakwater, and the approaches to the harbor were heavily shoaled. This deposited material was not suitable for the foundation of the breakwater. The littoral current was eroding the delta material away, but it was anticipated that annual dredging would be necessary for several years before a depth of 20 feet could be attained. Also, the Ventura River, upstream of the Ventura Harbor, had formed a delta and this too was being eroded, resulting in accretion on the beaches downcoast. The accretion is hastening the Pierpont groin field stabilization. When the groin field is completely stabilized, it is estimated that the littoral drift rate will have increased to 400,000 cubic yards annually into the harbor entrance.

The offshore breakwater was to have a length of 1,500 feet, and the alignment was oriented so as to reduce wave action in the harbor entrance and to provide a sand trap upcoast of the north jetty. The southern head of the breakwater was set as close to an underwater pipeline as practical. To extend the breakwater farther downcoast would have required relocating the pipeline at considerable expense. It was possible that this shorter configuration would reduce the protection from southwest storms that a longer breakwater would have provided. However, the southwest storms are rare and waves from this direction with heights greater than 4 feet occur less than 4 days per year. It was therefore considered unjustified to extend the breakwater. By extending the northern head of the

Fig. 3. Aerial photograph of Ventura Marina as of January 1976. Note that the upcoast sand trap in the lee of the detached breakwater is almost completely filled. (Photo by courtesy of the Ventura Port District).

detached breakwater beyond the north jetty it was estimated that the sand trap would have a capacity of 800,000 cubic yards. It was estimated also that the amount of sand that filled the Pierpont Bay groin field would be equivalent to the amount of material carried into the sand trap by the littoral current in 2 years. Thus, it was hoped that eventually annual dredging will not be required. However, until the delta formed by the 1969 flood has been eroded, annual dredging will be necessary. In 1970 it was estimated that dredging would be required annually for 5 years.

To eliminate the foundation problems of the breakwater it was decided to excavate the site to a depth of 20 feet. To prevent erosion of the breakwater toe, rubble protection was provided. The unusual foundation conditions also influenced the choice of armor protection material. Both quarry and concrete tribars were considered, but the quarry material was finally recommended because tribar units require a high degree of slope stability. The quarry armor also is more compatible with slight slope movements.

The construction of the breakwater started in September 1970 and was completed in December 1971 (Fig. 3). Maintenance dredging of the sand traps and the channel entrance was conducted in 1970, 1971, 1973 and 1974. In 1970 the dredged material was added to the area south of the marina between the sewage treatment plant and the Santa Clara River. In 1973 the dredged material was placed in the groin field north of the marina and on the shoreline downcoast of the Santa Clara River. In 1974 the dredged material was placed entirely in the disposal area south of the Santa Clara River.

CONCLUSION

In the development of the Ventura Marina the problem of beach erosion caused by littoral drift was encountered. The construction of the marina resulted in an alteration of the normal littoral process causing sand accretion in the harbor entrance. Although the need for sand bypassing was foreseen, the quantity to be dredged was not anticipated. The harbor development was especially unique due to problems encountered with the floods. Hopefully the harbor improvements will prove adequate to handle the shoaling problem and reduce the cost of harbor maintenance. The five-year annual dredging program will be over soon, and observations then will demonstrate if the improvements have provided an economical and adequate solution to the problem of harbor maintenance.

CALIFORNIA COASTAL COMMISSION
45 FREMONT, SUITE 2000
SAN FRANCISCO, CA 94105- 2219
VOICE AND TDD (415) 904- 5200
FAX (415) 904- 5400

Filed: August 10, 2007
49th Day: September 28, 2007
Staff: C. Teufel-SF
Staff Report: March 20, 2009
Hearing Date: April 9, 2009
Vote: 7-4 Approved

ADOPTED FINDINGS ON APPEAL DE NOVO REVIEW

COMMISSION APPEAL NO.: **A-4-OXN-07-096**

LOCAL GOVERNMENT: City of Oxnard

LOCAL DECISION: Denied

APPLICANT: **Southern California Edison Company**

SUBSTANTIVE ISSUE: On September 6, 2007, the Commission found that the appeal of the local government action on this project raised a substantial issue.

PROJECT DESCRIPTION: Construction and operation of a 45-megawatt "peaker" power plant and ancillary facilities.

PROJECT LOCATION: 251 North Harbor Boulevard, Oxnard, Ventura County.

APPELLANT: Southern California Edison Company

LIST OF EXHIBITS AND SUBSTANTIVE FILE DOCUMENTS: See Appendix A

EXECUTIVE SUMMARY

Project Summary. In this application, Southern California Edison (SCE) proposes to construct and operate a 45-megawatt natural gas fired "peaker" power plant in the City of Oxnard, Ventura County. The project includes additional electrical transmission lines and poles, an 1,800-foot long by six-inch diameter natural gas pipeline along the eastern edge of Harbor Boulevard, transformers, an electrical substation, a natural gas metering station, storage tanks, access roads, security gates and fences. The project would be primarily developed within a brownfield site that has previously supported energy-related infrastructure and neighbors the existing Mandalay Generating Station to the north, several functioning oil wells and production facilities to the west, and a protected backdune portion of Mandalay State Beach to the south. Additional project elements such as the natural gas pipeline and ten new and replacement transmission poles would be installed across the street from the brownfield site within two partially developed parcels owned by SCE.

Jurisdiction. The proposed project is located within the City of Oxnard's (City) certified Local Coastal Program (LCP) jurisdiction and therefore requires a coastal development permit from the City. In July 2007, the City of Oxnard denied SCE's request for a coastal development permit to construct and operate the peaker plant at the proposed location on the basis that the project is inconsistent with the zoning designation. At the same hearing in July of 2007, the City of Oxnard Planning Commission also decided not to certify a Mitigated Negative Declaration prepared for the proposed project. Denial of a major energy facility by a local government is appealable to the Coastal Commission (Commission). On August 10, 2007, SCE filed a timely appeal to the Commission. On September 6, 2007, the Commission found that SCE had raised a substantial issue regarding the conformance of the City of Oxnard's permit denial with the LCP.

Standard of Review. This report constitutes the Commission's de novo review of SCE's application to obtain a coastal development permit for the peaker plant and ancillary facilities. The standard of review is the City of Oxnard's LCP and the public access and recreation policies of the Coastal Act.

Zoning Designation. The project site is located within an area identified in the City of Oxnard's LCP as a Coastal Energy Facility Sub-zone. The City's denial of the proposed project was based on its determination that the proposal did not conform to the designated zoning for the parcel on which the project was to be located. The City's rationale for denying the proposal is that the zoning designation requires any energy facility on the site to be coastal dependent.[1] SCE contends that this zoning designation allows non-coastal dependent facilities and that the City therefore erred when it determined the proposed project would have to be coastal-dependent to be sited at this location. SCE appealed the City's permit denial to the Coastal Commission. On September 6, 2007, the Commission determined that SCE's appeal

[1] Both the City's LCP at Section 17-3(12) and Section 30101 of the Coastal Act define a "coastal-dependent development or use" as "any development or use which requires a site on, or adjacent to, the sea to be able to function at all."

raised a substantial issue regarding the conformance of the City of Oxnard's denial of a coastal development permit with applicable LCP policies.

The Commission finds the proposed project to be in conformance with the LCP's Coastal Energy Facility Sub-zone for the following reasons:

- The key subsection of the Coastal Energy Facility Sub-zone (Coastal Zoning Ordinance Section 17-20), states that "coastal dependent energy facilities shall be encouraged to locate or expand within existing sites and shall be permitted reasonable long-term growth, where consistent with this article." This subsection is the only one that specifically refers to "coastal-dependent" facilities, and it only "encourages" such facilities to locate within this zoning designation and does not prohibit non-coastal dependent facilities;

- Other subsections of Coastal Zoning Ordinance Section 17-20 apply generally to "energy related developments," not exclusively to "coastal-dependent" developments. Additionally, these subsections are all subject to the overarching provision of Section 17-20(A), which states that this zoning designation allows "power generating facilities and electrical substations" and is therefore not limited to "coastal-dependent" facilities[2]; and

- One of the four types of developments that can be conditionally permitted within the Coastal Energy Facility Sub-zone is an "Electrical power generating plant and accessory uses normally associated with said power generating facility," such as the project proposed by SCE.

Key LCP Issues. Key LCP issues of concern for this project are potential impacts to biological resources and adverse visual effects.

Biological Resources.
The peaker plant, electrical substation, natural gas metering station and associated infrastructure are to be located to the west of Harbor Boulevard on the former tank field site of the Mandalay Generating Station. As a brownfield site that was graded and heavily disturbed during the demolition and removal of three fuel oil storage tanks several years ago, biological resources and intact habitat areas are very limited. Some dune adapted plant species (native and invasive) are becoming established but the occurrence of these plants is very low. Nevertheless, during a biological survey of this site during the burrowing owl breeding season in 2006, this California Species of Special Concern was observed at the site. Although no occupied or suitable burrows were noted during this survey, due to the strong site fidelity of burrowing owls and the fact that an owl was observed at the project site during the breeding season, the Commission is requiring **Special Condition 3(c)**. This condition requires SCE to

[2] Further, the LCP's definition of "energy facility" does not specify that such facilities must be coastal-dependent. LCP Section 17-3(25) defines an "energy facility" as "any public or private processing, producing, generating, storing, transmitting or recovering facility for electricity, natural gas, petroleum, coal or other sources of energy."

conduct a pre-construction survey for burrowing owls throughout all portions of the project area no more than 30 days prior to the initiation of ground disturbance activities. If any burrowing owls are observed during this survey, or if burrows are found to be actively used within the project area, prior to the initiation of construction or ground disturbing activities, SCE must submit an Impact Avoidance Plan for the Executive Director's review and approval.

During local review of this project, the US Fish and Wildlife Service (FWS) raised concerns about the use of large trees for landscaping at the peaker plant site and the potential for these trees to attract nesting predatory birds such as crows and ravens, which could adversely affect nearby western snowy plover and California least tern nesting areas. In response, SCE developed a landscape plan (included as Exhibit 4) that avoids the use of large branching trees and includes only small native trees approved by FWS, native groundcover, bush and shrub species that are not known to provide nesting or roosting habitat for corvid and/or raptor species.

To the east of Harbor Boulevard, both to the north and south of the Mandalay Canal, SCE proposes to install and bury a six-inch diameter by 1,800-foot long natural gas pipeline parallel to Harbor Boulevard as well as to install three new transmission poles and remove and replace seven additional poles. This 37-acre area currently supports seven separate transmission line corridors with numerous wooden and steel poles, a transmission substation located within a fenced and graded site, several dirt access and maintenance roads and a variety of buried infrastructure and pipelines. A photomap of this site is included in Exhibit 1. SCE carries out routine operation and maintenance activities within this area including the use of high clearance vehicles within each of the seven transmission line corridors to facilitate washing and inspection of the lines.

This site is a sandy area with low to moderate vegetation density dominated primarily by invasive ice plant (*Carpobrotus edulis*) but also supports sand dune adapted native plants such as native mock heather, also known as California goldenbush (*Ericameria ericoides*). Other native shrubs and herbaceous dune plant species representative of rare southern dune scrub are also found in lesser abundance throughout this site. However, the southern dune scrub habitat present within the project's disturbance limits is substantially degraded and none of the numerous biological and botanical surveys of the site revealed the presence of any rare plant species within the proposed disturbance areas or their immediate vicinity. Sources of disturbance and degradation in the proposed project area include high numbers of invasive plants (iceplant, myoporum, tree tobacco and castor bean), frequent vegetation and soil disturbance due to the accumulation of litter, automotive debris and road runoff, the occasional use of the road shoulder and adjoining habitat by parked and broken-down vehicles, and the periodic and ongoing transmission line operation and maintenance activities carried out by SCE.

Proposed site activities would result in the permanent loss of 93 square feet of habitat area and 57,548 square feet of temporary habitat disturbance (36,000 for the pipeline and 21,548 for pole installation and replacement).

SCE has committed to preserve, restore and enhance the ecological integrity of the 37-acre site by implementing a comprehensive invasive species eradication program to remove iceplant and other non-native plant species (**Special Condition 3(b))**. In addition, SCE will carry out a restoration program, concentrated on the project's disturbance footprint, which includes planting native dune scrub species collected from locally collected seeds and annual monitoring to ensure that native species become re-established and invasive plants do not reoccur in these areas (**Special Condition 3(b)**).

As conditioned, the Commission believes the project will be carried out consistent with the LCP policies that provide for the protection of biological resources and sensitive habitat areas.

Although this site includes plant species representative of rare southern dune scrub habitat, the Commission staff recommends that because of its current use as an active transmission and pipeline corridor and the degraded state of the habitat within the project footprint, this site does not represent environmentally sensitive habitat area (ESHA). However, upon successful completion of the site-wide invasive species eradication program and restoration of disturbed areas as required by the Commission, the Commission believes the site will meet the definition of ESHA.

Visual Resources
The peaker would be located on the former tank farm site at a maximum distance from the state beach, and, as demonstrated by the photographs in Exhibit 3, many of the existing views in the immediate vicinity of the project site are industrial and energy related in nature. Nevertheless, the City of Oxnard 2020 General Plan's Open Space/Conservation Element designates several miles of Harbor Boulevard, including the stretch that passes along the eastern edge of the project site, as a scenic highway and also notes that "the lower dunes in the Mandalay Beach State Park north of Fifth Street" are one of the City's Scenic Resources. This portion of the park includes the dunes adjacent to the southern edge of the project site.

While the project site is adjacent to both visual resources identified in the General Plan and existing large-scale industrial facilities, the peaker plant itself would be located on the project site in closer proximity to the industrial facilities. This proposed location for the peaker plant would consolidate it both spatially and visually with existing compatible elements such as the Reliant Generating Station. The proposed plant's stack would be slightly visible to beach users from some areas along Mandalay State Beach, however. While the majority of the facility would not be visible from the beach and shoreline in this area because of the 15 to 20 foot high foredunes which follow the inland edge of the beach, as shown in the photo simulations included in Exhibit 3, the top several feet of the peaker plant's exhaust stack would be visible from some locations. However, considering the visual profile of the existing Mandalay Generating Station, and oil wells and oil processing equipment that are adjacent to the proposed peaker location, the plant would be visually compatible with existing uses and would not result in adverse impacts to any of the significant visual resources identified in the Oxnard LCP.

In addition, SCE has proposed a landscaping plan for the project site that would provide the maximum level of visual screening from Harbor Boulevard and adjacent areas given the

constraints regarding the use of large trees in this area. The Commission believes that implementing the proposed landscaping plan will minimize the plant's adverse visual effects and that those elements of the project that would not be blocked by proposed landscaping are compatible with the existing character and use of adjacent areas. The project would be sited such that it would not adversely affect any of the visual or aesthetic resources specifically identified and protected in the Oxnard LCP.

Vote. For the reasons expressed above, and based on the findings included below, the Commission, on April 9, 2009, by a vote of 7-4, **approved, with conditions,** coastal development permit application A-4-OXN-07-096.

TABLE OF CONTENTS

APPENDICES

I. COMMISSION ACTION

On April 9, 2009, by a vote of 7 in favor, 4 opposed, the Commission approved coastal development permit number A-4-OXN-07-096 on the grounds that the development, as conditioned, will be in conformity with the certified City of Oxnard LCP and the public access and recreation policies of the Coastal Act. Approval of the permit complies with the California Environmental Quality Act because there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.

II. STANDARD CONDITIONS:

1. **Notice of Receipt and Acknowledgment**. The permit is not valid and development shall not commence until a copy of the permit, signed by SCE or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.

2. **Expiration**. If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.

3. **Interpretation**. Any questions of intent of interpretation of any condition will be resolved by the Executive Director or the Commission.

4. **Assignment**. The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.

5. **Terms and Conditions Run with the Land**. These terms and conditions shall be perpetual, and it is the intention of the Commission and SCE to bind all future owners and possessors of the subject property to the terms and conditions.

III. SPECIAL CONDITIONS:

1. **Liability for Costs and Attorneys Fees:** SCE shall reimburse the Coastal Commission in full for all Coastal Commission costs and attorneys fees -- including (1) those charged by the Office of the Attorney General, and (2) any court costs and attorneys fees that the Coastal Commission may be required by a court to pay – that the Coastal Commission incurs in connection with the defense of any action brought by a party other than the applicant against the Coastal Commission, its officers, employees, agents, successors and assigns challenging the approval or issuance of this permit, the interpretation and/or enforcement of permit conditions, or any other matter related to this permit. The Coastal Commission retains complete authority to conduct and direct the defense of any such action against the Coastal Commission.

2. Mitigated Negative Declaration Mitigation Measures: This permit incorporates those mitigation measures identified in the uncertified May 11, 2007, Mandalay Peaker Project Mitigated Negative Declaration concerning air quality, biological resources, cultural resources, hazards and hazardous materials, transportation and traffic that are attached to this report as Exhibit 8.

3. Biological Resources:

(a) All "indirect impact" minimization measures described within the Mandalay Peaker Project Biological Resources Assessment, dated February 2007, prepared by Keane Biological Consulting, shall be strictly adhered to and incorporated into all final project design plans, construction methodologies and management practices.

(b) Prior to the start of construction activities to the east of Harbor Boulevard, SCE shall submit a revised McGrath Beach Peaker Landscaping and Restoration Plan for Executive Director approval that (1) adds myoporum, tree tobacco and castor bean to the list of invasive plant species to be removed from SCE owned property to the east of Harbor Boulevard; (2) clarifies that revegetation of those areas disturbed during placement/removal of transmission poles, installation of the natural gas pipeline and associated staging, construction and access activities shall be accomplished with native plant species representative of the southern dune scrub habitat community and grown from locally collected seed; (3) establishes performance criteria for restoration sites which ensures that disturbed areas are restored to replicate existing percent cover of high quality southern dune scrub vegetation in these areas; and (4) includes provisions for the maintenance of seeded and planted native plants in restoration areas.

(c) No more than 30 days prior to the initiation of ground disturbing activities, SCE shall conduct a pre-construction survey for burrowing owls throughout all portions of the project area (including the peaker plant site, construction staging areas, landscaping areas and transmission line and pipeline corridor to the east of Harbor Boulevard). If any burrowing owls are observed or burrows are found to be actively used within the project area, prior to the initiation of construction or ground disturbing activities, SCE shall submit an Impact Avoidance and Mitigation Plan for the Executive Director's approval. Approval of this plan shall be obtained prior to the initiation of ground disturbing activities. The plan shall include implementation of specific disturbance avoidance measures based on current CDFG guidelines, including, but not limited to, the avoidance of project activity within a minimum of 160 feet of occupied burrows during the non-breeding season of September 1 through January 31 or within a minimum 250 feet during the breeding season of February 1 through August 31 and the maintenance of a 300 foot foraging radius around each occupied burrow. If destruction of occupied burrows and/or disturbance within the 160-250 foot buffer distance is unavoidable, SCE shall adhere to the mitigation guidelines described within the California Burrowing Owl Consortium's April 1993, "Burrowing Owl Survey Protocol and Mitigation Guidelines" (Exhibit 9).

(d) The only activities allowed within 50 feet of the southern border of the peaker plant property shall be the removal of the existing chain link fence and the following landscape activities: (1) eradication of the existing exotic weed species; and (2) planting of native plant species from locally collected seed that are compatible with the revegetation project completed on the adjacent Mandalay State Beach in 2002. All landscaping and construction activities within 50 feet of Mandalay Canal shall be avoided with the exception of dewatering wastewater discharge, natural gas pipeline installation on Harbor Boulevard over Mandalay Canal, and use of existing roads for equipment access.

(e) SCE shall install two groundwater monitoring wells at the southern edge of its property line (but outside of the buffer area described within **Special Condition 3(d)**). Wells shall be installed and begin recording ground water levels at least 2 months prior to initiation of the ground water/dewatering pumps. If either well shows during dewatering activities a decrease in groundwater level of 24-inches or more from the 2-month average monitored level, SCE shall immediately cease dewatering activities and, within 60 days, submit a permit amendment to revise the dewatering and/or foundation installation plan to reduce the area of groundwater drawdown so that the groundwater level at the monitoring wells does not fall more than 24-inches, as shown by the monitoring wells. Groundwater monitoring shall continue to determine the length of time for ground water levels to recover once pumping has ceased.

4. Geologic Hazards: SCE shall incorporate all recommendations contained in the Geotechnical Investigation, dated December 13, 2006, prepared by Kleinfelder, Inc. into all final design and construction plans. Prior to issuance of this coastal development permit, SCE shall submit evidence of Kleinfelder, Inc.'s review and approval that all of its design criteria were incorporated into all final design and construction plans for the project. If implementation of Kleinfelder's recommendations results in project modifications, SCE shall apply for an amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

5. Assumption of Risk, Waiver of Liability and Indemnity: By acceptance of this permit, SCE acknowledges and agrees (i) that the site may be subject to hazards from liquefaction and lateral spreading; (ii) to assume the risks to the applicant and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development; (iii) to unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; and (iv) to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards.

6. Generic Deed Restriction: Prior to issuance of this coastal development permit, SCE shall submit to the Executive Director for review and approval documentation demonstrating that SCE has executed and recorded against the parcel(s) governed by this

permit a deed restriction, in a form and content acceptable to the Executive Director: (1) indicating that, pursuant to this permit, the Coastal Commission has authorized development on the subject property, subject to terms and conditions that restrict the use and enjoyment of that property; and (2) imposing the Special Conditions of this permit as covenants, conditions and restrictions on the use and enjoyment of the Property. The deed restriction shall include a legal description of the entire parcel or parcels governed by this permit. The deed restriction shall also indicate that, in the event of an extinguishment or termination of the deed restriction for any reason, the terms and conditions of this permit shall continue to restrict the use and enjoyment of the subject property so long as either this permit or the development it authorizes, or any part, modification, or amendment thereof, remains in existence on or with respect to the subject property.

7. Flood Protection: If the final approved FEMA Flood Insurance Rate Map for the project area that is currently in draft status shows the peaker plant site within the 500-year flood zone, SCE shall submit, within 60-days of FEMA's determination, a permit amendment to either construct an engineered a flood control berm or levee of sufficient height that a 500-year flood event would not result in flooding of the peaker plant or implement other design changes to the site's topography or foundation that would ensure that a 500-year flood event would not result in flooding of the peaker plant, the substation or the natural gas metering station.

8. Performance Bond: Prior to issuance of this coastal development permit, SCE shall provide a surety bond or other security device guaranteed by SCE acceptable to the Executive Director for $100,000, and naming the Coastal Commission as the assured, to guarantee the faithful observance and performance by SCE of conditions (c), (d), (e) and (g) of Oxnard Local Coastal Program Policy 57 (as described in Appendix B to this Staff Report). The surety bond or other security device shall be maintained in full force and effect at all times until conditions (c), (d), (e) and (g) of Oxnard Local Coastal Program Policy 57 have been met.

9. No Future Bluff or Shoreline Protective Device:

(a) By acceptance of this permit, SCE agrees, on behalf of itself and all successors and assigns, that no bluff or shoreline protective device(s) shall ever be constructed to protect the development approved pursuant to Coastal Development Permit No. A-4-OXN-07-096 including, but not limited to, the peaker plant, substation, natural gas metering station or associated infrastructure in the event that the development is threatened with damage or destruction from waves, erosion, storm conditions, bluff retreat, landslides, sea level rise or other natural hazards in the future. By acceptance of this permit, SCE hereby waives, on behalf of itself and all successors and assigns, any rights to construct such devices that may exist under Public Resources Code Section 30235 and corresponding provisions of the City of Oxnard's certified Local Coastal Program.

(b) By acceptance of this permit, SCE further agrees, on behalf of itself and all successors and assigns, that the landowner shall remove the development authorized by this permit, including the peaker plant, substation, natural gas

metering station or associated infrastructure, if any government agency has ordered that the structures are not to be occupied due to any of the hazards identified above. In the event that portions of the development fall to the beach before they are removed, the landowner shall remove all recoverable debris associated with the development from the beach and ocean and lawfully dispose of the material in an approved disposal site. Such removal shall require a coastal development permit.

10. Conservation Easement:

(a) Within 12 months of permit issuance, or if a challenge is made, within 3 months of the successful defense of such challenge, whichever is later, SCE shall prepare for Executive Director review and approval as part of the McGrath (Oxnard) Peaker Project a conservation easement suitable for recording over approximately 10 acres to be located on a substantial majority of a parcel of land owned by SCE, APN# 183002103, east of Harbor Boulevard and south of the Mandalay Canal. The conservation easement would be restricted to use for open space and development consistent with passive recreational uses. Public access would be allowed. A small portion of the parcel will be excluded from the easement to allow for operation, maintenance, repair and upgrades of existing and proposed utilities and transmission uses. Therefore, the easement would exclude the utility and transmission corridor plus 50 feet from the eastern boundary of the corridor, and would be subject and subordinate to existing easements. The Executive Director may extend this time period upon SCE's request and showing of good cause.

The conservation easement shall be of form and content approved by the Executive Director and shall include documentation showing (1) the easement location and dimensions; (2) planned or necessary improvements, along with a description showing that these improvements are consistent with the City's LCP; (3) a description of permitted and prohibited methods of access given that the primary purpose of the easement is to prohibit development that would detract from public access. The conservation easement shall run with the land binding successors and assigns of SCE.

(b) Within 6 months of approval by the Executive Director of the form of the easement set forth in part (a) above, or if a challenge is made, within 3 months of the successful defense of such challenge, whichever is later, SCE shall provide documentation to the Executive Director showing that it has recorded a conservation easement over approximately 10 acres of land owned by SCE, east of Harbor Boulevard and south of the Mandalay canal, identified as parcel APN# 183002103, excluding the existing utility and transmission corridor plus 50 feet from the eastern boundary of the corridor, and subject and subordinate to existing easements, in favor of a public agency or private association approved by the Executive Director and reasonably acceptable to SCE. The Executive Director may extend this time period upon SCE's request and a showing of good cause.

(c) Within 180 days of permit issuance, SCE shall deposit five hundred thousand dollars ($500,000) into an interest bearing escrow, or similar account, to be

established and managed by one of the following entities approved by the Executive Director: the City of Oxnard, the County of Ventura, the California Department of Parks and Recreation, or a private, non-profit organization. The entity receiving these funds shall enter into a Memorandum of Understanding with the Executive Director, on behalf of the Commission, specifying that the funds deposited in this account, and any accrued interest, shall only be used for passive public recreation facilities and/or improvements on the adjacent parcel (APN #183002103), consistent with the protection of habitat values on that parcel.

Prior to expenditure of any funds contained in this account, the Executive Director must review and approve the proposed use of the funds as being consistent with the intent and purpose of this condition. All development funded by this account will require coastal development permit review and approval. If any portion of the funds has not been expended five years after the account is established, the Executive Director may require such funds to be redirected to a different project or projects that create public coastal recreational facilities or improvements elsewhere in the City of Oxnard.

11. Future Coastal Hazards: In April 2029, SCE shall submit for Executive Director approval a written report that assesses the type, probability and magnitude of risks to the project site and facilities posed by coastal hazards such as flooding, erosion, sea level rise, and tsunami. The written report shall also discuss and evaluate the environmental conditions at the site which contribute to these hazards and risks. Upon approval of the report, the Executive Director shall determine whether or not a permit amendment shall be required to address these risks.

IV. FINDINGS AND DECLARATIONS

The Commission finds and declares as follows:

A. Project Description and Background

Southern California Edison (SCE) proposes to build and operate a 45-megawatt natural gas fired "peaker" plant in the coastal zone within the City of Oxnard. The project would require the use of two sites, one to the west of Harbor Boulevard for the peaker plant itself, as well as a substation, natural gas metering station and associated infrastructure. On the other site, to the east of Harbor Boulevard, SCE proposes an 1,800-foot long gas pipeline and ten new and replacement transmission poles. SCE historically used the western site as a tank farm to store fuel oil before the nearby Mandalay Generating Station was converted to be powered by natural gas. The eastern site currently supports seven transmission lines, an electrical substation, and a variety of underground pipelines and infrastructure. Both sites, owned by SCE, are in close proximity to the Mandalay Generating Station, the Mandalay Canal, an existing offshore oil processing facility and two operating oil wells on the west, and the undeveloped sand dune habitat of Mandalay State Beach on the south (as shown in Exhibit 1).

SCE initially proposed this project following an Assigned Commissioner's Ruling by Commissioner Michael Peevey of the California Public Utilities Commission (CPUC) (attached as Exhibit 2) which directed SCE to expand one of its energy conservation programs and to "…pursue the development and installation of up to 250 megawatts of black-start, dispatchable generation capacity within its service territory for summer 2007 operation." In this context, the term "black-start" refers to the ability of a generating unit to turn on and power-up without the need for external power input, for example during a power outage in the area, and the term "dispatchable" refers to a unit's ability to start and ramp up power output quickly, for example in response to a rapid demand increase or a sudden loss of other generation or transmission resources. In response to this Assigned Commissioner's Ruling, SCE constructed and brought on line four 45 megawatt peaker plants outside of the coastal zone in southern California for an estimated 180 megawatts of generating capacity and began the permitting process for a fifth 45 megawatt peaker within the coastal zone in Oxnard. The four inland peaker plants were installed and operating by August 2007, and during 2008 they operated between 104 and 127 total hours each.

SCE currently has an application pending before the CPUC for recovery in its electricity rates of the costs that SCE incurred on the four completed peakers. In January 2009, other parties to that proceeding raised the issue at the CPUC of whether there is continued need for the fifth peaker and accordingly whether further SCE spending on the fifth peaker should be eligible for recovery, citing factors such as the passage of the Summer 2007 period which was the focus of concern in the Assigned Commissioner's Ruling, the four completed peakers, and the recent downturn in the economy and electricity demand forecasts. SCE stated that the fifth peaker remains needed, especially because of power transmission constraints affecting the Ventura County-Santa Barbara County area and the resultant need for a black-start capable generator within that area, which does not currently have any black-start capable generation. The CPUC has not yet taken any action on this issue.

The California Independent System Operator (ISO) has submitted a letter to the Coastal Commission on March 10, 2009 stating that the ISO supports the peaker project. The ISO is a not-for-profit, public-benefit corporation statutorily charged with operating most of California's transmission system and maintaining the system's reliability in compliance with applicable standards. The ISO letter states that "Southern California has a continuing strong need for additional quick start peakers. In addition to providing peak power during times of high electricity demand, plants such as the Oxnard peaker provide the quick-start and power-ramping capabilities that are needed to maintain transmission system stability while integrating additional renewable resources into the transmission system."

SCE states that the proposed peaker plant, besides providing emergency black-start capability in the case of transmission outages to the Ventura County-Santa Barbara County area, "will be operated primarily during periods of peak power demand when the electrical grid system needs additional usable electric power capacity or when local voltage support is required" and that "the unit can be started on short notice to respond to demand peaks." Use of the peaker plant would be limited to a maximum of 2,000 hours per year (as specified in the air pollution emission limits established by the Ventura County Air Pollution Control District) and anticipated use would be around 200 hours per year.

The proposed peaker plant would require the construction of numerous components and infrastructure, including both a natural gas-fired emergency start-up generator (also known as a black-start generator because of its ability to startup without an external power source) and a natural gas-fired turbine generator with pollution control equipment, an 80 foot tall exhaust stack, a 10,500 gallon aqueous ammonia storage tank, a water demineralization system and 50,000 gallon de-ionized water storage tank, a 180,000 gallon fire water storage tank, natural gas and water supply lines and storage tanks, transformers, access roads, security gates, fences and transmission lines and poles. Additionally, the construction of an approximately 4,900 square foot electrical substation and a 3,000 square foot natural gas metering station would be required to facilitate electricity generation and transmission.

Site Preparation: Site preparation activities at the peaker plant site include establishing temporary staging areas and excavating, grading, and de-watering construction areas. Proposed temporary staging areas would encompass approximately 4.6 acres of the project site and would be used for the storage of material and equipment during construction. In addition, much of the remainder of the project site would be used for construction office trailers and temporary parking facilities. Proposed grading and excavation activities include the placement of a 1,000 foot long, 50 foot wide and six foot tall earthen berm along the entire eastern edge of the project site (adjacent to Harbor Boulevard), the temporary removal of roughly 45,333[3] cubic yards of soil to facilitate de-watering activities and the installation of the peaker plant's foundation, as well as additional smaller scale earth moving activities necessary to install the foundations for the natural gas metering station and transmission substation. The majority of this excavated material would be used as backfill at the site of

[3] Based on information provided by SCE that estimates the size of the excavation area at 240 feet by 340 feet and the depth of the excavation at 15 feet. Upon completion of dewatering activities and the installation of foundation supports, the majority of this material would be used onsite to backfill this excavation or construct the six-foot high earthen berm along the eastern edge of the site.

excavation once the de-watering and foundation construction activities are completed. Excess material would be used to construct the earthen berm. Any remaining material would be disposed of at an appropriate offsite receiving facility. To enable excavation and foundation construction to proceed, SCE proposes to lower the water table at the construction site by between 8 and 10 feet.

Proposed de-watering activities would withdraw approximately 25 million gallons of groundwater from the project site within the first ten days and would then proceed at an estimated withdrawal rate of 2.5 million gallons per day for an estimated additional 172 days. These de-watering activities would require between 11 and 30 separate twenty-four inch diameter by 40 foot deep wells around the perimeter of the approximately two acre peaker plant foundation footprint. Groundwater withdrawn by the proposed well system would be directed to a 21,000 gallon Baker style de-sanding tank to allow suspended solid materials within the water to settle out before the water is discharged through an existing storm drain pipe into the Mandalay Canal. Material collected within the proposed de-sanding tank would be chemically analyzed and then either used in the proposed landscape berms or hauled away to an approved disposal site, based on the results of chemical analysis. During the proposed ten day initial de-watering period, operation of the pump system would be continuous for 24 hours per day and would then proceed at the frequency necessary to maintain the target water depth, based on the rate of ground water intrusion and return. The total estimated amount of groundwater proposed to be withdrawn and discharged into the Mandalay Canal is 455 million gallons. Upon completion of foundation construction, de-watering would cease.

SCE has provided Commission staff with the results of chemical analyses conducted on groundwater samples from the project site. All pollutant levels appear to be well within applicable limits established by the California Regional Water Quality Control Board. Groundwater is brackish due to seawater intrusion and proximity to the ocean. SCE has also provided the water sample lab results to the California Regional Water Quality Control Board and has submitted a Notice of Intent to comply with general waste discharge requirements and obtain a National Pollutant Discharge Elimination System (NPDES) Permit.

Transmission Lines and Poles: As shown in Exhibit 1, SCE also proposes to install approximately 1,350 circuit feet of transmission line, seven new 55-80 foot tall transmission poles (four within the peaker plant parcel to the west of Harbor Boulevard and three to the east of Harbor Boulevard) and replace seven existing transmission poles located east of Harbor Boulevard with new poles that are slightly larger and taller (ranging in size from 65-85 feet tall).

The routing of the transmission line would require placement of two 55-60 foot tall wood power poles within the project site to connect the peaker plant to the transmission substation and two additional 55-65 foot wood power poles also within the project site but south of the proposed substation to route the powerline to the point where it will cross Harbor Boulevard. After the line crosses Harbor Boulevard, it will be routed along an existing transmission line within an existing transmission corridor through SCE's property on the east side of the street. In order to accommodate the weight of the new transmission line, provide sufficient ground clearance for safety purposes, and route the line to the appropriate junction with the existing

transmission line east of the existing Mandalay Substation, approximately seven wood power poles from the current transmission corridor will be replaced by new wood power poles in the same or adjacent locations, and approximately two additional wood power poles and one additional steel power pole will be installed in new locations. The proposed steel pole would require a seven foot diameter reinforced concrete support foundation to be installed above ground at its proposed footing site adjacent to the Mandalay substation's existing unpaved service road (this pole location is referred to as number 4533721E on Exhibit 1). A steel pole is required at this location to resist the stresses of a "corner" location along the line.

Apart from the proposed steel pole, the new and replacement poles will be similar in appearance but approximately five to ten feet taller than the existing poles within the same transmission corridor along Harbor Boulevard, which range from 60 to 75 feet in height. Placement of these poles and their anchoring systems require the excavation of 32 augured holes, each between six and ten feet in depth with a diameter of two feet, and one concrete foundation (25 feet deep and seven feet in diameter). The total amount of ground proposed to be permanently occupied by these poles, footings and foundations would be approximately 87 square feet. SCE also proposes to temporarily disturb approximately 21,548 square feet of undeveloped land to the east of Harbor Boulevard for transmission line construction staging activities and to facilitate truck and equipment access to the proposed pole installation and removal sites. In regard to poles and transmission line installation activities, SCE notes:

> *For transmission line installation, access for vehicles will not require temporary or permanent roads, as the terrain is a fairly flat, dune type of terrain that can be accessed with all wheel drive line trucks… High ground clearance trucks that can drive over the existing vegetation and ground mats to stabilize the sand will be used to access and install the new poles to avoid the need to establish or pave new roads. Trucks will be driven on the shortest route to and from their destinations in the narrowest path possible.*

Additionally, SCE has committed to using existing paved and unpaved access roads whenever feasible.

Natural Gas Pipeline and Tie-in: As previously noted, the proposed peaker plant would be powered by natural gas and would require the construction of both a gas metering station on an approximately 40 foot by 75 foot foundation and an 1,800 foot long by six inch diameter natural gas pipeline. This pipeline would require a six square foot maintenance hatch at its tie-in location to the larger natural gas supply line that services the Mandalay Generating Station. While the metering station would be constructed adjacent to the proposed peaker plant within the peaker plant site to the west of Harbor Boulevard, the Southern California Gas Company (the entity that would construct and install this pipeline) has determined that the most feasible and preferred location for the proposed natural gas pipeline would be along the east side of Harbor Boulevard. Potential pipeline routes on the west side of Harbor Boulevard were rejected by SCE and the Southern California Gas Company due to the presence of telephone and electrical lines, associated concrete vaults and a ten-inch gas pipeline on this side of the road as well as the need to obtain a voluntary easement from Reliant in order to install the proposed pipeline on Reliant's property north of the Mandalay

Canal. SCE has therefore proposed to concentrate the trenching and pipeline installation activities within a 30 foot wide area stretching inland from Harbor Boulevard (at the pipeline's northern terminus this construction corridor would increase to 54 feet wide).

The proposed pipeline would cross the Mandalay Canal in a cell within an existing vehicle bridge and run approximately 1,000 feet north along the edge of the roadway before tying-in to an existing 20 inch diameter natural gas pipeline near the northern edge of the Reliant Generating Station property. The proposed project site and approximate transmission line and natural gas pipeline routes and footprints are shown in Exhibit 1. The pipeline would be installed at a minimum depth of 36 inches and a planned depth of 42 inches and would be trenched using a backhoe within approximately 30 feet of the shoulder area along the eastern edge of Harbor Boulevard. Approximately 1,200 cubic yards of material would be excavated during trench construction and would be side-cast within the proposed 30 foot wide pipeline corridor. Any material remaining after backfill operations would be taken off site and disposed of at an approved facility.

The total anticipated footprint required for pipeline trenching and installation activities (not including the potential use of a portion of Harbor Boulevard) would be approximately 36,000 square feet. Pipeline construction is expected to be carried out concurrent with peaker plant construction and would take approximately 7 weeks to complete. Construction equipment required for pipeline installation would include pipe trucks, dump trucks, welding equipment, and backhoes as well as boring and lifting equipment. The proposed staging area for pipeline trenching and construction would be located within the project site in the same location as the peaker plant construction staging area. Temporary closure of the northbound traffic lane on Harbor Boulevard may periodically be required during pipeline installation to allow the safe access and operation of equipment. As described within the mitigation measures included within Exhibit 8, which SCE has committed to implement, traffic control shall be provided during these activities.

Operation and Maintenance Access Requirements: SCE also would undertake routine repair and maintenance activities. Routine operation and maintenance of a typical SCE 66 kilovolt line is limited to a pole inspection every 10 years for rot and insect damage, and a yearly insulator wash. During inspections, other problems may be noted that require action. However, the existing 66 kilovolt lines in the project area are required to be inspected 4 to 5 times a year due to more corrosive climatic conditions on the coast (moisture and salt). Similarly, due to increased salt deposition, SCE would wash the insulators every four weeks from May to October (this may vary sometimes depending on rainfall).[4]

For the one 230 kilovolt transmission line that crosses the northern of the two SCE parcels, operation and maintenance work requires periodic inspection and insulator washing (same frequency as 66 kilovolt lines).

[4] A wash entails the use of a 3 axle truck with an 80-foot boom that drives along the line, stops at every pole, extends outriggers, elevates a boom and washes the insulators with high-pressure deionized water.

Permit History: On June 28, 2007, the City of Oxnard Planning Commission denied SCE's application for a coastal development permit to construct and operate the peaker plant. The Planning Commission also declined to adopt the Mitigated Negative Declaration (MND) prepared by the City pursuant to requirements of the California Environmental Quality Act. During the Planning Commission hearing of June 28, 2007, City of Oxnard Planning Commission staff explained their rationale for recommending that the MND not be adopted by citing an insufficient opportunity to respond to a letter submitted by the director of the Ventura County Department of Airports on June 26, 2007, directly prior to the Planning Commission hearing. This letter raised concerns regarding the proposed 80-foot peaker plant exhaust stack and the potential for this stack to alter departing aircraft flight patterns slightly and cause additional overflight of the Oxnard Shores neighborhoods, thus increasing noise impacts to those areas[5]. This issue was not addressed or analyzed in the MND and the City of Oxnard Planning Commission staff noted during the hearing that

> *It does give us concern as to whether the MND is adequate since we don't know whether the changing flight pattern could generate noise in those neighborhoods. Because we don't have that analysis in hand, we really can't say whether* [this potential impact is] *mitigated or less than significant and for that reason we are changing our recommendation to not adopt the MND at this time.*

The Planning Commission declined to adopt the MND based on this recommendation by Planning Commission staff as well as additional concerns raised during public testimony and Commission deliberations regarding the need for a more comprehensive Environmental Impact Report, the inadequacy of the MND's discussion of potential biological, aesthetic and cumulative impacts and the fact that the Planning Commission would not be required to certify the MND if they did not approve the project.

On July 10, 2007, SCE filed a timely appeal of the Planning Commission's decision with the Oxnard City Council. Despite the results of additional analysis of the airport and flight pattern issues which established several mitigation measures to reduce potential significant impacts, on July 24, 2007, in a single action, the City Council denied the appeal and also declined to adopt the MND. On July 27, 2007, the Coastal Commission received the City's Notice of Final Action and associated records to start the 10-working-day appeal period, which ended August 10, 2007. SCE filed its appeal on August 10, 2007, and on September 6, 2007, the Commission found that the appellant had raised a substantial issue regarding the conformance of the City of Oxnard's coastal development permit denial with the LCP. At this time, the MND remains an uncertified draft document.

---

[5] Subsequent to the Planning Commission hearing at which the concerns about the impact of the project's stack on the Oxnard Airport were first raised, SCE provided additional information to the Ventura County Department of Airports (VCDOA) regarding the proposed project. In response to questions raised by Commission staff regarding this issue, SCE has noted that based on this information, the VCDOA determined that the stack would have no adverse impact on air traffic from the Oxnard Airport. During its discussions with the VCDOA, SCE agreed to (1) grant the County of Ventura an avigation easement over the parcel that is consistent with the FAA's model avigation easement for airport operations; (2) file FAA form 7460, "Notice of Proposed Construction" for the peaker plant and any associated construction equipment such as cranes; and (3) mount an obstruction light consistent with FAA Advisory Circular 150/5345-433 on the top of the exhaust stack.

Permit Jurisdiction: The proposed project would be located within the Coastal Zone in the City of Oxnard and is subject to the City's certified Local Coastal Plan (LCP). The proposed project is a "major energy facility" as defined in the Commission's regulations[6], and is therefore subject to appeal to the Coastal Commission, pursuant to Coastal Act Section 30603(a)(5).[7]

Standard of Review: As a "de novo" application and pursuant to Section 30604(b) of the Coastal Act, the standard of review for the proposed development is, in part, the policies, standards, and provisions of the City of Oxnard Local Coastal Program (LCP). In addition, pursuant to Section 30604(c) of the Coastal Act, all proposed development located between the first public road and the sea, including those areas where a certified LCP has been prepared, such as the project site, must also be reviewed for consistency with the Chapter 3 policies of the Coastal Act regarding public access and public recreation.

Appeal Issues Found to Raise a Substantial Issue: In its appeal, SCE contended that the City's denial of its CDP application was based on an erroneous interpretation of its LCP. SCE specifically contended that the City erred in determining that the City's Coastal Zoning Ordinance allows only "coastal-dependent" energy facilities to be located at the proposed project site. SCE argued that the proposed project could be permitted under the zoning designation's allowable conditional use as an "electrical power generating plant and accessory uses normally associated with said power generating facility." The question of whether or not the zoning designation of the proposed project site requires facilities developed on that site to be "coastal dependent" was found to raise a substantial issue by the Commission.

City of Oxnard Local Coastal Program Structure: The coastal development policies and standards that apply to the subject project site are found in the two documents that make up the City's LCP, namely the Coastal Land Use Plan and Coastal Zoning Ordinance. The Commission certified with suggested modifications the City of Oxnard's Coastal Land Use Plan (LUP) in July 1981. In May 1982, the City accepted modifications and the Land Use Plan was effectively certified.

The City's implementation program (Coastal Zoning Ordinance) was approved with Suggested Modifications in January 1985. In March 1985, the City accepted the suggested modifications, the Coastal Zoning Ordinance was effectively certified, and the City assumed permit authority over that portion of its Coastal Zone landward of the mean high tide line.

As described above, the coastal zoning map (Exhibit 7) shows one zone designation for all

---

[6] Coastal Act Section 30107 defines "energy facility" as "any public or private processing, producing, generating, storing, transmitting, or recovering facility for electricity, natural gas, petroleum, coal, or other source of energy. 14 Cal. Admin. Code Section 13012(a) defines, in relevant part, "major energy facilities" as those "that cost more than one hundred thousand dollars ($100,000)…" Edison states that the project would cost approximately $50 million to build.

[7] Coastal Act Section 30603(a) states, in relevant part: "After certification of its local coastal program, an action taken by a local government on a coastal development permit application may be appealed to the commission for only the following types of developments: … (5) Any development which constitutes a major public works project or a major energy facility."

areas in which development associated with the proposed project would occur. The designation is "Coastal Energy Facilities" Sub-Zone (EC). As detailed further in the section below titled "Zoning Designation," this zoning allows only energy related uses on the property.

Expansion of Existing Power Plants: In 1978, 1984, and 1985, pursuant to Section 30413(b) of the Coastal Act, the Coastal Commission adopted, revised and re-adopted a report titled "Designation of Coastal Zone Areas Where Construction of an Electric Power Plant Would Prevent Achievement of the Objectives of the California Coastal Act of 1976." That report identified sensitive resource areas along the California coast and designated them as areas *not* suitable for power plant siting. All designated protected areas (which include state and federal parks, sensitive plant and wildlife habitat areas, and special agricultural lands that were known to exist at the time) are displayed on 162 maps of the coastal zone. The designations do not preclude "reasonable expansion" of the then 19 existing coastal power plants, including the Mandalay Power Plant.

As part of a parallel process that occurred in conjunction with the CCC and San Francisco Bay Conservation and Development Commission (BCDC), the California Energy Commission (CEC) released a report in June of 1980 titled, "Opportunities to Expand Coastal Power Plants in California." This report was also produced in response to the mandates of Coastal Act Section 30413 and is based on a study conducted by the CEC, CCC and BCDC that specifically examined opportunities for the "reasonable expansion" of existing coastal zone power plants in California. The study also considered the effects of the CCC and BCDC designation of areas not suitable for coastal power plant siting and specified the location and extent of those areas within the coastal zone that supported coastal power plants in 1980. As noted in the CEC report:

> *An important aspect of this study involves the concept of "reasonable" expansion opportunities. The legislative mandates of the CCC and the BCDC require that their designations to protect coastal resources not be applied to specific areas necessary for the "reasonable" expansion of existing coastal zone power plants of 50 MW or more. This broad declaration is sufficient to convey the Legislature's intent with respect to provision of expansion opportunities on a general level, but it results in ambiguity when application is attempted at site-specific levels. A practical definition of "reasonable," more applicable to the site-specific situations involved in the study, is required to maintain the study's validity.*
>
> *In the interests of these requirements, the staff has defined "reasonable" with respect to expansion opportunities as meaning the provision, or maintenance, of land area adequate to satisfy a specific site's share of the state's need for increased electrical power generating capacity over the CEC planning intervals of 12 and 20 years. The area provided should be sufficient to meet the site's share of the demand for sites on a statewide basis within or adjacent to the existing plant boundaries, or lying within a distance which would permit a cost-effective use by the new power units of the support facilities of the existing power units, where necessary, or advisable. The determination of the effects of CCC and BCDC designations on expansion*

> *opportunities at each site is also based on the effects of other conventional siting factors on these same opportunities, since the designations are not expected to exist in a land use planning vacuum. To the extent that the CCC and BCDC designations provide for this type of expansion opportunities, they are determined to be "reasonable."*

The CEC report built on this definition of "reasonable expansion" and included maps designating the location and extent of coastal power plants and the adjacent areas determined to be suitable for reasonable expansion of these facilities. The map provided of the Mandalay Generating Station in Oxnard (shown in Exhibit 11) clearly includes the location of the proposed peaker facility within that area designated as a "power plant area."

B. Zoning Designation

The project site is located within an area identified in the City of Oxnard's LCP as a Coastal Energy Facility Sub-zone. The LCP's Coastal Zoning Ordinance Section 17-20(A), describes the Coastal Energy Facilities Sub-Zone designation as follows:

> *Purpose - The purpose of the* [Coastal Energy Facilities] *sub-zone is to provide areas that allow for siting, construction, modification and maintenance of power generating facilities and electrical substations consistent with Policies 51, 52, 54, 55 and 56 of the Oxnard coastal land use plan. Additionally, the EC sub-zone is designed to provide a framework for coordinating the requirements and responsibilities of applicable city, State and federal regulatory agencies vested with the authority for reviewing energy facility development. To assure consistency with the Oxnard coastal land use plan, the following coastal act provisions and land use plan policies shall apply:*
>
> *(1) Coastal dependent energy facilities shall be encouraged to locate or expand within existing sites and shall be permitted reasonable long-term growth, where consistent with this article. (Coastal Act, Section 30260)*
> *(2) All new energy related development shall conform to the air quality regulations set forth by the Ventura County Air Pollution Control District, the air quality management plan and new source review rule 26. (Policy 29)*
> *(3) Energy related development shall not be located in coastal resource areas including sensitive habitats, recreational areas and archeological sites. All development adjacent to these resource areas or agricultural areas shall be designed to mitigate any adverse impacts. (Policy 30)*
> *(4) All new energy related development shall be located and designed to minimize adverse effects upon public access to the beach. (Policy 54)*
> *(5) No energy related development shall be located seaward of the 100 year flood/wave run-up line as designated by the U.S. Department of Housing Insurance Program Administration and the land use map of the Oxnard coastal land use plan. (Policy 56)*
> *(6) Wastewater from any energy related facilities shall be treated as necessary and put to reuse including, but not limited to the following:*
> *(a) Re-injection into the aquifer or ground water recharge system; and*

(b) Recycling for industrial, agricultural or urban use. (Policy 64)

The LCP's Coastal Zoning Ordinance Section 17-20(B) describes the types of development that can be considered for approval within the Coastal Energy Facility Sub-zone as follows:

> *Conditionally permitted uses - The following uses are permitted subject to the approval of a coastal development permit pursuant to the provisions of article V:*
>
> *(1) Off-street public parking facility;*
> *(2) Electrical power generating plant and accessory uses normally associated with said power generating facility;*
> *(3) Electrical substation; and*
> *(4) Natural gas pump and extraction facilities.*

As noted in Exhibit 5, the City's denial of the proposed project was based on its determination that the proposal did not conform to the designated zoning for the parcel on which the project is to be located. Pursuant to the City of Oxnard LCP's Coastal Zoning Ordinance at Section 17-20, the parcel is designated as Coastal Energy Facility Sub-Zone. The City's rationale for denying the proposal is that the zoning designation requires any energy facility on the site to be coastal dependent.[8] SCE, the City and the Commission agree that the proposed peaker plant is not a coastal-dependent industrial facility because it does not rely on a site "on, or adjacent to, the sea" to function. SCE contends that this zoning designation allows non-coastal dependent facilities and that the City therefore erred when it determined the proposed project would have to be coastal-dependent to be sited at this location.

For this issue, the key subsection of this provision is Section 17-20(A)(1), which states that "coastal dependent energy facilities shall be encouraged to locate or expand within existing sites and shall be permitted reasonable long-term growth, where consistent with this article." The City's interpretation of this subsection is that the proposed project could not be sited at this location because it is not a coastal dependent energy facility. This subsection, however, is the only one that refers to "coastal-dependent" facilities, and it only "encourages" such facilities to locate within "existing sites." The other subsections apply generally to "energy related developments," not exclusively to "coastal-dependent" developments. Additionally, these subsections are all subject to the overarching provision of Section 17-20(A), which states that this zoning designation allows "power generating facilities and electrical substations" and is therefore not limited to "coastal-dependent" facilities.[9] The Commission therefore finds that the City's Coastal Energy Facilities sub-zone designation is not exclusive

[8] Both the City's LCP at Section 17-3(12) and Section 30101 of the Coastal Act define a "coastal-dependent development or use" as "any development or use which requires a site on, or adjacent to, the sea to be able to function at all."

[9] Further, the LCP's definition of "energy facility" does not specify that such facilities must be coastal-dependent. LCP Section 17-3(25) defines an "energy facility" as "any public or private processing, producing, generating, storing, transmitting or recovering facility for electricity, natural gas, petroleum, coal or other sources of energy."

to "coastal-dependent" energy developments and that as an "electrical power generating plant" the proposed project is a conditionally permitted use of the proposed project site.

The City continues to disagree with this interpretation of its Coastal Energy Facilities Sub-Zone zoning ordinance and has recently taken steps to further clarify its interpretation of the intent of this zoning ordinance. On February 19, 2009, the Planning Commission passed a resolution which inserted several references to coastal dependent energy facilities in the language of the Coastal Energy Facilities Sub-Zone zoning ordinance. This amendment was subsequently forwarded to the Oxnard City Council but has yet to be considered. If the proposed resolution were to be approved by the Oxnard City Council it would then be submitted to the Commission for its consideration. Specifically, the amended sections of the coastal zoning ordinance would read as follows – proposed insertions are in bold and underlined:

> *SEC. 17-20. EC, COASTAL ENERGY FACILITIES, SUB-ZONE*
> *Purpose - The purpose of the EC sub-zone is to provide areas that allow for siting, construction, modification and maintenance of* ***COASTAL DEPENDENT*** *power generating facilities and electrical substations consistent with Policies 51, 52, 54, 55 and 56 of the Oxnard coastal land use plan….*
> …
> *(B) Conditionally permitted uses - The following uses are permitted subject to the approval of a coastal development permit pursuant to the provisions of article V:*
>
> > *(1) Off-street public parking facility;*
> >
> > *(2)* ***COASTAL DEPENDENT*** *electrical power generating plant and accessory uses normally associated with said power generating facility;*
> >
> > …

In its review and consideration of this change to the Coastal Energy Facilities Sub-Zone zoning ordinance, the Planning Commission stated that "the proposed text amendment clarifies the existing meaning of an established allowed use" by removing all potential ambiguity as to the intent of this zoning designation and making it clear that only coastal dependent electrical power generating facilities would be conditionally permitted uses of the Coastal Energy Facilities Sub-Zone. Because these proposed amendments are pending consideration by both the City Council and the Commission, the Commission finds that the proposed peaker plant is still a conditionally permitted use of the Coastal Energy Facilities Sub-Zone.

C. Biological Resources and Water Quality

Local Coastal Policy 6 states, in relevant part: *As a part of the Phase III Implementation portion of the LCP process, a resource protection ordinance was created, defining the only uses permitted in areas designated on the land use map with the Resource Protection Zone. The ordinance incorporated the following policies which the City will implement to the extent of its legal and financial ability:*

a. All nonauthorized motor vehicles shall be banned from sensitive areas.
b. Scientific, educational and light recreational uses shall be conditionally permitted uses in all sensitive resource areas. Development shall be designed and sited to minimize impacts to the area. Permitted uses shall not be allowed to significantly disrupt habitat values.
c. In sand dune areas, foot traffic shall be minimized, and allowed only on established paths or boardwalks. Disturbance or destruction of any dune vegetation shall be prohibited unless no feasible alternative exists and then only when revegetation with native California plants is a condition of approval.
d. New development adjacent to wetlands or resource protection areas shall be sited and designed to mitigate any adverse impacts to the wetlands or resource.

A buffer of 100 feet in width shall be provided adjacent to all resource protection areas. The buffer may be reduced to a minimum of 50 feet only if the applicant can demonstrate the large buffer is unnecessary to protect the resources of the habitat area. All proposed development shall demonstrate that the functional capacity of the resource protection area is maintained. The standards to determine the appropriate width of the buffer area are:

1) biological significance of the area
2) sensitivity of the species to disruption
3) susceptibility to erosion
4) use of natural and topographical features to locate development
5) parcel configuration and location of existing development
6) type and scale of development proposed
7) use of existing cultural features to locate buffer zones

When a development is proposed within an environmentally sensitive habitat or a resource protection area, or within 100 feet of such areas, a biological report shall be prepared which includes applicable topographic, vegetative and soils information. The information shall include physical and biological features existing in the habitat areas. The report shall be prepared by a qualified biologist, and shall recommend mitigation measures to protect any impacted resources. All recommendations shall be made in cooperation with the State Department of Fish and Game. When applicable, restoration of damaged habitats shall be a condition of approval.

e. When a development is proposed within or near an environmentally sensitive habitat area, applicable topographic, vegetative and soils information shall be provided. The information shall include physical and biological features existing in the habitat areas.
f. …

Local Coastal Policy 52 states, in relevant part: *Industrial and energy-related development shall not be located in coastal resource areas, including sensitive habitats,*

recreational areas, and archaeological sites. All development adjacent to these resource areas or agricultural areas shall be designed to mitigate any adverse impacts…

The LCP contains several policies that provide for the protection of biological resources and sensitive habitat areas and that establish buffer distances around wetlands and other resource protection areas. The LCP also includes policies that provide for the maintenance and restoration of the quality of coastal waters. Applicable LCP policies include Local Coastal Policy 6 which requires development adjacent to wetlands or resource protection areas to include a 50-100 foot buffer between any development and the wetlands or resource protection areas; Local Coastal Policy 10 which requires runoff into coastal waters to be minimized and riparian vegetation to be protected; Local Coastal Policy 52 which limits development within sensitive habitats and requires development adjacent to resource protection areas to mitigate any adverse impacts to these resource areas; and Local Coastal Policy 57 which establishes a variety of routing and design considerations for the placement of pipelines within habitat and coastal resource areas. The full text of these policies is included in Appendix B.

Biological Features of Project Area: The project consists of development in two distinct areas of SCE's property. The peaker plant site is proposed to be located in an area that was once a tank farm that provided fuel oil storage for the Mandalay Generating Station. This former tank farm site was graded flat, covered by sandy fill material and vacated of structures and above ground utilities several years ago. SCE is also proposing development on its property east of Harbor Boulevard, to install a natural gas pipeline and ten new and replacement transmission poles.

Reports from biological surveys of the peaker plant site (former tank farm) conducted by Keane Biological Consulting on the mornings of September 20, 2006, and February 15, 2007, have noted that "no amphibian or fish species are expected to occur on the project site, which supports no aquatic or marine habitat" and "no reptile species were observed during the survey, although several species including the side-blotched lizard, western fence lizard, southern alligator lizard, San Diego coast horned lizard [a federal species of concern], western rattlesnake, and gopher snake are expected to occur in the project vicinity." Furthermore, the biological survey notes that "very few bird species were present on the site during the survey" with the most abundant species being the non-native European starling and additional observed species including American kestrel, black phoebe, American crow, house finch and belted kingfisher (heard offsite in the adjacent Mandalay Canal). Additional wildlife was observed indirectly, with tracks of coyote or grey fox, Botta's pocket gopher and Audubon's desert cottontail present.

Despite the apparently sparse biological resources noted during the biological surveys pf the peaker site, it borders areas containing significant biological resources. The southern border of the proposed project site[10] is adjacent to a segment of Mandalay State Beach that supports one of the two remaining stretches of undisturbed coastal sand dunes that exist within Ventura County. This inland portion of Mandalay State Beach has been identified in the City of

[10] Please note discussion on the following page regarding the Commission staff's delineation of the project site.

Oxnard's certified LCP as an environmentally sensitive habitat area and designated as a Resource Protection sub-zone in the City of Oxnard's Coastal Zoning Ordinance. As noted in the LCP, this "26-acre area of dunes at the intersection of Fifth Street and Harbor Boulevard is an excellent example of this increasingly rare habitat" and has thus been provided with protected status due to the rarity and diversity of plant and animal life it supports.

In addition, the northern border of the proposed project site is adjacent to the Mandalay Canal, a five mile long engineered coastal waterway that is linked to Channel Islands Harbor and provides the Reliant Mandalay Generating Station with ocean water for its cooling system. Although the Mandalay Canal has not been specifically identified by the certified LCP as a wetland area,[11] it does contain brackish marine waters and is known to provide habitat and forage for a number of marine, estuarine and riparian species, including many that have been recognized with state and/or federal protection.

On its west side, the proposed project site is approximately 750 feet from the Pacific Ocean, a lesser distance from the dunes of Mandalay State Beach and approximately 1,000 feet from McGrath State Beach. Mandalay and McGrath State Beaches contain wetland, dune, backdune and riparian habitats. These state parks also support significant breeding populations of both the state and federally endangered California least tern and the federally threatened western snowy plover.

As described above, in addition to the proposed peaker plant site to the west of Harbor Boulevard, SCE also proposes development activities east of Harbor Boulevard. On a 37-acre area to the east of Harbor Boulevard, both to the north and south of the Mandalay Canal, which currently includes five 66 kilovolt transmission lines, two 220 kilovolt transmission lines, and an electrical transmission substation, SCE proposes to install seven new or replacement transmission poles and an 1,800 foot-long six-inch diameter natural gas line and tie-in.

Habitat on SCE's property east of Harbor Boulevard is comprised of a degraded southern dune scrub community dominated by invasive ice plant (*Carpobrotus edulis*) and native mock heather, also known as California goldenbush (*Ericameria ericoides*). Other native shrubs and herbaceous dune plant species supported on the site in lesser abundance include California buckwheat (*Eriogonum fasiculatum ssp. fasiculatum*), hairy false goldenaster (*Heterotheca villosa*), California encelia (*Encelia californica*), lemonade berry (*Rhus integrifolia*), California sagebrush (*Artemisia californica*), California croton (*Croton californicus*), deerweed (*Lotus salsuginosus),* lance-leaved dudleya (*Dudleya lanceolata*), prickly-pear (*Opuntia littoralis*), California cudweed aster (*Lessingia filaginifolia filaginifolia*), beach bur (*Ambrosia chamissonis*), beach sand verbena (*Abronia umbellata umbellata*), beach saltbush (*Atriplex leucophylla*), beach evening primrose (*Camissonia cheiranthifolia*). The common non-native dune plant sea rocket (*Cakile maritima*) is also present. Although the state and federally endangered Ventura marsh milkvetch (*Astragalus*

[11] The LCP notes that "The wetlands occurring in the city are located in the Ormond Beach area and a portion of the Santa Clara River mouth area covering approximately 131 acres." This list of wetland areas is not comprehensive, however, and, as explained below, the LCP includes a definition of "wetlands" that would include the Mandalay Canal.

pycnostachyus var. *lanosissimus*) and other listed and rare plant species have been observed on neighboring and nearby parcels, biological surveys carried out by SCE's biological consultants in February and September of 2007 and more recently with the participation of the Commission's staff ecologist in May, June, August and October of 2008 have not revealed the presence of any special status species within the proposed disturbance areas or their immediate vicinity.

As described by Commission staff ecologist Dr. Engel in Exhibit 6, this portion of the project area nevertheless contains native plant species characteristic of southern dune scrub, a habitat type that is recognized by the California Department of Fish and Game in the California Natural Diversity Database's List of California Terrestrial Natural Communities as a rare natural community of highly limited distribution due to its scarcity and declining status in southern California. The remnant dunes adjacent to the southern edge of the project area, both to the west and east of Harbor Boulevard, have been characterized in the Ventura County General Plan as remnants of the once-extensive Mandalay coastal dune complex.

Portions of this dune complex outside the project area are designated as environmentally sensitive habitat areas by the Coastal Area Plan of the Ventura County General Plan, however, the portion at the project site is not so designated. The City of Oxnard has also designated portions of the Mandalay dune complex, specifically those areas within Mandalay State Beach, as sensitive habitat. Southern dune scrub habitat is ranked by the California Department of Fish and Game as S1.1, which is described as "very threatened," and is of high priority for conservation. It is estimated that less than 2,000 total acres of this habitat remain in California. In its February 5, 2009 letter to Commission staff, provided as Exhibit 15, SCE asserts that the area East of Harbor Boulevard should not be considered to be an Environmentally Sensitive Habitat Area (ESHA) because it is not specifically identified as ESHA in the certified LCP. The City's LCP, however, incorporates the Coastal Act definition of ESHA, [12] and while it gives examples of the types of sensitive habitats that might qualify as ESHA, and it describes the location of some of those areas, there is no indication in the LCP that these described areas represent the only areas within the City's Coastal Zone that meet the criteria to be considered ESHA.[13] The Commission must therefore examine whether the facts show that the area east of Harbor Boulevard qualifies as ESHA.

In the Commission's May 22, 2002, approval of the LCP amendment that allowed development of the Northshore at Mandalay Bay residential project (major LCP amendment number OXN-MAJ-1-00) on the adjoining parcel to the south, a parcel which supports a very similar suite of plant species and physical habitat characteristics along its northern edge, the Commission found that the dune scrub in this area was best described as a disturbed sensitive

[12] LCP Policies 6, 52, and 57 refer to ESHA and the definition section of the City of Oxnard Coastal Land Use Plan includes the following definition of ESHA: "Environmentally sensitive habitat area means any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments."

[13] Edison claims that the recent case of *Security National Guaranty, Inc. v. California Coastal Commission*, 159 Cal.App.4th 402 (2008) ("*SNG*") compels the Commission to find that there is no ESHA on the project site. The subject LCP in *SNG*, however, explicitly stated that there was no ESHA on the project site, whereas here, there is no such provision.

resource of greatly diminished biological and ecological value. The Commission did not consider this dune scrub habitat to qualify as ESHA in part due to its "disturbed and dispersed nature" on the site, the substantial soil and groundwater contamination of the site, as well as the fact that the dominant vegetation existing onsite was invasive iceplant. Specifically, the Commission adopted revised findings for major LCP amendment number OXN-MAJ-1-00 on May 22, 2002, which find that:

> *The existing habitat onsite* [and adjacent to the SCE parcel] *would not likely sustain healthy, viable vegetation communities on a long term basis if left to the course of nature. The dominant vegetation existing onsite is iceplant, a non-native, invasive plant species, which is encroaching upon the native vegetation onsite. Iceplant has been observed within the willow vegetation, dune scrub vegetation, and the milk-vetch community. Myoporum, a non-native, invasive tree species also occurs in various areas throughout the site, particularly in association with willow vegetation. Both iceplant & myoporum are fast growing species, are characterized by aggressive growth patterns, and can grow in a variety of habitat and soil conditions. Due to the adaptive abilities of non-native plants, such species tend to outcompete native plant species for available water, nutrients, sun and habitat.*
> …
> *These plant communities are in a degraded, disturbed state and thus, have reduced biological value. However, these vegetation types are typically considered to be ESHA due to their limited extent and high biological value within an ecosystem. Notably, the southern dune scrub is normally considered a sensitive biological resource because it has been severely depleted in Southern California and because of its value in supporting several special-status plant and wildlife species. In this case, however, because of the degraded and dispersed nature of these plant communities on the site in conjunction with the highly contaminated soil and groundwater environment, the biological and ecological value of these communities is greatly diminished. Therefore they do not fully qualify as ESHA in this situation.*

Additionally, in regard to the subject SCE property to the east of Harbor Boulevard, the Commission found that this parcel is also a "sensitive disturbed dune area" due to the presence of dune scrub species and predominance of some of the same sources of habitat disturbance and degradation which were found to exist within the Northshore at Mandalay Bay area.

The Commission staff's recent visits to the SCE property supports the Commission's previous findings that the southern dune scrub habitat present within the project area remains substantially degraded and disturbed. Chronic disturbance from public utility infrastructure installation and maintenance activities over the years has been substantial – an electricity transmission substation, gravel staging and storage area, several dirt roads, two underground natural gas pipelines and several dozen transmission poles and overhead power lines exist on the site and transmission line cleaning and maintenance activities involving the use of high clearance trucks along each of the seven transmission line corridors occur once every four weeks. Additionally, the proximity of the site to Harbor Boulevard contributes to the chronic disturbances listed above, in altering the topography, availability and movement of sand, as

well as to reduce the abundance of native species from the area and facilitate the introduction and spread of non-native vegetation such as ice plant.

To maintain the safety and proper functioning of the power lines, every four weeks SCE carries out cleaning and testing activities within the project area which require the use of high clearance service vehicles capable of driving across the vegetated and sandy dune areas to access the seven transmission line corridors and each of the dozens of existing transmission poles. Much of the project area lying along Harbor Boulevard has also been subject to frequent vegetation and soil disturbance over the years due to the accumulation of litter, automotive debris and road runoff and the occasional use of the road shoulder and adjoining habitat by parked and broken-down vehicles. Further, although comprehensive soil testing of the SCE site has not been conducted, the significant hydrocarbon and industrial materials contamination of the soil and groundwater on the adjoining Northshore at Mandalay site may have affected adjacent portions of the project area and contributed to the degradation of native species and dune habitats. Most notably however, the predominance of invasive plant species has contributed substantially to the disturbed and dispersed nature of southern dune scrub vegetation throughout the project area. The Commission's staff ecologist, Dr. Engel, found that iceplant comprises up to 40% of the ground cover in some locations and as described in the February 5, 2009 letter from SCE (attached as Exhibit 15), percent coverage of invasive vegetation combined with bare or disturbed ground accounts for between 84% and 89% of the area along transects that include the proposed project's disturbance footprints. When considered cumulatively, the many sources of habitat disturbance on the SCE property east of Harbor Boulevard have diminished the biological and ecological value of these plant communities such that the Commission believes it is appropriate to characterize the area as degraded southern dune scrub habitat but not ESHA.

Nevertheless, in spite of these impacts and potentially due to the proximity of this area to more intact southern dune scrub habitat across Harbor Boulevard at Mandalay State Beach (an area that has undergone comprehensive and successful invasive plant species removal efforts), characteristic native dune scrub species continue to colonize and exist within the proposed project area to the east of Harbor Boulevard. This is representative of many remaining dune communities which, despite experiencing degradation, continue to support an array of native plants and animals uniquely adapted to this sandy substrate transition zone between land and sea.

Proposed Habitat Disturbance: As described above, SCE has proposed to carry out construction activities on both a 4.6 acre portion of its graded brownfield site to the west of Harbor Boulevard as well as a roughly one acre portion of its partially developed parcels to the east of Harbor Boulevard. Although some limited re-colonization of the graded brownfield site by native and invasive plant species has occurred subsequent to the removal of SCE's oil storage tanks and associated equipment several years ago, this site provides very limited habitat value in its existing condition and SCE's proposed use of this site for the peaker facility, substation and metering station would not result in the disturbance or loss of sensitive or high quality habitat. Because the habitat areas to the east of Harbor Boulevard are more intact, a detailed discussion of the proposed use of these areas is included below.

Natural Gas Pipeline. To provide the peaker facility with the natural gas needed to power its turbines and generators, SCE has proposed to install, connect and bury a natural gas supply pipeline parallel to Harbor Boulevard on the inland side. These activities would require (a) excavation of an 1,800 foot-long by a minimum depth of 36 inches and a planned depth of 42 inches deep pipeline trench within a pipeline corridor located to the east of the inland lane of Harbor Boulevard; (b) temporary use of 36,000 square feet for trenching, soil sidecasting, vehicle and equipment access, storage and staging; and (c) permanent use of roughly six total square feet of habitat area for installation of a pipeline tie-in point access hatch. An aerial photograph detailing these proposed permanent and temporary use areas is provided as Exhibit 1.

As described in the biological characterization section above, although the habitat along the proposed pipeline corridor supports native dune scrub species, the area is also highly degraded, has undergone a variety of historic and chronic disturbances and is largely dominated by invasive plant species. The level of disturbance increases with proximity to Harbor Boulevard and the area within six feet of the road contains an existing pipeline right-of-way that has been previously trenched to allow the installation of an existing natural gas pipeline. Although vegetation has returned subsequent to this activity, native plant cover in this area is limited. Exhibit 15 includes the results of a biological evaluation carried out by SCE's consultant biologist that included a transect survey of the habitat directly adjacent to Harbor Boulevard:

> *Native plant cover along the transect comprises only approximately 10.7 percent of the total cover. The remainder is comprised of 48.4 percent non-native cover, 29.3 percent unvegetated sand dune, 7.3 percent disturbed bare areas, and 4.3 percent asphalt. Furthermore, when just the vegetated areas are considered, the level of disturbance is very high, with approximately 82 percent of all vegetation consisting of non-native species.*

Additionally, in the area directly adjacent to the northbound lane of Harbor Boulevard, disturbances, debris and litter from vehicle traffic have also accumulated over the years and contributed to the degradation of the viability and quality of the habitat located here. Although most of its discussion is focused on the biological value of the larger site, a March 10, 2009 letter to Commission staff from David Magney Environmental Consulting on behalf of the Los Padres Chapter of the Sierra Club (included within the correspondence attached to this report) provides a brief description of the area adjacent to Harbor Boulevard and some of the types of disturbance present within it:

> *Debris is found at scattered locations of the site and some areas have been graded and filled, primarily in the western portion adjacent to Harbor Boulevard. Debris observed onsite includes concrete rubble, rusted pipes, steel cables, strands of barbed wire, and other trash. Regardless, much of the site is in relatively pristine condition.*
>
> *The previously disturbed areas either are dominated by invasive exotic plant species or represent a large component of the vegetation. The dominant invasive exotic plant on the parcel is Hottentot Fig (Carpobrotus edulis), a common mat-forming shrub in*

> *the Ice Plant family (Aizoaceae). This invasive exotic plant has also invaded surrounding habitat, often competing with native plants. Tree Tobacco (Nicotiana glauca) is another invasive exotic plant onsite, but of only limited quantities and not highly competitive.*

Much of the most substantial and prevalent disturbance on the SCE parcel to the east of Harbor Boulevard is concentrated within the area in closest proximity to Harbor Boulevard. LCP Policy 57 includes conditions that must be met if pipelines cannot be routed around coastal resource areas, including habitat.

The Commission evaluated two potential pipeline re-route options that would avoid or reduce habitat disturbance: (1) installing the pipeline on the west side of Harbor Boulevard and (2) installing the pipeline directly adjacent to the east side of Harbor Boulevard and limiting construction and trenching activities to within six feet of the paved road . Moving the pipeline to the west side of Harbor Boulevard is not feasible because of spatial constraints. Specifically, because the area adjacent to the western edge of Harbor Boulevard currently supports underground telephone and electrical lines, associated concrete vaults and a ten-inch gas pipeline, there is not sufficient space in which to install the proposed pipeline. Additionally, in order to carry out pipeline installation along this western route, SCE would need to obtain a voluntary easement from Reliant in order to install the proposed pipeline on Reliant's property north of the Mandalay Canal. Re-locating the pipeline directly adjacent to the east side of Harbor Boulevard would, according to the Southern California Gas Company (the entity that would install this pipeline), require closure of both lanes of Harbor Boulevard for approximately seven weeks. Given the substantial traffic and access impacts such a road closure would cause, SCE concluded, and the Commission agrees, that this option is not preferable to the proposed route.

As required by LCP Policy 57, pipelines within coastal resource areas (including habitat areas) shall only be permitted if seven conditions are met (the text of LCP Policy 57 is included in Appendix B to the Staff Report). The first two conditions apply specifically to pipelines designed to carry liquids and are not relevant in this case. The remaining five conditions have been met or exceeded by SCE as described in an April 3, 2009 letter to Commission staff:

- *Condition 3* [which requires a survey to be conducted along the route of any proposed new pipeline in the coastal zone to determine what, if any, coastal resources may be impacted] *has been met with the many biological surveys conducted by the Coastal Commission Staff and SCE's biologists. These surveys have confirmed that* [the proposed pipeline] *will not affect any sensitive resources or habitats. In any case, the biological composition of the degraded area present has been accurately characterized in detail for the record, and any disturbed ground will be restored per the Applicant's McGrath Beach Peaker Landscaping and Restoration Plan dated February 20, 2009.*
- *Condition 4 of Policy 57* [which requires the applicant to submit a re-vegetation plan that includes provisions for the restoration of any habitats disturbed by construction or operation of the proposed pipeline] *has been met with Special*

Condition 3.b of the Coastal Development Permit, which "(2) clarifies that revegetation of those areas disturbed during . . . installation of the natural gas pipeline . . . shall be accomplished with native plant species representative of the southern dune habitat community and grown from locally collected seeds." Again, this will be accomplished via the aforementioned Applicant's McGrath Beach Peaker Landscaping and Restoration Plan.

- *Condition 5* [which requires the area crossed by the pipeline to be re-surveyed one year after completion of construction to determine the effectiveness of the restoration plan] *has also been met with the McGrath Beach Peaker Landscaping and Restoration Plan, which calls for performance monitoring for years one through 5 after the completion of planting, with reporting to the Executive Director.*
- *Condition 6* [which requires the posting of a performance bond by the applicant to ensure compliance with these provisions] *will be met prior to ~~construction of the gas pipeline~~issuance of the CDP by posting of a performance bond to ensure the ~~pipeline installation work and~~ post-construction restoration is completed. SCE estimates the total cost of pipeline ~~installation and~~ restoration work to be ~~$3 million~~100,000.*
- *Condition 7* [which prohibits the use of herbicides during pipeline construction] *will be met by avoiding use of any herbicides during gas pipeline construction and restoration of areas disturbed during pipeline construction.*

To implement SCE's offer to post a performance bond, as specified by condition six of LCP Policy 57, the Commission is requiring **Special Condition 8** to ensure that successful restoration and revegetation of the pipeline disturbance corridor is accomplished.

As discussed below in the section on public access and recreation, proposed pipeline construction activities to the east of Harbor Boulevard may periodically result in temporary closures to the northbound lane. The use of traffic control measures to mitigate for this closure is provided through **Special Condition 2.** The measures specified in **Special Condition 2** require that a registered traffic control engineer prepare a Traffic Control Plan for City approval, follow the standards set forth by Caltrans, designate required traffic patterns or temporary road closures for construction, provide construction work road signs and provide safety measures to separate motorists from the construction workers and the work zone. SCE has committed to implement these measures.

Although SCE believes that the possible addition of an access lane for the Northshore at Mandalay Bay residential site or expansion of Harbor Boulevard with additional lanes would require the first several dozen feet of SCE's parcels to be graded and paved, thus resulting in the destruction of the habitat located within this area, the Commission has not seen evidence to suggest that such plans are currently being developed. The Northshore at Mandalay Bay residential development site has entered foreclosure and the City of Oxnard's General Plan does not include the expansion of Harbor Boulevard in this area.

Transmission Pole Installation/Replacement. In addition to the proposed natural gas pipeline, SCE has also proposed to install and replace several transmission poles on its parcel to the east of Harbor Boulevard. As shown on Exhibit 1, three new transmission poles would be installed and seven poles would be removed and replaced with larger and taller versions. Overall these activities would require the temporary use of approximately 21,548 square feet for vehicle and equipment access, storage and staging and the permanent use of roughly 87 total square feet of habitat area for installation of power pole footings and above ground foundations. Combined with the activities described above for the natural gas pipeline trenching and installation, SCE proposes to temporarily disturb between three quarters of an acre and one and a third acres and permanently occupy approximately 93 square feet.

As described by SCE in Exhibit 15,

> *The new transmission lines will be added to the existing Channel Islands-Mandalay pole line to avoid the need for a second set of poles… To the extent possible, new or replacement wood poles will be placed in the same location as the existing poles to be replaced to reduce ground disturbance. New pole placements will be located on bare ground or in stands of iceplant and non-native vegetation. The permanent ground disturbance impact of the new poles will be 87 square feet. The current design of the pole replacement program offers the best trade off between minimizing the number of poles, minimizing their height, minimizing the size of the pole bases, and replacing poles in the same location to minimize any incremental disturbance.*

SCE's consultant biologist established a survey transect along the proposed transmission line to determine the dominant vegetation type and coverage. As described in the results of this survey, native plant cover comprised approximately 14.9 percent of the transect line while 40.9 percent was non-native cover and 44.1 percent was un-vegetated. The survey report also notes that "when just the vegetated areas are considered, the level of disturbance is very high with approximately 73 percent of all vegetation consisting of non-native species, with fig marigold accounting for all but approximately 0.5 percent of the non-native cover."

These survey results of the proposed temporary and permanent disturbance areas associated with the transmission pole installation and replacement activities are not inconsistent with the observations of the Commission staff ecologist and the vegetation community map results provided by David Magney Environmental Consulting in its March 10, 2009 letter to Commission staff (included in the correspondence packet attached to this report). The prevalence of invasive plants within this proposed transmission pole installation and replacement area may be explained by the historic and chronic disturbance that this area has undergone over the years. As noted previously, several existing transmission line corridors cross through this area, and SCE's operation and maintenance activities require the frequent use of high clearance vehicles within the sand dune habitat. It is likely that the initial installation of these transmission line corridors as well as the ongoing disturbance from operation and maintenance activities and invasive species competition has resulted in a substantial degradation of the habitat quality within this particular area. Although not as degraded and disturbed as the area adjacent to Harbor Boulevard, SCE's proposed

transmission pole installation and replacement sites nevertheless provide only marginally intact habitat and do not meet the definition of ESHA.

SCE has agreed as part of the project to implement a comprehensive invasive species eradication program to remove iceplant from throughout its 37-acre property to the east of Harbor Boulevard. SCE submitted a draft invasive species removal plan on February 20, 2009 (included as Exhibit 4), and has subsequently been working with Commission staff to refine and revise this draft plan to increase its effectiveness and potential for success. As such, **Special Condition 3(b)** specifies that the plan shall be amended to include a commitment to carry out the removal of other non-native invasive species such as myoporum, tree tobacco and castor bean from SCE's 37 acre parcel.

In addition, SCE has committed to restore the areas proposed to be temporarily used to trench and install the gas pipeline and provide vehicle and equipment access, staging and storage needed to carry out the pipeline and transmission line and pole installation activities. **Special Condition 3(b)** specifies that revegetation of those areas disturbed during placement/removal of transmission poles, installation of the natural gas pipeline and associated staging, construction and access activities shall be accomplished with native plant species representative of the southern dune scrub habitat community and grown from locally collected seed. In addition, **Special Condition 3(b)** also establishes performance criteria for restoration sites which ensures that disturbed areas are restored to replicate existing percent cover of high quality southern dune scrub vegetation in these areas and includes provisions for the maintenance of seeded and planted native plants in restoration areas. As detailed in SCE's draft plan, the *McGrath Beach Peaker Landscaping and Restoration Plan*, this restoration work would include quarterly monitoring during the first year after planting followed by twice yearly field checks for the following four years to ensure that native species become re-established and invasive plants do not reoccur in these areas. The draft plan is attached as Exhibit 4.

Further, SCE proposes to establish an open space conservation easement on its 10.7 acre parcel to the east of Harbor Boulevard and between Harbor Boulevard and the Mandalay Canal, as shown on Exhibit 1. This parcel is one of two SCE owned parcels to the east of Harbor Boulevard and is located adjacent to the Northshore development site. To implement SCE's offer, the Commission is requiring **Special Condition 10**. SCE's proposed open space easement would specify that the site is to be maintained as open space to further assure the protection of southern dune scrub habitat. While SCE would not be prohibited from carrying out routine operation, maintenance and repair activities on the existing transmission line and pipeline infrastructure that exists on site, additional development activities on this parcel would be prohibited.

The limited development activities SCE proposes for this area would not limit the potential for success of SCE's invasive plant species removal and southern dune scrub restoration plans. Furthermore, upon completion of the activities to remove the primary source of habitat degradation from the site – namely, the invasive plant species – and increase the abundance of native southern dune scrub plant species, the project site and greater SCE parcel will support an area of restored southern dune scrub adjacent to the wetlands of the Mandalay Canal area

and contiguous with the restored dune scrub, coyote brush/willow cluster, buckwheat and coastal sagebrush ESHA habitats on the Northshore at Mandalay site. This restored and continuous habitat area will result in habitats with higher ecological function and value. Therefore, the Commission believes that after implementation of SCE's restoration and enhancement measures the habitat on this parcel will qualify as ESHA.

Additional Potential Project-Related Biological Impacts: As noted above, several sensitive habitat areas are known to exist adjacent to or nearby the proposed project site, and a variety of special status species are known to occupy these habitats either seasonally or year-round. Among those special status species with habitats in the vicinity of the proposed project site, those with the highest likelihood of being negatively affected by the proposed project include the western snowy plover, California least tern, and burrowing owl as well as rare dune plant species such as Ventura marsh milk vetch, salt marsh bird's-beak, red sand-verbena, dunedelion, estuary seablite, and wooly seablite. LCP Policy 6 requires new development, such as this, that is located adjacent to wetlands or resource protection areas, to be sited and designed to mitigate any adverse impacts to the wetlands or resource. Potential adverse affects on these sensitive species and their habitats will be discussed below.

Western Snowy Plover. Western snowy plovers nest in the foredune and forage along the shoreline at Mandalay State Beach. The western snowy plover is a small shorebird that uses sandy beaches for nesting and roosting from southern Washington to Baja California. At most, approximately 2,000 snowy plovers may breed along the U.S. Pacific Coast with a similar number breeding along the Baja California coast (USFWS 2001 citing Page et. al. 1995a). Research has indicated that there has been a general decline in the West Coast population of snowy plover, including a substantial decrease between 1962 and 1984 in the abundance of wintering snowy plovers in southern California (Lafferty 2000 citing Page et al. 1986). Information provided by Page et al. (1991) indicated that between 1981 and 1991, snowy plovers experienced at least an 11 percent decline in abundance. Lafferty (2000) further reports that more recently, there has been a population decline of about 30% throughout the region (in the late 1990s). Among the factors linked to the regional decline in snowy plovers includes predation, beach erosion, encroachment of exotic vegetation and disturbance from recreation (Lafferty 2000 citing Page et al. 1995).

During local review of this project, the US Fish and Wildlife Service (FWS) raised concerns about the effect of SCE's proposed landscape plan on western snowy plovers and California least terns and the sensitive nesting habitat for these species located in close proximity to the project site (approximately 1000 feet to the west and northwest). In a June 18, 2007, letter to the City of Oxnard the FWS states:

> *Our concerns lie with the proposed row of trees. It is likely that this row of trees will provide habitat for American crows (Corvus brachyrhynchos) and ravens (Corvus corax) that prey on the California least tern and western snowy plover chicks and eggs located on the adjacent beaches. Specifically, we are concerned that these species are known to take up residence in areas with suitable breeding habitat and that are adjacent to food sources (e.g. California least tern colonies).*

Predation by corvids (the family of birds that includes American crows and ravens) is noted in U.S. Fish and Wildlife Service's August 2007, Recovery Plan for the Pacific Coast Population of the Western Snowy Plover (Recovery Plan), as a substantial threat to snowy plovers and is identified as a primary impediment to the recovery of this species. The Recovery Plan cites numerous examples of snowy plover nesting sites within California that have experienced nest failure rates of up to 69% as a result of corvid predation (Hickey et al. 1995). The Recovery Plan further notes that "Raven populations in coastal California have significantly increased in recent decades (Leibezet and George 2002), and as their range expands they are becoming increasingly significant as a nest predator on western snowy plovers" often counting as "the single most limiting factor on western snowy plover reproduction (Colwell et al. 2006)."

While the 2007 Recovery Plan and earlier 2001 Draft Recovery Plan for the Pacific Coast Population of the Western Snowy Plover both note that a limited amount of predation on snowy plovers from native corvid species is natural, this amount of predation can often be augmented to unnatural levels through human induced landform and land use alteration that allows predator species to exist at locally elevated abundances. The Recovery Plan notes that "Elevated predation pressures result from landscape-level alterations in coastal dune habitats which, in turn, now support increased predator populations within the immediate vicinity of nesting habitat for snowy plovers." Paramount among the "landscape-level alterations" identified in the Recovery Plan as key to an area's support of increased predator populations are "Unnatural habitat features such as landscaped vegetation (e.g., palm trees), telephone poles, fences, buildings, and landfills near snowy plover nesting areas…". The Recovery Plan concludes with a consideration of predator management as a means for controlling such factors as corvid populations and notes that

> *In heavily-developed areas in particular, habitat protected for sensitive species may be a "magnet" to native predators that have lost foraging habitat elsewhere. Continuing to remove predators from these areas effectively creates a "sink," such that the need for ongoing predator removal never ends and negative ecological consequences occur over large areas beyond the boundaries of snowy plover nesting areas.*

There appears to be a strong positive correlation between the number of trees which provide potential roosting and nesting habitat for corvids in coastal dune areas and the population of corvids in those areas (i.e. an increase in the number of trees is met with a corresponding increase in the number of corvids) as well as a negative correlation between local corvid numbers and snowy plover abundance (i.e. as the number of corvids increases, the abundance of snowy plovers declines).

Due to the abundance of dune scrub habitat and lack of landscaping in the area (the only landscaped parcel within the area, the Mandalay Generating Station, is sparsely landscaped with predominantly large shrub species such as juniper and myoporum), implementation of a landscaping plan that includes large vegetation such as trees would significantly augment the current number of potential nesting and roosting sites for corvids and raptors in the area. As discussed in Section D – Visual Resources - of this report, implementation of a landscaping plan is important to minimize the adverse visual effects of this industrial project. The

vegetation used to screen the project, however, should not interfere with measures to protect sensitive species, such as the western snowy plover.

SCE's initially proposed landscape plan would have increased the number of large trees in the immediate project area from less than 10 currently to more than 140 – an increase of approximately 1400%. Such a substantial increase in available nesting habitat for corvids, owls and raptors – all of which are known to prey on least tern and snowy plover adults, chicks and eggs – has the potential to increase predation in the vicinity of the project site and could therefore reduce the habitat value of the existing nesting sites for California least terns and snowy plovers in the vicinity of the proposed project. To address the potential impact to sensitive species and habitats, SCE has revised its landscape plan to the currently proposed plan described and detailed in Exhibit 4. This revised landscaping plan has substituted proposed large non-native tree species with small native trees as well as native bush, shrub and groundcover species that are not known to support nesting corvids, owls or raptors. The list of species included in this landscape plan was reviewed and approved by Commission staff as well as the local U.S. Fish and Wildlife biologist who manages snowy plover and least tern conservation efforts in the area. Biologists with the California Department of Fish and Game and State Parks were also consulted. The revised landscaping plan also includes performance standards, ongoing monitoring and measures to minimize the use of water, fertilizer and herbicides. With the inclusion of the revised landscaping plan, as described above, the Commission believes the western snowy plover will be adequately protected from project-related activities, and the project will therefore ensure the protection of the resources of the two state beaches located adjacent to the peaker plant site, as required by LCP Policy 6.

Special Status Animals. The burrowing owl (*Athene cunicularia*) is listed by the California Department of Fish and Game as a Bird Species of Special Concern. Although present throughout much of the western United States and Florida, the burrowing owl has been listed as a species of special concern in the majority of states that comprise its range. In addition, this species has been listed as endangered in Canada and threatened in Mexico. The primary threats to the conservation of this species in California are associated with habitat destruction from land development and predation from feral cats and domestic pets. As noted by SCE's biological consultant:

> *This species is found in open areas of usually sparse vegetation. It occupies rodent burrows, most often of California ground squirrels (Spermophilus beechyi). There are historic records of the owl occurring in the project area, however only marginal habitat is present for this species in the project area. SCE has conducted surveys for the burrowing owl around the Mandalay Substation just to the northeast of the peaker unit location and near the transmission line portion of the project, but the results of these surveys were negative for the owl. No burrowing owls or burrows were observed during the* [biological] *survey for this project; however, one burrowing owl was observed on the project site during soil testing for the project on February 8, 2007. It is likely the owl was a winter visitor, since no burrows were located on the project site during the survey. However, a focused survey for burrowing owls will occur prior to project construction.*

SCE's biological consultant has concluded that the project area provides only marginal habitat for burrowing owls and no burrows that could feasibly support burrowing owls were observed during the various biological surveys of the project area that SCE has conducted. Nevertheless, due to the strong site fidelity of burrowing owls and the fact that an owl was observed at the project site during the breeding season, to ensure that this special status species and its habitat is not adversely affected by the proposed project, the Commission is requiring in **Special Condition 3(c)** that SCE conduct a pre-construction survey for burrowing owls throughout all portions of the project area no more than 30 days prior to the initiation of ground disturbance activities.

This condition also requires that if any burrowing owls are observed during this survey, or if burrows are found to be actively used within the project area, prior to the initiation of construction or ground disturbing activities, SCE shall submit an Impact Avoidance Plan for the Executive Director's review and approval. This plan shall include the implementation of specific measures to minimize disturbance including the avoidance of project activity within a minimum of 160 feet of occupied burrows during the non-breeding season of September 1 through January 31 or within a minimum 250 feet during the breeding season of February 1 through August 31. In addition, the plan shall include a measure for SCE to maintain a 300 foot foraging radius around each occupied burrow. The 300 foot foraging radius should contain sufficient intact habitat areas to allow burrowing owls to continue feeding and hunting. If destruction of occupied burrows and/or disturbance within these 160-250 foot buffer distances is unavoidable, mitigation guidelines described within the California Burrowing Owl Consortium's April 1993, "Burrowing Owl Survey Protocol and Mitigation Guidelines" (detailed in Exhibit 9). Mitigation measures described in the California Burrowing Owl Consortium document include protocols for the establishment of alternate burrows as well as both on-site and offsite mitigation strategies.

Adjacent Sensitive Habitat Areas. LCP Policy 6 requires that "New development adjacent to wetlands or resource protection areas shall be sited and designed to mitigate any adverse impacts to the wetlands or resource." LCP Policy 6 also requires that "A buffer of 100 feet in width shall be provided adjacent to all resource protection areas" and "The buffer may be reduced to a minimum of 50 feet only if the applicant can demonstrate the large buffer is unnecessary to protect the resources of the habitat area."

The project site borders Mandalay State Beach, a portion of which is designated in the LCP as a Resource Protection Area. Although the peaker plant would be sited 700 feet from the border of Mandalay State Beach, the placement of landscaping plants and berms as well as the construction of the main access and entry road for the proposed facility would be located closer to Mandalay State Beach. As required by **Special Condition 3(d)**, these project related activities will occur at least 50 feet from the southern border of the project site and approximately 72 feet from the designated Mandalay State Beach resource protection area described in the LCP. Although a 100 foot buffer area is preferred, this 50 foot separation distance satisfies the minimum distance required by LCP Policy 6. LCP Policy 6 states that the preferred 100 foot buffer width "may be reduced to a minimum of 50 feet only if the applicant can demonstrate the large buffer is unnecessary to protect the resources of the habitat area." In support of the establishment of this minimum buffer area, SCE states:

> *SCE believes that a 50-foot buffer is appropriate to protect resources within the state parcel south of our site. The southern boundary of the SCE development is currently designed closer than this requirement allows, with landscaping, driveway and access road encroaching into the 50-100' buffer. I've attached a real estate parcel map that shows that the State resource protection area starts 22 feet south of SCE's fence line, to the south of the road parcel. Since this is a permanent road, the state partitioned their land to separate the right of way from the rest of the parcel. The map also [sic] clearly shows the oil drilling equipment that's half way down the road and all the dirt tracks that the oil trucks use to drive across the parcel. Because of the existing use of the land immediately south of the SCE parcel for oil drilling and access for large truck traffic, SCE believes that the 50' buffer should be adequate to protect resources on the state owned land south of SCE's land.*

SCE describes the fact that existing development with the potential to disturb adjacent resources is already located much closer to these resources than any of SCE's proposed new development. The backdune portion of Mandalay State Beach designated as a Resource Protection area and adjacent to the project site is not known to support nesting western snowy plovers. Although snowy plovers do nest within the vicinity of the project site, as discussed previously, all known nesting sites are to the west and northwest of the project area and well over 1,000 feet distant from any proposed development. Nevertheless, the dune scrub habitat of Mandalay State Beach located adjacent to the project site is known to support a variety of other sensitive plant and animal species and is specifically designated as ESHA by the LCP. However, there is an existing 22 foot wide paved access road that currently separates the proposed peaker site from this ESHA area, and this paved access road and the frequent ingress and egress of large trucks used to service the oil production facility to the west of the peaker site serve as a physical barrier and impediment to the biological connectivity of the peaker site and the state beach. SCE has committed to locate all proposed development and construction activities an additional 50 feet to the north of this road. The Commission finds that the establishment of what is functionally a 72 foot buffer (22 feet to an existing road and 50 feet beyond the road) in this area, where the existing road already constitutes an interruption of the "buffer" area, provides an appropriate level of protection for the sensitive resources located within the inland portion of Mandalay State Beach.

SCE has committed to apply this 50 foot wide buffer to the entire southern boundary of the project site that is adjacent to the inland parcel of Mandalay State Beach that has been identified in the LCP as a resource protection area. To further protect this resource protection area, several activities would be allowed within the proposed buffer area. These activities would be limited to the removal of existing invasive species, including iceplant and myoporum, which currently exist within this buffer area and the removal of an existing chain link fence to facilitate invasive species removal. The Commission therefore finds that with the establishment of the 50 foot buffer along the southern border of SCE's proposed project site, as committed to by SCE and further required under **Special Condition 3(d)**, the proposed project activities in this area conform to the provisions and buffer distance requirements of LCP Policy 6.

The provisions of LCP Policy 6 also require the establishment of a 50 to 100 foot wide buffer area between new development and wetland areas. Although not specifically identified by the LCP as a wetland area, the Mandalay Canal meets the LCP definition of wetland contained within LCP Policy 9. Specifically, LCP Policy 9 defines a wetland as "Land where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes." The Mandalay Canal in this area contains coastal waters during all times of the year and supports a variety of hydrophytic plant species. As such, LCP Policy 6 requires that a 100 foot buffer is maintained between proposed development and this wetland area, unless the applicant can demonstrate that a smaller buffer will still be adequately protect the wetland resources.

As demonstrated in Exhibit 1, the northern border of the proposed peaker location is located approximately 100 feet from the Mandalay Canal. Additionally, in an effort to ensure that the use of this location does not adversely affect the resources of the Mandalay Canal, SCE has proposed to install a raised bioswale/biofilter along the northern and northwestern borders of the proposed peaker plant site. According to SCE's proposed landscaping plan, this bioswale would be vegetated with native salt grass (*Disticlis spicata*) as well as other native grass and groundcover species. The Commission therefore finds that considering the distance of the SCE property line from the Mandalay Canal and the inclusion of a vegetated bioswale along the northern edge of the proposed project site, project activities proposed for this area are not likely to adversely affect the wetland habitat and open coastal waters provided by the Mandalay Canal.

Because SCE's property to the east of Harbor Boulevard is within 100 feet of the Mandalay Canal, to further protect the resources of this canal to the east of Harbor Boulevard, **Special Condition 3(d)** requires that all project development (with the exception of dewatering wastewater discharge and installation of the proposed natural gas pipeline on Harbor Boulevard over Mandalay Canal) remain more than 50 feet from the Mandalay Canal. The Commission believes the minimum buffer distance is sufficient in this area due to the existing buffer provided by the access road between proposed work and the Mandalay Canal (as described above). An exception to **Special Condition 3(d)** is specified for the discharge of dewatering wastewater because this discharge would occur through an existing storm drain and is anticipated to be drawn into the Reliant Mandalay Generating Station's cooling system with minimal potential to adversely impact the resources of the Mandalay Canal. An additional exemption is provided for the natural gas pipeline installation on Harbor Boulevard over the Mandalay Canal because this installation activity would make use of an existing bridge and roadway to remain outside and above the Mandalay Canal and therefore has very low potential to result in adverse impacts to the canal.

Although the proposed replacement of transmission poles shown in Exhibit 1 appears to be within 50 feet of the Mandalay Canal to the east of Harbor Boulevard, SCE has committed to maximize the transmission line span distance over the canal to ensure that new and replacement poles are installed at least 50 feet from the edge of the Mandalay Canal and all associated construction and removal activities occur outside of the buffer area required under **Special Condition 3(d)**. While a larger buffer distance in this area may provide a greater level of protection for the wetland vegetation and resources of the canal, SCE notes that an

additional increase in the transmission line span across the Mandalay Canal to accommodate a larger buffer area would necessitate the installation of taller and larger engineered steel transmission poles on either side of the canal in this location. These poles would require a larger disturbance footprint during installation and would be 5 to 10 feet taller than the wood transmission poles that are currently proposed. Considering this larger disturbance footprint as well as the current buffer provided by the existence of a dirt access and maintenance road between the proposed southern pole location and the canal (shown on page 1 of Exhibit 1), the Commission finds that the establishment of a 50 foot buffer, as specified in **Special Condition 3(d)** is sufficient to minimize the potential adverse impacts to the wetland resources of the Mandalay Canal that may result from the proposed installation of transmission poles. With the inclusion of this condition, the Commission finds that the proposed project is in conformance with the provisions and buffer distance requirements of LCP Policy 6.

Dewatering and Wetlands. During public review of the staff report, concerns were raised regarding the potential for the proposed site preparation dewatering activities to adversely affect wetlands at the southern end of McGrath State Beach and/or the central and southern portion of Mandalay State Beach. The proposed dewatering activities are designed to lower the water table at the project site for approximately seven weeks while the peaker plant foundation is constructed and installed. Concerns raised are that if the water table beneath nearby wetlands at Mandalay State Beach, McGrath Lake and/or the habitat restoration area adjacent to the north side of the Reliant Mandalay Generating Station property is also lowered, wetland adapted species that occur in these areas due to the high water table may be adversely affected. Theoretically, there are two ways in which proposed dewatering activities could affect the water table at the McGrath State Beach and/or Mandalay State Beach: (1) by decreasing the amount of groundwater flowing into the areas and/or (2) increasing the amount of groundwater flowing away from the areas.

McGrath State Beach Wetlands: Based on the results of a comprehensive hydrological, hydrogeological and watershed study of the McGrath Lake wetlands prepared for the U.S. Army Corps of Engineers in 2005, titled *McGrath Lake Watershed Management Study*, it would be unlikely for the proposed project to adversely affect wetland areas north of the Mandalay Canal by reducing the amount of groundwater flowing into these areas. As described in the *McGrath Lake Watershed Management Study*, the Mandalay Canal serves as the southern border of the watershed which includes McGrath Lake and all adjacent wetland areas. Groundwater from the project site and all areas south of the canal does not contribute to the replenishment of ground or surface water at the southern end of McGrath State Beach. Further, according to the McGrath Lake study, the Mandalay Canal acts as a groundwater "sink" for McGrath State Beach and the flow of groundwater beneath the state beach is towards the canal. In this way, the canal effectively severs the hydraulic connection between the project site and McGrath State Beach. This idea is demonstrated in the study which notes that:

> *Patrick Hamilton, a consultant for the Reliant Energy facility located to the south of McGrath Lake, provided groundwater monitoring data from wells at the facility. Patrick confirmed that the monitoring well data showed very little influence from tidal*

> *variations of the nearby ocean, and that the general trend of water levels was toward the Edison Canal east of the facility that acts as a groundwater sink.*

And:

> *Groundwater levels in* [monitoring well number three] *at the southern end of the lake appear to respond relatively quickly to lake level changes, indicating there is a strong hydraulic connection between the lake and groundwater in the vicinity of the monitoring well. Additionally, lake levels are higher than groundwater levels, indicating that the gradient is away from the lake and toward the SCE canal located to the southeast that serves as a groundwater "sink".*

Therefore, because the groundwater beneath the proposed project site is not a source of water for the wetland areas at the southern end of McGrath State Beach, it would be unlikely for the proposed dewatering activities to have an effect on the availability of groundwater north of the Mandalay Canal or decrease the amount of groundwater flowing into the wetlands area.

It would also be unlikely for the proposed dewatering activities to lower the water table at McGrath State Beach by increasing the flow of groundwater away from the wetlands area. The Mandalay Canal serves as a "sink" for the groundwater at the southern end of the state beach. Lowering the water level at the canal has the potential to increase the steepness of the water table gradient between the southern end of McGrath State Beach and the canal, thus increasing the flow rate away for the state beach. However, the proposed dewatering wells on the project site would discharge their contents into the Mandalay Canal and if the dewatering project were to have any influence on the water level in the canal it would be more likely to raise the water level than to lower it. The constant discharge of groundwater into the canal during dewatering would likely more than offset whatever water loss would occur in the canal as a result of the drawdown of groundwater on the adjacent project site. In addition, any potential drawdown in the level of water in the canal as a result of the proposed project would also likely be offset by an increase in the flow of water into the canal from the Channel Islands Harbor. Due to the Mandalay Canal's connection to Channel Islands Harbor and the ocean, the water level in the canal remains equalized close to sea level. If the water level in one area were to decrease, additional water would flow into the canal to replace this lost water. Therefore, while the proposed dewatering wells would lower the water table within a localized area of the project site, due to the presence of the canal and the increased discharge of water into it, the effects of proposed dewatering activities would not be expected to extend to the north of the Mandalay Canal.

Specifically, SCE proposes to install eleven subsurface wells to a depth of roughly 35 feet at equally spaced locations surrounding the outside edge of the 325 foot by 225 foot peaker plant's foundation site. These wells would drawdown the groundwater table by eight feet, from the current elevation of approximately six feet below the soil surface to a new elevation of 14 feet below the soil surface. The eight foot drawdown would allow SCE to excavate the foundation footprint to a depth of 11 feet below the current soil surface without encountering groundwater. When the site preparation is completed and the excavation is backfilled with native soil and engineered fill, dewatering activities would cease and the groundwater would

return to its current level. Based on the de-watering plan submitted by SCE, the radius of influence of the dewatering wells would be approximately 555 feet, measured from the edge of the peaker plant foundation site. The nearest wetlands at McGrath State Beach are approximately 1,200 feet north of this site and McGrath Lake is an additional 1,000 feet north. As such, these wetland areas are well outside the radius of influence of the dewatering wells.

Mandalay State Beach Wetlands: The backdune portion of Mandalay State Beach located north of Fifth Street and between Harbor Boulevard and the coastal dunes along the seashore contains several areas that support wetland vegetation. These wetland areas predominantly exist in two locations: at the southern end of the state beach parcel adjacent to Fifth Street; and near the center of the parcel. The northernmost wetland area extends to within approximately 100 - 300 feet of the border of the SCE parcel and to within approximately 800 – 1,000 feet of the area proposed to be dewatered and excavated to facilitate installation of the peaker plant foundation. The dewatering plan and design specifications provided by SCE suggest that proposed dewatering activities would not lower the groundwater level beyond about 555 feet of the edge of the proposed foundation site (a distance that corresponds roughly with the southern edge of SCE's southern property line). This would suggest that the wetlands of Mandalay State Beach, located between 800 and 1,000 feet south of the foundation site, would not be adversely affected by the proposed dewatering activities because the groundwater level at these wetlands would not be lowered.

However, unlike the McGrath Lake area, detailed information regarding the watershed which supports these wetlands and the source, flow direction and sink for groundwater beneath Mandalay State Beach was not obtained by Commission staff. In addition, the wetlands on Mandalay State Beach are located in closer proximity to the proposed dewatering wells than the wetlands on McGrath State Beach. Although it appears unlikely that the wetlands on either state beach would be affected by the proposed dewatering activities, insufficient information exists to support a definitive conclusion. Given this uncertainty and the closer proximity of the Mandalay State Beach wetlands, the Commission is requiring in **Special Condition 3(e)** that SCE install two groundwater monitoring wells at the southern edge of its property line (but not within the 50-foot buffer area required by **Special Condition 3(d)**). These monitoring wells would ensure the wetland resources of Mandalay State Beach are not adversely affected by the proposed dewatering activities because if the groundwater level monitoring wells demonstrate a decrease in the groundwater level of more than 24-inches, **Special Condition 3(e)** also requires SCE to immediately cease dewatering activities and, within 60 days, submit a permit amendment to revise the dewatering and/or foundation installation plan to reduce the area of groundwater drawdown so that the groundwater level at the monitoring wells does not fall more than 24-inches.

With the inclusion of **Special Condition 3(e)** and for the reasons described above as well as the relatively small volume of water to be removed during proposed dewatering activities, the temporary nature of these activities and the large distance (800 - 2,000 feet) that separates the project site and the wetland areas on McGrath State Beach and Mandalay State Beach, the Commission finds the proposed project in conformance with the wetland protection policies of the Oxnard LCP.

Additional Mitigation Measures. In addition to those measures described above and required through **Special Condition 3**, SCE has committed to implement several additional measures identified in the uncertified Mitigated Negative Declaration to further minimize the project's potential to adversely affect the biological resources and water quality of the project area. These measures are included in Exhibit 8 as biological resource and hazardous materials mitigation measures. SCE will hire a qualified biologist to conduct a pre-construction survey of each construction area to identify occupied nests of native birds prior to grubbing or grading activity. This measure requires a minimum buffer distance of 100 feet to be established between occupied nests and the limits of construction and would prohibit construction activities within this buffer area until a subsequent biological survey revealed the nest(s) to no longer be occupied. If work within the established buffer cannot be avoided, SCE shall consult with CDFG and FWS to determine if there are appropriate measures that may be taken to continue work in these areas. To further protect water quality and sensitive biological resource areas through avoidance of potential hazardous materials spills, the hazardous materials mitigation measure described in Exhibit 8 requires hazardous materials stored on-site to be limited to small quantities of paint, coatings, and adhesive materials, and emergency refueling containers. These materials would be stored in their original containers inside a flammable materials cabinet and shall be transported to the construction site on an as-needed basis by equipment service trucks.

Conclusion: With implementation of the Special Conditions, the proposed project is not expected to cause significant adverse impacts to sensitive biological resources. The Commission therefore finds that the project, as conditioned, is consistent with the applicable provisions of LCP Policies 6, 9, 10, 52 and 57.

D. Visual Resources

Local Coastal Policy 37 states: *All new development in the coastal zone shall be designed to minimize impacts on the visual resources of the area. Particular care should be taken in areas of special quality, such as those identified in the LCP.*

The proposed project would be primarily developed within a brownfield site that has previously supported energy related infrastructure and is in close proximity to the existing Mandalay Generating Station, an oil extraction and production facility, McGrath and Mandalay State Beaches and Harbor Boulevard. As described below, while design changes to reduce the visibility of the peaker plant, its associated transmission poles and exhaust stack are not feasible, SCE's proposal to construct a vegetated berm on the eastern border of the project site would minimize the project's impacts on the visual resources of the project area, as required by LCP Policy 37. In addition, **Special Condition 10(c)** would further mitigate the project's impacts on the visual resources of the project area by enhancing the visual character and providing for the establishment of access and recreation improvements in the land to the east of the peaker plant site.

Visual Character of Project Area: As demonstrated by the photographs in Exhibit 3, many of the existing views of and around the project site are industrial and energy related in nature. The project site is bordered on three sides by energy, industrial or transportation infrastructure

(specifically, an oil extraction and processing facility, a power plant cooling water supply canal and Harbor Boulevard) and on the fourth side by Mandalay State Beach. The portion of the state beach that is immediately adjacent to the project site has been designated as a resource protection area (as shown in Exhibit 7) and it therefore does not currently provide public access or recreational opportunities for park visitors. Access to this area from Harbor Boulevard and Fifth Street is currently restricted with chain link fences and the California Department of Parks and Recreation (State Parks) plans to install additional fencing on the western border of the resource protection area as well.

State Parks also plans to eventually develop both lateral and vertical access trails in the adjacent western portion of the state beach, inside the currently undeveloped portion of the property that has been designated as a coastal recreation area. One proposed trail would provide access along the inland side of the coastal dunes from the Oxnard Shores residential area and would connect with up to three additional proposed trails which would provide access across the dunes from the inland to the shoreline portion of the state beach. State Parks is currently developing environmental impact analyses for both the fencing and access trail projects and final permits and approvals from relevant agencies, including a coastal development permit, have yet to be obtained. Nevertheless, increased public access and use of the inland coastal recreation portion of Mandalay State Beach is likely to occur in the future and although the specific alignment of the proposed trails has yet to be determined, the proposed peaker plant would likely be visible to the right of the existing Mandalay Generating Station in views to the north from all four state beach access trails.

While the Open Space/Conservation Element of the City of Oxnard's 2020 General Plan designates several miles of Harbor Boulevard, including the stretch adjacent to the project site, as a scenic highway and lists the "lower dunes in the Mandalay Beach State Park north of Fifth Street" as one of the City's visual resources, no significant visual or aesthetic resources have been identified or are apparent on the proposed project site itself and currently, the most dominant aspects of the proposed site are the adjacent dunes of the state beach, the nearby Mandalay Generating Station and the approximately eight foot high screened chain-link and barbed-wire fence that surrounds the vacant and graded site.

The LCP notes that the project area lacks significant or notable visual resources and states that "the ocean is generally not visible from Harbor Boulevard, limiting the visual resources north of Fifth Street." (The project site is located approximately ¾ of a mile north of Fifth Street). The LCP does, however, reference the tall sand dunes south of Fifth Street and south of Wooley Road, the lower dunes in the Mandalay Beach County Park (now referred to as Mandalay State Beach) north of Fifth Street, and the wetlands in the Ormond Beach area. Of these three designated visual resource areas, "the lower dunes" of Mandalay State Beach are the closest to the project site. These dunes extend from south of the project site to the intersection of Harbor Boulevard and Fifth Street. The proposed project would not alter views of and to this dune area from Harbor Boulevard, the proposed site of the Northshore at Mandalay residential area or Mandalay State Beach.

Directly across Harbor Boulevard from Mandalay State Beach and its dune area, an LCP amendment which provides for the development of a 292 home residential community was

approved by the Commission in 2002 and has been undergoing soil and groundwater remediation and site preparation prior to construction. The topography of the site has been somewhat altered and potential future home sites along Harbor Boulevard would be approximately eight feet above the level of the road, providing an elevated view of the proposed project site. Homes on this site have yet to be constructed, however, and according to a December 13, 2008 article in the Pacific Coast Business Times, the property was recently subject to foreclosure and the status of future development remains uncertain.

SCE has provided visual simulations of the peaker plant from the street level adjacent to the nearest potential residences at this site. These simulations are provided in Exhibit 3. While views shown in these simulations are from the street level and therefore do not accurately represent the increased visibility of the proposed peaker facility from the elevated height of potential residential development in this area, the simulations nevertheless demonstrate the ability of proposed landscaping to partially screen the site. These simulations also show that while views towards the proposed project area would include the proposed project as a separate facility to the right of the existing energy structures, the peaker facility would be viewed within the context of the existing Mandalay Generating Station, its associated facilities and infrastructure and the adjacent oil production plant. Overall, these simulations demonstrate that the proposed project would be screened to the extent feasible and would add another industrial feature to this already visually impacted area.

Visual Impact Minimization and Mitigation Measures: Specifically, SCE's efforts to screen the proposed facility and reduce its visual profile include both the implementation of a landscaping plan as well as the construction of an earthen berm to augment landscaping efforts and increase the height of proposed vegetation. Initially, SCE's proposed landscaping plan included construction of a 1,000 foot long, six foot tall earthen berm within the project site along the west side of Harbor Boulevard and the placement of various indigenous and non-native plant species around and atop this berm to provide visual screening. Proposed plant species included native tree and shrub species such as Monterey cypress, Torrey pine, California wax myrtle, California bay, lemonade berry, toyon, qualibush and California brittlebush as well as extensive use of two faster growing non-native tree species, the New Zealand Christmas Tree and Australian red flowering gum. As described in the Biological Resources section above, due to the potential for the placement of substantial numbers of large trees on the project site to significantly degrade the viability of nearby sensitive habitat areas, including snowy plover and least tern nesting sites, SCE has revised its proposed landscape plan to eliminate the use of large native and non-native tree species. As demonstrated in the revised landscape plan included as Exhibit 4, all large tree species have been replaced by small native tree, bush, shrub, grass and groundcover species that will provide a maximum level of visual screening while remaining unsuitable as nesting habitat for corvid, owl and raptor species that may prey on local tern and plover populations. The use of trees would be limited to those that have been approved by the Commission ecologist as well as staff of both the California Department of Parks and Recreation and the U.S. Fish and Wildlife Service as unlikely to attract corvid, owl and raptor species due to their limited height (typically less than 20 feet), dense foliage, and lack of large braches suitable for nesting. While these species would not be likely to attain heights in excess of approximately 20 feet, the density of their branches and their use on the six foot high earthen berm in

conjunction with other large bushes would still enable them to provide a high degree of visual screening of the peaker plant from both Harbor Boulevard and the potential Northshore residential development site.

Considering the biological constraints outlined above and to ensure the successful implementation of the maximum amount of vegetative screening, as specified in **Special Condition 3(b)**, SCE's revised landscaping plan would be subject to approval by the Executive Director and would be required to include periodic monitoring, success criteria, contingency plans and maintenance standards. Additionally, if after five years, the Executive Director determines that SCE has not fully met the success criteria of the approved plan, SCE would be required to submit to the Commission in the form of a permit amendment a revised landscaping plan to address those elements of the original approved plan that did not satisfy the success criteria.

Despite SCE's visual screening commitments, some elements of the project – primarily the 80-foot tall exhaust stack and its associated plume, the three new power poles and seven larger replacement transmission poles – would be visible from Harbor Boulevard, the proposed Northshore residential community, and both the resource protection and publicly accessible portions of Mandalay State Beach, the only nearby "area of special [visual] quality" specified in the LCP and included by reference in LCP policy 37. Some elements of the peaker facility would also be visible from areas farther away, including the Oxnard Shores neighborhood and potentially, coastal Ventura. However, constructing the peaker plant at this site will add another industrial facility to an area that already supports other substantial industrial development, thus the peaker plant would present less of a visual intrusion at this location than it would in an area in which industrial uses were not consolidated. The Mandalay Generating Station, which is sited directly landward of the northern extent of Mandalay State Beach, dominates the visual profile of this stretch of coastline. The peaker plant, however, would be sited further inland and south of the existing power plant. The uncertified Mitigated Negative Declaration (MND) produced by the City of Oxnard for this project states that:

> *Views of the proposed project site from the beach and shoreline would be essentially blocked by the intervening topography and the existing oil processing structures. Recreational users at the Mandalay State Beach Park located approximately 1,000 feet southwest of the proposed project site would be able to view the tallest project structure (i.e. the 80-foot exhaust stack). However, the intervening land between the Mandalay State Beach Park and the proposed project site is dotted with existing oil processing structures, which are approximately 70 feet high, and the stack at the Mandalay Power Generating facility which is 203 feet high. The existing oil derricks would be the main visual element of the view looking north from the Park and would overshadow the more distant, and therefore smaller and less intrusive, view of the proposed project elements.*

The conclusions and assertions of the MND included above are supported by Commission staff's review of the project site and knowledge of the project area gained through numerous visits to both the project site and to those portions of the Mandalay State Beach shoreline

directly west of the proposed peaker plant. Nevertheless, the proposed exhaust stack would still be visible from the shoreline and from surrounding areas. To minimize the adverse visual effects of those project elements that can not be effectively screened, SCE considered reducing the height of the exhaust stack and poles and using alternate paint colors. However, the proposed color was considered to have the least visual impact when accounting for all lighting conditions and vantage points and, as noted by SCE, reducing the height of the stack would cause other undesirable results:

> *Reducing the height of the stack is not feasible, and could result in additional undesirable impacts such as change in emission characteristics. The height of the stack has already been minimized to the maximum extent feasible and cannot be reduced further.*

A visible condensation plume would draw additional attention to the stack and effectively increase its height by up to several dozen feet at times. The peaker plant's operation would be limited to a maximum of 2,000 hours annually, however, and therefore a visible condensation plume would not be a permanent visual feature of the project. The plume would only be visible upon the occurrence of certain metrological events (cold temperatures and high humidity). It should be noted, however, that the condensation plume associated with this proposed facility would not be the same as the steam plume visible from the Mandalay Generating Station and other power plants with similar steam turbine generators. Because the proposed peaker would rely on a different turbine system which would make use of an adapted jet engine, exhaust vapors and gas released from the stack are much hotter and would disperse significantly before the water vapor in the stack exhaust cooled sufficiently to condense, and would only be visible when atmospheric conditions would resulted in condensation. Although the condensation plume would undoubtedly increase the visual presence of the peaker plant during these times, SCE has stated that elimination or minimization of the condensation plume would not be possible due to technical limitations and air quality requirements. Even without effective minimization of this visual feature, the Commission does not anticipate adverse affects to the aesthetics of the surrounding area to result from the condensation plume, primarily due to its temporary and impermanent nature.

A reduction in the height of the proposed transmission poles is also not feasible due to the size and weight of the proposed transmission lines and the safety, design requirements and standards that transmission infrastructure must adhere to. The Commission therefore finds that the required height of the proposed peaker plant's exhaust stack and transmission poles preclude efforts to completely screen these features from all nearby vantage points. As specified under the LCP's visual resource policy (policy 37), however, "all new development in the coastal zone shall be designed to minimize impacts on the visual resources of the area" and "particular care shall be taken in areas of special quality." While direct design changes which would reduce the visibility of the peaker plant facility or its associated transmission poles and exhaust stack are not feasible, SCE's commitment to construct vegetated berms on the eastern border of the project site would serve to minimize the proposed project's impacts on the visual resources of the project area.

In addition, the Commission is requiring in **Special Condition 10** that SCE dedicate a conservation easement on a portion of its property to the east of Harbor Boulevard and provide $500,000 for the implementation of visual enhancements and access and recreation improvements to this property as a means of mitigating the adverse visual impacts to the project area that would result from project construction and operation.

With implementation of the landscaping plan, as noted above and described within Exhibit 4, as well as the adoption of **Special Condition 10(c),** the Commission finds that the project's adverse visual effects will be minimized to the extend feasible and therefore will be consistent with LCP Policy 37.

E. Hazards

The certified LCP contains policies that provide for the consideration and minimization of potential threats posed by natural hazards. Applicable LCP policies include:

> ***Local Coastal Policy 39 states:*** *All applications for grading and building permits and subdivisions shall be reviewed for threats from hazards such as seismic activity, liquefaction, tsunami run-up, seiche, beach erosion, flood, storm wave run-up, and expansive soils. Geologic reports may be required in known hazard areas. Appropriate mitigation measures shall be applied to minimize threat from any hazards.*
>
> ***Local Coastal Policy 56 states:*** *No industrial or energy-related development shall be located seaward of the 100-year flood/wave run-up line as designated by the U.S. Department of Housing Insurance Program Insurance Program Administration and the Land Use Map.*

Regarding potential hazards posed by natural events and geologic features at the site, the uncertified Mitigated Negative Declaration produced by the City of Oxnard for this project states:

> *The proposed project will be constructed in an area of known seismic activity. Approximately 38 active faults are known to exist within a 60-mile radius of the project site. Of primary concern is the Oak Ridge Fault (Blind Thrust Offshore), approximately 3.9 miles southwest of the project site which represents the most significant potential source of strong seismic ground shaking at the project site. The fault trends in an east-west direction and extends from offshore in the Pacific Ocean toward the Ventura-Oxnard coastline. This fault is considered capable of generating a 6.9 magnitude earthquake. Based on the California Geological Survey's Probabilistic Seismic Hazards Mapping Ground Motion Page (2006), there is a 10 percent probability of earthquake ground motion exceeding 0.582 times the acceleration of gravity (g) at the project site over a 50-year period.*
> …
> *Because the proposed project is located in a seismically active region, there is the potential for damage to the new project structures in the event of an earthquake. According to the latest geotechnical report for the proposed site, (Kleinfelder, 2006),*

differential seismic settlements at the site could be on the order of ¼ inch. New structures must be designed to comply with the recommendation presented in the geotechnical report (Kleinfelder, 2006), the California Building Code (CBC)(2001 edition) and the Uniform Building Code (UBC) Zone 4 requirements because the project is located in a seismically active area. The CBC and UBC are considered to be standard safeguards against major structural failures and loss of life. The goal of the codes is to provide structures that will: (1) resist minor earthquakes without damage; (2) resist moderate earthquakes without structural damage, but with some non-structural damage; and (3) resist major earthquakes without collapse, but with some structural and non-structural damage. The UBC bases seismic design on minimum lateral seismic forces ("ground shaking"). The UBC requirements operate on the principle that providing appropriate foundations, among other aspects, helps to protect buildings from failure during earthquakes. SCE will design all structures to meet the latest UBC codes. With adherence to proper design and construction practices, no significant impacts from seismic ground shaking would be expected.

…

There is the potential for liquefaction induced impacts at the project site. The appropriate parameters for liquefaction exist at the project site, including unconsolidated granular soils and a high water table. In addition, Seismic Hazard Zone maps prepared by the State of California (Division of Mines and Geology 2002) indicate that the site is in an area with the potential for liquefaction. In addition, the site has a high potential for liquefaction to occur during seismic event based on subsurface soil conditions observed during the most recent geotechnical study (Kleinfelder, 2006). If liquefaction should occur at the site, there is the potential for up to approximately two to three inches of lateral displacements to occur towards the adjacent channel (Kleinfelder, 2006). The CBC and UBC requirements consider liquefaction potential and establish more stringent requirements for building foundations in areas potentially subject to liquefaction. Therefore, compliance with the CBC and UBC requirements is expected to minimize the potential impacts associated with liquefaction. Thus, liquefaction impacts are expected to be less than significant.

…

The uppermost 10 feet of soil at the project site is generally composed of loose, fine to medium-grained sand with gravel. The USDA Soil Conservation Service (1970) classifies these soils as having a low potential for expansion and are not considered an expansive soil as defined in Table 18-1-B of the UBC (1994), and thus, the proposed project would not be expected to create substantial risks to life or property due to expansive soils.

Because SCE proposes to site the peaker plant near the northwestern edge of the project site, within approximately 150 feet of the southern bank of the Mandalay Canal, one of the potential consequences of seismically induced liquefaction at this site is the lateral movement of soil towards this un-reinforced canal. This type of soil movement is referred to as lateral spreading and has a potential to occur up to two to three inches. While this level of lateral spreading has the potential to substantially affect the structural integrity of the proposed

facility, it is within the range that can be addressed and mitigated by engineering and design modifications.

SCE prepared a geotechnical report addressing the high potential for seismic activity, liquefaction and lateral spreading at this site. The report recommends a number of design changes to ensure the structural integrity of the facility. If the structural design of the facility cannot tolerate the potential 2 to 3 inches of lateral spreading that may occur at the site due to liquefaction, the report recommends pile foundations, a soil-mixing wall to cut off the lateral spreading and stone columns to mitigate the liquefaction. The report also recommends that the plant be supported on shallow mat foundations underlain by engineered fill and that the upper native soil materials and any existing artificial fill below the foundations be over-excavated and replaced with reinforced engineered fill with three layers of geogrid sheets.

The Commission's staff geologist reviewed the geotechnical report and agrees with the recommendations it contains. **Special Condition 4** requires that SCE implement the recommendations detailed in the project's geotechnical report (Kleinfelder, 2006) as well as the relevant policies of the Uniform Building Code and California Building Code. Although Kleinfelder Inc. has no longer been retained as SCE's geotechnical consultant, because this firm developed the hazard risk minimization recommendations proposed to be used for this project, **Special Condition 4** requires that Kleinfleder Inc. provide review and approval of all final project design and construction plans to ensure that its design criteria have been appropriately incorporated. As conditioned, the Commission finds the proposed project consistent with LCP Policy 39 as it relates to seismic hazards.

Although the Commission finds that through compliance with the recommendations provided by Kleinfelder Inc., the proposed project is consistent with the LCP policy relating to seismic hazards, development along the coast, particularly in seismically active areas, inherently involves risk. The risks of the proposed development include that the proposed structures will not be adequately protected against damage from seismic activity, liquefaction and lateral spreading. Although the Commission has sought to minimize these risks, the risks cannot be eliminated entirely. Given that SCE has chosen to construct the development despite these risks, SCE must assume the risks. **Special Condition 5** therefore requires SCE to waive liability and indemnify the Commission against damages that may occur as a result of its approval of this permit. **Special Condition 6** requires the applicant to record a deed restriction imposing the conditions of this permit as covenants, conditions and restrictions on the use and enjoyment of the property.

Because the project site is located in close proximity to both the ocean and one of the region's major river systems, the Santa Clara River, potential hazards resulting from flood, sea level rise and tsunami inundation must also be closely considered. With regard to the potential for tsunami inundation of the project site, the uncertified MND describes the tsunami risk at the project site as low but evaluates the potential risk to personnel and damage to project equipment and infrastructure resulting from a tsunami that was able to reach the project site:

> *Because the facility will normally be manned by only one or two employees during the normal work week (Mon-Fri) and when the peaker is operating, a tsunami would not*

significantly increase the risk of exposure of people to the inundation. Damage to the facility as a result of a tsunami may potentially include damage to the ammonia storage tank resulting in a release. However, ammonia is highly soluble in water. If damage to the aqueous ammonia storage tank were caused by a tsunami, and aqueous ammonia were released, the released aqueous ammonia would mix with seawater. Mixing with seawater would substantially reduce the rate of evaporation of gaseous ammonia from the mixture in two ways. First, the seawater would dilute the aqueous ammonia, which would reduce the ammonia concentration. The ammonia evaporation rate would be lower in a more dilute solution than in the 19 percent solution contained in the storage tank.

The evaporation rate of ammonia from an aqueous solution is affected by the pH of the solution. At a pH of about 9.8 or higher, the ammonia is essentially all present as dissolved ammonia gas, which can evaporate from the solution. At a lower pH, the ammonia dissociates into ammonium and hydroxyl ions, which do not evaporate from the solution. The pH of the 19 percent solution in the storage tank is above 12, so the ammonia could evaporate from the solution if it were released without dilution with seawater. However, the pH of seawater is between about 7.5 and 8.5, and substances dissolved in seawater "buffer" it, so that it is resistant to changes in pH when other solutions are mixed with it. As a result, mixing the aqueous ammonia from the storage tank with seawater would lower its pH below 9.8, so most of the ammonia would be dissociated and not able to evaporate.

As a result of the effects of mixing the aqueous ammonia with seawater on the ammonia evaporation rate, a release of aqueous ammonia from the storage tank caused by a tsunami is not anticipated to cause significant adverse impacts.

Ventura County has developed tsunami evacuation maps that are based upon a rough estimate that tsunami inundation could extend up to about the 10 meter contour. These evacuation maps indicate that the proposed site would be seaward of the evacuation area and provides appropriate evacuation routes to egress the area. At the present time, the California Emergency Management Agency is working on a new set of state-wide tsunami inundation maps for evacuation planning. The maps for Ventura County are presently under review. Though not intended for making land-use decisions, the results from these maps could help in evaluating the tsunami hazard for the project. The sand dunes seaward of the proposed project are approximately 20 feet high and would be expected to offer some barrier from inundation. In addition, the project site is located at an elevation of between 10 and 15 feet above sea level and several hundred feet landward of the coastal dunes. While detailed information on the tsunami inundation potential for the proposed site should be available soon, inclusion of this site in local plans for tsunami preparedness and evacuation planning would likely be components of responsible operation and contingency planning if the site is determined to be within the tsunami inundation or evacuation area.

For these reasons, the Commission finds the proposed project to be consistent with LCP Policy 39 as it relates to tsunami hazard.

Flooding is often a hazard along the coast and both LCP Policies 39 and 56 address flood risk. The U.S. Department of Housing Insurance Program Administration, specified in LCP Policy 56, no longer exists and the federal program for flood insurance and development of flood insurance rate maps is now housed in the Federal Emergency Management Administration (FEMA) in the Department of Homeland Security. Both the Land Use Map included in the Oxnard LCP as well as the currently effective Flood Insurance Rate Map produced by FEMA indicate that the zone of inundation associated with a 100-year flood event would remain to the west of the project site and seaward of the coastal dunes along Mandalay State Beach. However, these maps were developed approximately 20 years ago and FEMA is presently in the process of updating its Flood Insurance Rate Map for the project area. The draft map has been circulated for public review and a new Flood Insurance Rate Map for this area is scheduled for completion in September 2009. The City has provided a copy of the draft map which shows that the proposed location of the peaker plant would be outside of the Special Flood Hazard Areas Inundated by 100-year Flood but within a zone that includes "areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood."

This latest draft FEMA map is refuted by an evaluation produced on September 17, 2008 by SCE's engineering consultant, Dr. Howard Chang. Dr. Chang modeled the Santa Clara River conditions and concluded that neither a 100-year flood event nor a 500-year flood event at the Santa Clara River would reach the project site. This evaluation relies on a variety of site specific hydrologic and topographic features around the project site as well as the results of flood modeling simulations. On March 12, 2009, Dr. Chang submitted an appeal of the draft flood delineation to FEMA on behalf of SCE that draws on the findings of his analysis to conclude that "the Peaker Plant site is not subject to flooding during the 100-yr flood, nor the 500-yr flood." Specifically, Dr. Chang's analysis and conclusion are based on three primary factors: (1) the large distance between the Santa Clara River channel and the peaker plant site; (2) the presence of the Mandalay Canal between the Santa Clara River and the peaker plant site; and (3) the likely occurrence of river bed scour in the Santa Clara River during a flood event which would serve to deepen the river and decrease the volume of water available to flood its banks. As noted by Dr. Chang in his appeal of the draft FEMA flood map:

> *(1) The Peaker plant site is separated from the current south river bank by about 2 miles. Based on the assumptions used by FEMA, the floodwater would overtop the south channel bank by as much as 5 feet. When the water spreads out to a width of 2 miles, the average water depth would be in inches. In other words, the overbank flow, if any, reaching the plant site would spread out in a very large width to become very shallow in depth. The plant site has the minimum ground elevation of 12 feet, which is at least two feet above the adjacent areas. Flooding in adjacent areas, if any, cannot be deeper than 2 feet; therefore floodwater could not cause flooding of the plant site.*
>
> *(2) The water surface in the canal is tidal; it is therefore much lower than the Peaker plant site. The canal would intercept floodwater before it reaches the plant site; it then transfers floodwater toward the south and then the ocean via the Channel Islands Harbor.*

> *(3) In reality, the river channel near the mouth will undergo substantial channel bed scour to result in lowering of the flood level. Coastal rivers in southern California may be blocked by beach sand during the dry season, but the sand bar blocking the river mouth would be removed during floods by the floodwaters themselves. Fig. 5 shows measured cross-sectional changes of the San Dieguito River by Coastal Environment (1993) at a river station 680 feet inside the river mouth during the 1993 flood, which was an 18-year flood. The cross-sectional profile of December 22, 1992 represents the measurement before the flood, the March 15, 1993 profile was measured just after the flood, and remaining profiles after the flood depict gradual refill of the channel bed by littoral sand from the beach. The figure shows that the 18-yr flood lowered the channel bed by about 7 feet. One should expect the 100-yr flood to cause even greater channel bed scour. This same effect will occur at the Santa Clara River mouth as predicted by* [the computer model] *FLUVIAL-12.*

Dr. Chang's report provides a well-reasoned evaluation to support his conclusion that this site will not be at risk from the 100-year or 500-year flood. However, FEMA has not yet responded to Dr. Chang's letter. FEMA has a formal process to make changes or revisions to the Flood Insurance Rate Maps and it is not now possible to anticipate whether the new finalized Flood Insurance Rate Map for this area will include or exclude the proposed project site from the 500-year flood risk area. If it is shown to be at risk from flooding, there are options for on-site mitigation. FEMA has historically accepted engineered levees and berms as flood protection. As part of the proposed landscaping plan (Exhibit 4), SCE will construct a six-foot high berm along the eastern edge and northeastern corner of the proposed facility and would transition this berm along the northern edge of the peaker plant to a vegetated bioswale which would surround the remaining sides of the peaker plant. This berm would facilitate the discharge of surface water flows away from the facility and reduce the visual impact of the plant. SCE could expand and engineer this berm and swale to also mitigate for flooding.

Mapping for flood hazards is based on the current sea level conditions and a 1% probability storm or flood event. Most climate models show that sea level will rise in the future, with some researchers showing up to 3.5 to 4.6 feet of sea level rise from 1990 to 2100. There is a great deal of debate about what is an appropriate amount of sea level change for planning purposes, and what amount of increase should be used for engineering design. It is agreed that sea level rise will worsen the flood risk at areas which are now subject to flooding and will expand the flood risk to areas which now do not experience flooding. A recent report on the coastal impacts of sea level rise has shown that this site could be inundated with a combination of a 1% probability flood and a 4.6 foot rise in sea level.[14] These draft inundation maps provide some general evidence for concern about flood risk at the site and reinforce the possible need for flood protective berms now, or in the future. The draft maps that show the area near the proposed project to be in an area of future inundation are based on a possible rise in sea level of 4.6 feet by the year 2100, rely primarily on broad scale elevation data, do not take any site specific topographic features, existing development or flood

[14] See for example, draft maps prepared in conjunction with the Pacific Institute's March 2009 Draft Report, "The Impacts of Sea-Level Rise on the California Coast", CEC-500-2009-024-D

protection structures into account and do not provide a site-specific analysis to determine if there is a direct connection between low-lying areas that could be flooded and a water body that would be the source of the flooding. These draft maps also do not consider the flood protection that could be provided by either the existing dunes seaward of the plant or the visual berm and drainage features at the site. In addition, the draft maps include a caveat which states that they "shall not be used to assess actual coastal hazards, insurance requirements or property values, and specifically shall not be used in lieu of Flood Insurance Studies and Flood Insurance Rate Maps issued by the Federal Emergency Management Agency (FEMA)." [15] Further, the estimate of the "current coastal base flood (approximate 100-year flood extent)" used on the draft maps does not accurately represent the delineation of the 100-year flood area included on the current FEMA Flood Insurance Rate Maps for the area. Specifically, the draft maps produced by the Pacific Institute include the project site within the approximate 100-year flood zone while the current FEMA Flood Insurance Rate Map for the area does not. The report correctly raises concern that this site could be subject to flooding under certain sea level rise conditions. If sea level rise were to put the proposed project at risk from flooding sometime in the future, SCE may need to increase the on-site berms to maintain flood protection of the site. The berms should be engineered to allow adaptation for future flood risks.

Given the inherent uncertainty regarding the timing and magnitude of coastal hazards as well as the changing nature of coastal areas, the Commission recognizes the need to provide opportunities for addressing future threats to coastal development through adaptive management. Although not conclusive, as described above, information currently exists regarding the potential susceptibility of the project area to sea level rise and inundation in the future. This information suggests that these threats may need to be addressed prior to the end of the project's 25 year anticipated operating life. As such, **Special Condition 11** requires SCE to provide the Executive Director with a written evaluation of coastal hazards and risks posed to the peaker plant and associated facilities twenty years after the Commission's approval of the project. Based on the findings of this report, the Executive Director shall determine whether a permit amendment shall be required for SCE to address the threat posed by these coastal hazards.

In addition, **Special Condition 7** requires that if the final approved Flood Insurance Rate Map shows the project site to be at risk from a 500-year flood event, SCE shall submit, within 60-days of FEMA's determination, a permit amendment for either an engineered berm or levee around the peaker plant, its substation and natural gas metering station that is adequate to provide flood protection without encroaching into ESHA or other sensitive coast resource areas or an alternate design change to the site's topography or foundation which would also ensure that a 500-year flood event would not result in flooding of the peaker plant.

For the reasons described above, the Commission finds that the project site would not be subject to flood hazard and, as conditioned, would conform to LCP Policy 39.

---

[15] Ibid.

This section of coast has historically had high rates of erosion, ranging from 8 to 10 feet per year for the Oxnard region.[16] The proposed peaker plant site is approximately 1,000 feet from the current shoreline; however, with ongoing or accelerated coastal erosion, the peaker plant site may be threatened by erosion in the future. Seawalls, coastal armoring and other structures to protect from coastal erosion are known to cause scour, encroachment on the beach, passive erosion, denial of inland sand to the littoral cell and other adverse impacts to sensitive beach and dune areas and public recreational resources. In addition, the Mandalay State Beach seaward of the proposed peaker plant site supports sensitive dune habitat and recreation resources that are protected by the habitat and resource policies of the LCP. The proposed peaker plant has a sufficient setback that it should be safe from erosion for the life of the structure and not require the construction of any shore protection devices. In the event that the setback is not adequate long-term erosion protection and to ensure the proposed project is consistent with LCP policies for habitat and resource protection, the Commission is requiring **Special Condition 9** to prevent the installation of seawalls or shoreline armoring devices in the future.

With respect to LCP Policy 56, the 100-year flood and wave run-up line designated in the LCP's Land Use Map is located approximately 500 feet to the west of the proposed project site, on the seaward side of the coastal dunes along Mandalay State Beach. Although the U.S. Department of Housing Insurance Program Administration referred to in this policy no longer appears to be in existence under that title, FEMA, the federal agency which creates flood hazard maps and regulates flood insurance, appears to fill a similar role. As discussed above, the proposed project site is also outside of the 100-year flood zone displayed by the existing version of FEMA's flood map of the project area.[17] While a recently released draft FEMA flood map appears to offer revisions of the flood projections for the project area, this draft FEMA map does not include the peaker site within the delineation of Special Flood Areas Inundated by 100-year Flood. Based on the low flooding risk of this area, as determined by FEMA and the City of Oxnard in its Land Use Map, the Commission finds the proposed project consistent with LCP Policy 56.

F. Water Conservation and Municipal Services

The certified LCP contains policies that require water conservation measures to be included in new development and require a consideration of municipal service capacity. Applicable LCP policies include:

> ***Local Coastal Policy 41 states:*** *All new development in the coastal zone shall employ the most recent water conservation methods, including (but not limited to):*
>
> *a. low-flow pipes and toilets;*
>
> *b. flow restrictions on all shower heads;*

[16] Hapke, S.J., D. Reid, B.M. Rishmond, P. Ruggiero and J. List 2006. "National Assessment of Shoreline Change Part 3: Historical Shoreline Change and Associated Coastal Land Loss along Sandy Shorelines of the California Coast," USGS Open File Report 2006 – 1219.

[17] The Commission notes, however, that the 100-year flood/wave run-up line designated by the City of Oxnard Land Use Map does not appear to factor in continued sea level rise.

c. underground drip irrigation systems; and
d. use of low-water use vegetation for landscaping.

Local Coastal Policy 42 states: *Consideration of all proposed projects in the coastal zone shall include consideration of the remaining water and sewer capacities. This shall include a calculation of the proposed project's use of remaining capacity in percent. Projects shall be approved only when sufficient water and sewer services are available.*

Local Coastal Policy 64 states: *It shall be a condition of approval that, wherever possible, wastewater from any industrial or energy-related facility be treated as necessary and put to reuse including, but not limited to, the following: the re-injection into the aquifer or groundwater recharge system, recycling for industrial use, agricultural use, or urban services.*

The applicable provisions of the LCP's policies directed towards water conservation and municipal services relate to three separate aspects of the proposed project, landscaping water use and low-water use vegetation for landscaping (LCP Policy 41), municipal service supply capacity (LCP Policy 42) and wastewater reuse (LCP Policy 64).

To satisfy the provisions of LCP Policy 41 regarding the use of low-water use vegetation for landscaping, SCE's landscape plan exclusively relies on locally adapted native bush, shrub and small tree species. Given the tolerance of most native California species for low water conditions, the use of these species would ensure that the potentially elevated water requirements of non-native species and large trees would be avoided. In addition, SCE's landscape plan also includes the use of an irrigation system that minimizes water use (through the use of evapotranspiration sensors and climate based irrigation scheduling) and is appropriate for native plant species. Although LCP Policy 41 specifies that water conservation methods include underground drip irrigation systems, such systems may not be appropriate for the native shrub, bush and grass species that would be used within the project's landscaping. Some native species do not do well with drip irrigation as this type of system may provide too much water to plant roots which discourages root growth and promotes root rot due to over-saturation. In addition, because the project would make use of low-water use vegetation for landscaping, within several years landscaping plants should be sustained with little or no water beyond what is provided through natural precipitation. The installation of a permanent underground irrigation system may therefore not be needed or appropriate in this case. As proposed and described in Exhibit 4, the Commission finds the project's landscaping conforms to the requirements of LCP Policy 41.

With regard to Local Coastal Policy 42, SCE states that,

> *There are adequate public services for the proposed use including, but not limited to, fire and police protection, water, sanitation, and public utilities and services to ensure that the proposed use would not be detrimental to public health and safety. The MND concluded that the project will not impact any public services.*

The proposed project's sewer and municipal water requirements are discussed in detail in the uncertified Mitigated Negative Declaration produced by the City of Oxnard for this project, which states that:

> *For at least the first year of operation, the wastewater will be collected in a tank, and hauled offsite for disposal because there is no sewer system in the site vicinity. SCE expects that a sewer connection will be installed sometime in the future, at which time the wastewater, will be discharged to the City's sewer system and will meet the City's pretreatment standards. There will be no effect on the City's physical or biological treatment processes.*
> …
> *The Oxnard Wastewater Treatment Plant (OWTP) has an average dry weather flow (ADWF) design capacity of 31.7 million gallons per day with provisions for an ultimate ADWF design capacity of 39.7 million gallons per day… The wastewater flow from the project of eight gallons per minute is insignificant compared to the capacity of OWTP.*
> ..
> *Overall, the volume of water required to operate this type of facility [the peaker plant] is very low, the main water uses are for direct injection into the turbine to control NOx emissions (50 gpm) and spraying a mist into the inlet of the combustion turbine to lower air temperature to improve efficiency (12 gpm). Daily water use during the operational phase is estimated to average 62 gpm during unit operation… The City's potable water supply is sufficient to meet the unit's water requirements.*
> …
> *The project's demand for water during construction and operation is not significant compared to the water supply available in the City of Oxnard.*

In addition to the anticipated operational water use described above, proposed landscaping activities would require an additional three acre-feet of municipal water per year in each of the first two years of landscaping and maintenance and roughly one acre-foot of water per year in years three and four. No water is anticipated to be needed for landscaping use during year five and beyond as the landscaping plants should have established root systems capable of capturing rainwater and existing soil moisture. In total, the proposed project would require nearly 27 acre feet of water per year for the first two years of operation and approximately 25 acre feet in years three and four and 24 acre feet in each subsequent year of operation. These estimates are made assuming the peaker would operate at the maximum level of 2,000 hours per year as specified in the proposed plant's air emission permit issued by the Ventura County Air Pollution Control District. Under anticipated use of approximately 200 hours per year, annual water requirements would be reduced to between 2 and 4 acre-feet of water per year.

Calculated as a percentage of remaining capacity in the City of Oxnard, as required under LCP Policy 42, the proposed project would comprise less than one-tenth of one percent of the City's total water demand (based on the average demand of the past five years of 29,087 acre

feet per year[18]) and would require less than approximately one percent of the projected excess supply in 2010.[19] The proposed project's municipal water requirements would therefore not be expected to substantially affect remaining or projected water supply capacity in the City of Oxnard. However, in communications with Commission staff, representatives of the City of Oxnard have repeatedly stated that due to existing drought conditions, recent court decisions, and the fact that long range municipal water supply assessments did not include an allocation of water for this project, SCE would be required to participate in a newly created mitigation program designed to address projects requiring substantial use of municipal water. This program is detailed in a report which was provided to the Oxnard City Council by the Municipal Services Director on January 15, 2008. The program specifies that all users of large volumes of municipal water not discussed and evaluated in the City of Oxnard's 2005 Urban Water Management Plan would be presented with two options: (1) "large water users could participate in program(s) developed by the Water Department that offset existing water demand (permanent, verifiable, and quantifiable) and then be entitled to the amount of the offset, or" (2) "suspend project approval contingent on confirmed availability of reliable water supplies." The report goes on to describe the implementation of this mitigation program by specifying that "Initially, this program would be included in EIRs and MND, including the General Plan Update EIR, and then added into the next update of the [Urban Water Management Plan]."

At the current time, the City of Oxnard's General Plan Update EIR is still being developed and the next update of the Urban Water Management Plan is scheduled for 2010. In addition, it is the understanding of Commission staff that the Water Department offset program described within the first option included above has yet to be developed and implemented. Although the municipal water use mitigation program has not yet been implemented by the City of Oxnard and the offset program has yet to be developed, SCE confirmed the availability of reliable water supplies for the proposed project. As described in a letter from the General Manager of the Calleguas Municipal Water District (one of the primary suppliers of water to the City of Oxnard) to SCE dated January 15, 2009:

> *Calleguas warrants that it can provide additional water to the City of Oxnard to service Edison's proposed facility. From Calleguas' perspective, the incremental increase of 1 to 2 acre-feet of annual water consumption for this important peaker facility is quite small, and supplies are available. This is also true of the estimated maximum annual use by the peaker in a prolonged emergency.*

Commission staff has repeatedly requested confirmation from the City regarding whether or not this letter from the Calleguas Municipal Water District qualifies as "confirmed availability of reliable water supplies," as specified in the City's water management program. As of March 20, 2009, this request is still being considered by the City. In the absence of this confirmation by the City, Commission staff has evaluated existing information regarding municipal water supplies, including the 2005 Urban Water Management Plan as well as the

[18] Based on the Final Water Supply Assessment and Verification dated April 2008 by Kennedy/Jenks Consultants for the proposed Wagon Wheel Development project.
[19] As noted in Table 42 of Appendix A of the 2005 City of Oxnard Urban Water Management Plan, supply in 2010 is projected to be exceed demand by approximately 3,189 acre feet.

letter from the Calleguas Municipal Water District. Given the small amount of municipal water required by the proposed project – relative to the total excess capacity of 3,189 acre-feet projected to be available in 2010 by the 2005 City of Oxnard Urban Water Management Plan, the proposed project would require less than 1% - as well as the guarantee of reliable supply by the Calleguas Municipal Water District, the Commission finds that "sufficient water and sewer services are available" for the proposed project and that is therefore in conformance with LCP Policy 42.

As stated in SCE's appeal to the Commission in regard to Local Coastal Policy 64,

> *Wastewater produced by the Project* [during operation] *will be minimal. Eight gallons per minute of wastewater from the evaporative cooler would be produced during the limited hours that the unit will operate. This water will have elevated levels of total dissolved solids but no other added pollutants and will be collected and disposed of at a facility that complies with the above requirement* [Local Coastal Policy 64].

The limited amount of wastewater generated by the proposed project during operation (just over 1 million gallons per year based on a maximum anticipated use of the peaker plant – 2,121 hours per year) and the discharge proposal outlined above appears to satisfy the requirements of LCP policy 64. With regard to the substantially greater levels of wastewater proposed to be generated during preparation of the peaker plant site, SCE has proposed to discharge approximately 455 million gallons of wastewater associated with these activities into the Mandalay Canal during de-watering. SCE proposes such extensive de-watering to lower the groundwater level at the peaker plant site so that installation of a foundation and support pad for the facility may be achieved. The discharge of this wastewater into the Mandalay Canal also appears to be in conformance with policy 64 because the proposed wastewater discharge site in the Mandalay Canal is directly adjacent to the cooling water intake site for the Mandalay Generating Station. The proximity of these discharge and intake locations would allow the vast majority of wastewater discharged from the proposed de-watering activities to be taken-up by the Mandalay Generating Station for use as cooling water. This would allow de-watering wastewater to be recycled for an industrial type use, as specified under LCP policy 64, while offsetting the amount of coastal water extracted from the Mandalay Canal by the Mandalay Generating Station.

The Commission finds that with the inclusion of SCE's revised landscaping plan, the proposed project is consistent with the water conservation and municipal service provisions of LCP Policies 41, 42 and 64.

G. Air Quality

The certified LCP contains policies that provide for the protection and management of local and regional air quality. Applicable LCP policies include:

> ***Local Coastal Policy 47 states:*** *The Ventura County Air Quality Management Plan (AQMP) is incorporated into the LCP by reference. All new development located within the coastal zone shall occur in a manner consistent with the AQMP.*

Local Coastal Policy 51 states: *All new industrial and energy-related development shall conform to the air quality regulations set by the Ventura County Air Quality Management Plan and New Source Review Rule 26.*

The City's LCP requires that the peaker plant project conform to the air quality regulations of the Ventura County Air Quality Management Plan. Specifically, this project must meet the requirements of New Source Review Rule 26. Rule 26 requires an applicant to provide Best Available Control Technology ("BACT") and, if certain emission thresholds are exceeded, provide emission offsets. As part of its review of this project, Coastal Commission staff consulted with staff of the Ventura County Air Pollution Control District (VCAPCD). VCAPCD is requiring an Authority to Construct Permit for the project and has issued a Draft Authority to Construct Permit. The VCAPCD has concluded that the project meets Rule 26's BACT requirements and that no emission offsets are required.

Construction Emissions: The project will generate construction and operational air emissions. Construction emissions principally consist of equipment exhaust emissions (CO, ROC, NO_x, sulfur dioxides (SO_x) and particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}), fugitive dust from grading and excavation, and ROC from painting and asphaltic paving). Emissions during construction also include exhaust emissions from worker commute trips and trucks, and emissions associated with natural gas pipeline construction (trenching, welding and paving). VCAPCD recommends a CEQA mitigation threshold of 25 pounds per day for construction-related emissions of ozone precursors NOx and ROC to avoid a significant adverse impact to ozone air quality during project construction. The uncertified Mitigated Negative Declaration (MND) estimates that during construction the project's NO_x and ROC emissions will exceed 25 pounds per day. The MND estimates 157.1 pounds per day of NOx and 32.3 pounds per day of ROCs will be emitted during construction. The MND recommends measures to reduce these construction-related emissions. These measures include:

- Controlling fugitive dust on all graded, excavated and exposed soil areas. Treatment will include periodic watering, application of "environmentally safe" soil stabilization materials and/or roll compaction. Reclaimed water is to be used, if feasible;
- Minimizing equipment idling time;
- Limiting on-site traffic to 15 miles per hour or less;
- Curtailing all grading, clearing, earth-moving and excavation operations during periods of high wind (i.e., wind speed sufficient to cause fugitive dust to impact adjacent properties; and
- Use of alternative fueled construction equipment, such as compressed natural gas (CNG), liquefied natural gas (LNG), electric, or equipment meeting Tier 2 standards, if feasible.

As part of its project, SCE proposes to implement all these recommended mitigation measures. Implementation of these mitigation measures will reduce these potential adverse air impacts to less than significant levels.

Operational Emissions: Operation of the peaker plant due to the combustion of natural gas fuel will also result in emissions of NO_x, CO, $PM_{10,}$ ROC and SO_2. Of most concern here is the release of NO_x and ROC that produce ozone. Ozone is a criteria pollutant that is formed when NO_x and ROCs – both byproducts of combustion – undergo slow photochemical reactions in the presence of sunlight.

The proposed project's operational emissions were presented in the MND, but there was an error in the methodology and so the calculations are not accurate. In accordance with VCAPCD CEQA guidelines, equipment that receives a VCAPCD air permit is not included in the CEQA significance calculation. For this project, the combustion turbine generator will receive a VCAPCD permit. Mistakenly, the combustion turbine generator was included in the MND's operational emissions significance evaluation. Applying the proper methodology, the project's operations will result in 5.62 lbs/day NO_x and 0.66 lbs/day ROCs. The total peak daily emissions for ROC and NO_x are therefore much less than VCAPCD's significance threshold of 25 lbs/day. VCAPCD's CEQA guidelines do not require mitigation or offsets in cases where project emissions fall below significance thresholds.

As stated above, SCE must obtain from VCAPCD an air permit for the combustion turbine generator and satisfy the district's Rule 26 requirements. Rule 26 requires an applicant to provide emission offsets only if a project emits 5.0 tons per year or more of NO_x and ROC. Because this facility will operate only a limited number of hours per year (up to 2,000 hours), the annual potential to emit from permitted equipment (the combustion turbine generator) is less than 5.0 tons per year of NO_x (4.9 tons per year) and less than 5.0 tons per year of ROC (1.3 tons per year). Therefore, the VCAPCD will not require emission offsets for NO_x and ROC emissions from the combustion turbine generator.

As part of its application to the City, SCE also performed emissions and hazards modeling to assess if any health-based exposure thresholds will be exceeded. SCE assumed a "worst case" exposure level and assumed multiple operating scenarios that exceed the plant's permitted operating hours. To ensure that potential impacts from peaker operations were evaluated under all meteorological conditions, SCE conducted the modeling every hour of a 3-year period using VCAPCD-approved meteorological data. The results of the modeling showed that the maximum predicted air quality concentrations and carcinogenic and non-carcinogenic risks associated with human exposure both at the proposed peaker plant fence line and in receptor areas located within 1 kilometer of the plant do not pose any risk to human health. VCAPCD staff reviewed SCE's modeling and air toxics health risk assessment and concluded that both long-term (cancer and chronic non-cancer) and short-term (acute non-cancer) impacts were assessed using reasonable worst-case assumptions and that the project does not pose any significant risk to human health for both residents and off-site workers. [20]

As described above, through issuance of an Authority to Construction Permit, the VCAPCD will require that the project be carried out consistent with VCAPCD's air quality regulations. The Commission thus finds the project consistent with LCP Policies 47 and 51.

---

[20] See SCE's *Maximum Potential Air Quality Impacts from McGrath Peaker Project Operations*, September 8, 2008 and VCAPCD health risk assessments included as Exhibit 14.

H. Public Access and Recreation

The certified LCP contains policies that provide for the protection of public access to the beach. Applicable LCP policies include:

> ***Local Coastal Policy 54 states:*** *All new industrial and energy-related development shall be located and designed to minimize adverse effects upon public access to the beach. Where appropriate, an access dedication shall be a condition of approval.*
>
> ***Local Coastal Policy 72 states:*** *Public access to and along the shoreline and the Inland Waterway shall be required as a condition of permit approval for all new developments between the shoreline and the first public roadway inland from the shore, except as provided below:*
>
> 1. *Exceptions may be made when access would be inconsistent with public safety, military security, the protection of fragile coastal resources, or when agriculture would be adversely affected.*
>
> …

In addition, due to the proposed project location between the first public road and the sea, pursuant to Section 30604(c) of the Coastal Act, the proposed project must also be reviewed for consistency with the Chapter 3 policies of the Coastal Act regarding public access and public recreation. Relevant Coastal Act public access and public recreation policies include:

Coastal Act Section 30210 *states that:*

> *In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.*

Coastal Act Section 30211 *states:*

> *Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.*

Coastal Act Section 30212(a) *provides that in new shoreline development projects, access to the shoreline and along the coast shall be provided except in specified circumstances, where:*

> *(1) it is inconsistent with public safety, military security needs, or the protection of fragile coastal resources.*
>
> *(2) adequate access exists nearby, or,*

(3) agriculture would be adversely affected. Dedicated access shall not be required to be opened to public use until a public agency or private association agrees to accept responsibility for maintenance and liability of the accessway.

Coastal Act Section 30220 *states that:*

Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such use.

The project site is not located adjacent to the shoreline and is separated from the beach by an existing oil extraction and treatment facility which abuts the project site on the west side. Currently, no public beach access exists within the immediate vicinity of the project site. The closest recreational facility and beach access point is located near the entrance to Mandalay Beach State Park, at the intersection of Harbor Boulevard and Fifth Street, approximately one mile south of the project site. An additional coastal access point is located several miles to the north of the project site, at the entrance to McGrath State Beach. Lateral access from McGrath State Beach to Mandalay State Beach west of the project site is currently restricted due to the presence of the cooling water discharge canal for the Mandalay Generating Station which transects the beach and restricts passage.

During project construction, all workers shall park on-site and impacts to existing beach access parking lots (at the entrances to Mandalay and McGrath State Beaches) are not anticipated to occur. Construction of the proposed natural gas pipeline would occur within the public right-of-way on the east side of Harbor Boulevard for a distance of approximately 1,800 feet and it may necessitate the temporary closure of the northbound lane. Pipeline installation and trenching is anticipated to require approximately seven weeks to complete. Harbor Boulevard in this area does not have bicycle lanes, pedestrian walkways or on-road parking that would be affected by this lane closure. Potential impacts to traffic flows along the pipeline route would be minimized by limiting the construction period to those periods specified by the City in the approved encroachment permit and through implementation of the mitigation measures identified in the uncertified Mitigated Negative Declaration (MND), as required by **Special Condition 2**. The MND mitigation measures require that a registered traffic control engineer prepare a Traffic Control Plan for City approval, follow the standards set forth by Caltrans, designate required traffic patterns or temporary road closures for construction, provide construction work road signs and provide safety measures to separate motorists from the construction workers and the work zone. SCE has committed to implement these measures.

The Commission therefore finds that the proposed project will not interfere with the public's access to and recreational use of the beach along this stretch of coast and therefore is consistent with the public access policies of the LCP and Coastal Act.

I. Climate Change

The City of Oxnard Coastal Land Use Plan specifically protects many of the resources that would be directly affected by global climate change resulting from increases in greenhouse

gases. LUP sections and policies specific to these resources include section 3.2.2 (Habitat Areas) which contains Local Coastal Policy 6 (protection of sensitive habitat, wetlands and resources) and Local Coastal Policy 10 (protection and restoration of coastal waters); section 3.2.3 (shoreline structures, diking and dredging) which contains Local Coastal Policy 13 (prohibition on shoreline protective devices and protection of existing beaches); section 3.3 (Hazards) which includes Local Coastal Policy 39 (minimization of threat from storm wave runup) and Local Coastal Policy 40 (development within flood and wave runup zones); section 3.6 (industrial and energy development) which contains Local Coastal Policy 52 (minimization of impacts from energy development); and section 3.8 (acquisitions), which contains Local Coastal Policy 91 (continuous protection of coastal resources).

Climate Change: The Coastal Commission also considered the potential effects of this project on climate change. The construction and operation of major water, energy, telecommunication, and transportation projects can significantly increase greenhouse gases (GHG)[21] and global warming, which in turn can cause significant adverse impacts to coastal resources of California. The Coastal Act has a number of provisions that provide direct authority to take steps to reduce climate change and to adapt to the effects of global warming. These include the Coastal Act's public access and recreation policies (Sections 30220 and 30211), marine resource and water quality policies (Sections 30230 and 30231), the environmentally sensitive habitat area protection policy (Section 30240), and the coastal hazards policy (Section 30253(1) and (2)). Further, Section 30253(4) requires development to minimize energy consumption and vehicle miles traveled.

In September 2006, Governor Arnold Schwartzenegger signed AB 32, the California Global Warming Solutions Act of 2006. In passing the bill, the California Legislature found that "*Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems"* (California Health & Safety Code, Division 25.5, Part 1).

AB 32 requires the California Air Resources Board (CARB) to adopt a statewide GHG emissions limit equivalent to the statewide GHG emissions levels in 1990 to be achieved by 2020. It requires CARB to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions. Strategies that the state will pursue for managing GHG emissions focus on generally reducing consumption of petroleum across all areas of the California economy. Improvements in transportation energy

[21] Greenhouse gases are any gas, both natural and anthropogenic, that absorbs infrared radiation in the atmosphere and include water vapor, carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). These greenhouse gases lead to the trapping and buildup of heat in the atmosphere near the earth's surface, commonly known as the "Greenhouse Effect." Carbon dioxide is the major anthropogenic greenhouse gas. All greenhouse gases are quantified collectively by the carbon dioxide equivalent, or the amount of CO_2 that would have the same global warming potential, when measured over a specific time period.

efficiency (fuel economy) and alternatives to petroleum-based fuels are to provide substantial reductions by 2020.

Climate change covers a broad range of impacts that can occur due to GHG emissions, such as increased sea level rise, changes in the frequency, intensity or occurrence of heavy precipitation and droughts, changes in the frequency and intensity of extreme temperature events, and changes in ocean water chemistry. California's 2006 Climate Change Impacts Assessment, reports by the Intergovernmental Panel on Climate Change (IPCC Reports in 1990, 1995, 2001 and 2007) and various climate research centers (such as the Pew Center on Global Climate Change and the Heinz Center) recognize that within the coming century potentially severe impacts could occur in the areas of sea level, water resources, agriculture, forests and landscapes, and public health. Many of these effects will impact the coastal zone and resources specifically protected by the Coastal Act, including impacts to air quality, species distribution and diversity, agriculture, expansion of invasive species, increase in plant pathogens, alteration of sensitive habitat, wildfires, rising sea level, coastal flooding, and coastal erosion. In addition, absorption of carbon dioxide by the ocean leads to a reduction in ocean pH with concomitant consumption of dissolved carbonate ions, which adversely impacts calcite-secreting marine organisms (including many phytoplankton, zooplankton, clams, snails, sea stars, sea urchins, crabs, shrimp, and many others). The most direct impacts of global warming focused on the coastal zone are sea level rise and its associated impacts, ocean warming, and ocean acidification.

Sea Level Rise. Sea level rise is one of the most direct consequences resulting from climate change and a general warming of the atmosphere. In turn, a change in sea level is one of the main factors causing changes in coastal processes. An increase in sea level can:

- Increase coastal wave energy
- Increase beach and bluff erosion
- Increase coastal flooding and inundation
- Increase scour around foundations
- Reduce the effectiveness of existing coastal protection efforts
- Reduce the expected effective life of development setbacks
- Reduce dry beach area and threaten beach-level access and recreational use
- Reduce access time for beaches that are only accessible now at low tide
- Shift the intertidal location inland; possibly reduce intertidal area

Due to the many ways that rising sea level can influence development on the coast, the Commission has, for many years, considered future sea level in the planning and design of many coastal projects. Consequences of an increase in sea level such as increased erosion and scour, increased nearshore wave energy and reduced beach area are all detrimental to the coast and damaging to coastal resources. The greater the rise in sea level, the greater the possible detrimental consequences to the coastal resources directly effected by sea level rise. There are no models that can attribute specific changes in sea level to specify amounts of GHG emissions; nevertheless, there are clear indications that increases in GHG emissions contribute

to the overall increase in climate change, rising sea level and resultant impacts to coastal resources.[22]

Ocean Warming. One of the well-recognized connections between the atmosphere and the ocean is heat exchange. Global warming of the atmosphere is expected to cause an increase in ocean warming as the ocean absorbs greater amounts of thermal energy from the atmosphere. One of the consequences of ocean warming is a shift in the geographic ranges of species. With continued warming, species can be expected to continue to migrate northward as long as suitable habitat is available. An indirect consequence of ocean warming is a decline in ocean productivity due to habitat shifts. Ocean warming can cause a direct loss of primary productivity as well. Warming of the surface of the ocean results in increased ocean stratification, limiting the upwelling of deep, nutrient-rich waters that are responsible for California's rich coastal productivity.

Ocean Acidification. Just as there is an exchange of thermal energy between the atmosphere and the oceans, there is an ongoing exchange of gases between the atmosphere and the ocean. Each year some 92 billion metric tonnes of CO_2 are directly absorbed by the ocean from the atmosphere. At the same time, approximately 90 billion metric tonnes are released back to the atmosphere[23]. The net increase in dissolved CO_2 in the ocean is a direct result of increases in the atmosphere related to changes humans are making to the carbon cycle—most notably fossil fuel burning and land use changes (deforestation, mostly in the tropics). One of the consequences of this increase in dissolved CO_2 is a reduction in the pH of the ocean. This decrease in ocean pH (commonly called "ocean acidification") can cause physiologic stresses in some species. In addition to physiologic effects, calcite-secreting organisms (including many phytoplankton, zooplankton, clams, snails, sea stars, sea urchins, crabs, shrimp, and many others) have more difficulty secreting their shells and plates under reduced carbonate ion concentrations. Deep-sea species will be particularly affected because increasing CO_2 levels in seawater decreases the saturation state of seawater with respect to calcium carbonate ($CaCO_3$) and raises the saturation horizon closer to the surface. Increasing surface CO_2 levels could have serious consequences for organisms that make external $CaCO_3$ shells and plates.[24] The effect on food webs is unclear, but it is very likely that these effects will result in a loss of biodiversity and complexity in California's coastal marine ecosystems.

Reducing Greenhouse Gas Emissions from Electrical Generation. The State of California and the California Public Utility Commission (CPUC) have adopted numerous greenhouse gas laws, regulations and policies in order to address greenhouse gas emissions from electricity generation sources. One of the key requirements is AB32 – The California Global Warming Solutions Act of 2006 – that requires the California Air Resources Board (CARB) to promulgate regulations to reach the 2020 goal of reducing greenhouse gas emissions to 1990

---

[22] Recent discussions of atmospheric temperature, ocean temperature and sea level rise from combustion of fossil fuels and other anthropogenic sources of greenhouse gases and their effects can be found in the reports from the IPCC (1990, 1992, 1995, 2001, 2007; www.ipcc.ch/index.html).

[23] Schlesinger, W.H. (1997).
[24] The Royal Society (2005).

levels. The regulations are to go into effect in 2012. In order to achieve AB32's stated goal of reducing greenhouse emissions to 1990 levels by 2020, CARB is in the process of developing regulations for all major contributing source categories, including the electricity industry. CARB will determine the quantity of emission reductions that will be allocated to each contributing emission segment (transportation, electricity, manufacturing, etc.) and individual emission company or source, as well as setting forth the regulatory mechanisms by which these reductions will be implemented. For the electricity sector, CARB is developing a program that will reduce CO_2 emissions on a systemwide basis in order to ensure that all emissions created to serve California's load are captured and that all generating sources, regardless of ownership or location, are being treated uniformly and equitably. CARB is currently developing a Scoping Plan that will provide a blueprint on how AB32 will be implemented (i.e., command and control measures and market-based programs). In a recent decision (D.08-03-018), the CPUC recommended to CARB that a cap-and-trade system be used to reduce greenhouse gas emissions from the electricity sector, with sources being required to purchase at least a certain portion of the credits. The net effect is that greenhouse gas emissions from SCE's generation portfolio would be capped and would be required to be reduced as directed by CARB to meet the State's greenhouse gas reduction goals.

Peaker Plant Emissions. As part of its review of this project, Commission staff requested SCE submit the annual quantity and sources of all greenhouse gases and that would be emitted as a result of the project. On April 9, 2008, SCE submitted to the Coastal Commission its estimate of peak annual emissions of greenhouse gases from the proposed peaker plant (included as Exhibit 10). The peaker plant will emit greenhouse gases from the combustion of natural gases in its turbine and emergency generator. The principal greenhouse gases emitted from fossil fuel combustion are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (NO). According to SCE, the Ventura County Air Pollution Control District (VCAPCD) will limit combustion turbine operation to 2,121 hours per year (1,881 operating hours plus 240 hours of start up and shut down periods). The emergency generator will only operate during routine testing and maintenance activities and if there is a system blackout on the local electric grid. Reliability testing is a maximum of 50 operating hours per year. Based on these limits, SCE estimates the maximum potential to emit from the proposed peaker plant is 51,032.7 Metric Tonnes CO_2E per year. If a 30-year life is assumed, then the maximum potential to emit over the life of the project is 1,530,981 Metric Tonnes CO_2E. Under the economic dispatch scenario, the scenario which most closely estimates the anticipated operation of the unit by assuming that the peaker would only be operated when it would be most cost effective, the peaker plant would operate for an average of approximately 93 hours per year. Under this scenario potential emissions from the proposed project are 2,496 Metric Tonnes CO_2E[25] per year, or 74,881 Metric Tonnes CO_2E over a 30-year operating period.

[25] When quantifying GHG emissions, the different global warming potentials (GWP) of the various greenhouse gases are usually taken into account by normalizing their rates into an equivalent CO_2 emission rate. Carbon dioxide equivalent emissions (CO2 Eq, CO_2E or CO_2e) represents the amount of CO_2 emissions that it would take to create a climate impact equivalent to the emissions of the specific gas or source of interest. This standardization is useful for comparison purposes, since the emissions impact of different source types and gases can then be directly compared.

Construction of the peaker plant will also generate greenhouse gases. Greenhouse gas emissions from construction activities are primarily due to CO_2 emissions from on-site construction equipment and motor vehicle trips to and from the site. SCE estimates emissions from construction activities to be 618.00 Metric Tonnes CO_2E.

Preparation of the local distribution system in anticipation of the peaker plant's operation would also result in greenhouse gas emissions. These emissions would come from the installation of a new SF_6-insulated circuit breaker, which contains 52 pounds of sulfur hexafluoride (SF_6). SF_6 has a relatively high global warming potential (approximately 23,900 times that of CO_2), so even small emissions of SF_6 can contribute to climate change. The leak rate for this equipment is guaranteed by the manufacturer to not to exceed one percent per year. Therefore, the maximum potential to emit of this circuit breaker will be 0.52 pounds of SF_6 per year, which is equivalent to 5.6 Metric Tonnes CO_2E per year. Assuming an operational life of 30 years, the maximum potential to emit over the life of the project is 168 Metric Tonnes CO_2E.

In addition to emission calculations, SCE submitted an emission analysis which concludes that operation of the peaker plant will be nearly neutral and will result in only a slight increase (approximately 726 Metric Tonnes CO_2E) in CO_2E emissions across SCE's generation portfolio. This conclusion is based on SCE's use of the Ventyx Market Analytics and the Ventyx Planning and Risk models to simulate the operation of its electric system and the net change in CO_2 emissions that would occur both with and without the proposed peaker unit. These models calculate the CO_2 emissions from SCE's system as a whole based on its projected annual load profile and are currently used to comply with CPUC directives to evaluate the net CO_2 emissions from new energy projects and other reporting requirements. The use of this modeling approach allowed SCE to incorporate factors such as power plant loading order[26] and generating efficiency into its analysis. As SCE states in its analysis,

> *Because the marginal cost of natural gas fired peakers is high compared to other resources, they dispatch last in the loading order after all other available resources have been brought on line. Therefore, when the proposed peaker project is dispatched, it will almost always replace a higher emitting natural gas fired unit. Because all natural gas fired peakers are reasonably efficient, the relative difference in CO_2 emissions between the proposed peaker and the less efficient units would be expected to be small. This means that the net decrease in annual CO_2 emissions would also expected to be small.*

In other words, during operation, SCE anticipates that direct emission increases from the peaker (which would be approximately 2,496 Metric Tonnes of CO_2E per year for 93 hours of operation) would be completely offset by emission decreases at other power plants on the system, resulting in a slight net emissions decrease.

[26] Loading order is determined through an evaluation of the marginal cost of the generation resource – generating stations with the lowest marginal cost are dispatched first and those with the highest cost are dispatched last.

SCE's analysis also suggests that further emission reductions would be achieved through increases in transmission efficiency and decreases in line loss resulting from the peaker plant's ability to tie in directly to the local 66 kv transmission system that provides the local Oxnard area with electricity. Whereas power currently generated at the Mandalay and Ormond Beach Generating Stations must first travel to the Santa Clara substation on 230 kv transmission lines before it can return to Oxnard over the 66 kv system (a situation that results in the loss of power during travel in both directions), the placement of a peaker plant in Oxnard would allow locally produced power to be transmitted directly to the local 66 kv system first without traveling to Santa Clara. This would reduce the amount of electricity lost during transit over the transmission lines which would decrease the amount of energy that needs to be produced and therefore reduce production related emissions.

SCE agreed to provide funding for the Commission to hire an independent consultant to review its emission calculations and analysis. The independent review of SCE's analysis performed by Marine Research Specialists substantiates SCE's analysis and also indicates that only a slight increase in CO_2E emissions across SCE's generation portfolio would result from the proposed project. Specifically, Marine Research Specialists found that CO_2E emissions would increase by approximately 726 Metric Tonnes of CO_2E over the anticipated 30 year project life (as demonstrated in Exhibit 12). This figure matches the conclusion reached by SCE considering the economic dispatch scenario. Over a 30 year project life, this is a relatively small number. To provide perspective on this level of CO_2E emissions, the U.S. Environmental Protection Agency has estimated that eight Toyota Prius cars operated for 15,000 miles (45% highway driving and 55% city driving) per year would produce 744 Metric Tonnes of CO_2E over 30 years.

Based on these relatively low levels of greenhouse gas emissions over the life of the project, the Commission agrees with SCE that no mitigation or offset is required.

J. Alternatives

Overview: CEQA Guidelines Section 15126.6 provides direction for the discussion of alternatives to the proposed project. This section requires:

> (1) a description of "…a range of reasonable alternatives to the project, or to the location of a project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives." [15126.6(a)]
>
> (2) a setting forth of alternatives that "…shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the [CEQA document] need examine in detail only the ones that the lead agency determined could feasibly attain most of the basic objectives of the project." [15126.6(f)]
>
> (3) a discussion of the "no project" alternative, and "…if the environmentally superior alternative is the "no project" alternative, the [CEQA document] shall also identify an environmentally superior alternative among the other alternatives." [15126.6(e)(2)]

> (4) a discussion and analysis of alternative locations "…that would substantially lessen any of the significant effects of the project need to be considered in the [CEQA document]." [15126.6(f)(2)(A)]

In defining feasibility, the Coastal Act, Section 30108, states that:

> *"Feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors.*

In addition, the CEQA Guidelines, Section 15126.6 also defines the feasibility of alternatives and states:

> *Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site.*

Project Purpose: Based on information provided in SCE's *Supplemental Analyses for the Southern California Edison Mandalay Peaker Project* (the relevant section of which has been included as Exhibit 13), SCE selected the Ventura/Santa Barbara County area specifically for development of a peaker plant because it identified two local reliability project needs: (1) providing black-start service for the Mandalay Generating Station and (2) providing additional emergency generation to the Goleta subsystem that may be required in the future but would possibly no longer be needed if a peaker plant were constructed in this area.

Alternative Substation Sites: Once the Ventura/Santa Barbara region was selected, SCE established additional screening criteria to facilitate the selection and comparison of potential project sites within this region. The three criteria that were developed are based primarily on financial and regulatory considerations associated with expedited construction and include: (1) SCE ownership of the property; (2) the presence of 2-3 acres of available land within or adjacent to a 66 or 115kV substation; and (3) the absence of a school or hospital within 1,000 feet of the project site.

Using the three criteria described above, SCE reviewed 56 SCE and customer owned substation sites and SCE properties other than the proposed project site within the cities of Camarillo, Goleta, Carpinteria, Ventura, Oxnard, Isla Vista, Calabasas, Santa Barbara, Fillmore, Gaviota, Malibu, Port Hueneme, Agoura Hills, Moorpark, Thousand Oaks, Ojai, Summerland, Newbury Park, Simi Valley, Saticoy, Somis and Santa Paula. Of these sites, thirty-nine were rejected as infeasible due to a lack of sufficient space, one was rejected as infeasible due to its proximity to an elementary school, and thirteen were rejected as infeasible because SCE did not own the property.

However, three sites were determined to satisfy the criteria and qualify for further review. These sites are the Goleta substation in Santa Barbara County, the Moorpark substation in Moorpark and the Santa Clara substation in Ventura.

Goleta Substation: The City of Oxnard requested that the Commission evaluate SCE's Goleta substation site, located at 1425 Glenn Annie Road in Santa Barbara County, as a feasible environmentally preferable site. This request was due to limited preliminary evaluations by SCE and Commission staff which suggested that the Goleta site met SCE's site selection criteria and that construction of a plant at this location would achieve one of SCE's two priority goals for the project – the enhancement of local reliability by providing additional emergency generation to the Goleta subsystem. However, SCE rejected the Goleta substation site as an alternative site for a peaker plant due to a combination of factors detailed in SCE's June 17, 2008, *Supplemental Analyses for the Southern California Edison Mandalay Peaker Project* (Exhibit 13) and its June 24, 2008, letter to Commission staff. Many of these factors concerned the need for extensive site preparation activities including grading, vegetation clearance, substation upgrades, several miles of trenching for natural gas supply lines and the redesign of access roads that would have required considerable time, financial commitments and potentially adverse impacts to riparian and chaparral/oak woodland habitats. Specifically, as described in Exhibit 13, SCE notes that construction of a peaker facility at this site would require:

> *…clearing vegetation from previously undeveloped land, grading hillsides and redesigning the main access road. The gas connection would require trenching through several miles of undeveloped land and include one railroad and one highway crossing. Road redesign would require road realignment near the substation and road widening in several locations. This would require coordination with Santa Barbara County, which may require additional concurrent work along the full three mile length of the road. A minimum of four 66kv lines would require relocation to improve site accessibility.*

In addition, SCE further notes in its June 24, 2008, letter to Commission staff:

> *This site was screened out as a primary site because: 1) the substation site is partially within* [U.S. Forest Service] *property, and federal licensing would have presented an additional delay; 2) access to the site on Glen Annie Road would have required extensive road improvements; and 3) the required natural gas pipeline was of greater length and had potential for greater environmental concerns than other sites requiring shorter gas line extensions.*

Additional issues identified by SCE include the potential need to prepare an EIR due to the possibility that an ammonia leak could result in the release of toxic ammonia gas outside of the facility's fenced limits as well as the potentially lengthy permitting process by the Santa Barbara County Air Pollution Control District, City of Goleta and Santa Barbara County. Furthermore, the Goleta substation site would not meet the project purpose and goals specified above as essential to the proposed project. Specifically, although the installation of a peaker plant at this site would meet the criteria described in the CPUC's Assigned Commissioner's Ruling and provide the Goleta area with emergency generation capacity,

black-start support for the Mandalay Generating Station could not be provided at this site. SCE therefore rejected the Goleta substation site for its project.

On October 8, 2008, Commission staff, including staff ecologist Dr. Jonna Engel, visited the Goleta substation site. Based on staff's field observations and review of the activities and development that would be required to build a peaker plant at this site, staff concluded that constructing a peaker at this site would result in adverse environmental impacts more substantial than those associated with development of the Oxnard site. Specifically, use of the Goleta site would require installation of a 2.2 mile long natural gas pipeline along Glen Annie Road and passage through three separate drainages which feed into Glen Annie Creek. Pipeline installation over or under these drainages could increase sedimentation and erosion into Glen Annie Creek and would likely result in loss and disturbance of riparian vegetation and habitat. In addition, construction of a peaker plant at the Goleta substation site would require extensive modification and expansion of Glen Annie Road to facilitate the ingress and egress of materials and construction equipment. During a recent winter storm, Glen Annie Road was reduced to one lane for approximately 100 feet due to a landslide collapse and in its present condition would not be able to accommodate the 15 foot wide semi truck trailer needed to transport the peaker generator to the site. To allow construction of a peaker plant at the Goleta substation site Glen Annie Road would therefore need to be repaired and widened to its original two lane configuration. At this time, the Commission is not aware of plans by the County of Santa Barbara to carry out this work. Similarly, due to the transport trailer's approximately 15 foot height, numerous oak trees and overhead transmission lines that pass directly over Glen Annie Road at heights of less than 15 feet would also need to be removed, trimmed or temporarily relocated to allow the transport of the peaker generator to the substation site.

Preparation of the construction site itself would also require substantial native vegetation clearing, grading and fill. SCE investigated two potential peaker plant installation locations at the substation site and both would require the removal of native chaparral/oak woodland habitat and extensive landform alteration. This work would result in the removal of some of the few remaining stands of native vegetation that remain in the area following the devastation incurred by the recent Gap Fire which burned nearly 100% of the vegetation in the portion of Los Padres National Forest that borders the substation site. Raptors roost, and likely nest, in the native and non-native trees that would need to be removed to accommodate construction of the peaker plant at this site. The extensive grading and cut and fill work that would be required to accommodate the peaker plant's footprint would also affect several additional drainages and tributaries that flow into Glen Annie Creek, potentially resulting in increased sediment loads and alteration of this creek. For these reasons, the Commission agrees with SCE that the Goleta substation alternative site is not environmentally preferable to the proposed project site.

Moorpark Substation: SCE's documents of June 17 and 24 also detail the factors supporting its rejection of the Moorpark substation. Although this site clearly met the Assigned Commissioner's Ruling criteria described above, provided sufficient space for development of the peaker plant and would likely have presented fewer potential environmental impacts when compared to the proposed project site (due to its location in a

suburban area with no known sensitive species, habitats or resource protection areas within the immediate vicinity), after additional review SCE determined that this site did not meet the project purpose. Specifically, the construction of a peaker plant at the Moorpark substation site would not provide the same local reliability as the proposed project site (i.e. both black-start support of Mandalay Generating Station and emergency generation for the Goleta subsystem would not be possible from this location). This alternative site was therefore rejected as a feasible alternative.

Santa Clara Substation: The Santa Clara substation site was also rejected by SCE based on additional site specific review. As noted by SCE in its June 17, 2008, *Supplemental Analyses for the Southern California Edison Mandalay Peaker Project* (Exhibit 13),

> *This site possesses significant engineering challenges that may make it non-constructible. This site was rejected in 2007 because it could not be constructed on the required schedule and more favorable sites existed. Greater environmental impacts and fewer reliability benefits, coupled with identified construction issues continue to weigh against this site.*

The Santa Clara substation site presented a number of engineering and construction challenges due to the topography of the site and its location within hilly terrain. As noted by SCE

> *The property is located in fairly steep terrain and is basically a small canyon which was graded to allow for the installation of the* [existing] *Santa Clara substation. The west side of the property located outside of the fenced area of the existing substation is on a steep slope covered primarily by native vegetation. The excess property in this location is also crisscrossed by the many existing 66 kv and 230 kv transmission lines making this area unavailable for development. Another area exists on the southeast corner of the property which appeared initially to be large enough for a peaker installation. However, this area would require extensive grading due to the steep slope, encroach on the existing substation and access road and require large retaining walls to be installed in order to try and squeeze the peaker onto the site.*

SCE has estimated that approximately 75,000 cubic yards of material would need to be imported to the site to facilitate construction.

Due to the extensive engineering and construction challenges that it presents, the Santa Clara substation site does not provide a feasible alternative site for the proposed project.

Ormond Beach and Tayshell Substations: Based on Commission staff's review of the information submitted by SCE regarding its site selection process, namely the June 17, 2008, *Supplemental Analyses for the Southern California Edison Mandalay Peaker Project* and SCE's June 24, 2008, letter to Commission staff, two sites in addition to Moorpark, Goleta and Santa Clara also appear to satisfy the selection criteria and project purpose detailed above. These sites include the Ormond Beach substation in Oxnard, and the Tayshell substation in Ventura. SCE's rejection of these sites appears to have been based on the assumption that 2-3

acres of available land is not available at either site. However, Commission staff's review of the aerial photographs that were used to formulate this conclusion suggests that two to three acres of undeveloped land may indeed exist in these locations. In response to Commission staff's request for additional information regarding the rejection of these sites, SCE has suggested that much of its property at the Ormond Beach site is comprised of transmission line right-of-ways and that the presence of existing transmission lines that are not readily visible from aerial photographs would preclude the construction of the peaker facility here. Regarding the Tayshell site, SCE has provided subsequent information to Commission staff which suggests that SCE's property at this site comprises less than the 2-3 requisite acres needed for peaker plant construction.

Customer Substations: Although SCE has specified that only property it currently owns would be acceptable as a site for the proposed project, its June 17, 2008, *Supplemental Analyses for the Southern California Edison Mandalay Peaker Project*, nevertheless includes an assessment of 20 customer owned substations. Initial review by SCE and Commission staff has suggested that 13 of these sites would potentially provide enough open land in close proximity to a 66 or 115kV substation and sufficiently far from a school or hospital to serve as acceptable location for a peaker unit. However, as described in the June 17, 2008, *Supplemental Analyses for the Southern California Edison Mandalay Peaker Project*, SCE rejected five of these sites because they are not located within the Santa Clara transmission subsystem and "the Mandalay Generating Station can only be black-started from within the Santa Clara subsystem when the peaker is connected to a non-bulk power 66 kv substation." In other words, SCE rejected three sites within the Goleta subsystem and two sites within the Moorpark subsystem because construction of a peaker unit at these sites would not meet the project purpose by simultaneously eliminating the need for an additional future project that would provide the Mandalay Generating Station with black-start support. As noted previously, providing the Mandalay Generating Station with black-start support was one of the two principle local reliability projects that resulted in SCE's selection of the Ventura/Santa Barbara region for a peaker facility.

However, the other principle local reliability project that drove the selection of the Ventura/Santa Barbara region, providing additional emergency generation to the Goleta subsystem, would potentially be resolved by locating the peaker unit within the Goleta subsystem. As SCE notes, a peaker facility located within the Goleta transmission subsystem would still provide "important local reliability benefits to the Goleta subsystem that would otherwise require the construction of a new generation project in the Santa Barbara area." SCE also states that if a Goleta site were chosen, "a second generation project would need to be proposed and constructed in the Oxnard area [at a future date] in order to provide black-start capability [for the Mandalay Generating Station[27]]." In other words, each of the three customer owned substation sites within the Goleta area appears to meet most of SCE's site selection criteria (with the exception of the criteria which specifies that SCE should already own the proposed peaker unit site). Nevertheless, SCE has rejected these sites and appears to have prioritized the sites with the potential to eliminate the necessity for a future project

[27] It is important to note that because a peaker unit currently exists at the Mandalay Generating Station, a small black start generator could be added to this peaker unit which would then be able to provide black start support for the generating station.

which would provide the Mandalay Generating Station with black-start support (i.e. sites which would allow the peaker unit itself to provide this black-start support). In its letter of June 25, 2008, to Commission staff, SCE explained this prioritization as follows,

> *The Santa Clara substation has three emergency tie-lines that can be used to route emergency power into the Goleta 66kv subsystem network. When the Santa Clara subsystem is used to provide power simultaneously to both the Santa Clara and Goleta subsystems, local generation must be turned on inside the Santa Clara 66kv subsystem to provide additional energy, voltage and frequency support to this area to anchor it while bypass power is being routed to the north. Existing cogenerators and the Mandalay* [Generation Station] *peaker can be used to provide a portion of this anchor. The* [proposed] *new McGrath Beach peaker would be used to provide the remaining power needed to anchor the system.*

According to SCE, a peaker unit within the Santa Clara subsystem could potentially provide both additional emergency generation to the Goleta subsystem as well as black-start support for the Mandalay Generating Station.

SCE therefore rejected those sites outside of the Santa Clara subsystem and seriously considered only those sites that would allow the peaker unit to provide the Mandalay Generating Station with black-start support. With this additional selection criteria, SCE evaluated the remaining eight customer owned substation sites that had already met all the other selection criteria. Of these eight sites, all but one were rejected after a review of the transmission circuit distances between the site and the Mandalay Generating Station revealed that they were located beyond a 17 circuit mile radius. As noted by SCE, "in the Oxnard area, a black-start generator must be located within 10-12 circuit miles to allow a successful black-start [of the Mandalay Generating Station]." As demonstrated in SCE's June 17, 2008, *Supplemental Analyses for the Southern California Edison Mandalay Peaker Project*, only the Unioil substation site is located within this distance. As SCE notes in reference to this site, "The Unioil 66kv substation is located within the DCOR oil processing facility located adjacent and to the west of the [proposed] project site and between it and the ocean. Therefore, connecting the peaker to this location would not move its proposed footprint. As such, the existing site remains the preferred alternative." Essentially, because the Unioil substation is located directly to the west of the proposed site, the use of this substation would require a project that would be essentially the same as the one currently proposed.

EF Oxnard Alternative: Another site considered by SCE was the property owned by EF Oxnard Inc. As noted by SCE

> *EF Oxnard contacted SCE in March 2007 suggesting that its site would be suitable for the Proposed Project. At that time, SCE conducted a preliminary screening investigation of the site and concluded that the site did not meet its initial screening criteria. SCE has reviewed this site again as part of its current review and has reached the same conclusion.*

The primary reason the site is not suitable is that it does not posses the required amount of unoccupied land to house the project's 2-3 acre footprint. The land that was identified by EF Oxnard as available for SCE's use contains less than 0.5 acres of available space. Even assuming that existing structures could be removed, only 1 acre of space is available in which to construct both the project and a new substation.

The existing substation and transmission lines at this location were not designed to accommodate more than a single generating unit. The existing underground 66 kV transmission line is located in a vault that would need to be expanded to house a second line. In addition, a new loop substation would need to be constructed to accommodate the additional SCE peaking unit. This new substation would require an additional 0.25 acres of contiguous fenced space.

Because there is insufficient space at this location to construct the Proposed Project, this alternative does not meet the purpose and need of the Proposed Project.

Mandalay Generating Station Alternatives: In addition to those alternative locations and projects detailed above, SCE also considered several project alternatives associated with the Mandalay Generating Station and the peaker unit that currently exists on the Mandalay Generating Station site. SCE's rejection of these options is based on a variety of factors and is excerpted from SCE's June 17, 2008, *Supplemental Analyses for the Southern California Edison Mandalay Peaker Project* and included below.

Use the Existing Mandalay Generating Station Peaker

Using the existing Reliant Energy peaker does not meet the purpose and need of the Proposed Project. The output of this peaker was taken into account when the need for additional generation was identified by the CAISO and the CPUC. Therefore, the CPUC order to construct 250 MW of new generation would not be satisfied by assuming that the existing unit is providing the needed electricity.

Further, this unit is not capable of meeting the grid reliability requirements needed in the area. The Reliant peaker has been in operation since 1970 and is capable of producing up to 140 MW of energy on peak, although its operation is limited to approximately 85 hours per year due to air quality permit emission limits. The equipment is over 30 years old and has been discontinued, such that parts are no longer readily available in the event of a breakdown. This unit is not configured to either black-start or to provide auxiliary power to the main Mandalay generators; therefore, it cannot provide black-start services. Due to its limited hours of operation, it cannot provide energy to the Goleta subsystem during extended outages. For these reasons, the existing unit does not have the desired reliability characteristics for an emergency function.

Because it was concluded that unit does not conform to the requirements of the CPUC directive, and neither provides additional energy or capacity benefits nor the required local reliability benefits, this alternative does not satisfy the purpose and need of the Proposed Project.

Replace the Existing Mandalay Generating Station Peaker

The existing Mandalay Generating Station peaker is operated by Reliant Energy. SCE neither owns property nor makes business decisions on behalf of Reliant Energy. SCE is not aware of any plans for Reliant Energy to retire this unit, which currently supplies power to the SCE system and produces revenue for Reliant's shareholders. Construction on the Reliant site was originally rejected in 2007 because SCE-owned land was needed to meet the required schedule. Although the Summer 2007 deadline has passed, timing is still an issue.

As noted above, the CPUC directive requires [up to] *250 MW of new SCE-owned generation. Therefore replacing the existing 140 MW peaker with the proposed 45 MW peaker would not meet the purpose and need of the Proposed Project. A project capable of supplying a net total of 185 MW of power would be needed to ensure that an additional 45 MW of power would be available. This would require designing and permitting a significantly larger and completely different project than what has been proposed. The Proposed Project does not include removal and replacement of existing equipment, only the construction of a project on clear and available land. Such a project would trigger lengthy CEC review, which is inconsistent with project objectives.*

Finally, any new project would be SCE-owned. This would require independent support equipment in order to provide mechanical and electrical separation from the Reliant facility. Even assuming the original 45 MW project, this requirement would result in a larger footprint (2-3 acres) than is being utilized by the existing equipment, which would require siting the unit at a different location on the property.

For all these reasons, replacing the existing unit with the Proposed Project is not viable, and would not meet the purpose and need of the Proposed Project.

SCE also examined the feasibility of constructing the peaker plant on the Reliant Mandalay Generating Station site. As noted by SCE in a letter provided to Commission staff on February 25, 2009:

Siting the proposed peaker plant on the Reliant Mandalay Generating Station ("RMGS") site to replace the existing Reliant peaker does not meet the purpose and need of the Peaker project. While Reliant maintains an active permit on its existing peaker, its black start equipment is not functional. Moreover, if the new unit were sited within the Reliant Plant, the entire Reliant Plant would have to upgrade to meet the new National Electric Reliability Council Critical Infrastructure Protection guidelines and reopen its California Energy Commission and Ventura County Air Pollution Control District permits. Also, the requisite 2-3 acres of open land needed to construct the Peaker Project does not exist at the Reliant Mandalay property, except in the northwest corner, and this site has additional limitations that make it more environmentally impacting [specifically, this area is in close proximity to least tern and snowy plover nesting sites].

> *Finally, SCE has spoken to Reliant and they are not interested in this type of arrangement.*

Renewable Energy/Demand Side Management/Energy Efficiency Alternative: SCE considered a variety of alternative energy projects in its June 17, 2008, *Supplemental Analyses for the Southern California Edison Mandalay Peaker Project*, including wind and solar power projects and energy efficiency systems. Due to the specific criteria within the Assigned Commissioner's Ruling which requires the development of new sources of black start capable dispatchable energy, these alternatives were rejected as incapable of meeting the project goals. As noted by SCE,

> *Renewable energy, demand side management and energy efficiency projects are valuable to help reduce demand on SCE's system; however, they do not fulfill the purpose and need for the Proposed Project. Projects in these three categories are neither black start capable or dispatchable as required by the CPUC directive. More importantly, none of these project categories have the physical characteristics required to provide black start capability to the Mandalay Generating Station, nor to provide the voltage support inside the Santa Clara system that is required to allow additional emergency generation to be routed into the Goleta system via the 66 kV network.*

SCE additionally notes that

> *Wind and solar project cannot be counted on to start at all times and provide stable, continuous power over an extended period of time (i.e., 12-24 hours) as is required during emergency situations. The wind is not always blowing and the sun is not always shining. Although demand side management and energy efficiency projects are effective in reducing the demand for electricity, they do not generate additional electricity, and therefore cannot provide reliability benefits.*

Existing Local Cogeneration Alternative: As noted by SCE in its June 17, 2008, *Supplemental Analyses for the Southern California Edison Mandalay Peaker Project*, local cogeneration facilities were considered as a project alternative, however,

> *The output of all existing generation resources, including cogenerators, was taken into account by the CAISO and the CPUC prior to their determination that more peak generation was necessary. Therefore, the CPUC order to construct 250 MW of new generation would not be satisfied by assuming that existing cogeneration units can provide the needed electricity.*
>
> *Further, because the output of cogenerations are designed to remain stable to support industrial processes, they are not dispatchable on peak, nor can they provide the other system reliability benefits that would be provided by a peaker. Finally, these units are not configured for black start capability and have already been taken into consideration when determining the amount of generation needed within the Santa Clara Subsystem to allow emergency power to be routed into the Goleta subsystem.*

Consequently, these units do not meet the purpose and need of the Proposed Project.

No Project Alternative: SCE's June 17, 2008, *Supplemental Analyses for the Southern California Edison Mandalay Peaker Project*, also included an analysis of the "no project alternative." As stated by SCE, this alternative was rejected because

> *The Ventura/Santa Barbara system west of the Pardee Substation area has been identified as the area on the SCE system most in need of the proposed project. In this area, local reliability needs include: 1) providing black start service for the Mandalay Generating Station, and 2) providing additional emergency generation to the Goleta subsystem through the 66 kv system. No other projects have been proposed that will provide the reliability benefits of the proposed project. If the proposed project is not constructed, one or more future generation or transmission projects will need to be constructed in this same area to address these issues.*
>
> *This alternative does not satisfy the fundamental purpose and need for the project.*

The Commission agrees that no other projects have been proposed that will provide the reliability benefits of the proposed project and that the "no project alternative" does not satisfy the fundamental purpose and need for the project as specified by SCE.

Conclusion: As detailed in the findings above, the Commission finds that, within the meaning of the Coastal Act and California Environmental Quality Act of 1970, there are no feasible alternatives which would substantially lessen any significant adverse effect which the proposed project may have on the environment.

K. Cumulative Impacts

As noted by SCE in its June 17, 2008, *Supplemental Analyses for the Southern California Edison Mandalay Peaker Project,*

> *According to CEQA Guidelines Section 15065(a)(3), "cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects. Given its size and proximity to the proposed project site, the environmental impacts from the Northshore at Mandalay Bay residential development, a 292-unit low-density development approximately 750 feet southeast of the proposed project site, were evaluated as part of the proposed project's cumulative impacts analysis.*
>
> *The* [uncertified] *MND concluded that the proposed project would not have an impact on agricultural resources, geology/soils, hydrology/water quality, land use/planning, mineral resources, population/housing, or recreation. As such no mitigation was required for these areas. Since the proposed project itself will not cause adverse impacts*

in these areas, it will not, in conjunction with the Northshore development, cause cumulatively considerable impacts.

While the proposed project will have some less than significant impacts with respect to aesthetics, air quality, biological resources, cultural resources, hazards and hazardous materials, noise, public services, transportation/traffic, and utilities and service systems, the incremental effects of the proposed project are not significant cumulative impacts when combined with the impacts of the Northshore development.

The Commission supports this analysis, especially given the current uncertainty about whether or not the Northshore development project will proceed. In addition, based on comments submitted by the City of Oxnard regarding the potential role that the proposed project would have on extending the use and presence of the Mandalay Generating Station, SCE examined the likelihood that this facility would be removed within the near future and reviewed the potential effect that the proposed project would have on allowing this generating station to continue to operate beyond when it may be otherwise required to cease operation. In a June 30, 2008 letter SCE states:

SCE is not aware of any plans for Reliant Energy's Mandalay Generating Station to shut down. Mandalay's two steam boilers (2-215 MW) and one peaker (140 MW) currently provide 560 MW of peak power to the SCE system under existing contracts. SCE has not identified any California Independent System Operator (CAISO), California Energy Commission (CEC), California Public Utility Commission (CPUC), Western Electricity Coordinating Council (WECC), California Ocean Protection Council (OPC), State Water Resources Control Board (SWRCB), or other federal, state, or local agency study or report that concludes that the plant is not needed, cannot be repowered, cannot meet Section 316(b) of the federal Clean Water Act related to once-through cooling (OTC), or is otherwise scheduled to shut down. On the contrary, recent reports have concluded that the existing coastal power plant fleet continues to provide important peak reliability services to the California grid[28], there are benefits to modernizing the current fleet at existing locations[29], repowering existing facilities is favored in both state law and state policy[30], and that the Mandalay plant can be converted to comply with recent OTC requirements.[31]

The conclusion that the facility will be shut down because it does not have a Reliability Must Run (RMR) contract is not correct. RMR contracts identify plants that must run to provide energy or capacity to meet peak electric load under normal operating

[28] "Electric Grid Reliability Impacts from Regulation of Once-Through Cooling in California," April 2008, prepared for the OPC and SWRCB by Jones & Stokes. pp. 17-19

[29] Ibid pp. 19-29. Also, "Scenario Analyses Of California's Electricity System: Preliminary Results For The 2007 Integrated Energy Policy Report. Appendix A. Analysis Of Transmission Implication Of Aged Power Plant Retirement And Replacement," August 2007, prepared for the CEC by Navigant Consulting, Inc. (CEC-200-2007-010-AD2-AP)

[30] "Electric Grid Reliability Impacts from Regulation of Once-Through Cooling in California," April 2008, prepared for the OPC and SWRCB by Jones & Stokes. p. 55

[31] "California Coastal Power Plants: Alternative Cooling System Analysis," February 2008, prepared for the OPC by Tetra Tech, Inc.

> *conditions because insufficient generation currently exists inside of a transmission constrained area. Plants that provide other important location-specific grid reliability or emergency functions are not covered under the RMR process. The fact that an RMR contract does not exist does not mean that a plant is not needed at a particular location.*
>
> *It is difficult to predict the future of any particular plant. Each owner must assess the economics, pros and cons of restricting operations, retrofitting, repowering, or shutting down a plant as it ages. In the Ventura/Santa Barbara County area, where (i) electricity demand levels are similar to existing local generating capacity, (ii) topography and other factors prevent major new transmission lines from easily being sited to bring additional power into the area, and (iii) the configuration of the system results in a considerable potential for islanding during grid emergencies, SCE expects that it will continue to be important for the foreseeable future to maintain the current level of generation at or near its present location.*

The City of Oxnard Planning Department staff and several members of the public also raised concerns regarding the potential for the proposed project to facilitate the potential development of offshore liquefied natural gas (LNG) marine terminals in the Southern California Bight by providing a site for the natural gas pipelines associated with these marine facilities to come ashore. Although it is important to note that future development of LNG marine terminals within the Southern California Bight would require additional environmental review and action by a wide variety of state and federal agencies, including the Coastal Commission, and that none of these types of facilities have been approved within state or federal waters off the coast of California,[32] it is the understanding of the Commission that the consideration of the McGrath/Mandalay Beach area as a potential landfall site for natural gas pipelines is based primarily on the proximity of this area to existing coastal and inland SoCal Gas natural gas infrastructure (including the Center Road Valve Station and Line 324 which connects the Center Road Station to the Saugus Station in Santa Clarita) and the current industrial use and zoning designation of this area. Because the proposed project would influence neither the zoning designation nor the existing large diameter gas transport pipeline infrastructure of the area, it would not facilitate the potential development of an LNG marine terminal in the Southern California Bight. Further support for this conclusion comes from the fact that the final environmental impact statement/environmental impact report (EIS/EIR) for the BHP Billiton LNG marine terminal project considered the same pipeline landing site at McGrath/ Mandalay Beach as a potential project alternative several years prior to SCE's proposed use of its land within this area as site of a peaker plant project – in other words, the area has been and may continue to be considered as a landing site for an LNG pipeline irregardless of the proposed peaker plant.

Based on the information and findings included above, the Commission finds that the proposed project would not result in adverse cumulative impacts.

---

[32] The only LNG marine terminal proposal within the project area, Clearwater Port, has been delayed indefinitely due to recent changes in growth forecasts in California and natural gas market conditions.

L. Environmental Justice[33]

The purpose of Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low income Populations," is to identify and address whether high and adverse human health or environmental effects are likely to fall disproportionately on minority and/or low income populations of the community. In guidelines developed by the U.S. EPA to assist federal agencies in evaluating environmental justice impacts, a minority and/or low income population is said to exist if the minority and/or low income population percentage of the affected area is 50 percent or more of the area's general population. Further, the Council on Environmental Quality guidance on this issue suggests that impacts may be felt when minority and/or low income populations in potentially affected areas are present in proportions meaningfully greater than those of the general population of the area. The thresholds for poverty level for an individual and a family of four in 2000 were income levels of $8,501 and $17,029, respectively[34]. The Council on Environmental Quality defines the term "minority" as persons from any of the following groups: Black/African American; Asian; Native Hawaiian or Other Pacific Islander; American Indian or Alaska Native; and Hispanic, regardless of race. Additionally, for the purposes of this analysis, "minority" also includes all other nonwhite racial categories such as "some other race" and "two or more races."

In evaluating this issue, it is important to first examine the type, likelihood and magnitude of potential adverse human health or environmental effects that could result from the proposed project and then examine whether or not these effects would be felt disproportionately by minority and/or low income populations within the project area. As detailed above, potential issues raised by the proposed project that could adversely affect the health or environmental quality of the local community include the air emissions, noise levels, water discharges and visual blight associated with the peaker facility. Water discharges and visual blight associated with the proposed project are discussed in previous sections above and with the adoption of the recommended special conditions; the Commission finds that these would not have significant adverse effects on the health or environmental quality of the local community.

Regarding the proposed project's air emissions and potential adverse health impacts associated with these emissions, the Ventura County Air Pollution Control District (VCAPCD) provided Commission staff with two memoranda, dated November 27, 2006 and June 6, 2007, that provide the results of the VCAPCD's health risk assessment of the proposed project. This assessment is based on computer modeling of anticipated emissions which factors in local weather conditions and the pollution control equipment which would be in use at the proposed facility. Measurements were made at 25 meter and 100 meter intervals to a distance of two kilometers and as detailed in Exhibit 14, the VCAPCD concluded that the calculated health risks associated with the proposed project were below the permit issuance

---

[33] The issue area of environmental justice is not one that is addressed by the policies of Chapter 3 of the Coastal Act or the City of Oxnard LCP. Accordingly, the avoidance and mitigation of any adverse effects on the environment that are significant only because of their disproportionate impacts on minority or low-income populations are outside the scope of the Commission's authority under both the Coastal Act and the City's LCP. Environmental justice concerns have been raised by the City and members of the public, however, so this section constitutes the Commission's response to these comments.

[34] U.S. Census Bureau, American Fact Finder Database. http://factfinder.census.gov.

threshold levels established by VCAPCD. These conclusions are supported by an assessment carried out by SCE on September 8, 2008, titled *Maximum Potential Air Quality Impacts From McGrath Peaker Project Operations*, also provided in Exhibit 14.

Noise impacts associated with the proposed project were also assessed during both the City of Oxnard's MND process and the Commission's review. Although no sensitive noise receptors (i.e. recreation areas, residences, schools, etc.) are located near the proposed project site, noise models were developed and reviewed. The results of these models show that noise levels associated with the proposed project would not exceed ambient levels at the property line of the project site. Therefore, because the proposed project, as conditioned, will not have significant adverse effects, the project could not disproportionately impact any segment of the local community, including low-income and minority populations.

Nevertheless, assuming a worst-case scenario in which the proposed project were to adversely affect the health or environmental quality of the community in closest proximity to the project area, the Commission examined the demographic and socioeconomic composition of this community to determine whether or not low-income and/or minority populations would be disproportionately affected. Given the proposed infrequent use, relatively small size and specific design of the project being considered, even under a worst-case scenario the likelihood is very low that the proposed project would adversely affect human health or environmental resources at a distance greater than a half-mile from the project site. Therefore, although nearly 80% of the population within the greater City of Oxnard is made up of minority groups (based on U.S. Census Bureau survey data from 2000), it is more appropriate to consider the specific composition of the communities and populations within the immediate project area.

Spatial representation of the 2000 census data provided in SCE's report titled *Supplemental Analyses for the Southern California Edison Mandalay Peaker Project* show that in contrast to the minority composition of the rest of the City of Oxnard, the closest residential area to the project site, Oxnard Shores, is home to a population that is at least 80% white. Minority representation in Oxnard's population increases to the east and southeast of the proposed project site as one travels further inland. Based on the spatial representations of year 2000 U.S. Census Bureau survey data provided to Commission staff by SCE, the nearest residential areas with a minority population of greater than 40% are over 1.5 miles southeast of the project site and at least twice as far away as the nearest part of the Oxnard Shores community. Therefore, although the proposed project would not result in adverse impacts to human health or the environment, even under a worst case scenario in which the closest residential community to the project site were to experience some adverse impact, this impact would not be disproportionately felt by a minority community. Specifically, the less than 20% minority representation in Oxnard Shores is less than half of the average minority percentages in Ventura County (43.3 percent) and in the State of California (53.3 percent), and well below the 50-percent threshold considered when evaluating disproportionate impacts on minority populations.

In addition, the spatial data of U.S. Census Bureau survey data provided by SCE to the Commission show that there are substantially fewer residential areas within a three mile

radius of the proposed project that are below the poverty level than there are in Ventura County and the greater State of California. These communities within three miles of the project site are below the 50-percent threshold considered when evaluating disproportionate impacts on low-income populations. Other than the proposed Northshore at Mandalay Bay residential development (which may no longer be built due to foreclosure and is not proposed to contain affordable housing), none of the adjacent land uses in the project area include residential. The only existing residential areas in the vicinity of the proposed project are to the south of Fifth Street in the Oxnard Shores area previously described. According to information provided to the Commission by SCE, less than 6.5 percent of the population in this area was below the poverty level in 2000. This percentage is substantially lower than the percentages of the population below the poverty level in Ventura County (9.2%) and in the State of California (14.2%). This percentage does not meet the 50-percent threshold established by the U.S. EPA in guidelines developed to assist federal agencies in evaluating environmental justice impacts. The 6.5% figure also does not meet the Council on Environmental Quality guidance on this issue which suggests that impacts may be felt when minority and/or low income populations in potentially affected areas are present in proportions meaningfully greater than those of the general population of the area.

Overall, the Commission finds that the proposed project would not adversely affect human health or environmental resources within the project area and local community, that the residential area and community within the immediate vicinity of the proposed project is not comprised of a predominantly minority and/or low income population, and that these populations would not be disproportionately impacted in an adverse way by the proposed project.

M. CEQA

Section 13096(a) of the Commission's administrative regulations requires Commission approval of coastal development permit applications to be supported by a finding showing the application, as conditioned by any conditions of approval, to be consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse effect which the activity may have on the environment.

Because the proposed project has the potential to result in significant adverse environmental impacts, the Commission has identified and adopted six special conditions necessary to avoid, minimize, or mitigate these impacts. With the inclusion of these six special conditions, the Commission finds that, within the meaning of the California Environmental Quality Act of 1970, there are no further feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse effect which the proposed project may have on the environment. Therefore, the proposed project, as conditioned, has been adequately mitigated and is determined to be consistent with CEQA.

Appendix A: List of Exhibits and Substantive File Documents

List of Exhibits:

1. Project Site Plan, Transmission Line Route and Natural Gas Pipeline Route
2. California Public Utilities Commission Rulemaking No. 06-02-013
3. Photographs of Existing Visual Condition of Site
4. SCE's Draft Landscaping, Restoration and Invasive Plant Species Removal Plan
5. City of Oxnard Planning Commission and City Council Resolutions
6. Memo from California Coastal Commission Staff Ecologist Dr. Jonna Engel
7. LCP Land Use and Zoning Map No. 2 (Project Area)
8. Relevant Mitigation Measures from project Mitigated Negative Declaration
9. Relevant Mitigation Guidelines from California Burrowing Owl Consortium's April 1993, "Burrowing Owl Survey Protocol and Mitigation Guidelines"
10. SCE's McGrath Beach Peaker Project Greenhouse Gas Emission Discussion and Construction Emission Calculations
11. California Energy Commission, Coastal Power Plant Siting and Zoning Map
12. Marine Research Specialists, "SCE McGrath Beach Peaker Project Greenhouse Gas Emissions," July 1, 2008
13. Excerpt from SCE's *Supplemental Analyses for the Southern California Edison Mandalay Peaker Project*, June 17, 2008
14. SCE's March 19, 2009 Letter to Commission Staff regarding Air Quality Impacts with attached memoranda from Ventura County Air Pollution Control District
15. SCE's February 5, 2009 Letter to Commission Staff regarding Environmentally Sensitive Habitat Areas with attached memorandum from Glenn Lukos Associates

Substantive File Documents:

City of Oxnard Coastal Land Use Plan, last updated May 2002

City of Oxnard Coastal Zoning Ordinance, last updated February 2004

City of Oxnard Mitigated Negative Declaration No. 07-02 for Coastal Development Permit No. PZ-06-400-5, SCE Peaker Plant, May 11, 2007.

City of Oxnard Planning Commission Staff Report for Coastal Development Permit No. PZ-06-400-5, SCE Peaker Plant, June 28, 2007.

City of Oxnard Planning Commission Staff Report for Appeal of the Planning Commission's Denial of Planning and Zoning Permit No. 06-400-5 (Coastal Development Permit), July 12, 2007.

City of Oxnard Planning Commission Resolution No. 2007-19, June 28, 2007.

City of Oxnard City Council Resolution No. 13,340, July 24, 2007.

City of Oxnard, Development Services Director report to City Council re: Report and Direction to Staff on Water Supply Management and Traffic Level of Service Policies Related to the 2020 General Plan Update, November 30, 2007.

City of Oxnard, Letter to Southern California Edison Company re: Coastal Development Permit PZ 06-400-5, Proposed SCE Peaker Plant, Request for Additional Environmental Analysis for the Mitigated Negative Declaration, March 15, 2007.

City of Oxnard, Letter to California Coastal Commission re: Notice of Final Decision on Coastal Development Permit No. 06-400-5, July 25, 2007.

City of Oxnard, Letter to California Coastal Commission re: Appeal of the City of Oxnard's Denial of the Edison Peaker Plant Proposal; Appeal No. A-4-OXN-07-096, May 6, 2008.

City of Oxnard, Letter to California Coastal Commission re: Appeal of the City of Oxnard's Denial of the Edison Peaker Plant Proposal; Appeal No. A-4-OXN-07-096, May 12, 2008.

City of Oxnard, Letter to California Coastal Commission re: Appeal of the City of Oxnard's Denial of the Edison Peaker Plant Proposal Appeal No. A-4-OXN-07-096, July 18, 2008.

City of Oxnard, Letter to California Public Utilities Commission re: Oxnard Statement Concerning Application A.07-12-029, Presented at CPUC Workshop, March 2, 2009.

California Coastal Commission Staff Report A-4-OXN-00-172

California Coastal Commission Staff Report OXN-MAJ-1-00

California Coastal Commission Staff Report A-4-OXN-07-096 (Substantial Issue)

California Coastal Commission, "Designation of Coastal Zone Areas Where Construction of an Electric Power Plant Would Prevent Achievement of the Objectives of the California Coastal Act of 1976," September 1978 (revised in 1984 and re-adopted in December 1985).

California Public Utilities Commission Rulemaking Nos. 05-12-013 and 06-02-13.

California Regional Water Quality Control Board, Los Angeles Region, "Notice of Intent to Comply with General Waste Discharge Requirements and National Pollutant Discharge and Elimination System Permit," December 4, 2006.

California Department of Parks and Recreation, Letter to City of Oxnard - Planning and Environmental Services Division re: MND 07-02 Edison Peaker Plant, June 15, 2007.

United States Department of the Interior – Fish and Wildlife Service, Letter to City of Oxnard - Planning and Environmental Services Division re: Comments on the Mandalay Peaker Project, Mitigated Negative Declaration, June 18, 2007.

Ventura County Air Pollution Control District, Memorandum: Engineering Analysis of Application No. 07891-100, February 1, 2007.

Ventura County Air Pollution Control District, Memorandum: Health Risk Assessment for Southern California Edison (Application No. 07891-100), November 27, 2006.

Ventura County Air Pollution Control District, Memorandum: Health Risk Assessment for Southern California Edison, June 6, 2007.

Ventura County Watershed Protection District – Planning and Regulatory Disvision, Memorandum: RMA 07-027 Mandalay Peaker Project, June 1, 2007.

California Burrowing Owl Consortium, "Burrowing Owl Survey Protocol and Mitigation Guidelines," April 1993.

California Energy Commission, "Opportunities to Expand Coastal Power Plants in California – Staff Report," May 30, 1980.

Northshore at Mandalay Bay Draft Environmental Impact Report, August 1998.

Northshore at Mandalay Bay Final Environmental Impact Report, March 1999.

Sierra Club - Los Padres Chapter, Letter to California Coastal Commission, August 2, 2008.

Southern California Edison Company, Letter to City of Oxnard – Planning and Environmental Services Division, February 16, 2006.

Southern California Edison Company, Letter to City of Oxnard – Planning and Environmental Services Division, April 19, 2007.

Southern California Edison Company, Letter to City of Oxnard – Planning and Environmental Services Division, June 13, 2007.

Southern California Edison Company, Letter to City of Oxnard – Planning and Environmental Services Division, June 27, 2007.

Southern California Edison Company, Appeal from City of Oxnard CDP No. 06-400-05, August 9, 2007.

Southern California Edison Company, Letter to California Coastal Commission (with attachments), February 21, 2008.

Southern California Edison Company, Letter to California Coastal Commission (with attachments), March 21, 2008.

Southern California Edison Company, Letter to California Coastal Commission (with attachments), April 9, 2008.

Southern California Edison Company, Letter to California Coastal Commission (with attachments), June 24, 2008.

Southern California Edison Company, Letter to California Coastal Commission (with attachment), June 17, 2008.

Southern California Edison Company, Letter to California Coastal Commission, June 26, 2008.

Southern California Edison Company, Letter to California Coastal Commission (with attachments), June 30, 2008.

Southern California Edison Company, Letter to California Coastal Commission (with attachments), October 7, 2008.

Southern California Edison Company, Letter to California Coastal Commission (with attachments), February 5, 2009.

Southern California Edison Company, Letter to California Coastal Commission (with attachments), February 20, 2009.

Southern California Edison Company, Letter to California Coastal Commission (with attachments), March 19, 2009.

Southern California Edison Company, Letter to Oxnard City Clerk re: Administrative Appeal of the June 28, 2007 Decision of the Oxnard Planning Commission regarding the Southern California Edison Company Mandalay Peaker Project (PZ 06-400-5) with Attachments, July 10, 2007.

Southern California Edison Company, "Fact Sheet: Mandalay Peaker Unit Project," January 2007.

Southern California Edison Company, "Responses to Public Comments from the June 28, 2007, Oxnard Planning Commission Hearing on Planning and Zoning Permit Number 06-400-5," August 30, 2007.

Southern California Edison Company, "Environmental Soil Investigation Results," March 21, 2008.

Southern California Edison Company, "McGrath Beach Peaker Project Greenhouse gas Emission Discussion," April 9, 2008.

Southern California Edison Company, "Construction Emission Calculations ," April 9, 2008.

Southern California Edison Company, "Supplemental Analyses for the Southern California Edison Mandalay Peaker Project" (with attachments), June 17, 2008.

Southern California Edison Company, "McGrath Beach Peaker Landscaping Plan," June 26, 2008.

Southern California Edison Company, "Flood Potential of Southern California Edison's Proposed McGrath Beach Peaker," October 7, 2008.

Chang Consultants, "Study of Flooding Potential at the McGrath Beach Peaker Plant Site in Oxnard," September 17, 2008.

Marine Research Specialists, "SCE McGrath Beach Peaker Project Greenhouse Gas Emissions," July 1, 2008.

Glenn Lukos Associates, "Results of Focused Surveys for Special-Status Plants for Peaker Plant Project East of Harbor Boulevard, Ventura, California," May 19, 2008.

Glenn Lukos Associates, "Results of Studies to Quantify the Composition and Approximate Cover of Vegetation Associated with the McGrath Beach "Peaker" Power Plant Project East of Harbor Boulevard, Ventura, California," October 16, 2008.

Keane Biological Consulting, "Mandalay Peaker Project Biological Resources Assessment," February, 2007.

Keane Biological Consulting, Letter to SCE, December 1, 2007.

Keane Biological Consulting, Letter to Southern California Edison re: McGrath Peaker Project: Responses to California Coastal Commission comments, March 18, 2008.

Entrix, Inc., "Fish survey of waters in the vicinity of Mandalay Generating Station, including the intake area on Mandalay Canal, the discharge basin and the associated beach pond, with special reference to the federally endangered tidewater goby, *Eucyclogobius newberryi*." February 4, 2007.

Dale Hinkle, P.E. Inc., "Dewatering Plan Mandalay Generating Station Peaking Unit," June 11, 2007.

David Magney Environmental Consulting, Letter to California Coastal Commission re: SCE's Mandalay Beach Property Biological Resources (Appeal File No. A-4-OXN-07-096), March 10, 2009.

Weck Laboratories, Inc., "Mandalay Groundwater – Certificate of Analysis," August 27, 2007.

Weck Laboratories, Inc., "McGrath Beach Soil Testing – Certificate of Analysis," April 9, 2007.

Southern California Gas Company, Letter to Southern California Edison re: Natural Gas Pipeline Construction and Installation, March 17, 2008.

Kleinfelder, Inc., "Geotechnical Investigation Proposed Peaker Unit Project Mandalay Beach Steam Station Oxnard, California," December 13, 2006.

Federal Register, Volume 67, Number 196, Pages 62926-62945, "Endangered and Threatened Wildlife and Plants; Proposed Designation of Critical Habitat for Astragalus pycnostachyus var. lanosissimus, a Plant from the Coast of Southern and Central California," October 9, 2002.

Baldocchi, D., and S. Wong. 2006. "An assessment of the impacts of future CO2 and climate on California agriculture." California Climate Change Center. 34 pp.

Battles, J.J., T. Robards, A. Das, K. Waring, J.K. Gilless, F. Schurr, J. LeBlanc, G. Biging, and C. Simon. 2006. "Climate change impact on forest resources." California Climate Change Center. 28 pp.

Bindschadler, R. 2006. "Hitting the ice sheets where it hurts." Science. v. 311: 1720-1721.

Caldeira, K., and M.E. Wickett. 2003. "Anthropogenic carbon and ocean pH." Nature v. 425: 365.

California Coastal Commission. 2001. "Overview of Sea Level Rise and Some Implications for Coastal California."

Cavagnaro, T., L. Jackson, and K. Scow. 2006. "Climate change: Challenges and solutions for California agricultural landscapes." California Climate Change Center. 107 pp.

Cayan, D., P. Bromirski, K. Hayhoe, M. Tyree, M. Dettinger, and R. Flick. 2006a. "Projecting future sea level." California Climate Change Center. 53 pp.

Cayan, D., A.L. Luers, M. Hanemann, G. Franco, and B. Croes. 2006b. "Scenarios of climate change in California: An overview." California Climate Change Center. 47 pp.

Cayan, D., E. Maurer, M. Dettinger, M. Tyree, K. Hayhoe, C. Bonfils, P. Duffy, and B. Santer. 2006c. "Climate scenarios for California." California Climate Change Center. 44 pp.

Church, J.A., and N.J. White. 2006. "A 20th century acceleration in global sea-level." Geophysical Research Letters. v. 33.

Drechsler, D.M., N. Motallebi, M. Kleeman, D. Cayan, K. Hayhoe, L.S. Kalkstein, N. Miller, S. Sheridan, J. Jiming, and R.A. VanCuren. 2006. "Public health-related impacts of climate change in California." California Climate Change Center. 80pp.

Ekström, G., M. Nettles, and V.C. Tsai. 2006. "Seasonality and increasing frequency of Greenland glacial earthquakes." Science. v. 311: 1756-1757.

Franco, G., and A.H. Sanstad. 2006. "Climate change and electricty demand in California." California Climate Change Center. 9 pp.

Fried, J.S., J. K. Gilless, W.J. Riley, T.J. Moody, C.S. de Blas, K. Hayhoe, M. Moritz, S. Stephens, and M. Torn. 2006. "Predicting the effect of climate change on wildfire severity and outcomes in California: Preliminary analysis." California Climate Change Center. 47 pp.

Friedrich, A., F. Heinen, F. Kamakaté, and D. Kodjak. 2007. "Air Pollution and Greenhouse Gas Emissions from Ocean-going Ships: Impacts, Mitigation Options and Opportunities for Managing Growth." International Council on Clean Transportation. 101 pp.

Gutierrez, A.P., L. Ponti,, C.K. Ellis, and T. d'Oultremont. 2006. "Analysis of climate effects on agricultural systems." California Climate Change Center. 30 pp.

Heede, R. 2006. "LNG supply chain greenhouse gas emissions for the Cabrillo Deepwater Port: Natural gas from Australia to California: Snowmass, Colorado." Climate Mitigation Services. 28 pp.

Howell, D.G. 1993. "The future of energy gases." Professional Paper: Washington, D.C., U.S. Geological Survey Professional Paper 1570. 890 pp.

Joughin, I. 2006. "Greenland rumbles louder as glaciers accelerate." Science. v. 311: 1719-1720.

Joyce, B., S. Vicuña, L. Dale, J. Dracup, M. Hanemann, D. Purkey, and D. Yates. 2006. "Climate change impacts on water for agriculture in California: A case study in the Sacramento Valley." California Climate Change Center. 76 pp.

Kerr, R. 2006. "A worrying trend of less ice, higher seas." Science. v. 311: 1698-1703.

Laws, E.A. 1997. *El Niño and the Peruvian Anchovy Fishery: Sausalito, California.* University Science Books. 58 pp.

Lenihan, J.M., D. Bachelet, R. Drapek, and R.P. Neilson. 2006 "The response of vegetation distribution, ecosystem productivity, and fire in California to future climate scenarios simulated by the MC1 dynamic vegetation model." California Climate Change Center. 19 pp.

Luers, A.L., D.R. Cayan, G. Franco, H. Hanemann, and B. Croes. 2006. "Our Changing Climate: Assessing the Risks to California." California Climate Change Center. 16 pp.

Luers, A.L., and S.C. Moser. 2006. "Preparing for the impacts of climate change in California: Opportunities and constraints for adaptation." California Climate Change Center. 41 pp.

Medellin, J., J. Harou, M. Olivares, J. Lund, R. Howitt, S. Tanaka, M. Jenkins, K. Madani, and T. Zhu. 2006. "Climate warming and water supply management in California." California Climate Change Center. 32 pp.

Miller, N.L., and N.J. Schlegel. 2006. "Climate change--Projected Santa Ana fire weather occurrence." California Climate Change Center. 11 pp.

Moritz, M.A., and S.L. Stephens. 2006. "Fire and sustainability: Considerations for California's altered future climate." California Climate Change Center. 6 pp.

Nezlin, N.P., W.M. Hamner, and L.D. Zeidberg. 2005. "Influence of El Nino 1997-1998 on the pelagic ecosystem off California: Remote-sensed analysis, in Magoon, O.T." Converse, H., B. Baird, B. Jines, and M. Miller-Henson, eds. California and the World Ocean '02: Revisiting and revising California's Ocean Agenda. Reston, Virginia. American Society of Civil Engineers. 1233-1252 pp.

Schlesinger, W.H. 1997. *Biogeochemistry: An Analysis of Global Change*. San Diego, Academic Press. 587 pp.

The Royal Society. 2005. *Ocean acidification due to increasing atmospheric carbon dioxide*. London. The Royal Society. 60 pp.

Vicuña, S. 2006. "Predictions of climate change impacts on California water resources using CALSIM II: A technical note." California Climate Change Center. 24 pp.

Vicuña, S., R. Leonardson, J.A. Dracup, M. Hanemann, and L. Dale. 2006a. "Climate change impacts on high elevation hydropower generation in California's Sierra Nevada: A case study in the Upper American River." California Climate Change Center. 36 pp.

Westerling, A., and B. Bryant. 2006. "Climate change and wildfire in and around California: Fire modeling and loss modeling." California Climate Change Center. 28 pp.

Wolock, D., and G. McCabe. "Climate Research." 1999. "Explaining spatial variability in mean annual runoff in the conterminous United States." Climate Research. v. 11: 149-159.

Kennedy/Jenks Consultants, "Wagon Wheel Development Water Supply Assessment." April 2008.

City of Oxnard 2005 Urban Water Master Plan.

Appendix B: Selection of Applicable Local Coastal Policies

Local Coastal Policy 6 states, in relevant part: *As a part of the Phase III Implementation portion of the LCP process, a resource protection ordinance was created, defining the only uses permitted in areas designated on the land use map with the Resource Protection Zone. The ordinance incorporated the following policies which the City will implement to the extent of its legal and financial ability:*

a. …
b. …
c. …
d. *New development adjacent to wetlands or resource protection areas shall be sited and designed to mitigate any adverse impacts to the wetlands or resource.*

A buffer of 100 feet in width shall be provided adjacent to all resource protection areas. The buffer may be reduced to a minimum of 50 feet only if the applicant can demonstrate the large buffer is unnecessary to protect the resources of the habitat area. All proposed development shall demonstrate that the functional capacity of the resource protection area is maintained. The standards to determine the appropriate width of the buffer area are:

1) biological significance of the area
2) sensitivity of the species to disruption
3) susceptibility to erosion
4) use of natural and topographical features to locate development
5) parcel configuration and location of existing development
6) type and scale of development proposed
7) use of existing cultural features to locate buffer zones

When a development is proposed within an environmentally sensitive habitat or a resource protection area, or within 100 feet of such areas, a biological report shall be prepared which includes applicable topographic, vegetative and soils information. The information shall include physical and biological features existing in the habitat areas. The report shall be prepared by a qualified biologist, and shall recommend mitigation measures to protect any impacted resources. All recommendations shall be made in cooperation with the State Department of Fish and Game. When applicable, restoration of damaged habitats shall be a condition of approval.

e. *When a development is proposed within or near an environmentally sensitive habitat area, applicable topographic, vegetative and soils information shall be provided. The information shall include physical and biological features existing in the habitat areas.*

Local Coastal Policy 9 states: *Wetlands shall be defined as:*

Land where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes. In certain types of wetlands, vegetation is lacking and soils are poorly developed or absent as a result of frequent and drastic fluctuations of surface water levels, wave action, waterflow, turbidity or high concentrations of salts or other substances in the water or substrate. Such wetlands can be recognized by the presence of surface water or saturated substrate at some time during the year, and their location within, or adjacent to, vegetated wetlands or deep-water habitats.

Local Coastal Policy 10 states, in relevant part: *The water quality of the City's coastal waters shall be maintained and, where feasible, restored by the following:*

a. The effects of wastewater discharges which release toxic substances into coastal waters, streams, wetlands, estuaries and lakes shall be minimized, and, where feasible, toxic substances should be removed. Wastewater discharges which do not contain toxic substances and which are necessary to sustain the functional capacity of streams, wetlands, estuaries and lakes shall be maintained.
b. …
c. The effects of increased amounts of runoff into coastal waters, streams, wetlands, estuaries and lakes due to development shall minimize through, among other means, grading and other site development controls, and buffer zones.
d. …
e. Naturally occurring vegetation that protects riparian habitats shall be maintained and, where feasible, restored.
f. …
g. …

Local Coastal Policy 52 states, in relevant part: *Industrial and energy-related development shall not be located in coastal resource areas, including sensitive habitats, recreational areas, and archaeological sites. All development adjacent to these resource areas or agricultural areas shall be designed to mitigate any adverse impacts…*

Local Coastal Policy 57 states: *If it is not possible to reroute pipelines around coastal resource areas, including habitat, recreational and archeological areas, they shall be permitted to cross the areas with the following conditions:*

a. Pipeline segments shall, in case of break, be isolated by automatic shut-off valves or with other safety techniques approved by the City. If the City determines it is necessary, the valves may be located at intervals less than the maximum required by the Department of Transportation.
b. Any routing through resource areas shall be designed to minimize the impacts of a spill, should it occur, by considering spill volumes, durations and trajectories. Plans for appropriate measures for cleanup shall be submitted with permit applications for all pipeline project proposals.
c. Except for pipelines exempted from coastal development permits under Sections 30610(c) and (e) of the Coastal Act as defined by the State Coastal Commission's

Interpretive Guidelines, a survey shall be conducted along the route of any proposed new pipeline in the coastal zone to determine what, if any, coastal resources may be impacted, by construction and operation of the proposed pipeline. The costs of this survey shall be borne by the applicant. This survey may be conducted as part of environmental review if an EIR is required.

d. The survey shall be conducted by a consultant selected jointly by the applicant, the City, and the Department of Fish and Game. If it is determined that the area to be disturbed will not re-vegetate naturally or sufficiently quickly to avoid erosion or other damage, the applicant shall submit a re-vegetation plan. The plan shall also include provisions for the restoration of any habitats disturbed by construction or operation of the proposed pipeline.

e. For projects where a re-vegetation plan and/or habitat restoration plan has been required, the area crossed by the pipeline shall be re-surveyed one year after completion of construction to determine the effectiveness of the plan. This survey shall continue on an annual basis to monitor progress in returning the site to preconstruction conditions until the City has determined that the vegetation restoration is complete.

f. The City shall require the posting of a performance bond by the applicant to ensure compliance with these provisions.

g. Herbicides shall not be used during pipeline construction. The sidecasting of soil may be restricted where the City deems necessary by removal of excess soil to an approved dumping site after the excavation has been backfilled and compacted. The City may require that the trenches be filled by replacing the soil horizons in sequence.

McGrath Peaker Temporary and Permanent Impacts

MP1/MSW/sid 8/15/2006

FILED
08-15-06
02:49 PM

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Consider Refinements to and Further Development of the Commission's Resource Adequacy Requirements Program.	Rulemaking 05-12-013 (Filed December 15, 2005)
Order Instituting Rulemaking to Integrate Procurement Policies and Consider Long-Term Procurement Plans.	Rulemaking 06-02-013 (Filed February 16, 200

EXHIBIT NO. 2
Application:
A-4-OXN-07-096
So. Cal. Edison

ASSIGNED COMMISSIONER'S RULING ADDRESSING ELECTRIC RELIABILITY NEEDS IN SOUTHERN CALIFORNIA FOR SUMMER 2007

1. Summary

In the captioned dockets and in other pending proceedings, this Commission is working with partners including the California Independent System Operator (CAISO), the California Energy Commission (CEC), regulated entities, and other stakeholders to develop and enhance the electric infrastructure so that it meets California's growing need for reliable, cost-effective, and environmentally sound electric service. Significant progress has been achieved since the electric market disruptions of 2000-2001, and the procedural steps needed to maintain this progress are well under way.

In light of recent events, I find it is necessary to take additional action. The heat storm that hit California in July 2006, and the surprising growth in electricity demand throughout the state that had become evident even before the heat storm, have exposed certain vulnerabilities in the electric generation and

transmission infrastructure that require immediate attention to assure reliability in 2007, particularly in parts of southern California. Accordingly, as set forth in more detail below, I direct Southern California Edison Company (SCE) to expand its Air Conditioning Cycling Program (ACCP, also referred to as Summer Discount Plans) to target an additional 300 megawatts (MW) of program capacity for the summer 2007 season. In addition, SCE should pursue the development and installation of up to 250 MW of black-start, dispatchable generation capacity within its service territory for summer 2007 operation. In connection with this added generation capacity, I invite SCE to file an advice letter to establish a memorandum account in which it would record the acquisition and installa costs.

2. Background

In the captioned rulemaking dockets and in predecessor proceedings initiated in the wake of the energy crisis of 2000-2001, this Commission has established policies for procurement of electric generation by investor-owned utilities (IOUs) and by other load-serving entities (LSEs) subject to the Commission's jurisdiction.[1] Throughout these proceedings, a fundamental goal of the Commission has been assuring that Californians served by these LSEs receive reliable electric service through cost-effective, environmentally sound, sustainable, and competitive procurement of electric generation capacity. Key elements of this procurement regime include the following:

[1] The Commission has found that the service territories of the three largest electric IOUs in California account for approximately 80% of California's electricity usage.

- The California Energy Action Plan (EAP II), which establishes a preferred loading order of resources, beginning with energy efficiency and demand response.
- Review and approval of the IOUs' Long Term Procurement Plans (LTPPs) in conjunction with the CEC's demand forecast.
- Establishment of Resource Adequacy (RA) procurement obligations whereby each jurisdictional LSE must acquire the resources needed to serve its own customer load plus a 15%-17% planning reserve margin.

3. Discussion

I am confident that the adopted procurement regime, described abov successfully meeting California's electric system needs and will continue to so. I recognize, however, that the LTPP and RA programs are still under development and that the adopted program elements have not been in place for sufficient time to bear full fruit. Despite the Commission's ongoing efforts to assure that adequate operating resources are made available to the CAISO at the times and places the CAISO needs those resources for electric grid operations, it is critical that we continually monitor system developments and be prepared to act as necessary.

Last month's heat storm, and the evident and surprising growth in demand that had occurred even before the heat storm, give rise to the need for further action. The CAISO's assessment for the summer of 2006 indicated that it could handle a demand in excess of 48,000 MW, close to what demand was forecasted to be under extreme temperatures that materialize once every

10 years, with limited to no impact on firm load customers.[2] However, the CAISO reports, the peak demand during that heat wave was 51,000 MW, well above any of the scenarios it had assumed in its assessment.[3] As the CAISO notes, that was over 12% higher than last year's record, 6% higher than the worst case scenario the CAISO analyzed in its assessment, and 38% higher than the peak demand of the crisis year 2001; it represents the demand forecasted not to appear until five years from now.[4] Across the CAISO's service area, weighted average temperatures ranged between 106 and 110 degrees Fahrenheit on various days, something California and the West have not experienced in re history; these temperatures were higher than anything recorded in the 30-y history of the temperature models used by the CAISO.[5] Also, staff informs the demand forecasts used to plan for resource needs in California may not have fully incorporated the impacts of recent population growth in the warmer inland areas of California.

EXHIBIT NO. 2
Application:
A-4-OXN-07-096
So. Cal. Edison

The good news for California is that the right policies were put in place in recent years, and all parties pulled together during the recent heat storm with the result that the CAISO was able to meet the resulting reliability challenge. Looking ahead to next summer, however, I am persuaded that additional steps should be taken now to assure reliability. While there is no way at this time to determine whether the unusually high temperatures experienced this summer in

---

[2] *See* Prepared Statement of Yakout Mansour, President and Chief Executive Officer of CAISO, before the California State Senate Committee Governmental Organizations, dated August 9, 2006. The statement is available at the CAISO's website.

[3] *Id.*

[4] *Id.*

[5] *Id.*

California and much of the nation are the product of global climate change trends, it is prudent to go forward with the expectation that a repeat of this summer's experience, and/or a continuation of the unexpectedly high growth in overall demand, are possible in 2007. The CAISO advises that the situation is particularly severe in southern California.[6] Recognizing that time does not allow for development of large new projects between now and next summer, the CAISO recommends that the Commission take steps to direct IOUs to develop

> ... a combination of quick-start generation and demand response opportunities that can be developed over the next six to twelve months to increase available supply at the peak hours and enhance grid reliability.[7]

Accordingly, in response to critical near-term needs in southern Calif that have been recently identified by the CAISO, I take the following actions.

First, consistent with the preference to be accorded to demand response programs under EAP II, I direct SCE to target an additional 300 MW of ACCP program capacity for the summer 2007 season. SCE is directed to determine if shifting existing demand response funds can cover the costs of the additional 300 MWs or if additional funds (incremental to those previously approved in D.06-03-024) are necessary. SCE is directed to provide this information to the Commission via the process outlined in A.05-06-006, *et al.*[8]

---

[6] *See* letter from Yakout Mansour, President and Chief Executive Officer of CAISO, dated August 9, 2006. A copy of the letter is attached to this ruling.

[7] *Id.*

[8] On August 9, 2006 I issued an Assigned Commissioner Ruling in A.05-06-006, *et al.*, directing the IOUs to submit proposals August 30, 2006 to expand their existing demand response programs.

Second, I direct SCE to pursue new utility-owned generation that can be online in time for summer 2007. I take this action out of concern that SCE's current, ongoing Request for Offer (RFO) process may not be completed in time for summer 2007 needs. As I noted earlier, competitive IOU procurement processes are key elements of the Commission's procurement regime. As it goes forward with its RFO, SCE should not reduce the amount of capacity it contracts for through the RFO due to development of generation specified in this ruling. Additionally, SCE should promptly evaluate any offers of resources similar to those covered in this ruling that may be online by August 1, 2007. Should S consider any such offers potentially viable, it should make best efforts to re agreement with the bidders and file a request for contract approval with th Commission by November 15, 2006. The Commission will target action on any such requests not later than January, 2007. Offers considered by SCE but not deemed August 1-capable, and offers SCE is unable to reach agreement on before November 15, 2006, should continue to follow the schedules and procedures laid out in the RFO. I would expect contracts filed by SCE pursuant to this section to contain financial guarantees of operation on or before August 1, 2007.

EXHIBIT NO. 2
Application:
A-4-OXN-07-096
So. Cal. Edison

To avoid undue impacts on the ongoing RFO process, SCE should pursue development of not more than five non-RFO generation units. Such units should be black-start capable and dispatchable, and should bring collateral benefits to SCE's transmission and distribution system as well as the CAISO grid.

It does not appear possible for SCE to develop and for the Commission to consider proposals for ratemaking treatment of the costs of developing and installing the utility-owned generation described above prior to the time such generation would be installed. Accordingly, I invite SCE to file an advice letter to establish a memorandum account to record the acquisition and installation

costs of such generation facilities. Because of the urgent need for capacity for summer 2007 and the unusual steps being taken in this ruling, SCE may choose in its later rate application to request, and the Commission may wish to consider, for resources built pursuant to this ruling, different ratemaking treatment than that established in D.06-07-029 for utility-owned resources.

In this ruling I have focused on actions that are to be undertaken by SCE in light of the CAISO's stated concern about reliability in southern California. As a precaution to assure reliability throughout the service territories of all of the IOUs, I will direct Pacific Gas and Electric Company and San Diego Gas & Electric Company to submit reports in the LTPP proceeding addressing the for similar actions in their territories, particularly with respect to air conditi cycling.

This ruling is being issued in R.05-12-013 and R.06-02-013 because of the related subject matter; however, these proceedings are not consolidated.

IT IS RULED that:

1. In order to address and resolve potential resource inadequacies that could affect reliability in southern California in the summer of 2007, Southern California Edison Company (SCE) is directed to take necessary steps to expand its demand response programs and to develop black-start, dispatchable resources in accordance with the foregoing discussion.

2. Not later than 15 days from the date of this ruling, Pacific Gas and Electric Company and San Diego Gas & Electric Company shall file reports in Rulemaking 06-02-013 addressing the need for actions in their territories similar to those addressed in this ruling with respect to SCE, particularly with respect to air conditioning cycling.

3. In addition to the service lists in the captioned dockets, a copy of this ruling shall also be served on the service list in Application (A.) 05-06-006, A.05-06-008, and A.05-06-017.

Dated August 15, 2006, at San Francisco, California.

/s/ MICHAEL R. PEEVEY
Michael R. Peevey
Assigned Commissioner

EXHIBIT NO. 2
Application:
A-4-OXN-07-096
So. Cal. Edison

View Point 1 Before

View Point 1 After

FILENAME:

View Point 2 Before

View Point 2 After

FILENAME:

View Point 3 Before

View Point 3 After

FILENAME:


VP-16
VP-17
VP-16
VP-15
VP-14
VP-13
VP-11
VP-10
VP-9
VP-8
VP-7
VP-6
VP-5
VP-4
VP-3
VP-2
VP-1
N
Image NASA
© 2008 Tele Atlas
Google
lat 34.211014° lon -119.251407°
elev 23 ft
Nov 2004
Eye alt 15088 ft

VP-01 - before

VP-01 - after

J:\2008_Projects\08200 - SCE\031-Peakers\Mandalay\New Sims\VP--01.dwg

VP-05 - before

VP-05 - after

J:\2008_Projects\08200 - SCE\031-Peakers\Mandalay\New Sims\VP-05.dwg

VP-06 - before

VP-06 - after

J:\2008_Projects\08200 - SCE\031-Peakers\Mandalay\New Sims\VP-06.dwg

VP-07 - before

VP-07 - after

J:\2008_Projects\08200 - SCE\031-Peakers\Mandalay\New Sims\VP-07.dwg

VP-09 - before

VP-09 - after

J:\2008_Projects\08200 - SCE\031-Peakers\Mandalay\New Sims\VP-09.dwg

VP-13 - before

VP-13 - after

J:\2008_Projects\08200 - SCE\031-Peakers\Mandalay\New Sims\VP-13.dwg

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

February 17, 2009

Mr. Cassidy Teufel
California Coastal Commission
45 Fremont Street, Suite 2000
San Francisco, CA
94105-2219

Re: Appeal No. A-4-OXN-07-096 (Southern California Edison Company, McGrath Beach "Peaker" Power Plant)

Dear Mr. Teufel:

Enclosed is a revised landscaping plan with narrative for the proposed project and updated visual simulations from Harbor Boulevard to replace those previously sent to you dated February 4, 2009. The revised plan incorporates native trees approved by U.S. Fish and Wildlife Service staff, which more effectively screens the facility from the east while dissuading corvids and other predatory birds from perching. We believe this change responds to the Commission's stated desire to reduce the visual impact of the facility to the maximum extent possible, while still protecting endangered bird species. All simulations and the landscape plan are also provided as digital files on the enclosed CD.

Please call or e-mail me if you should have any questions.

Sincerely,

David W. Kay
Manager of Environmental Projects

Enclosures

EXHIBIT NO. 4
Application
A-4-OXN-07-096
So. Cal. Edison

McGRATH BEACH PEAKER
LANDSCAPING AND RESTORATION PLAN
February 20, 2009

LANDSCAPING GOALS

The goals of the site landscaping plan are to: (1) create a visual barrier to screen the peaker development from motorists traveling on Harbor Boulevard east of the project site and from residents in the Northshore housing development; (2) restore vegetation in areas temporarily disturbed during construction; (3) plant new vegetation to offset any permanently removed during construction, (4) prevent non-native vegetation from reestablishing in restored/planted areas, and (5) remove invasive iceplant from the 37 acres of SCE owned land east of Harbor Blvd. All will be achieved through the use of California native plant species that are compatible with and presently occur in local plant communities.

Peaker Site

The proposed peaker site landscape plan is included as Attachment A. It has been reviewed by the biologist that conducted the restoration activities for the adjacent Mandalay Beach property to ensure its compatibility. It also employs a plant palette approved by U.S. Fish and Wildlife Service (USFWS) staff through verbal consultation.

The landscape plan calls for removing the existing chain link fence along Harbor Blvd. and replacing it with a shorter decorative fence to prevent public access. A new chain link fence will be installed behind the landscaped area to limit access to the peaker equipment site. In order to provide maximum screening of the project, a six foot high berm will be constructed and densely planted with a selection of locally-occurring California native ground covers, shrubs, and trees.

Tree species were selected in consultation with USFWS and possess dense foliage that does not provide nesting or roosting habitat for bird species that might prey on locally occurring nesting colonies of rare birds, such as California least tern and western snowy plover. Both of these species nest on the coastal strand on the west side of the dune field that parallels the coast, to the west of the project site. There was concern that planting trees that could provide additional habitat for corvids (ravens and crows) and raptors (i.e., hawks, falcons, etc.) could result in a negative impact on the nesting success of the species of concern. This plan was developed to address this concern.

The existing plantings on the southern edge of the SCE site consist of invasive exotic species that will be eradicated to prevent their spread into natural habitats within the adjacent Mandalay State Beach property. Current plantings include approximately 5,200 square feet (40 ft. by 130 ft.) of Hottentot fig (*Carpobrotus edulis*), myoporum (*Myoporum laetum*) and blue gum trees (Eucalyptus species) on the southeast corner of the property, which continues to the west along the southern property line.

Gas and Transmission Line Temporary Impact Sites

In addition to the peaker site landscaped area, in areas east of Harbor Boulevard where temporary construction disturbance occurs, a non-irrigated native hydroseed mix shall be developed and applied

just prior to the rainy season to re-establish native vegetation and decrease the spread of non-native exotics. The total area temporarily impacted by construction will be less than 0.83 acre.

The areas disturbed by pipeline and transmission line activities will also be treated to remove existing invasive species and prevent their reestablishment. Areas dominated by weed species that have been graded or trenched will have the vegetation removed and properly disposed of to eliminate seeds, roots, and stems present in the soil. If the plants to be removed are in seed, care will be taken to prevent the seeds from being distributed.

Permanent impact areas are limited to the new manhole/vault cover for the gas pipeline tie-in valve, the footprints of three (3) new wood poles, and the expanded footprint of one (1) existing pole to be replaced with a steel pole employing a larger concrete footing. The total permanent impact area is only about 93 square feet. Since the areas of temporary impact are presently either bare ground or vegetation is substantially non-native or invasive, the reseeding and revegetation of temporary impact areas (<0.83 acres, or approximately 36,000 square feet) will significantly exceed this small permanent impact area. Therefore, no additional areas are proposed be restored to offset the permanent impacts.

Removal of Iceplant on SCE-Owned Land East of Harbor Boulevard

The remaining undeveloped areas of the two SCE-owned parcels east of Harbor Blvd. will be voluntarily enhanced by removal of all invasive iceplant. This will be accomplished by a combination of solarization for large, contiguous areas of iceplant and targeted herbicide spot-treatment of small patches of iceplant mixed with natives. Dead iceplant will be left in place to decompose to prevent wind and water soil erosion while native vegetation naturally re-establishes in these areas. Experience with these methods on other dune restorations demonstrates that slowly decomposing iceplant does not inhibit the establishment of native vegetation compared to manually removing the dead iceplant.

Annual monitoring will ensure that iceplant does not reestablish in any previously cleared areas.

IRRIGATION SYSTEM (PEAKER SITE ONLY)

The irrigation system will be designed to minimize water use while encouraging the establishment of the selected California native species. The best irrigation system for native plants is an overhead sprinkler system that can deliver water droplets that simulates rainfall to the plant root zone and the surrounding soil area to encourage root development. This method also provides the best strategy for keeping the plants leaf surface clean to allow healthy plant respiration and transpiration as well as establishing seeded grasses and small shrubs.

The landscape plan will incorporate a zoned overhead sprinkler system with an ET ("Evapotranspiration") controller to minimize water use until the plants have been established. The ET controller will ensure climate based irrigation scheduling, so that watering only occurs when needed. It is anticipated that only a small amount of supplemental watering will occur during the dry season to keep the young native shrubs and seedlings alive until they can develop a mature root system capable of retrieving moisture directly from the soil profile. The zoned system will ensure that the proper amount of water is delivered to each species without over watering. The system will deliver more water to the larger root balls of the shrubs and less to the smaller seedlings.

The system will remain in place for 3 to 4 years with the frequency of operation decreasing every year until it can be abandoned. The exact length of installation will depend on the speed at which the plants establish themselves based on the natural precipitation levels.

FERTILIZERS, PESTICIDES AND HERBICIDES

The use of fertilizers, pesticides, and herbicides shall be minimized. Soil test shall be conducted prior to planting to determine the existing soil properties. Organic soil amendment and mulch shall be used in the initial planting procedure to supplement the existing soil to enhance the success of the planting. Mulch shall be guaranteed to be weed-free and shall not contain growth-inhibiting substances. Until the plants are established it may be necessary to apply low rates of natural organic fertilizer. Fertilizer will only be used when authorized by the Landscape Architect based on actual plant condition and soil tests. Only organic fertilizer will be used. Once the native plants have been well established, it is expected that the use of fertilizer will be discontinued.

A broadcast spray of Rodeo or other herbicide(s) suitable for use near wetlands may be used on the proposed Peaker Site landscape area as part of an initial "grow and kill" treatment to control invasive weeds contained in the imported soil. Existing habitats shall be protected against herbicide spray. Non-target plants shall be protected against contamination by spray drift. No herbicide applications shall be allowed when wind speed exceeds 5 MPH.

After the initial planting, herbicides will be used only as needed to eradicate weeds and non-natives if alternate methods are not effective. Herbicides will be applied only as spot treatments, and only directly on the areas where needed. Pesticides will not be used.

PERFORMANCE MONITORING

Monitoring Method: Quantitative monitoring of the peaker landscaped area, restored temporary impact areas and iceplant removal areas will be conducted using the line-intercept method to determine relative cover. Permanent transects will be established once construction is complete and all landscaping and irrigation has been installed. Monitoring will focus on the success of installed plants as well as general qualitative conditions, such as proper functioning of irrigation systems, herbivore, insect or disease problems, plant mortality and reduced vigor, vandalism, erosion, etc. Observations will be made to identify significant factors affecting plant survival and success of weed control. Photographs will be taken from at least one end of each transect to document changes during the monitoring period.

This method will document and quantify the relative abundance and dominance of:

- Planted or hydroseeded native species (except for iceplant removal areas);
- Natural recruitment of other native species; and,
- Weed growth or return of invasives.

Monitoring Schedule: Monitoring will commence following completion of planting. Four monitoring visits will be conducted during the first year after planting, with additional field checks after any large storm events. For years 2 through 5, two visits per year will be conducted, one each in spring and fall. This monitoring frequency provides sufficient oversight to correct minor problems before they become large problems, such as issues with individual plants (insects, herbivores, irrigation, etc), spot erosion, and weed infestations.

PERFORMANCE CRITERIA

The goal of the Peaker Site landscape plan is to create native vegetative cover as described in Table 1 below. Corrective actions may include replanting, weed control, and similar actions.

Table 1 – Landscape Performance Criteria

Monitoring Measure	Year 1	Year 2	Year 3	Years 4-5
Relative Native Cover (including natural recruits)	50%	60%	70%	80%
<10% non-native cover	<10%	<10%	<10%	<10%

The goal of the invasive plant removal program along the disturbed areas of the pipeline and transmission line corridors is to remove the existing non-native vegetation and discourage its re-establishment as described in Table 2.

Table 2 – Pipeline/Transmission Corridor Performance Criteria

Monitoring Measure	Year 1	Year 2	Year 3	Years 4-5
<10% non-native cover	<10%	<10%	<10%	<10%

The goal of the iceplant removal program on the undeveloped SCE land east of Harbor Blvd. is to remove the existing non-native iceplant and discourage its re-establishment as described in Table 3.

Table 3 – Iceplant Removal Performance Criteria

Monitoring Measure	Year 1	Year 2	Year 3	Years 4-5
<10% non-native cover	<10%	<10%	<10%	<10%

MAINTENANCE

Landscape Area Maintenance: The landscaped area will be maintained to assure proper care of the installed plants, including irrigation and on-going removal of invasive non-native plants. Exotic non-native plant species will be controlled for five years. Weeds will be removed by hand to minimize disturbance to the establishing vegetation. Herbicides and mechanical removal will be used only as needed, with spot treatment of herbicides only. The use of chemicals shall be minimized. Weed removal will occur as needed each year, generally most intensively in the early and late spring to eradicate small weed plants before they set seed and develop large roots.

If invasive species have not been reduced to a less than 10 percent cover after the first six to twelve months of exotic plant removal, the frequency and/or intensity of the eradication effort will be increased.

Pipeline and Transmission Line Construction Area Maintenance: The reintroduction of exotic non-native plant species into the areas disturbed by pipeline and transmission line construction activities will be controlled for five years.

If invasive species have not been reduced to a less than 10 percent cover after the first six to twelve months of exotic plant removal, the frequency and/or intensity of the eradication effort will be increased.

REPORTING

As-builts: An "as-built" of the completed work, including photographs, will be submitted to the Executive Director within 30-days of completion of the initial landscaping work.

Annual Reporting: Annual reports will be submitted to the Executive Director beginning the first year after construction of the permitted project. The reports will include an overview of project status, copies of field monitoring forms and photographs, and a Performance Evaluation that compares the status of the landscaping to the performance criteria. Reports will describe any corrective actions recommended by the monitor and conducted by the applicant. If appropriate (e.g., a "one-time" repair), the reports will describe the corrective action taken by the applicant otherwise (e.g., in the case of an on-going modification or repair best undertaken at a different season) the report will present a schedule for taking corrective action.

The first annual report will be submitted within one year of completion of planting at the site. Subsequent annual reports will be submitted by the end of December each year.

Final Report: A final report will be submitted by the end of December of the final monitoring year

McGRATH SITE

FEBRUARY 10, 2009

L1
PRELIMINARY LANDSCAPE PLAN

SOUTHERN CALIFORNIA EDISON COMPANY

SOUTHERN CALIFORNIA EDISON COMPANY
251 N. HARBOR BLVD., OXNARD, CALIFORNIA

Bowland & Associates

JORDAN, GILBERT & BAIN
LANDSCAPE ARCHITECTS INC.

RESOLUTION NO. 2007-19

A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF OXNARD DENYING COASTAL DEVELOPMENT PERMIT (PZ 07-400-5) FOR A 45-MW ELECTRICAL GENERATING FACILITY LOCATED AT 251 NORTH HARBOR BOULEVARD, WITHIN THE COASTAL ZONE. FILED BY SOUTHERN CALIFORNIA EDISON, 2244 WALNUT GROVE AVENUE, ROSEMEAD, CA, 91770.

WHEREAS, the Planning Commission of the City of Oxnard considered the above-described application for a Southern California Edison 45-MW electrical power-generating facility and related equipment ("the project"); and

EXHIBIT NO. 5
Application:
A-4-OXN-07-096
So. Cal. Edison

WHEREAS, the California Coastal Act defines a "Coastal-dependent development or us
"...any development or use which requires a site on, or adjacent to, the sea to be
function at all" (PRC §30101), and

WHEREAS, the project location is located in the Coastal Zone of the City Of Oxnard and subject to the Oxnard Coastal Land Use Plan and Chapter 17 (Coastal Zoning Ordinance) of the City Code; and

WHEREAS, the purpose of the Coastal Zoning Ordinance is stated in Section 17-2(2), "To assure priority for coastal-dependent and coastal-related development over other development on the coast"; and

WHEREAS, the coastal zone designation for the project site is Coastal Energy Facility Sub-Zone (EC); and

WHEREAS, Coastal Zoning Ordinance Section 17-20(B)(2) includes "Electrical power generating plant and accessory uses normally associated with said power generating facility" as a conditionally allowed use in the EC zone, requiring a coastal development permit; and

WHEREAS, there are no uses allowed in the EC zone other than by coastal development permit and the electrical power generating plant and accessory uses normally associated with said power generating facility use should be considered in the context of coastal-dependent; and

WHEREAS, a non-coastal dependent energy-generating facility would not be allowable based on Section 17-5(I) of the City Code which states, "If a proposed use is not listed as permitted or conditionally permitted, such use shall be assumed to be prohibited unless the city council determines, following recommendations from the commission and a public hearing, that the proposed use is substantially the same as a listed use."; and

WHEREAS, the project was characterized by the applicant in letters dated April 19, 2007 and June 15, 2007 as "non-coastal dependent" and four identical projects are being developed in non-coastal locations.

NOW, THEREFORE, BE IT RESOLVED that the Planning Commission of the City of Oxnard finds that the proposed project is not an allowed use in the EC zone and denies the application for coastal development permit No. PZ 07-400-5.

PASSED AND ADOPTED by the Planning Commission of the City of Oxnard on the 28th day of June, 2007, by the following vote:

AYES: Commissioners: Medina, Sanchez, Elliott, Frank, Okada

NOES: Commissioners: Dean, Pinkard

ABSENT: Commissioners: None

EXHIBIT NO. 5
Application:
A-4-OXN-07-096
So. Cal. Edison

Dr. Sonny Okada, Chairperson

ATTEST: _____
Susan L. Martin, Secretary

CALIFORNIA COASTAL COMMISSION
SOUTH CENTRAL COAST AREA
89 SOUTH CALIFORNIA ST., SUITE 200
VENTURA, CA 93001
(805) 585-1800

M E M O R A N D U M

FROM: Jonna D. Engel, Ph.D.
Ecologist

TO: Cassidy Teufel
Coastal Analyst, Energy and Oceans

SUBJECT: Southern Dune Scrub Community at the Proposed Southern California Edison Peaker Plant, 251 Harbor Boulevard, Oxnard, California

DATE: October 9, 2008

On Friday May 16, 2008, I visited the site of Southern California Edison's (SCE) proposed Peaker Plant with Jim Harvey from SCE and Tony Bomkamp of Glenn Lukos and Associates, SCE's contract biologist. We surveyed the project area consisting of the proposed gas pipeline and associated trenching areas that run parallel to Harbor Boulevard east and west of the canal that bisects Harbor Boulevard and the disturbance footprint associated with equipment access, construction staging, and construction and removal of transmission poles along the transmission line corridor. The portion of the transmission line corridor where the work would occur starts north of Harbor Boulevard behind the existing transmission substation and runs east across the canal to the point where transmission lines pass over Harbor Boulevard. Subsequent to this site visit, I visited the site three additional times, on June 12, July 18, and October 2, 2008.

The bulk of SCE's property east of Harbor Boulevard and the habitat within the project area (pipeline and transmission line corridor) is southern dune scrub. However, chronic disturbance in the project area, from public utility infrastructure installation and maintenance activities over the years has been substantial – an electricity transmission substation, gravel staging and storage area, several dirt roads, two underground natural gas pipelines and several dozen transmission poles and overhead power lines exist on the site and transmission line cleaning and maintenance activities involving the use of high clearance trucks along each of the seven transmission line corridors occur once every four weeks. Additionally, the proximity of the site to Harbor Boulevard contributes to the chronic disturbances listed above, in altering the topography, availability and movement of sand, as well as to reduce the abundance of native species from the area and facilitate the introduction and spread of non-native vegetation, especially the non-native invasive iceplant, *Carpobrotus edulis*. Within 20 within feet of Harbor Boulevard, the percent cover of iceplant is upwards of 40%. Iceplant cover is nearly as high along the transmission line corridor.

In spite of the degraded and disturbed nature of the project area, most of the vegetation is comprised of native southern dune scrub species including mock heather or

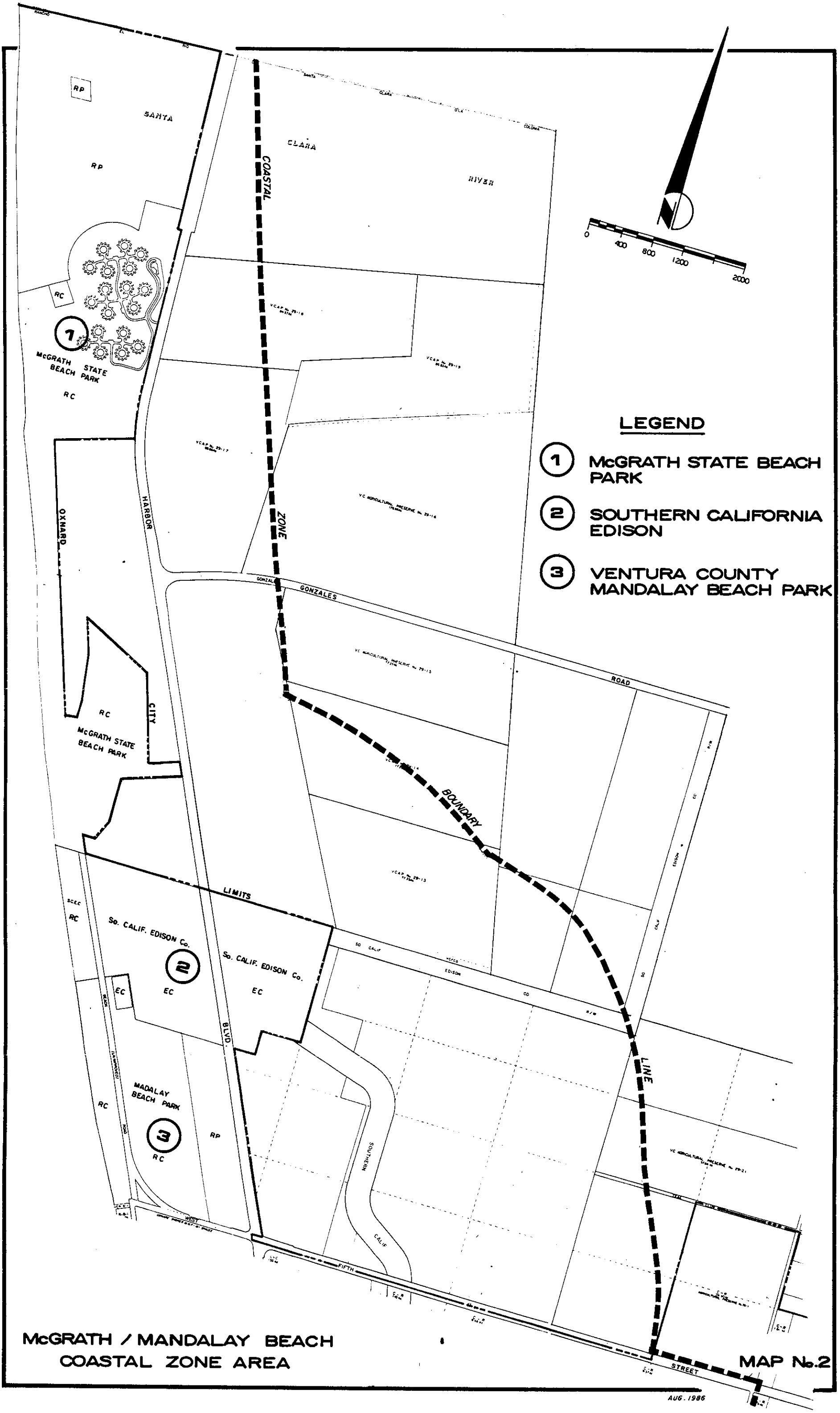
EXHIBIT NO. 6
Application
A-4-OXN-07-096
So. Cal. Edison

California goldenbush, *Ericameria ericoides;* California buckwheat (*Eriogonum fasiculatum ssp. fasiculatum*), hairy false goldenaster (*Heterotheca villosa*), California encelia (*Encelia californica*), lemonade berry (*Rhus integrifolia*), California sagebrush (*Artemisia californica*), California croton (*Croton californicus*), deerweed (*Lotus salsuginosus),* lance-leaved dudleya (*Dudleya lanceolata*), prickly-pear cactus (*Opuntia littoralis*), and California cudweed aster (*Lessingia filaginifolia filaginifolia*). A number of southern foredune species occur among the southern dune scrub species including beach primrose, *Camissonia cherianthifolia;* beach bur, *Ambrosia chamissonis;* sand verbena, *Abronia umbellate spp. umbellata*, beach saltbush, *Atriplex leucophylla*, and the non-native sea rocket, *Cakile maritima*. The most abundant native species is mock heather and the substrate throughout the project area is sand.

Holland (1986) states that southern dune scrub is a dense coastal scrub community restricted to the coast on stabilized back dune slopes, ridges, and flats and integrating toward the coast with southern foredunes. He describes southern dune scrub as a community composed of scattered shrubs, subshrubs, and herbs, generally less than 1m tall and often developing considerable cover. He states that southern dune scrub is similar to northern and central dune scrub but that it is exposed to a climate that is drier, warmer and less windy. He characterizes southern dune scrub as dominated by *Atriplex leucophylla, Croton californicus, Ephedra californica, Ericameria ericoides, Haplopappus venetus vernoniodes, Lupinus chamissonis, Lycium brevipes, Opuntia littoralis, Rhus integrifolia,*and *Simmondsia chinensis*

The California Department of Fish and Game's Natural Diversity Data Base (CNDDB) plant community descriptions are based on Holland (1986). Holland found that southern dune scrub "has been virtually eliminated from mainland southern California." The CNDDB identifies southern dune scrub as a rare habitat type and assigns it the highest rarity rankings; a state rating of S1.1 - very threatened, less than 2000 acres; global ranking of G1, less than 2000 acres. The southern dune scrub on the SCE property is part of a very small area of remnant southern dune scrub that still exists in the Oxnard area.

Most of the SCE property east of Harbor Boulevard, including the pipeline and transmission line corridor areas currently being considered for development, clearly meet the definition of southern dune scrub. When considered cumulatively, the many sources of habitat disturbance within the proposed project area have had a noticeable adverse affect on the southern dune scrub habitat and have diminished the biological and ecological value of this plant community throughout the site such that it is appropriate to characterize the project area as significantly degraded southern dune scrub habitat.



McGRATH / MANDALAY BEACH COASTAL ZONE AREA

MAP No.2

AUG. 1986

PLANNING DIVISION
305 WEST THIRD STREET
OXNARD, CALIFORNIA 93030

MITIGATED NEGATIVE DECLARATION NO. 07-02

On the basis of an initial study, and in accordance with Section 15070 of the California Code of Regulations, the Planning Division has determined that there is no substantial evidence that the proposed project may have a significant effect on the environment:

Coastal Development Permit PZ 06-400-5, a request to develop a 45-Megawatt (MW) "p
located at 251 N. Harbor Boulevard, Oxnard, California. The project facilities will inc
gas-fired General Electric (GE) LM6000 gas turbine generator, pollution control equipr
selective catalytic reduction (SCR) system and an oxidation catalyst, an 80-foot tall exhaus
gallon 19-percent aqueous ammonia storage tank, fuel gas supply line, fuel gas compress
line, water demineralizer, two water storage tanks, transformers, 66 kilovolt (kV) transmission tap line, a natural gas-fired "black-start" generator that can be independently started, a power control module, a 65- by 75-foot customer substation, and a 40- by 75-foot gas metering station. Filed by Southern California Edison, 2244 Walnut Grove Avenue, Rosemead, CA 91770

EXHIBIT NO. 8
Application:
A-4-OXN-07-096
So. Cal. Edison

Attached is a copy of the initial study documenting the reasons to support the finding of no significant effect on the environment. Mitigation measures are included in the initial study to reduce the identified potential effects to a less than significant level:

• Aesthetics	• Land Use and Planning
• Air Quality	• Mineral Resources
• Biological Resources	• Noise
• Cultural Resources	• Population/housing
• Geology and Soils	• Recreation
• Hazards and Hazardous Materials	• Transportation/Traffic
• Hydrology and Water Quality	• Utilities/Service Systems

Mitigations are summarized on the following pages.

Attachments: Initial Study/MND 07-02
Appendices A to G

SUMMARY OF MITIGATION MEASURES INCORPORATED INTO THE PROJECT

Topic Area	Mitigation Measures	
Aesthetics		None
Agricultural Resources		None
Air Quality	**AQ-1**	The area disturbed by clearing, grading, earth moving, or excavation operations shall be minimized to prevent excessive amounts of dust.
	AQ-2	Pre-grading/excavation activities shall include watering the area to be graded or excavated before commencement of grading or excavation operations. Application of water (preferably reclaimed, if a should penetrate sufficiently to minimize fugitive dust durin activities.
	AQ-3	Fugitive dust produced during grading, excavation, and cor activities shall be controlled by the following activities: a) If soil is hauled off site, all haul trucks shall be required to cover their loads as required by California Vehicle Code §23114. b) All graded and excavated material, exposed soil areas, and active portions of the construction site, including unpaved on-site roadways, shall be treated to prevent fugitive dust. Treatment shall include, but not necessarily be limited to, periodic watering, application of environmentally-safe soil stabilization materials, and/or roll-compaction as appropriate. Watering shall be done as often as necessary and reclaimed water shall be used whenever possible.
	AQ-4	Graded and/or excavated inactive areas of the construction site shall be monitored by SCE's construction contractor at least weekly for dust stabilization. Soil stabilization methods, such as water and roll-compaction, and environmentally-safe dust control materials, shall be periodically applied to portions of the construction site that are inactive for over four days. If no further grading or excavation operations are planned for the area, the area should be seeded and watered until grass growth is evident, or periodically treated with environmentally-safe dust suppressants, to prevent excessive fugitive dust.
	AQ-5	Signs shall be posted on-site limiting traffic to 15 miles per hour or less.

EXHIBIT NO. 8
Application:
A-4-OXN-07-096
So. Cal. Edison

- Not Applicable -

Topic Area		
		moving, and excavation operations shall be curtailed to the degree necessary to prevent fugitive dust created by on-site activities and operations from being a nuisance or hazard, either off-site or on-site. The site superintendent/supervisor shall use his/her discretion in conjunction with the APCD in determining when winds are excessive.
	AQ-7	Adjacent streets and roads shall be swept at least once per day, preferably at the end of the day, if visible soil material is carried over to adjacent streets and roads.
	AQ-8	Personnel involved in grading operations, including contr subcontractors, should be advised to wear respiratory pr accordance with California Division of Occupational S Health regulations.
	AQ-9	Equipment idling time shall be minimized.
	AQ-10	Equipment engines shall be maintained in good condition and in proper tune as per manufacturers' specifications.
	AQ-11	Alternatively fueled construction equipment, such as compressed natural gas (CNG), liquefied natural gas (LNG), electric, or equipment meeting Tier 2 standards, shall be used if feasible.
Biological Resources	**BIO-1**	A pre-construction survey of the areas to be disturbed by natural gas pipeline and transmission line construction will be conducted by a qualified biologist for Ventura marsh milk-vetch following determination of the final transmission pole layouts. If individual plants are identified in the transmission line corridor, pole placement and site access will be adjusted, as necessary, to avoid impacts to this species. If impacts to the Ventura marsh milk-vetch cannot be avoided during construction, consultation with the California Department of Fish and Game and U.S. Fish and Wildlife Service will be conducted to develop appropriate measures to minimize project impacts to less than significant.

EXHIBIT NO. 8
Application:
A-4-OXN-07-096
So. Cal. Edison

SUMMARY OF MITIGATION MEASURES INCORPORATED INTO THE PROJECT

Topic Area	Mitigation Measures	
	BIO-2	A pre-construction survey will be conducted by a qualified biologist for burrowing owls no more than 30 days prior to ground disturbing activities for the natural gas pipeline and transmission line construction following the determination of the final transmission pole layouts. Should any burrows be actively used by owls within the project vicinity, appropriate distances based on current California Department of Fish and Game guidelines will be kept from all occupied burrows, and a qualified biological monitor will be present during construction activities. If burrowing owls cannot be avoided during construction, consultation with the California Department of Fish and Game will be conducted to develop appropriate me minimize project impacts on burrowing owls to less than sig
	BIO-3	A qualified biologist will conduct a pre-construction surve construction area to identify occupied nests of native birds grubbing or grading activity. If occupied nests of native birds are observed within the construction zone, a minimum buffer of 100 feet will be established between the nest and limits of construction. Additionally, the construction crew will avoid activities within the buffer zone until the bird nest(s) is/are no longer occupied, per a subsequent survey by the qualified biologist. If work within the established 100 foot buffer cannot be avoided, consultation with the U.S. Fish and Wildlife Service and California Department of Fish and Game will be conducted to determine if there are appropriate measures that may be taken to continue work in these areas.
Cultural Resources	**CUL - 1**	Developer shall contract with a Native American monitor to be present during all subsurface grading, trenching or construction activities on the project site. The monitor shall provide a final report to the Planning Division summarizing the activities during the reporting period. A copy of the contract for these services shall be submitted to the Planning Division Manager for review and approval prior to issuance of any grading permits. The monitoring report(s) shall be provided to the Planning Division prior to approval of final building permit signature.
Geology and Soils		None
Hazards & Hazardous Materials	**HM - 1**	During construction, hazardous materials stored on-site will be limited to small quantities of paint, coatings and adhesive materials, and emergency refueling containers. These materials will be stored in their original containers inside a flammable materials cabinet. Fuels, lubricants, and various other liquids needed for operation of construction equipment will be transported to the construction site on an as-needed basis by equipment service trucks.

EXHIBIT NO. 8
Application:
A-4-OXN-07-096
So. Cal. Edison

SUMMARY OF MITIGATION MEASURES INCORPORATED INTO THE PROJECT

Topic Area	Mitigation Measures	
Hydrology/Water Quality		None
Land Use/Planning	**LUP-1**	If the Planning Commission finds the proposed use is not consistent with the Coastal Zone designation, the applicant would have to file for a Coastal Land Use Plan amendment to add "non-coastal energy facility" to the approved use list.
Mineral Resources		None
Noise		
Population/Housing		None
Public Services		None
Recreation		None
Transportation/Traffic	**TT-1**	Should a temporary road and/or lane closure be necessa construction the contractor will provide traffic control activities and personnel, as necessary, to minimize traffic impacts. This may include scheduling deliveries for off-peak hours and providing escorts for oversized loads, detour signage, cones, construction area signage, flagmen and other measures, as required, for safe traffic handling in the construction zone.

EXHIBIT NO. 8
Application:
A-4-OXN-07-096
So. Cal. Edison

SUMMARY OF MITIGATION MEASURES INCORPORATED INTO THE PROJECT

Topic Area	Mitigation Measures
	TT-2 Traffic Control Plan. A traffic control plan for the natural gas pipeline construction will be prepared by a registered traffic control engineer. The details of the traffic control plan will be prepared and approved by the affected jurisdictions. The Traffic Control Plan will generally follow the standard set forth by Caltrans. The Traffic Control Plan shall be submitted to the City for approval and will contain the following elements: • Designate required traffic patterns or temporary road closures for construction; • Provide construction work zone signs; • Provide safety measures to separate motorists construction workers and the work zone; In addition to the traffic control plan, the construction met along the roadways will: • Ensure access for emergency vehicles at all times; • Open lanes as soon as possible to restore normal traffic patterns; • Notify the public during construction, using methods such as large electronic notification and arrow signs, notification to impacted residents, appropriate detour signs, and notifications to schools and emergency providers; • Provide a designated traffic control coordinator to ensure compliance with the Traffic Control Plan; • During construction, cover open trenches within 15 feet of the edge of the pavement with metal plates at the end of the work day; and • After construction, restore the road to its pre-construction condition.
Utilities/Service Systems	None

EXHIBIT NO. 8
Application:
A-4-OXN-07-096
So. Cal. Edison

SECTION 2 BURROWING OWL MITIGATION GUIDELINES

The objective of these mitigation guidelines is to minimize impacts to burrowing owls and the resources that support viable owl populations. These guidelines are intended to provide a decision-making process that should be implemented wherever there is potential for an action or project to adversely affect burrowing owls or their resources. The process begins with a four-step survey protocol (see *Burrowing Owl Survey Protocol)* to document the presence of burrowing owl habitat, and evaluate burrowing owl use of the project site and a surrounding buffer zone. When surveys confirm occupied habitat, the mitigation measures described below are followed to minimize impacts to burrowing owls, their burrows and foraging habitat on the site. These guidelines emphasize maintaining burrowing owls and their resources in place rather than minimizing impacts through displacement of owls to an alternate site.

Mitigation actions should be carried out prior to the burrowing owl breeding season, generally from February 1 through August 31 (Thomsen 1971, Zarn 1974). The timing of nesting activity may vary with latitude and climatic conditions. Project sites and buffer zones with suitable habitat should be resurveyed to ensure no burrowing owls have occupied them in the interim period between the initial surveys and ground disturbing activity. Repeat surveys should be conducted not more than 30 days prior to initial ground disturbing activity.

DEFINITION OF IMPACTS

1. Disturbance or harassment within 50 meters (approx. 160 ft.) of occupied burrows.

2. Destruction of burrows and burrow entrances. Burrows include structures such as culverts, concrete slabs and debris piles that provide shelter to burrowing owls.

3. Degradation of foraging habitat adjacent to occupied burrows.

GENERAL CONSIDERATIONS

1. Occupied burrows should not be disturbed during the nesting season, from February 1 through August 31, unless the Department of Fish and Game verifies that the birds have not begun egg-laying and incubation or that the juveniles from those burrows are foraging independently and capable of independent survival at an earlier date.

2. A minimum of 6.5 acres of foraging habitat, calculated on a 100-m (approx. 300 ft.) foraging radius around the natal burrow, should be maintained per pair (or unpaired resident single bird) contiguous with burrows occupied within the last three years (Rich 1984, Feeney 1992). Ideally, foraging habitat should be retained in a long-term conservation easement.

3. When destruction of occupied burrows is unavoidable, burrows should be enhanced (enlarged or cleared of debris) or created (by installing artificial burrows) in a ratio of 1:1 in adjacent suitable habitat that is contiguous with the foraging habitat of the affected owls.

4. If owls must be moved away from the disturbance area, passive relocation (see below) is preferable to trapping. A time period of at least one week is recommended to allow the owls to move and acclimate to alternate burrows.

5. The mitigation committee recommends monitoring the success of mitigation programs as required in Assembly Bill 3180. A monitoring plan should include mitigation success criteria and an annual report should be submitted to the California Department of Fish and Game.

AVOIDANCE

Avoid Occupied Burrows

No disturbance should occur within 50 m (approx. 160 ft.) of occupied burrows during the non-breeding Season of September 1 through January 31 or within 75 m (approx. 250 ft.) during the breeding Season of February 1 through August 31. Avoidance also requires that a minimum of 6.5 acres of foraging habitat be preserved contiguous with occupied burrow sites for each pair of breeding burrowing owls (with or without dependent young) or single unpaired resident bird (Figure 2).

MITIGATION FOR UNAVOIDABLE IMPACTS

On-site Mitigation

On-site passive relocation should be implemented if the above avoidance requirements cannot be met. Passive relocation is defined as encouraging owls to move from occupied burrows to alternate natural or artificial burrows that are beyond 50 m from the impact zone and that are within or contiguous to a minimum of 6.5 acres of foraging habitat for each pair of relocated owls (Figure 3). Relocation of owls should only be implemented during the non-breeding season. On-site habitat should be preserved in a conservation easement and managed to promote burrowing owl use of the site.

Owls should be excluded from burrows in the immediate impact zone and within a 50 m (approx. 160 ft.) buffer zone by installing one-way doors in burrow entrances: One-way doors should be left in place 48 hours to insure owls have left the burrow before excavation. One alternate natural or artificial burrow should be provided for each burrow that will be excavated in the project impact zone. The project area should be monitored daily for one week to confirm owl use of alternate burrows before excavating burrows in the immediate impact zone. Whenever possible, burrows should be excavated using hand tools and refilled to prevent reoccupation. Sections of flexible plastic pipe or burlap bags should be inserted into the tunnels

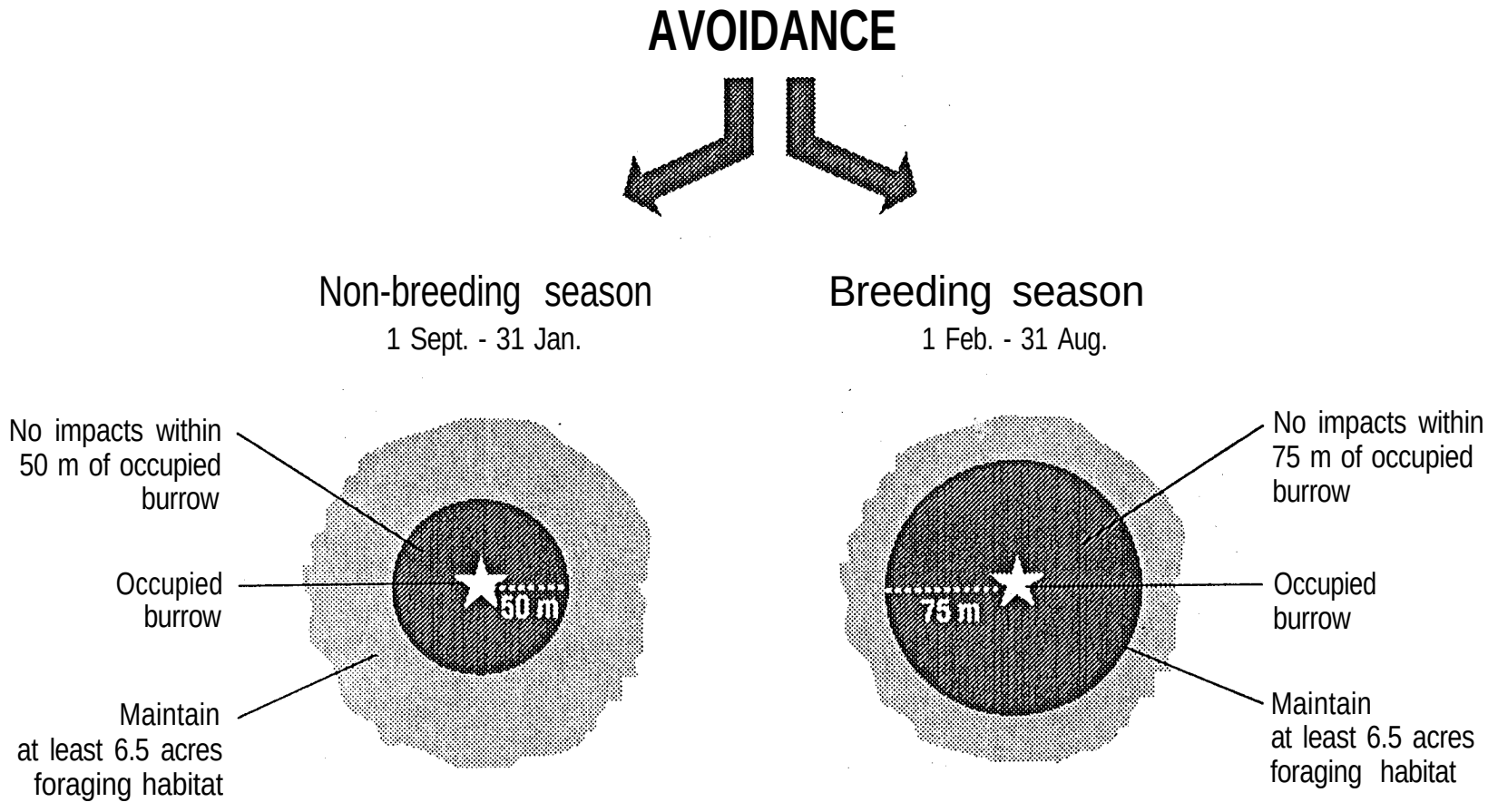


Figure 2. Burrowing owl mitigation guidelines.

EXHIBIT NO. 9
Application:
A-4-OXN-07-096
So. Cal. Edison

ON-SITE MITIGATION
IF AVOIDANCE NOT MET

(More than 6.5 acres suitable habitat available)

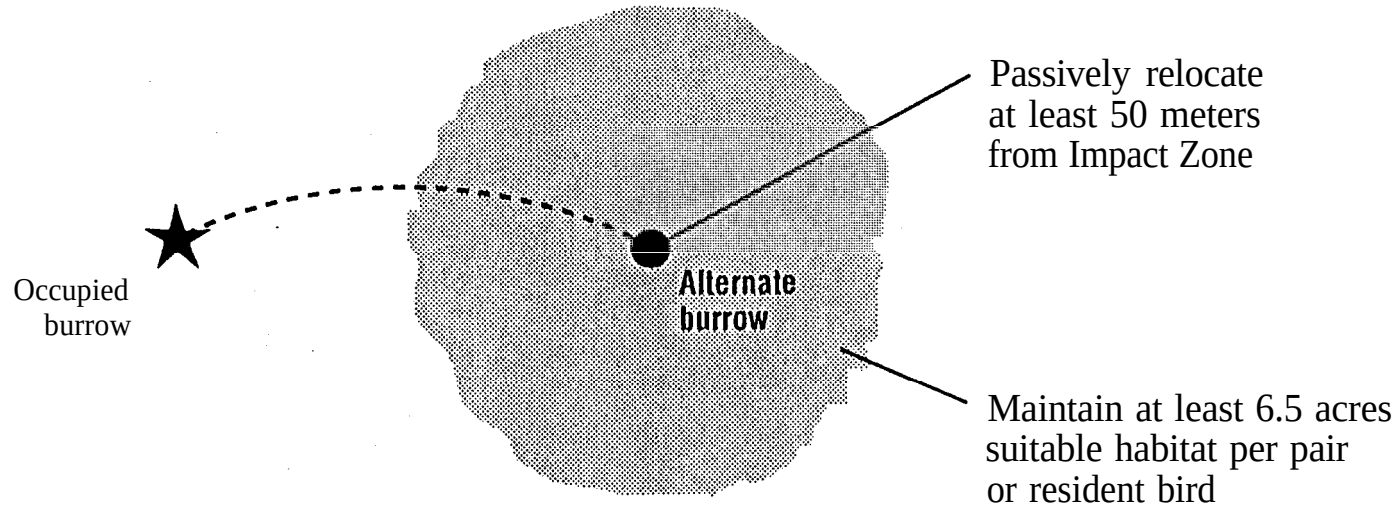


Figure 3. Burrowing owl mitigation guidelines.

EXHIBIT NO. 9
Application:
A-4-OXN-07-096
So. Cal. Edison

during excavation to maintain an escape route for any animals inside the burrow.

Off-site Mitigation

If the project will reduce suitable habitat on-site below the threshold level of 6.5 acres per relocated pair or single bird, the habitat should be replaced off-site. Off-site habitat must be suitable burrowing owl habitat, as defined in the *Burrowing Owl Survey Protocol*, and the site approved by CDFG. Land should be purchased and/or placed in a conservation easement in perpetuity and managed to maintain suitable habitat. Off-site mitigation should use one of the following ratios:

1. Replacement of occupied habitat with occupied habitat: 1.5 times 6.5 (9.75) acres per pair or single bird.

2. Replacement of occupied habitat with habitat contiguous to currently occupied habitat: 2 times 6.5 (13.0) acres per pair or single bird.

3. Replacement of occupied habitat with suitable unoccupied habitat: 3 times 6.5 (19.5) acres per pair or single bird.

McGrath Beach Peaker Project
Greenhouse Gas Emission Discussion

During the environmental review of the McGrath Beach peaker project, members of the public requested additional information on how the project might impact global climate change and what steps Southern California Edison (SCE) intended to take to mitigate those impacts. This white paper discusses the McGrath Beach peaker's greenhouse gas (GHG) emissions in the context of the overall regulatory structure governing SCE's GHG emissions and their planned reduction to meet California's GHG emission targets.

1. Scientific Background

SCE considers global warming to be an important issue and is committed to ensuring that the potential GHG emission impacts from its generation portfolio, including existing generation, new utility generation, new third-party generation built to satisfy SCE power procurement solicitations, and purchased generation from long- and short-term power contracts, are adequately addressed.

Global warming is particularly important to the coastal zone because California possesses significant habitat, marine life, and development assets within this zone that would be adversely affected if temperatures were to increase significantly or sea levels were to rise. The proposed McGrath Beach project is itself located at 10 feet above sea level and could be adversely impacted if global warming were to result in a rise in sea level.

Scientific research attributes global warming primarily to GHG emissions that remain in the atmosphere for many decades and trap heat, thereby resulting in warming of the global atmosphere. GHG emissions that contribute to global warming include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (NO), hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride (SF_6).

In 2004, total worldwide GHG emissions were estimated to be 20,135 Million Metric Tonnes[1] of Carbon Dioxide Equivalents[2] ($MMTCO_2E$).[3] For comparison, in 2004, U.S. GHG emissions were 7,074 $MMTCO_2E$,[4] of which California produced 492 $MMTCO_2E$, making it the state with the second largest GHG emissions contribution in that year.[5] If

[1] 1 million metric tonnes (MMT) = 1 teragram (Tg) = 1.102 million U.S. ("short") tons
[2] When quantifying GHG emissions, the different global warming potentials (GWP) of the various greenhouse gases are usually taken into account by normalizing their rates into an equivalent CO2 emission rate. Carbon dioxide equivalent emissions (CO_2 Eq, CO_2E *or* CO_2e) represents the amount of CO2 emissions that it would take to create a climate impact equivalent to the emissions of the specific gas or source of interest. This standardization is useful for comparison purposes, since the emissions impact of different source types and gases can then be directly compared.
[3] Association of Environmental Professionals. Final - June 29, 2007. M. Hendrix et. al. Alternative Approaches to Analyzing Greenhouse Gas Emissions and Global Climate Change in CEQA Documents. This estimate excludes emissions/removals from land use, land use change, & forestry.
[4] Ibid
[5] Ibid

EXHIBIT NO. 10
Application:
A-4-OXN-07-096
So. Cal. Edison

California were an independent nation, it would have ranked between 12th and 16th in total GHG emissions worldwide in 2004.[6,7]

California's largest source of GHG emissions is from transportation, which contributes 41% of the State's total GHG emissions. Electricity generation (including energy imports) is the second largest source, contributing 22%. Industry is the third largest source, contributing 20%.[8]

Out-of-state electricity generation has a significantly higher GHG emission rate than in-state generation, due to the higher percentage of coal-fired generation that is included in out-of-state imports. Although imported electricity comprises less than one-third of total retail sales, it produces approximately half of total GHG emissions. Since 1990, imported fossil fuel generation produced between 544 and 735 Metric Tonnes of CO_2E per gigawatt-hour (GWh) of electricity use, while in-state electricity generation (including zero emission sources) resulted in less than 280 metric tons of CO_2 per GWh , or only 35-40% of the CO_2 emissions for the same amount of energy production.[9]

Although California's total GHG emissions are large, the State's carbon intensity is comparatively low. In 2001, California ranked the fourth lowest among the 50 states and the District of Columbia in CO_2 emissions from fossil fuel combustion per capita, and fifth lowest in CO_2 emissions from fossil fuel combustion per unit of gross state product. This low intensity is attributable to a variety of factors, including the heavy dependence on natural gas as a generation fuel, the effectiveness of California's energy efficiency measures and the state's mandatory Renewable Portfolio Standards in reducing state greenhouse gas emissions.[10]

2. Regulatory Background

As a regulated utility, SCE has the obligation to provide electric service to all customers within its service territory. This means that SCE must supply a sufficient quantity of electricity each year to meet its customers' demands. This electricity can be provided either from utility-owned generation or from power purchase agreements with third party suppliers. The quantity of GHG emissions that are produced to serve customer demand is directly related to: 1) the number of megawatt hours (MWh) of electricity that SCE must provide; 2) the energy source used to generate the electricity; and 3) the efficiency of the generation unit.

Different types of energy sources emit different amounts of GHG per MWh of electricity generated. Nuclear, hydroelectric, and renewable resources such as wind or solar energy

[6] California Energy Commission. December 2006. Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004. Staff Final Report. CEC-600-2006-013-SF.
[7] Since 2004, emissions from the expanding economies of the world (e.g., China and India) have outpaced emissions in the U.S. and the developed countries, substantially changing the proportional shares of global GHG emissions.
[8] Ibid
[9] Ibid
[10] Ibid

EXHIBIT NO. 10
Application:
A-4-OXN-07-096
So. Cal. Edison

produce no direct GHG emissions. Among fossil fuel energy sources, natural gas is the cleanest source, followed by fuel oil, with coal producing the most GHG emissions per MWh of generation. Within each of the three major fossil fuel categories, more efficient sources with lower heat rates (mmbtu/MWh) emit fewer greenhouse gasses than less efficient sources with higher heat rates. A lower heat rate means that less fuel (mmbtu) is combusted to produce the same amount of electricity (MWh). Because GHG emissions are directly proportional to the amount of fuel combusted, a more efficient source will produce less GHG per MWh than a less efficient source.

Consequently, in order to reduce GHG emissions from the electric industry, the near term focus is on influencing the above three variables: energy demand (MWh), energy source, and generation efficiency. Energy efficiency and demand response initiatives are used to reduce energy demand (MWh). Increasing the amount of energy being supplied from renewable and natural gas energy sources reduces the amount of energy that must be supplied from higher GHG emitting energy sources such as coal. Replacing aging, less efficient generating units with newer, more efficient units; siting generation closer to customers; and utilizing efficient combined heat and power resources (CHP) improves generation efficiency.

This focus is clearly reflected in the California Climate Action Team's March 2006 Report to the Governor and California Legislature which suggested that the following initiatives be implemented by the California Public Utilities Commission to reduce GHG emissions from the electric industry.

Public Utilities Commission GHG Emission Reduction Strategies[11]

Strategy	$MMTCO_2E$	
	2010	2020
• Accelerated Renewable Portfolio Std to 33% by 2020 (includes load-serving entities)	5	11
• California Solar Initiative	0.4	3
• Investor-Owned Utility (IOU) Energy Efficiency Programs (including LSEs)	4	8.8
• IOU Additional Energy Efficiency Programs/Demand Response	NA	6.3
• IOU Combined Heat and Power Initiative	1.1	4.4
• IOU Electricity Sector Carbon Policy	1.6	2.7
Total:	12.1	36.2

In addition, the California Energy Commission has been directed to increase building and consumer product efficiency standards that apply to SCE's customers, which will lead to further reductions in energy demand.

[11] State of California, Environmental Protection Agency, Climate Action Team. March 2006. Climate Action Team Report to Governor Schwarzenegger and the California Legislature.

This focus is also reflected in the key climate change mitigation strategies that have been identified by the Intergovernmental Panel on Climate Change (IPCC) for the electricity industry. Key mitigation strategies for energy supply include the following:[12]

- **Mitigation technologies and practices currently commercially available:** Improved supply and distribution efficiency; fuel switching from coal to gas; nuclear power; renewable heat and power (hydropower, solar, wind, geothermal and bioenergy); combined heat and power; early applications of Carbon Dioxide Capture and Storage (CCS) (e.g. storage of removed CO_2 from natural gas).

- **Mitigation technologies and practices projected to be commercialized before 2030:** Carbon capture and storage for gas, biomass and coal-fired electricity generating facilities; advanced nuclear power; advanced renewable energy, including tidal and wave energy, concentrating solar, and solar photovoltaics.

The State of California and the California Public Utility Commission (CPUC) have adopted numerous GHG laws, regulations and policies that apply to the proposed project and to SCE's overall GHG emissions profile, power generation, and power procurement activities in order to address GHG emissions from electricity generation sources. The key requirements affecting SCE are as follows:

Governor's Executive Order S-3-05 – Establishes state GHG emission targets that call for a reduction of GHG emissions to 2000 levels by 2010; to 1990 levels by 2020; and to 80% below 1990 levels by 2050.

AB32 (The California Global Warming Solutions Act of 2006) – Requires the California Air Resources Board (CARB) to promulgate regulations to reach the 2020 goal of reducing total GHG emissions to 1990 levels.

Governor's Executive Order S-20-06 – Directs CARB to develop a program for reducing greenhouse gas emissions through emissions trading.

Western Climate Change Action Initiative – Commits CA, WA, OR, AZ & NM to develop a regional market-based program to reduce GHG emissions.

CPUC R.04-4-003 – Requires SCE to consider the implications of various GHG scenarios in its long term procurement plans (LTPPs) to ensure that state GHG goals are met.

CPUC D.04-12-048 – Requires SCE to employ a GHG adder when evaluating energy bids for contracts over five years in duration in order to ensure a preference for renewable and low GHG energy sources.

[12] Intergovernmental Panel on Climate Change. 2007. Lenny Bernstein, et. al. Fourth Assessment Report Climate Change 2007: Synthesis Report, Summary for Policymakers.

CPUC R.06-02-013 – Extends the use of the GHG adder to include all contracts of 1 year or longer and requires any PUC Application for new fossil-fired generation to demonstrate how the resource fits into SCE's overall GHG reduction strategy.

SB 1368 – Prevents long term power purchase agreements with or investments in baseload power plants with GHG emissions in excess of those produced by a combined-cycle natural gas power plant. The CPUC has established this emission performance standard (EPS) as 1,100 lbs CO_2E/net MWh.

SB 1078 (CA Renewable Portfolio Standard (RPS) Program) – Requires 20% of all power used by Investor Owned Utility customers in California to be generated from renewable resources by 2010.

CEC Energy Action Plan II (2005) – Establishes a 33% renewable RPS target for 2020. The CPUC requires SCE to report on progress towards meeting the 33% goal.

CPUC D.06-12-033 – Implements the California Solar Initiative with the goal of installing 3,000 MW of new solar photovoltaic systems by 2017. SCE will administer this program within its service territory, with a goal of 805 MW to be installed.

CPUC D.03-06-032 – Requires SCE to pursue the goal of satisfying 5% of it peak load through price responsive demand response programs by 2007 and to expeditiously implement time-of-day pricing for all customers.

CPUC D.04-09-060 – Requires SCE to pursue the goal of achieving cumulative energy savings of 10,608 GWh[13] and 2,228 MW between 2004-2013.

CPUC D.07-10-032 – Reaffirms the energy efficiency goals established in D.04-09-060 and establishes a process to develop goals extending to 2020.

CPUC D.08-03-018 – Recommends that CARB establish a GHG cap-and-trade system for all entities supplying power to the California electricity grid, with at least some portion of the GHG emission allowances being auctioned.

The above requirements have been adopted to ensure that the power generated to meet SCE's customer load is:

- Produced with the lowest GHG emissions rate possible;
- Consistent with the Governor's GHG policy; and
- Supports the state's GHG emission reduction targets.

[13] 1 GWh = 1,000 MWh

EXHIBIT NO. 10
Application:
A-4-OXN-07-096
So. Cal. Edison

Meeting SCE's load under all circumstances, in particular as customer demand continues to increase over time, requires a mixture of different energy resources in different locations to ensure that the electric system functions smoothly and reliably. SCE's resource portfolio must be constructed carefully to ensure that SCE complies with the above regulations to minimize and continue to reduce its GHG emissions while still efficiently meeting customer energy requirements.

As one example, in order to increase the use of intermittent[14] renewable resources such as wind or solar in its portfolio, SCE must also increase its natural gas fired peaking resources so it is able to backstop and smooth the changing electrical output from these intermittent sources in order to ensure grid stability. Similarly, a certain number of fossil fuel fired "black start" generators of high reliability must be sited in key locations to ensure grid reliability in the event of system upsets. Larger fossil fuel generators must be located at strategic locations to provide grid voltage support and system inertia.

The State has given the California Air Resources Board (CARB) the lead role in implementing California's GHG emission reduction program with regards to CO_2 air emission limits.

> "It is the intent of the Legislature that the State Air Resources Board consult with the Public Utilities Commission in the development of emissions reduction measures, including limits on emissions of greenhouse gases applied to electricity and natural gas providers regulated by the Public Utilities Commission in order to ensure that electricity and natural gas providers are not required to meet duplicative or inconsistent regulatory requirements." *(Cal. Health & Safety Code §38501(g)*)

In order to achieve AB32's stated goal of reducing GHG emissions to 1990 levels by 2020, CARB is in the process of developing regulations for all major contributing source categories, including the electricity industry. The first step in this process, finalizing the 1990 statewide CO_2 emission inventory, was completed in December 2007. CARB will now use this inventory, the 2008 statewide CO_2 emission inventory, and CO_2 emission reports from individual major sources to determine the quantity of emission reductions that will be allocated to each contributing emission segment (transportation, electricity, manufacturing, etc.) and individual emission company or source, as well as setting forth the regulatory mechanisms by which these reductions will be implemented.

SCE has calculated and reported its systemwide CO_2 emissions, including emissions from both generated and purchased power, to the California Climate Action Registry every year since 2002.[15] The AB32 program that CARB is developing for the electricity sector will reduce CO_2 emissions on a systemwide basis in order to ensure that all emissions created to serve California's load are captured and that all generating sources, regardless

[14] Intermittent resources are those whose power output can fluctuate from moment to moment, for example by a change in wind speed or a cloud passing over the sun.
[15] Starting in 2009, CO2 emissions will be reported to CARB.

of ownership or location, are being treated uniformly and equitably.[16] If generation sources are not treated uniformly, regulating CO_2 emissions in one location, for example natural gas plants located in California, can have the adverse effect of increasing CO_2 emissions from the system as a whole by making it more economic to import out-of-state electricity from higher emitting generation sources.

CARB is in the process of creating a Scoping Plan that contains specific policy scenarios for regulating the different source categories. In a recent decision (D.08-03-018), the CPUC provided input to CARB recommending that a cap-and-trade system be utilized to reduce greenhouse gases from the electricity sector, with sources being required to purchase at least a certain portion of credits. AB32 requires CARB to adopt implementing regulations by January 2012.

The net effect of the above regulations is that the GHG emissions from SCE's generation portfolio will be capped and will be required to be reduced as directed by CARB to meet the State's greenhouse gas reduction goals.

3. Project Emissions

Operational Emissions

Power Plant Emissions

The McGrath Beach peaker will emit greenhouse gases from the combustion of natural gas in its turbine and the emergency ("black start") generator. The principal greenhouse gases emitted from fossil fuel combustion are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (NO). The Ventura County Air Pollution Control District (VCAPCD) air permit for the project will limit combustion turbine operation to 2,121 hours per year, 1,881 operating hours plus 240 hours of start up and shut down periods. The emergency generator will only operate during routine testing and maintenance activities and if there is a system blackout on the local electric grid. Reliability testing activities will require a maximum of 50 operating hours per year. Therefore, the maximum potential to emit from the proposed project is **51,032.7 Metric Tonnes CO_2E** per year. If a 30-year project life is assumed, then the maximum potential to emit over the life of the project is 1,530,981 Metric Tonnes CO2e.

[16] Although the program that is being developed will address generation emissions on a systemwide basis, the responsibility for unit-specific emissions are expected to be assigned to the individual generators and power aggregators ("first sellers") that have direct control over the emissions output from each generation source.

McGrath Beach Peaker CO_2 Equivalent Emissions

CO2	Annual Usage (hours)	Heat Input (MMBtu/hr)	Emission Factor (kg C / MMBtu)	Oxidation Factor	CO2 Annual Emissions (tonnes/yr)	CO2 Equivalent Annual Emissions (tonnes/yr)	Fuel
Turbine	2121	451.3	14.47	0.995	50532.30	50532.30	Natural Gas
IC Engine	50	6.43	14.47	0.995	16.97	16.97	Natural Gas
CH4	**Annual Usage (hours)**	**Heat Input (MMBtu/hr)**	**Emission Factor (kg / MMBtu)**		**CH4 Annual Emissions (tonnes/yr)**	**CO2 Equivalent Annual Emissions (tonnes/yr)**	**Fuel**
Turbine	2121	451.3	0.003901		3.73	78.42	Natural Gas
IC Engine	50	6.43	0.003901		0.0013	0.026	Natural Gas
N2O	**Annual Usage (hours)**	**Heat Input (MMBtu/hr)**	**Emission Factor (kg / MMBtu)**		**N2O Annual Emissions (tonnes/yr)**	**CO2 Equivalent Annual Emissions (tonnes/yr)**	**Fuel**
Turbine	2121	451.3	0.001361		1.30	403.86	Natural Gas
IC Engine	50	6.43	0.001361		0.00044	0.14	Natural Gas
Total Emissions (Annual CO2 Equivalent Metric Tonnes)						51032.72	

The McGrath Beach peaker plant is expected to operate only during periods of high electricity demand, to stabilize the transmission system when a high voltage transmission line or another source of generation unexpectedly goes off line, or during system emergencies. Consequently, actual emissions are expected to be substantially lower than the maximum potential to emit.

Because the project will require no more than 1-2 employee round trips per day and ammonia deliveries no more than four times per year, other operating emissions from the facility are insignificant.

Transmission Emissions

GHG emissions may also result from the sulfur hexafluoride (SF_6) used to insulate the transmission equipment that will be installed to connect the project to the electric grid. Although small in quantity, SF_6 emissions are important because they have an extremely high global warming potential. One ton of SF_6 emissions is equivalent to approximately

23,900 tons of CO_2. Fugitive emissions of SF_6 can escape from gas-insulated equipment through the seals or during equipment installation, servicing, and disposal.

The McGrath Beach peaker will require the installation of one new SF_6-insulated circuit breaker at the customer substation that will be constructed just to the south of the generating unit. This circuit breaker will contain 52 pounds of SF_6. The leak rate for this equipment is guaranteed by the manufacturer to not to exceed 1 percent per year. Therefore, the maximum potential to emit of this circuit breaker will be 0.52 pounds of SF_6 per year, which is equivalent to **5.6 Metric Tonnes CO_2E** per year. The calculation spreadsheet is attached.

SCE utilizes industry best practices to manage and minimize its SF_6 emissions. Between 1999 and 2006, SCE reduced sulfur hexafluoride (SF_6) gas emissions from its electrical insulation equipment by 41 percent, while at the same time increasing its overall inventory of SF_6 containing equipment by 27 percent. SCE reports its SF_6 emissions annually to the U.S. Environmental Protection Agency under a voluntary Memorandum of Understanding. SCE also tracks and reports its SF_6 emissions to the State as part of its systemwide CO_2e emission total. These emissions will be addressed as part of CARB's overall AB32 regulatory program.

Construction Emissions

Direct Construction Emissions

GHG emissions from construction activities are primarily due to CO_2 emissions from on-site construction equipment and motor vehicle trips to and from the site. Emissions from construction activities were estimated from the types and operating times of construction equipment that would be used during construction, the number and length of daily on- and off-site motor vehicle truck trips required to deliver materials and supplies to and remove construction debris from the site, and the estimated number and length of worker commute trips. Specific calculation spreadsheets are attached.

Total CO_2 emissions from construction activities were estimated to be **618.0 Metric Tonnes CO_2E**.

CO_2 emissions from construction activities will be minimized to the extent possible by implementing air quality mitigation measures AQ-9 through AQ-12 from the Draft Initial Study prepared as part of the project's California Environmental Quality Act (CEQA) analysis.

Transmission Interconnection Emissions

In order to prepare the local distribution system for the installation of the McGrath Beach peaker, 32 existing circuit breakers were replaced during 2007. These included 28 circuit breakers at the Santa Clara substation, 1 circuit breaker at the Charmin substation, and 3 circuit breakers at the Levy substation. These circuit breakers were oil-insulated models that were scheduled to be replaced as part of SCE's planned transmission and distribu

system expansion activities in the Oxnard area. However, their replacement was accelerated by one year to occur in 2007, so that the system would be ready to accommodate the additional generation from the Mandalay site.

If these emissions are included in the project total, the proposed project resulted in an additional one-time maximum potential emission increase of **180.4 Metric Tonnes CO_2E**.

4. Systemwide Emissions

Systemwide Power Plant Emissions

There is a basic difference between building a power plant and other types of development. New residential, commercial and industrial developments are also new electric customers that increase the MWh of electricity that must be provided by the electric system in order to meet their additional energy demands. New power plants do not change the demand for electricity; they merely respond to the existing system's demand for power. The same MWh of generation must be generated by power plants at some location to supply the amount of electricity SCE requires to serve its customers regardless of whether or not a specific generation project is constructed.

SCE uses the Ventyx Market Analytics and the Ventyx Planning and Risk models to simulate the operation of its electric system. These models calculate the CO_2 emissions from SCE's system as a whole based on its projected annual load profile and are currently used to comply with CPUC directives to evaluate the net CO_2 emissions from new energy projects and for other reporting requirements.

In order to investigate the emission impact of the proposed project on SCE's generation portfolio, SCE used the Ventyx Planning and Risk model to dispatch SCE's portfolio with and without the proposed McGrath Beach peaker to determine the net change in CO_2 emissions that would occur.

To estimate CO_2 emissions from the proposed project, SCE modeled 3 cases: 1) base case (no project); 2) economic dispatch (how the peaker is expected to run); and 3) maximum dispatch (peaker dispatched at the maximum allowable run time in the VCAPCD air permit). Emissions were calculated for each year between 2008-2020[17] and averaged to determine the average annual net change.

Generation resources are economically dispatched to meet demand based on their marginal cost. [18] This is called the loading order. The marginal cost is highly correlated with unit efficiency, which means that power plants almost always dispatch in the order of the most efficient to the least efficient heat rate (mmbtu/MW-hr) within its fuel category. This is because the marginal cost of generating electricity within each fuel

[17] Model inputs are only available through 2020

[18] Certain higher cost resources such as renewable resources are required to be dispatched first, pursuant to existing regulatory requirements.

category (coal, natural gas, etc.) is almost always lower for units that burn less fuel per MWh of energy produced. Consequently, the peaker would only be expected to operate when it is the most efficient resource available (lowest heat rate/least cost) to produce the next required MWh of electricity.

Because the marginal cost of natural gas fired peakers is high compared to other resources, they dispatch last in the loading order after all other available resources have been brought on line. Therefore, when the proposed peaker project is dispatched, it will almost always replace a higher emitting natural gas fired unit. Because all natural gas peakers are reasonably efficient, the relative difference in CO_2 emissions between the proposed peaker and the less efficient units would be expected to be small. This means that the net decrease in annual CO_2 emissions would also be expected to be small. This is consistent with the results of the model runs.

The economic dispatch scenario operated the peaker only when it would be cost effective to do so, which is the scenario that most closely estimates the actual operation of the unit. This scenario resulted in an average annual hourly operation of 93 hours and produced a net systemwide emissions decrease of **18 Metric Tonnes CO_2E** per year. This result mean that the direct emission increases from the peaker (which would be approximately 2,496 Metric Tonnes CO2e per year for 93 hours of operation) are completely offset by emission decreases at other power plants on the system, and will in fact produce a slight net emissions decrease.

The maximum dispatch scenario required the peaker to run for the full 2,121 hours (1,881 operating hours and 240 hours of startup/shutdown) allowed each year. This required running the unit when it was not economic to do so and when the peaker was not the most efficient available resource. This scenario produced a net systemwide emissions increase of **23 Metric Tonnes CO_2E**. This result means that the direct emission increases from the peaker (i.e., the 51,038 Metric Tonnes CO2e per year increase calculated above) were almost completely offset by emission decreases at other power plants on the system.

The variation in the two runs is less than +/- 0.05% of the gross project emissions of 51,032.7 Metric Tonnes CO_2E. Therefore, considering the uncertainties inherent in the model, neither of the two scenarios produces results significantly different than zero. This indicates that the emission impact of the proposed project is neutral and the addition of the proposed peaker does not increase CO_2 emissions from the SCE system.

Indirect Line Loss Emissions

In addition to its direct impact on the emissions of other generation sources supplying power to the electric grid, the location of a new generation source will also affect systemwide emissions based on how it impacts the path and distance that power must travel to reach the customer.

When electricity travels across the wires of the transmission system it creates friction. This friction in turn creates waste heat that results in a measurable energy loss. This

energy loss, called line loss, occurs both due to the distance that power must travel from its source to its destination, and due to differences in the materials that are used in different types of electric conductors across which the power must flow. If the path that the electricity must follow has higher friction, then there will be a greater line loss, which means that more generation will be required to serve the same load. The amount of electricity that must be generated to serve the load is equal to the MWh of customer demand plus the MWh that is required to transport the electricity across the system. Lower line losses mean that less electricity must be generated to deliver the same amount of electricity. In general, the farther that a generation source is from the customer that is being served, the more electricity will be lost to line losses and the more generation will be required to serve an identical load.

When a new generation source is added to the SCE electric system, it changes both the path and the distance that electricity must travel to reach the customer. In order to determine the line loss impact of the proposed project on SCE's generation portfolio, SCE used the GE Positive Sequence Load Flow (PSLF) program to simulate transmission line power flows with and without the proposed McGrath Beach Peaker. An adjusted load forecast for the Santa Clara 66kV sub-transmission system was created for the year 2009 for both the expected dispatch scenario (93 operating hours) and the maximum potential dispatch scenario (1881 operating hours) using the Ventyx model load profile output for the peaker. The GE PSLF program was then run using these two load forecasts and the historic load profile for this system, to generate the average system line losses for each scenario (i.e. 93 hours and 1881 hours respectively).

Using 2009 to calculate line loss impact is a conservative approach because line loss benefits increase when more demand is placed on the electric system. Demand on the Santa Clara sub-transmission is growing at the rate of 2-3% per year; therefore the line loss benefits of the proposed peaker will increase every year.

The GE PSLF model calculated that the economic dispatch scenario (93 hours) reduced lines losses in the Santa Clara system by 17.4 MWh per year. The maximum dispatch scenario (1881 hours) reduced line losses by 231.7 MWh per year

To determine the avoided CO_2 emissions from this generation reduction, the following formula is used:

Metric Tonnes CO_2E Reduced = MWh * HR * ER * 4.537E-07 [19]

Where

MWh = Megawatt-hours of avoided generation

HR = Heat rate of the generating unit being displaced in btu/kWh

ER = Emission rate of the generating unit being displaced in lbs CO_2/mmbtu

[19] 4.54 E-07 = 10^3 kW/MW * 10-6 mmbtu/btu ÷ 2204 lbs/metric tonne

Because the new peaker will displace similar natural gas peakers during the hours that it will operate, a conservative heat rate of 8,500 btu/kW and 119 lbs CO_2/mmbtu emission rate were assumed for the incremental operating unit.

The CO_2 reduction is therefore calculated as follows:

Metric Tonnes of CO_2E Reduced = 17.4 MWh * 8,500 btu/kWh * 119 lbs CO_2/mmbtu * 4.537E-07

= 8.0 Metric Tonnes of CO_2E

Therefore, the economic dispatch scenario reduces systemwide CO_2 emissions by **8.0 Metric Tonnes CO_2E** per year due to the reduction in line losses. Using a similar calculation, the maximum dispatch scenario reduces systemwide CO_2 emissions by **106.3 Metric Tonnes CO_2E** per year. Assuming a project life of 30-years, the total line loss benefit of the peaker is a reduction of 240 Metric Tonnes of CO_2E for the economic dispatch scenario and 3,189 Metric Tonnes of CO_2E for the maximum dispatch scenario.

Additional Systemwide Benefits

One key benefit of the proposed project is its ability to supply power in the event of a system upset that requires "black start" capability. Under a blackout scenario, the peaker would be able to supply 45 MW of emergency power to the local grid almost immediately and would assist the regional electrical grid in coming back on line as quickly as possible, thereby reducing recovery time.

During blackout situations, many sources operate diesel-fired backup emergency generators. These generators have higher CO_2 emission rates than the proposed project. Therefore, the generator emissions that are avoided due to the interim power being supplied by the peaker and the overall faster recovery time of the regional grid will provide additional GHG benefits.

Energy Efficiency Measures Incorporated into Project Design

Energy efficiency measures have been incorporated into the project's design to the extent feasible. The proposed project has been designed to meet California Energy Commission energy efficiency standards for outdoor lighting and incorporates automatic cut off switches and multi level switching as required to allow best practice management of lighting levels. The significant use of California native vegetation in the landscape design also minimizes the amount of water required to irrigate the project, compared to a design consisting primarily of ornamental species. These measures will also reduce the indirect CO_2 emissions from the proposed project.

5. Net Emissions

To determine the net GHG emissions from the proposed peaker, operational, construction and systemwide emissions impacts (increases and/or decreases) are added together.

Lifetime emissions were calculated assuming a 30-year project life. For the maximum potential generation scenario, the proposed project results in an overall **2,223 Metric Tonnes CO_2E** decrease over the life of the project, primarily due to the line loss benefits created by the project.

McGrath Peaker Net CO_2E Emission Impact
Maximum Potential Dispatch Scenario

Operational Emissions	*Metric Tonnes of CO_2E*
Power Plant	1,530,981
Transmission System	168
Construction Emissions	
Direct Construction	180
Transmission Interconnection	618
Systemwide Emissions	
Power Plant	-1,530,981
Transmission System	-3,189
Total:	**-2,223**

If the project operates for fewer hours, as predicted by the economic dispatch scenario, line loss benefits will be reduced, and the proposed project results in a net increase of **726 Metric Tonnes CO_2E** over the life of the project. Actual dispatch hours and emissions will likely fall somewhere in between the two scenarios.

Either result is less than +/- 0.1% of the proposed project's maximum potential to emit of 1,531,149 Million Metric Tonnes CO_2E and should be considered de minimus for a project of this size.

McGrath Peaker Net CO_2E Emission Impact
Economic Dispatch Scenario

Operational Emissions	*Metric Tonnes of CO_2E*
Power Plant	74,881
Transmission System	168
Construction Emissions	
Direct Construction	180
Transmission Interconnection	618
Systemwide Emissions	
Power Plant	-74,881
Transmission System	-240
Total:	**726**

EXHIBIT NO. 10
Application:
A-4-OXN-07-096
So. Cal. Edison

6. Summary

SCE's electric system is subject to a significant number of complex requirements that work together to regulate GHG emissions, including AB32 "The California Global Warming Solutions Act of 2006." These regulations are collectively designed to ensure that new sources generate electricity as cleanly as possible and that the SCE system continues to reduce its overall emissions as required to meet California's goal of reducing statewide CO2 emissions to 1990 levels by 2020. It is important that the proposed project is treated consistently with generators in other locations in the way it is required to comply with the above regulations.

The emission analysis for the proposed project shows that the installation of the McGrath Beach peaker will result in a slight net decrease in CO_2E emissions across SCE's generation portfolio due to its operation. Depending on the operating hour assumptions, these emission reductions may or may not fully offset the project's construction emissions. The maximum level of residual construction emissions is calculated to be 726 Metric Tonnes CO_2E which represents less than 0.1% of lifetime project emissions and would typically be considered de minimus.

CONSTRUCTION EMISSION CALCULATIONS

EXHIBIT NO. 10
Application:
A-4-OXN-07-096
So. Cal. Edison

Construction Carbon Dioxide Emissions

Carbon dioxide (CO_2) emissions during construction of the Mandalay Peaker Project were estimated. The estimates included CO_2 emissions from construction equipment and from motor vehicles.

CO_2 emissions from construction equipment were calculated by multiplying operating hours for each type of construction equipment by an emission factor, in units of pounds of CO_2 emitted per operating hour. The construction equipment exhaust emission factors used for the calculations are composite horsepower-based off-road emission factors for 2007 developed for the South Coast Air Quality Management District (SCAQMD) by the California Air Resources Board (CARB) from its OFFROAD Model. The composite off-road emission factors were derived based on equipment category (tractor, dozer, scraper, etc.), and average equipment age and horsepower rating within horsepower ranges for the year. Although the proposed project will be constructed in Ventura County, emission factors for construction equipment in the SCAQMD's jurisdiction are expected to be similar to emission factors for equipment in adjacent Ventura County. The CO_2 emission factors developed by CARB for the SCAQMD for 2007 are listed in Table 5 of the attached spreadsheets and can also be downloaded from http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html.

The types of construction equipment and the maximum daily operating time for each type of equipment during each bi-weekly construction period were estimated by SCE's engineering contractor for the proposed projects. Emission factors for CO_2 were prepared for the specified equipment and are provided in Table 4 of the attachment. The anticipated construction equipment usage and emissions by bi-weekly period are listed in Tables 1, 2 and 3 of the attachment. Total CO_2 emissions from construction equipment are estimated to be 571.4 U.S. Tons (518.5 Metric Tonnes).

CO_2 emissions from motor vehicles were calculated by multiplying miles traveled by each type of motor vehicle by an emission factor, in units of pounds of CO_2 emitted per mile traveled. The emission factors were compiled by the SCAQMD by running the California Air Resources Board's EMFAC2007 (version 2.3) Burden Model for the South Coast Air Basin for 2007. A weighted average of vehicle types was used to calculate emission factors for passenger vehicles, and emission factors for heavy heavy-duty diesel trucks were used for delivery trucks. The emission factors account for the emissions from start, running and idling exhaust. Emission factors for motor vehicles in the South Coast Air basin are expected to be similar to emission factors for vehicles in adjacent Ventura County. The motor vehicle exhaust CO_2 emission factors are listed in Table 6 of the attachment and can also be downloaded from http://www.aqmd.gov/ceqa/handbook/onroad/onroad.html.

SCE's engineering contractor estimated the number and length of daily on-site and off-site motor vehicle trips by trucks to deliver materials and supplies, remove construction debris, etc., by bi-weekly construction period. The anticipated number of construction workers during each bi-weekly construction period was used to calculate the number of construction worker commute trips, assuming each worker would drive separately to and from the site each day. This assumption overestimates the number of trips, since it is likely that some workers will carpool.

The anticipated number of motor vehicles and the resulting CO_2 emissions by bi-weekly period are listed in Tables 1, 2 and 3 of the attachment. Total CO_2 emissions from motor vehicles are estimated to be 109.6 U.S. Tons (99.5 Metric Tonnes).

Total CO_2 emissions during construction are estimated to be 681.0 U.S. Tons (618.0 Metric Tonnes).

EXHIBIT NO. 10
Application:
A-4-OXN-07-096
So. Cal. Edison

SF_6 EMISSION CALCULATIONS

EXHIBIT NO. 10
Application:
A-4-OXN-07-096
So. Cal. Edison

Table 1
Mandalay Construction Equipment and Motor Vehicle Numbers

Equipment/Vehicle Type	Fuel	Hours or Miles/Day	Bi-Weekly Maximum Daily Number											
			Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Period 7	Period 8	Period 9	Period 10	Period 11	Period 12
Power Plant														
Construction Equipment														
Welding rigs	D	10	2	2	2	2	2	2	2	2	2	1	1	0
Backhoe	D	10	1	2	2	2	2	2	1	1	1	1	0	0
Compressor	D	10	1	2	4	4	4	3	2	2	0	0	0	0
Front-end loader	D	10	0	1	1	1	1	1	1	1	0	0	0	0
15 ton crane	D	10	0	1	1	3	3	3	2	2	2	1	1	1
75 ton crane	D	10	0	0	0	1	1	1	1	1	1	0	0	0
Generator	D	10	2	2	2	2	1	1	1	1	0	0	0	0
Scraper	D	10	1	1	1	1	1	1	1	0	0	0	0	0
Forklift	D	10	2	3	3	3	3	2	2	2	2	1	1	1
Manlift	D	10	2	2	2	2	1	1	1	0	0	0	0	0
Dewatering drill rig	D	1.25	1	1	1	0	0	0	0	0	0	0	0	0
Motor Vehicles														
On-Site Pickup Truck	G	25	1	2	2	3	3	2	2	2	1	2	3	4
On-Site Construction Worker Commute	G	0.5	6	22	30	38	36	24	24	16	4	4	4	4
On-Site Water Truck	D	20	1	1	1	1	1	1	1	1	1	1	0	0
Off-Site Dump Truck	D	50	1	2	2	1	1	0	0	0	0	0	0	0
Off-Site Concrete Truck	D	50	0	5	5	0	0	0	0	0	0	0	0	0
Off-Site Delivery Truck	D	50	0	1	1	1	1	1	1	1	0	0	0	0
Off-Site Construction Worker Commute	G	35	6	22	30	38	36	24	24	16	4	4	4	4
Gas Line														
Construction Equipment														
Gas Line Welding rigs	D	6	4	4	4	4	0	0	0	0	0	0	0	0
Gas Line Backhoe	D	6	1	1	1	1	0	0	0	0	0	0	0	0
Gas Line Compressor	D	3	2	2	2	2	0	0	0	0	0	0	0	0
Gas Line Front-end loader	D	5	2	2	2	2	0	0	0	0	0	0	0	0
Gas Line Compactor	D	4	1	1	1	1	0	0	0	0	0	0	0	0
Gas Line Excavator	D	6	1	1	1	1	0	0	0	0	0	0	0	0
Gas Line 15 ton crane	D	4	2	2	2	2	0	0	0	0	0	0	0	0
Gas Line Roller	D	4	1	1	1	1	0	0	0	0	0	0	0	0
Gas Line Reed Screen	D	6	1	1	1	1	0	0	0	0	0	0	0	0
Motor Vehicles														
On-Site Pickup Truck	G	30	2	2	2	2	0	0	0	0	0	0	0	0
Off-Site Dump Truck	D	30	1	1	1	1	0	0	0	0	0	0	0	0
On-Site Water Truck	D	20	1	1	1	1	0	0	0	0	0	0	0	0
Off-Site Concrete Truck	D	80	1	1	1	1	0	0	0	0	0	0	0	0
Off-Site Delivery Truck	D	80	1	1	1	1	0	0	0	0	0	0	0	0
Off-Site Construction Worker Commute	G	80	20	20	20	20	0	0	0	0	0	0	0	0
Transmission Line														
Construction Equipment														
15 ton crane	D	10	2	2	2	2	2	2	2	2	2	2	2	1
Forklift	D	10	2	2	2	2	2	2	2	2	1	1	1	1
Motor Vehicles														
On-Site Pickup Truck	G	10	1	1	1	1	1	1	1	1	1	1	1	0
On-Site Line Truck	D	10	1	1	1	1	1	1	1	1	1	1	1	1
Off-Site Pickup Truck	G	20	1	1	1	1	1	1	1	1	1	1	1	0
Off-Site Line Truck	D	20	1	1	1	1	1	1	1	1	1	1	1	1

EXHIBIT NO. 10
A
A
S
EXHIBIT NO. 10
Application:
A-4-OXN-07-096
So. Cal. Edison

Table 2
Mandalay Construction Equipment and Motor Vehicle Use

Equipment/Vehicle Type	Fuel	Bi-Weekly Operating Hours or Miles[a]											
		Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Period 7	Period 8	Period 9	Period 10	Period 11	Period 12
Power Plant													
Construction Equipment													
Welding rigs	D	160	160	160	160	160	160	160	160	160	80	80	0
Backhoe	D	80	160	160	160	160	160	80	80	80	80	0	0
Compressor	D	80	160	320	320	320	240	160	160	0	0	0	0
Front-end loader	D	0	80	80	80	80	80	80	80	0	0	0	0
15 ton crane	D	0	80	80	240	240	240	160	160	160	80	80	80
75 ton crane	D	0	0	0	80	80	80	80	80	80	0	0	0
Generator	D	160	160	160	160	80	80	80	80	0	0	0	0
Scraper	D	80	80	80	80	80	80	80	0	0	0	0	0
Forklift	D	160	240	240	240	240	160	160	160	160	80	80	80
Manlift	D	160	160	160	160	80	80	80	0	0	0	0	0
Dewatering drill rig	D	10	10	10	0	0	0	0	0	0	0	0	0
Motor Vehicles													
On-Site Pickup Truck	G	200	400	400	600	600	400	400	400	200	400	600	800
On-Site Construction Worker Commute	G	24	88	120	152	144	96	96	64	16	16	16	16
On-Site Water Truck	D	160	160	160	160	160	160	160	160	160	160	0	0
Off-Site Dump Truck	D	400	800	800	400	400	0	0	0	0	0	0	0
Off-Site Concrete Truck	D	0	2,000	2,000	0	0	0	0	0	0	0	0	0
Off-Site Delivery Truck	D	0	400	400	400	400	400	400	400	0	0	0	0
Off-Site Construction Worker Commute	G	1,680	6,160	8,400	10,640	10,080	6,720	6,720	4,480	1,120	1,120	1,120	1,120
Gas Line													
Construction Equipment													
Gas Line Welding rigs	D	192	192	192	192	0	0	0	0	0	0	0	0
Gas Line Backhoe	D	48	48	48	48	0	0	0	0	0	0	0	0
Gas Line Compressor	D	48	48	48	48	0	0	0	0	0	0	0	0
Gas Line Front-end loader	D	80	80	80	80	0	0	0	0	0	0	0	0
Gas Line Compactor	D	32	32	32	32	0	0	0	0	0	0	0	0
Gas Line Excavator	D	48	48	48	48	0	0	0	0	0	0	0	0
Gas Line 15 ton crane	D	64	64	64	64	0	0	0	0	0	0	0	0
Gas Line Roller	D	32	32	32	32	0	0	0	0	0	0	0	0
Gas Line Reed Screen	D	48	48	48	48	0	0	0	0	0	0	0	0
Motor Vehicles													
On-Site Pickup Truck	G	480	480	480	480	0	0	0	0	0	0	0	0
Off-Site Dump Truck	D	240	240	240	240	0	0	0	0	0	0	0	0
On-Site Water Truck	D	160	160	160	160	0	0	0	0	0	0	0	0
Off-Site Concrete Truck	D	640	640	640	640	0	0	0	0	0	0	0	0
Off-Site Delivery Truck	D	640	640	640	640	0	0	0	0	0	0	0	0
Off-Site Construction Worker Commute	G	12,800	12,800	12,800	12,800	0	0	0	0	0	0	0	0
Transmission Line													
Construction Equipment													
15 ton crane	D	160	160	160	160	160	160	160	160	160	160	160	80
Forklift	D	160	160	160	160	160	160	160	160	80	80	80	80
Motor Vehicles													
On-Site Pickup Truck	G	80	80	80	80	80	80	80	80	80	80	80	0
On-Site Line Truck	D	80	80	80	80	80	80	80	80	80	80	80	80
Off-Site Pickup Truck	G	160	160	160	160	160	160	160	160	160	160	160	0
Off-Site Line Truck	D	160	160	160	160	160	160	160	160	160	160	160	160

[a] Based on 8 working days per bi-weekly period

EXHIBIT NO. 10
Application:
A-4-OXN-07-096
So. Cal. Edison

Table 3
Mandalay Construction Equipment and Motor Vehicle Exhaust CO2 Emissions

Equipment/Vehicle Type	Emission Factor	Bi-Weekly Emissions (lb)											
		Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Period 7	Period 8	Period 9	Period 10	Period 11	Period 12
Power Plant													
Construction Equipment													
Welding rigs	26.0	4,153.3	4,153.3	4,153.3	4,153.3	4,153.3	4,153.3	4,153.3	4,153.3	4,153.3	2,076.6	2,076.6	0.0
Backhoe	101.4	8,111.0	16,221.9	16,221.9	16,221.9	16,221.9	16,221.9	8,111.0	8,111.0	8,111.0	8,111.0	0.0	0.0
Compressor	22.3	1,781.7	3,563.4	7,126.8	7,126.8	7,126.8	5,345.1	3,563.4	3,563.4	0.0	0.0	0.0	0.0
Front-end loader	106.3	0.0	8,505.2	8,505.2	8,505.2	8,505.2	8,505.2	8,505.2	8,505.2	0.0	0.0	0.0	0.0
15 ton crane	80.3	0.0	6,427.6	6,427.6	19,282.7	19,282.7	19,282.7	12,855.1	12,855.1	12,855.1	6,427.6	6,427.6	6,427.6
75 ton crane	112.2	0.0	0.0	0.0	8,972.7	8,972.7	8,972.7	8,972.7	8,972.7	8,972.7	0.0	0.0	0.0
Generator	30.6	4,899.7	4,899.7	4,899.7	4,899.7	2,449.8	2,449.8	2,449.8	2,449.8	0.0	0.0	0.0	0.0
Scraper	262.5	21,000.2	21,000.2	21,000.2	21,000.2	21,000.2	21,000.2	21,000.2	0.0	0.0	0.0	0.0	0.0
Forklift	54.4	8,703.3	13,055.0	13,055.0	13,055.0	13,055.0	8,703.3	8,703.3	8,703.3	8,703.3	4,351.7	4,351.7	4,351.7
Manlift	34.7	5,555.5	5,555.5	5,555.5	5,555.5	2,777.7	2,777.7	2,777.7	0.0	0.0	0.0	0.0	0.0
Dewatering drill rig	141.1	1,410.8	1,410.8	1,410.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Construction Equipment Total		**55,615.4**	**84,792.5**	**88,355.9**	**108,772.9**	**103,545.4**	**97,412.0**	**81,091.8**	**57,313.9**	**42,795.4**	**20,966.8**	**12,855.9**	**10,779.2**
Motor Vehicles													
On-Site Pickup Truck	1.107	221.3	442.7	442.7	664.0	664.0	442.7	442.7	442.7	221.3	442.7	664.0	885.4
On-Site Construction Worker Commute	1.107	26.6	97.4	132.8	168.2	159.4	106.2	106.2	70.8	17.7	17.7	17.7	17.7
On-Site Water Truck	4.222	675.5	675.5	675.5	675.5	675.5	675.5	675.5	675.5	675.5	675.5	0.0	0.0
Off-Site Dump Truck	4.222	1,688.7	3,377.5	3,377.5	1,688.7	1,688.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Off-Site Concrete Truck	4.222	0.0	8,443.7	8,443.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Off-Site Delivery Truck	4.222	0.0	1,688.7	1,688.7	1,688.7	1,688.7	1,688.7	1,688.7	1,688.7	0.0	0.0	0.0	0.0
Off-Site Construction Worker Commute	1.107	1,859.3	6,817.4	9,296.5	11,775.5	11,155.8	7,437.2	7,437.2	4,958.1	1,239.5	1,239.5	1,239.5	1,239.5
Motor Vehicle Total		**4,471.4**	**21,542.9**	**24,057.4**	**16,660.8**	**16,032.1**	**10,350.3**	**10,350.3**	**7,835.9**	**2,154.1**	**2,375.4**	**1,921.3**	**2,142.6**
Gas Line													
Construction Equipment													
Gas Line Welding rigs	26.0	4,983.9	4,983.9	4,983.9	4,983.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gas Line Backhoe	51.7	2,482.9	2,482.9	2,482.9	2,482.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gas Line Compressor	22.3	1,069.0	1,069.0	1,069.0	1,069.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gas Line Front-end loader	106.3	8,505.2	8,505.2	8,505.2	8,505.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gas Line Compactor	67.1	2,145.7	2,145.7	2,145.7	2,145.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gas Line Excavator	73.6	3,533.9	3,533.9	3,533.9	3,533.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gas Line 15 ton crane	112.2	7,178.2	7,178.2	7,178.2	7,178.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gas Line Roller	67.1	2,145.7	2,145.7	2,145.7	2,145.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gas Line Reed Screen	80.9	3,881.2	3,881.2	3,881.2	3,881.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Construction Equipment Total		**35,925.8**	**35,925.8**	**35,925.8**	**35,925.8**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Motor Vehicles													
On-Site Pickup Truck	1.107	531.2	531.2	531.2	531.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
On-Site Construction Worker Commute	1.107	265.6	265.6	265.6	265.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Off-Site Dump Truck	4.222	675.5	675.5	675.5	675.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Off-Site Concrete Truck	4.222	2,702.0	2,702.0	2,702.0	2,702.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Off-Site Delivery Truck	4.222	2,702.0	2,702.0	2,702.0	2,702.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Off-Site Construction Worker Commute	1.107	14,166.0	14,166.0	14,166.0	14,166.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Motor Vehicle Total		**21,042.3**	**21,042.3**	**21,042.3**	**21,042.3**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Transmission Line													
Construction Equipment													
15 ton crane	80.3	12,855.1	12,855.1	12,855.1	12,855.1	12,855.1	12,855.1	12,855.1	12,855.1	12,855.1	12,855.1	12,855.1	6,427.6
Forklift	54.4	8,703.3	8,703.3	8,703.3	8,703.3	8,703.3	8,703.3	8,703.3	8,703.3	4,351.7	4,351.7	4,351.7	4,351.7
Construction Equipment Total		**21,558.5**	**21,558.5**	**21,558.5**	**21,558.5**	**21,558.5**	**21,558.5**	**21,558.5**	**21,558.5**	**17,206.8**	**17,206.8**	**17,206.8**	**10,779.2**
Motor Vehicles													
On-Site Pickup Truck	1.107	88.5	88.5	88.5	88.5	88.5	88.5	88.5	88.5	88.5	88.5	88.5	0.0
On-Site Line Truck	4.222	337.7	337.7	337.7	337.7	337.7	337.7	337.7	337.7	337.7	337.7	337.7	337.7
Off-Site Pickup Truck	1.107	177.1	177.1	177.1	177.1	177.1	177.1	177.1	177.1	177.1	177.1	177.1	0.0
Off-Site Line Truck	4.222	675.5	675.5	675.5	675.5	675.5	675.5	675.5	675.5	675.5	675.5	675.5	675.5
Motor Vehicle Total		**1,278.9**	**1,278.9**	**1,278.9**	**1,278.9**	**1,278.9**	**1,278.9**	**1,278.9**	**1,278.9**	**1,278.9**	**1,278.9**	**1,278.9**	**1,013.2**

Total During Construction (lb)													
Construction Equipment		1,142,867.5											
Motor Vehicles		219,144.5											
Total		1,362,012.0											
Total During Construction (tons)													
Construction Equipment		571.4											
Motor Vehicles		109.6											
Total		681.0											

Note: Totals may not match sum of individual values because of rounding.

EXHIBIT NO. 10
Application:
A-4-OXN-07-096
So. Cal. Edison

Table 4
Construction Equipment Exhaust CO2 Emission Factors

Equipment Type	Fuel	Horsepower	ARB Off-Road Model Category	CO_2 (lb/hr)[a]
Welding rigs	D	35	Welders	26.0
Backhoe	D	175	Tractors/Loaders/Backhoes	101.4
Compressor	D	37	Air Compressors	22.3
Front-end loader	D	147	Rubber Tired Loaders	106.3
15 ton crane	D	175	Cranes	80.3
75 ton crane	D	250	Cranes	112.2
Generator	D	40	Generator Sets	30.6
Scraper	D	200	Scrapers	262.5
Forklift	D	150	Forklifts	54.4
Manlift	D	150	Aerial Lifts	34.7
Dewatering drill rig	D	125	Bore/Drill Rigs	141.1
Gas Line Welding rigs	D	38	Welders	26.0
Gas Line Backhoe	D	118	Tractors/Loaders/Backhoes	51.7
Gas Line Compressor	D	49	Air Compressors	22.3
Gas Line Front-end loader	D	140	Rubber Tired Loaders	106.3
Gas Line Compactor	D	99	Rollers	67.1
Gas Line Excavator	D	99	Excavators	73.6
Gas Line 15 ton crane	D	230	Cranes	112.2
Gas Line Roller	D	65	Rollers	67.1
Gas Line Reed Screen	D	65	Other Construction Equipment	80.9

[a] From Table 5

Emissions [pounds per day] = Emission factor [pounds per hour] x Number pieces of equipment x Operating time for each piece [hours per day]

SCAB Fleet Average Emission Factors (Diesel)

Air Basin	SC

Table 5
Construction Equipment Emissions Factors for 2007 by Equipment Catgeory and Horsepower Range[a]

Equipment	MaxHP	(lb/hr) ROG	(lb/hr) CO	(lb/hr) NOX	(lb/hr) SOX	(lb/hr) PM	(lb/hr) CO2
Aerial Lifts	15	0.0120	0.0539	0.0784	0.0001	0.0055	8.7
	25	0.0268	0.0678	0.1103	0.0001	0.0083	11.0
	50	0.0867	0.2042	0.2062	0.0003	0.0210	19.6
	120	0.0819	0.2563	0.5110	0.0004	0.0398	38.1
	500	0.1827	0.7381	2.2160	0.0021	0.0703	212.9
	750	0.3397	1.3341	4.1001	0.0039	0.1287	384.8
Aerial Lifts Composite		0.0781	0.2253	0.4026	0.0004	0.0279	34.7
Air Compressors	15	0.0163	0.0539	0.0928	0.0001	0.0071	7.2
	25	0.0376	0.0934	0.1473	0.0002	0.0113	14.4
	50	0.1306	0.2933	0.2468	0.0003	0.0290	22.3
	120	0.1158	0.3415	0.6762	0.0006	0.0591	47.0
	175	0.1434	0.5150	1.1478	0.0010	0.0615	88.5
	250	0.1459	0.4071	1.6003	0.0015	0.0557	131.2
	500	0.2288	0.8865	2.5465	0.0023	0.0889	231.7
	750	0.3607	1.3701	4.0281	0.0036	0.1390	358.1
	1000	0.6027	2.3256	6.5406	0.0049	0.2054	486.4
Air Compressors Composite		0.1285	0.3872	0.8302	0.0007	0.0579	63.6
Bore/Drill Rigs	15	0.0124	0.0632	0.0788	0.0002	0.0057	10.3
	25	0.0222	0.0689	0.1397	0.0002	0.0089	16.0
	50	0.0980	0.2886	0.2959	0.0004	0.0288	31.0
	120	0.1208	0.5011	0.8412	0.0009	0.0680	77.1
	175	0.1383	0.7539	1.2916	0.0016	0.0650	141.1
	250	0.1125	0.3532	1.6315	0.0021	0.0426	188.1
	500	0.1628	0.5678	2.2334	0.0031	0.0659	311.3
	750	0.3368	1.1219	4.6545	0.0062	0.1342	615.1
	1000	0.7011	1.9338	9.8819	0.0093	0.2471	928.3
Bore/Drill Rigs Composite		0.1457	0.5388	1.4734	0.0017	0.0648	164.9
Cement and Mortar M	15	0.0092	0.0399	0.0596	0.0001	0.0042	6.3
	25	0.0428	0.1084	0.1763	0.0002	0.0133	17.6
Cement and Mortar Mixers Compos		0.0120	0.0455	0.0693	0.0001	0.0050	7.2
Concrete/Industrial S	25	0.0215	0.0689	0.1402	0.0002	0.0089	16.5
	50	0.1513	0.3517	0.3238	0.0004	0.0352	30.2
	120	0.1654	0.5152	1.0187	0.0009	0.0830	74.1
	175	0.2336	0.8939	1.9684	0.0018	0.0987	160.2
Concrete/Industrial Saws Composit		0.1561	0.4487	0.7639	0.0007	0.0640	58.5
Cranes	50	0.1555	0.3455	0.2666	0.0003	0.0334	23.2
	120	0.1338	0.3855	0.7667	0.0006	0.0693	50.1
	175	0.1417	0.4975	1.1009	0.0009	0.0615	80.3
	250	0.1478	0.4119	1.4665	0.0013	0.0571	112.2
	500	0.2121	0.8483	2.1049	0.0018	0.0819	180.1
	750	0.3600	1.4213	3.6197	0.0030	0.1389	303.0
	9999	1.2786	5.2276	13.5665	0.0098	0.4345	970.6
Cranes Composite		0.1882	0.6365	1.6948	0.0014	0.0755	128.7
Crawler Tractors	50	0.1727	0.3812	0.2897	0.0003	0.0368	24.9
	120	0.1844	0.5217	1.0539	0.0008	0.0941	65.8
	175	0.2256	0.7814	1.7367	0.0014	0.0979	121.2
	250	0.2386	0.6707	2.2824	0.0019	0.0932	166.1
	500	0.3324	1.5264	3.1976	0.0025	0.1289	259.2
	750	0.5988	2.7192	5.8408	0.0047	0.2324	464.7
	1000	0.9273	4.2839	9.5522	0.0066	0.3239	658.1
Crawler Tractors Composite		0.2180	0.7090	1.6218	0.0013	0.0988	114.0
Crushing/Proc. Equip	50	0.2623	0.5917	0.4879	0.0006	0.0582	44.0

Air Basin	SC

Table 5
Construction Equipment Emissions Factors for 2007 by Equipment Catgeory and Horsepower Range[a]

Equipment	MaxHP	(lb/hr) ROG	(lb/hr) CO	(lb/hr) NOX	(lb/hr) SOX	(lb/hr) PM	(lb/hr) CO2
	120	0.2051	0.6092	1.1923	0.0010	0.1061	83.1
	175	0.2709	0.9819	2.1527	0.0019	0.1174	167.3
	250	0.2682	0.7429	2.9565	0.0028	0.1022	244.5
	500	0.3634	1.3803	4.0348	0.0037	0.1413	373.6
	750	0.5796	2.0915	6.5366	0.0059	0.2229	588.8
	9999	1.6038	5.9800	17.5501	0.0131	0.5443	1,307.8
Crushing/Proc. Equipment Compos		0.2499	0.7817	1.6553	0.0015	0.1048	132.3
Dumpers/Tenders	25	0.0137	0.0383	0.0709	0.0001	0.0049	7.6
Dumpers/Tenders Composite		0.0137	0.0383	0.0709	0.0001	0.0049	7.6
Excavators	25	0.0206	0.0677	0.1353	0.0002	0.0088	16.4
	50	0.1510	0.3526	0.2778	0.0003	0.0341	25.0
	120	0.1786	0.5504	1.0305	0.0009	0.0963	73.6
	175	0.1792	0.6758	1.3897	0.0013	0.0794	112.2
	250	0.1726	0.4642	1.8559	0.0018	0.0641	158.7
	500	0.2295	0.7653	2.3809	0.0023	0.0858	233.7
	750	0.3841	1.2645	4.0758	0.0039	0.1444	387.4
Excavators Composite		0.1816	0.5977	1.4225	0.0013	0.0776	119.6
Forklifts	50	0.0932	0.2119	0.1643	0.0002	0.0206	14.7
	120	0.0786	0.2337	0.4359	0.0004	0.0428	31.2
	175	0.0934	0.3343	0.7024	0.0006	0.0416	56.1
	250	0.0762	0.1920	0.8930	0.0009	0.0273	77.1
	500	0.0988	0.2777	1.1190	0.0011	0.0364	111.0
Forklifts Composite		0.0861	0.2495	0.6430	0.0006	0.0346	54.4
Generator Sets	15	0.0198	0.0761	0.1277	0.0002	0.0081	10.2
	25	0.0349	0.1140	0.1798	0.0002	0.0123	17.6
	50	0.1294	0.3076	0.3197	0.0004	0.0318	30.6
	120	0.1638	0.5185	1.0338	0.0009	0.0791	77.9
	175	0.1944	0.7569	1.6938	0.0016	0.0795	142.0
	250	0.1982	0.5974	2.3843	0.0024	0.0737	212.5
	500	0.2824	1.1211	3.4731	0.0033	0.1084	336.9
	750	0.4695	1.8098	5.7390	0.0055	0.1771	543.8
	9999	1.1949	4.4076	13.2584	0.0105	0.4151	1,048.6
Generator Sets Composite		0.1130	0.3549	0.7249	0.0007	0.0446	61.0
Graders	50	0.1733	0.3929	0.3101	0.0004	0.0381	27.5
	120	0.1902	0.5657	1.1025	0.0009	0.0996	75.0
	175	0.2073	0.7540	1.6258	0.0014	0.0907	123.9
	250	0.2088	0.5808	2.1482	0.0019	0.0803	172.1
	500	0.2487	0.9672	2.5414	0.0023	0.0960	229.5
	750	0.5320	2.0374	5.5148	0.0049	0.2053	485.7
Graders Composite		0.2055	0.6712	1.7198	0.0015	0.0886	132.7
Off-Highway Tractors	120	0.2830	0.7723	1.6142	0.0011	0.1402	93.7
	175	0.2641	0.8840	2.0209	0.0015	0.1135	130.4
	250	0.2149	0.6125	1.9515	0.0015	0.0852	130.4
	750	0.8341	4.3552	7.8223	0.0057	0.3265	568.1
	1000	1.2771	6.7361	12.5734	0.0082	0.4551	814.3
Off-Highway Tractors Composite		0.2692	0.9270	2.2742	0.0017	0.1107	151.5
Off-Highway Trucks	175	0.2093	0.7697	1.5881	0.0014	0.0920	125.1
	250	0.1933	0.5096	1.9993	0.0019	0.0709	166.5
	500	0.2870	0.9451	2.8530	0.0027	0.1051	272.3
	750	0.4689	1.5279	4.7727	0.0044	0.1730	441.7
	1000	0.7528	2.6058	8.3284	0.0063	0.2569	624.7
Off-Highway Trucks Composite		0.2881	0.9133	2.9144	0.0027	0.1056	260.1
Other Construction E	15	0.0121	0.0617	0.0770	0.0002	0.0056	10.1
	25	0.0183	0.0570	0.1155	0.0002	0.0074	13.2
	50	0.1356	0.3262	0.2942	0.0004	0.0324	28.0
	120	0.1711	0.5607	1.0579	0.0009	0.0896	[illegible]
	175	0.1464	0.5955	1.2310	0.0012	0.0641	

EXHIBIT NO. 10
Application:
A-4-OXN-07-096
So. Cal. Edison

Air Basin	SC

Table 5
Construction Equipment Emissions Factors for 2007 by Equipment Catgeory and Horsepower Range[a]

Equipment	MaxHP	ROG (lb/hr)	CO (lb/hr)	NOX (lb/hr)	SOX (lb/hr)	PM (lb/hr)	CO2 (lb/hr)
	500	0.2095	0.7692	2.4473	0.0025	0.0825	254.2
Other Construction Equipment Com		0.1311	0.4749	1.2411	0.0013	0.0539	122.8
Other General Indust	15	0.0067	0.0391	0.0470	0.0001	0.0034	6.4
	25	0.0192	0.0632	0.1266	0.0002	0.0082	15.3
	50	0.1476	0.3260	0.2499	0.0003	0.0317	21.7
	120	0.1671	0.4756	0.9336	0.0007	0.0877	62.0
	175	0.1706	0.5880	1.3014	0.0011	0.0746	95.9
	250	0.1630	0.4366	1.7266	0.0015	0.0614	135.6
	500	0.2851	1.0467	3.0123	0.0026	0.1087	265.4
	750	0.4755	1.7251	5.0871	0.0044	0.1816	437.4
	1000	0.7280	2.7744	7.7949	0.0056	0.2473	559.6
Other General Industrial Equipmen		0.2111	0.6987	1.9012	0.0016	0.0850	152.2
Other Material Handli	50	0.2034	0.4495	0.3473	0.0004	0.0437	30.3
	120	0.1620	0.4626	0.9094	0.0007	0.0848	60.7
	175	0.2152	0.7444	1.6495	0.0014	0.0939	122.1
	250	0.1729	0.4654	1.8395	0.0016	0.0653	145.0
	500	0.2038	0.7541	2.1690	0.0019	0.0781	191.6
	9999	0.9597	3.6689	10.2941	0.0073	0.3256	741.3
Other Material Handling Equipment		0.2038	0.6298	1.8362	0.0015	0.0819	141.2
Pavers	25	0.0368	0.0997	0.1770	0.0002	0.0125	18.7
	50	0.1881	0.4131	0.3234	0.0004	0.0401	28.0
	120	0.1921	0.5429	1.1172	0.0008	0.0958	69.2
	175	0.2363	0.8214	1.8559	0.0014	0.1015	128.3
	250	0.2844	0.8186	2.7050	0.0022	0.1128	194.4
	500	0.3028	1.4943	2.9397	0.0023	0.1194	233.2
Pavers Composite		0.2062	0.6000	1.1291	0.0009	0.0799	77.9
Paving Equipment	25	0.0175	0.0544	0.1103	0.0002	0.0070	12.6
	50	0.1593	0.3498	0.2759	0.0003	0.0340	23.9
	120	0.1501	0.4248	0.8753	0.0006	0.0748	54.5
	175	0.1842	0.6413	1.4542	0.0011	0.0789	101.0
	250	0.1774	0.5124	1.6935	0.0014	0.0704	122.3
Paving Equipment Composite		0.1556	0.4693	1.0333	0.0008	0.0708	69.0
Plate Compactors	15	0.0054	0.0263	0.0351	0.0001	0.0025	4.3
Plate Compactors Composite		0.0054	0.0263	0.0351	0.0001	0.0025	4.3
Pressure Washers	15	0.0095	0.0365	0.0612	0.0001	0.0039	4.9
	25	0.0142	0.0462	0.0729	0.0001	0.0050	7.1
	50	0.0491	0.1223	0.1449	0.0002	0.0131	14.3
	120	0.0463	0.1529	0.3055	0.0003	0.0216	24.1
Pressure Washers Composite		0.0235	0.0705	0.1079	0.0001	0.0081	9.4
Pumps	15	0.0168	0.0554	0.0954	0.0001	0.0073	7.4
	25	0.0507	0.1260	0.1987	0.0002	0.0153	19.5
	50	0.1541	0.3621	0.3619	0.0004	0.0371	34.3
	120	0.1685	0.5265	1.0488	0.0009	0.0822	77.9
	175	0.1977	0.7584	1.6961	0.0016	0.0816	140.1
	250	0.1941	0.5771	2.2926	0.0023	0.0727	201.4
	500	0.2982	1.2024	3.5991	0.0034	0.1149	345.2
	750	0.5068	1.9878	6.0902	0.0057	0.1923	570.7
	9999	1.5682	5.9197	17.3104	0.0136	0.5441	1,354.8
Pumps Composite		0.1090	0.3243	0.6224	0.0006	0.0439	49.6
Rollers	15	0.0076	0.0386	0.0482	0.0001	0.0035	6.3
	25	0.0185	0.0575	0.1165	0.0002	0.0074	13.3
	50	0.1520	0.3436	0.2884	0.0003	0.0338	26.0
	120	0.1450	0.4326	0.8650	0.0007	0.0734	59.0
	175	0.1748	0.6398	1.4194	0.0012	0.0748	108.1
	250	0.1867	0.5391	1.9194	0.0017	0.0729	153.1
	500	0.2375	1.0016	2.4749	0.0022	0.0933	219.1
Rollers Composite		0.1410	0.4419	0.9073	0.0008	0.0629	67.1

Air Basin	SC

Table 5
Construction Equipment Emissions Factors for 2007 by Equipment Catgeory and Horsepower Range[a]

Equipment	MaxHP	ROG (lb/hr)	CO (lb/hr)	NOX (lb/hr)	SOX (lb/hr)	PM (lb/hr)	CO2 (lb/hr)
Rough Terrain Forklif	50	0.2019	0.4635	0.3746	0.0004	0.0452	33.9
	120	0.1508	0.4598	0.8819	0.0007	0.0798	62.4
	175	0.1981	0.7390	1.5699	0.0014	0.0871	124.9
	250	0.1880	0.5203	2.0303	0.0019	0.0716	170.8
	500	0.2518	0.8995	2.6920	0.0025	0.0973	256.6
Rough Terrain Forklifts Composite		0.1576	0.4928	0.9631	0.0008	0.0800	70.3
Rubber Tired Dozers	175	0.2712	0.8964	2.0450	0.0015	0.1164	129.5
	250	0.3139	0.8843	2.8004	0.0021	0.1236	183.5
	500	0.4045	2.1197	3.6631	0.0026	0.1563	264.9
	750	0.6094	3.1710	5.5926	0.0040	0.2361	398.8
	1000	0.9543	5.0610	9.2959	0.0060	0.3417	591.9
Rubber Tired Dozers Composite		0.3789	1.6950	3.4143	0.0025	0.1474	239.1
Rubber Tired Loaders	25	0.0221	0.0708	0.1440	0.0002	0.0092	16.9
	50	0.1938	0.4399	0.3495	0.0004	0.0427	31.1
	120	0.1480	0.4419	0.8601	0.0007	0.0775	58.9
	175	0.1759	0.6425	1.3849	0.0012	0.0769	106.3
	250	0.1781	0.4960	1.8452	0.0017	0.0684	149.0
	500	0.2528	0.9706	2.6039	0.0023	0.0977	237.0
	750	0.5240	1.9793	5.4711	0.0049	0.2022	485.5
	1000	0.7317	2.8295	8.0073	0.0060	0.2487	593.9
Rubber Tired Loaders Composite		0.1730	0.5552	1.3821	0.0012	0.0768	108.6
Scrapers	120	0.2643	0.7453	1.5133	0.0011	0.1342	93.9
	175	0.2768	0.9565	2.1368	0.0017	0.1199	148.1
	250	0.3046	0.8606	2.9011	0.0024	0.1195	209.5
	500	0.4168	1.9485	4.0046	0.0032	0.1622	321.4
	750	0.7239	3.3468	7.0442	0.0056	0.2818	555.3
Scrapers Composite		0.3677	1.5249	3.3991	0.0027	0.1465	262.5
Signal Boards	15	0.0072	0.0377	0.0453	0.0001	0.0033	6.2
	50	0.1740	0.4062	0.3843	0.0005	0.0411	36.2
	120	0.1772	0.5523	1.0878	0.0009	0.0884	80.2
	175	0.2227	0.8540	1.8787	0.0017	0.0939	154.5
	250	0.2504	0.7317	2.9189	0.0029	0.0951	255.3
Signal Boards Composite		0.0254	0.0972	0.1806	0.0002	0.0115	16.7
Skid Steer Loaders	25	0.0315	0.0814	0.1358	0.0002	0.0100	13.8
	50	0.1126	0.2842	0.2606	0.0003	0.0282	25.5
	120	0.0840	0.2923	0.5256	0.0005	0.0455	42.8
Skid Steer Loaders Composite		0.0981	0.2735	0.3375	0.0004	0.0326	30.3
Surfacing Equipment	50	0.0708	0.1644	0.1519	0.0002	0.0165	14.1
	120	0.1455	0.4496	0.9017	0.0007	0.0718	63.8
	175	0.1281	0.4896	1.0832	0.0010	0.0539	85.8
	250	0.1521	0.4563	1.6282	0.0015	0.0589	134.9
	500	0.2227	0.9889	2.4265	0.0022	0.0873	221.2
	750	0.3558	1.5437	3.8879	0.0035	0.1379	347.0
Surfacing Equipment Composite		0.1864	0.7654	1.8498	0.0017	0.0712	166.0
Sweepers/Scrubbers	15	0.0125	0.0729	0.0878	0.0002	0.0064	11.9
	25	0.0251	0.0821	0.1673	0.0002	0.0106	19.6
	50	0.1973	0.4427	0.3522	0.0004	0.0434	31.6
	120	0.1885	0.5540	1.0600	0.0009	0.1003	75.0
	175	0.2297	0.8158	1.7675	0.0016	0.1010	139.0
	250	0.1660	0.4343	1.9127	0.0018	0.0611	162.0
Sweepers/Scrubbers Composite		0.1963	0.5672	1.0277	0.0009	0.0819	78.5
Tractors/Loaders/Bac	25	0.0254	0.0741	0.1443	0.0002	0.0095	15.9
	50	0.1684	0.3985	0.3286	0.0004	0.0389	30.3
	120	0.1179	0.3748	0.6979	0.0006	0.0635	51.7
	175	0.1513	0.5918	1.2085	0.0011	0.0672	101.4
	250	0.1714	0.4716	1.9310	0.0019	0.0643	171.7
	500	0.3074	1.0278	3.3772	0.0039	0.1177	344.9

Air Basin	SC

Table 5
Construction Equipment Emissions Factors for 2007 by Equipment Catgeory and Horsepower Range[a]

Equipment	MaxHP	(lb/hr) ROG	(lb/hr) CO	(lb/hr) NOX	(lb/hr) SOX	(lb/hr) PM	(lb/hr) CO2
	750	0.4689	1.5371	5.2373	0.0058	0.1793	517.3
Tractors/Loaders/Backhoes Compo		0.1307	0.4142	0.8303	0.0008	0.0639	66.8
Trenchers	15	0.0099	0.0517	0.0622	0.0001	0.0046	8.5
	25	0.0429	0.1377	0.2800	0.0004	0.0179	32.9
	50	0.2110	0.4651	0.3764	0.0004	0.0454	32.9
	120	0.1767	0.5030	1.0427	0.0008	0.0868	64.9
	175	0.2602	0.9129	2.0726	0.0016	0.1109	143.9
	250	0.3246	0.9471	3.0938	0.0025	0.1293	222.9
	500	0.4018	2.0679	3.9323	0.0031	0.1591	311.3
	750	0.7640	3.8744	7.5254	0.0059	0.3008	586.9
Trenchers Composite		0.1942	0.5171	0.8578	0.0007	0.0714	58.7
Welders	15	0.0140	0.0463	0.0798	0.0001	0.0061	6.2
	25	0.0294	0.0730	0.1151	0.0001	0.0088	11.3
	50	0.1392	0.3169	0.2825	0.0003	0.0317	26.0
	120	0.0931	0.2798	0.5556	0.0005	0.0468	39.5
	175	0.1516	0.5570	1.2432	0.0011	0.0642	98.2
	250	0.1264	0.3603	1.4180	0.0013	0.0481	119.1
	500	0.1582	0.6316	1.8085	0.0016	0.0615	167.6
Welders Composite		0.0917	0.2336	0.3191	0.0003	0.0297	25.6

Emission factors sent by ARB on December 7, 2006 in grams per hour. EF converted by SCAQMD to pounds per hour.

[a] These are composite horsepower-based off-road emission factors for 2007 developed for the SCAQMD by CARB from its Off-road Model. The composite off-road emission factors were derived based on the equipment category (tractor, dozer, scraper, etc.), and average equipment age and horsepower rating within horsepower ranges for the year. The emission factors can be downloaded from http://www.aqmd.gov/ceqa/hdbk.html/offroadEF_0620.xls

Table 6
2007 Motor Vehicle Exhaust CO2 Emission Factors

Passenger Vehicles (pounds/mile)		Delivery Trucks (pounds/mile)	
CO2	1.10672	CO2	4.2218

Source: SCAQMD CEQA Analysis Guidance Handbook Web Site,
http://www.aqmd.gov/ceqa/hdbk.html

Note: The emission factors were compiled by running the California Air Resources Board's EMFAC2007 (version 2.3) Burden Model. A weighted average of vehicle types was used to calculate emission factors for passenger vehicles, and emission factors for heavy heavy-duty diesel trucks were used for delivery trucks. All the emission factors account for the emissions from start, running and idling exhaust.

Vehicle Type	Exhaust Emission Factors
On-Site Pickup Truck	1.10672
On-Site Construction Worker Commute	1.10672
On-Site Water Truck	4.22184
On-Site Line Truck	4.22184
Off-Site Dump Truck	4.22184
Off-Site Concrete Truck	4.22184
Off-Site Delivery Truck	4.22184
Off-Site Line Truck	4.22184
Off-Site Pickup Truck	1.10672
Off-Site Construction Worker Commute	1.10672

Emissions [pounds/day] = Emission factor [pounds/mile] x Vehicle miles traveled [miles/day]

EXHIBIT NO. 10
Application:
A-4-OXN-07-096
So. Cal. Edison

mrs
Marine • Research • Specialists

July 2, 2008

Ms. Alison Dettmer
Supervisor, Energy and Ocean Resources Unit
California Coastal Commission
45 Fremont
Suite 2000
San Francisco, California
94105-2219

Re: SCE McGrath Beach Peaker Project Greenhouse Gas Emissions

Dear Alison:

Marine Research Specialists (MRS) has reviewed Southern California Edison's (SCE) analysis of greenhouse gas (GHG) emissions associated with their proposed McGrath Beach Peaker Project. While we generally concur with most of their analysis regarding the net change in GHG emissions associated with the proposed project, we believe there would be a net increase in GHG emissions associated with the project. Our review and comments are provided in the following sections.

Operational Emissions

The proposed peaker plant operation emissions would result for normal operations and transmission system upgrades.

Peaker Plant Emissions

The McGrath Beach peaker will emit greenhouse gases from the combustion of natural gas in its turbine and the emergency ("black start") generator. SCE estimated the maximum potential to emit GHG emissions based on the Ventura County Air Pollution Control District (VCAPCD) permit limit of 2,121 hours per year, plus 50 operating hours for reliability testing. The maximum potential to emit from the proposed project is 51,032.7 Metric Tonnes CO_2E[1] per year. Assuming an operational life of 30 years, the maximum potential to emit over the life of the project is 1,530,981 Metric Tonnes CO_2E. Under the economic dispatch scenario, which is how

[1] When quantifying GHG emissions, the different global warming potentials (GWP) of the various greenhouse gases are usually taken into account by normalizing their rates into an equivalent CO_2 emission rate. Carbon dioxide equivalent emissions (CO2 Eq, CO_2E or CO_2e) represents the amount of CO_2 emissions that it would take to create a climate impact equivalent to the emissions of the specific gas or source of interest. This standardization is useful for comparison purposes, since the emissions impact of different source types and gases can then be directly compared.

the peaker plant will likely be operated, potential emissions from the proposed project are 2,496 Metric Tonnes CO_2E[2] per year, or 74,881 Metric Tonnes CO_2E over a 30-year operating period.

MRS concurs with SCE's estimate of operational GHG emissions.

Transmission Emissions

The McGrath Beach peaker will require the installation of one new SF_6-insulated circuit breaker, which will contain 52 pounds of sulfur hexafluoride (SF_6). SF_6 has a relatively high global warming potential (approximately 23,900 times that of CO_2), so even small emissions of SF_6 can contribute to climate change. The leak rate for this equipment is guaranteed by the manufacturer to not to exceed one percent per year. Therefore, the maximum potential to emit of this circuit breaker will be 0.52 pounds of SF_6 per year, which is equivalent to 5.6 Metric Tonnes CO_2E per year. Assuming an operational life of 30 years, the maximum potential to emit over the life of the project is 168 Metric Tonnes CO_2E.

MRS concurs with SCE's estimate of transmission system upgrade GHG emissions.

Construction Emissions

SE estimated construction emissions for the proposed peaker plant. Construction emissions would represent a one-time contribution to total project-related GHG emissions of 618.0 Metric Tonnes. In order to prepare the local distribution system for the installation of the McGrath Beach peaker, 32 existing circuit breakers were replaced during 2007. These circuit breakers were oil-insulated models that were scheduled to be replaced as part of SCE's planned transmission and distribution system expansion activities in the Oxnard area. However, their replacement was accelerated by one year to occur in 2007, so that the system would be ready to accommodate the additional generation from the Mandalay site. The installation of the new circuit breakers represents an additional one-time maximum potential emission increase of 180.4 Metric Tonnes CO_2E.

MRS concurs with SCE's estimate of construction GHG emissions.

Statewide System Emissions

The proposed peaker plant would replace emissions from an existing generating facility. The relative changes in systemwide emissions are discussed below.

[2] When quantifying GHG emissions, the different global warming potentials (GWP) of the various greenhouse gases are usually taken into account by normalizing their rates into an equivalent CO_2 emission rate. Carbon dioxide equivalent emissions (CO2 Eq, CO_2E or CO_2e) represents the amount of CO_2 emissions that it would take to create a climate impact equivalent to the emissions of the specific gas or source of interest. This standardization is useful for comparison purposes, since the emissions impact of different source types and gases can then be directly compared.

Systemwide Power Plant Emissions

Based on the economic dispatch of generation, it is likely that the McGrath Peaker would displace similar generation in terms of operational efficiency and GHG emissions. SCE used the Ventyx Market Analytics and the Ventyx Planning and Risk models to simulate the operation of its electric system and estimate GHG emissions for the units that would be replaced by the McGrath Peaker. In each case evaluated by SCE, emissions associated with the McGrath Peaker would be approximately the same as the generation that is replaced. Therefore, it is unlikely that there would be any appreciable net change in GHG emissions associated with the operation of the proposed peaker and displacement of existing generating units.

Indirect Line Loss Emissions

One of the more difficult aspects of the GHG emission inventory to validate is related to the amount of energy lost during electrical transmission, and the equivalent amount of GHGs that would be emitted to make up for the lost energy. As noted in SCE's analysis:

> *When electricity travels across the wires of the transmission system it creates friction. This friction in turn creates waste heat that results in a measurable energy loss. This energy loss, called line loss, occurs both due to the distance that power must travel from its source to its destination, and due to differences in the materials that are used in different types of electric conductors across which the power must flow.*

The main presumption contained in the SCE GHG analysis is that power generated by the Mandalay Beach Peaker Project would replace more distant generation and be used for local power needs. This assumption appears to be consistent with the CPUC order requiring SCE to develop additional peaking capacity, which states:

> *"Such units should be black-start capable and dispatchable, and should bring collateral benefits to SCE's transmission and distribution system as well as the CAISO grid." (CPUC, 2006)*

In order to estimate potential improvements in system transportation, SCE utilized the General Electric (GE) Positive Sequence Load Flow (PSLF) software to simulate the Santa Clara 66 kV Subsystem. According to GE, the PSLF software is:

> *…designed to provide comprehensive and accurate load flow, dynamic simulation and short circuit analysis. Using this tool, engineers can analyze transfer limits while performing economic dispatch. PSLF is ideal for simulating the transfer of large blocks of power across a transmission grid or for importing or exporting power to neighboring systems.*

Existing power generation in the Oxnard area is transmitted to the Santa Clara substation via the 230 kV transmission system and them back to the area where it is generated via the less efficient 66 kV distribution system, thus resulting in line losses on the lower voltage 66 kV system. The proposed peaker plant would serve the local 66 kV distribution system and result in more

efficient power transmission. Therefore, while difficult to quantify in the absence of a complete independent model simulation of the SCE Santa Clara 66 kV Subsystem, the proposed peaker plant would clearly lessen potential line losses and associated GHG emissions. However, SCE has conducted the PSLF modeling for the Santa Clara 66 kV Subsystem, and modeling results appear to provide a reasonable estimate of potential improvement in local power distribution and reductions in line losses and GHG emissions.

Net Project GHG Emissions

SCE evaluated two generation scenarios, a maximum potential dispatch scenario and an economic dispatch scenario. Based on the worst-case economic dispatch scenario, which would most likely resemble actual peaker plant operations, the project-related net increase in GHG emissions can be summarized as follows:

McGrath Peaker Net CO_2E Emission Impact
Economic Dispatch Scenario

Operational Emissions	*Metric Tonnes of CO_2E*[1]
Power Plant	74,881
Transmission System	168
Construction Emissions	
Direct Construction	180
Transmission Interconnection	618
Systemwide Emissions	
Existing Power Plant Displacement	-74,881
Transmission System Line Losses	-240
Total:	**726**

[1.] Totals assuming a 30-year project life.

If you have any questions please do not hesitate to give me a call at 805.289.3927.

Best Regards,

Steven R. Radis
Principal

mrs

EXHIBIT NO. 11
Application
A-4-OXN-07-096
So. Cal. Edison

APPENDIX D: POWER PLANT SITE MAPS

CCC DESIGNATED AREA FACTORS

Staff-Recommended Designations of Areas
Unsuitable for Power Plant Construction Under
Section 30413(b) of the California Coastal Act of 1976

Adopted September 5, 1978

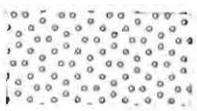
EXHIBIT NO. 12
Application:
A-4-OXN-07-096
So. Cal. Edison

		Designation Boundary
		Coastal Zone Boundary
		"Partial" Designation
1	-	Publicly Owned Parks
2	-	Other Recreation Areas
3	-	Wetlands and Estuaries
4	-	Marine Life Refuges and Reserves, Ecological Reserves, Areas of Special Biological Significance
5	-	Marine Resources (kelp beds, rocky intertidal and subtidal areas, mouths of anadromous fish streams)
6	-	Marine Mammal and Seabird Breeding and Resting Areas
7	-	Environmentally Sensitive Habitat Areas
7-10	-	Wildlife Habitat, Cultivated Agricultural Land
8	-	California Natural Areas Coordinating Council Areas
9	-	Forestry Special Treatment Areas
10	-	Cultivated Agriculture - Special Agrarian Communities
11	-	View Protection
12	-	Inadequate Public Services
13	-	Riparian Vegetation
a	-	After any number indicates an area proposed for acquisition by a State Agency
PP	-	Existing Power Plant

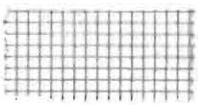
EXHIBIT N
Application
A-4-OXN-0
So. Cal. Ed

Power Plant Site Maps
CEC Natural Resource Pattern Key

Reserves

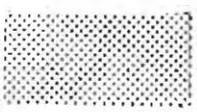


Wetlands



Estuary

EXHIBIT NO. 12
Application:
A-4-OXN-07-096
So. Cal. Edison



Commercial and Recreational Resources

Endangered Species

Power Plant Area

* In three cases, power plant boundary patterns overlap the CEC natural resource patterns of wetlands and endangered species, as follows:

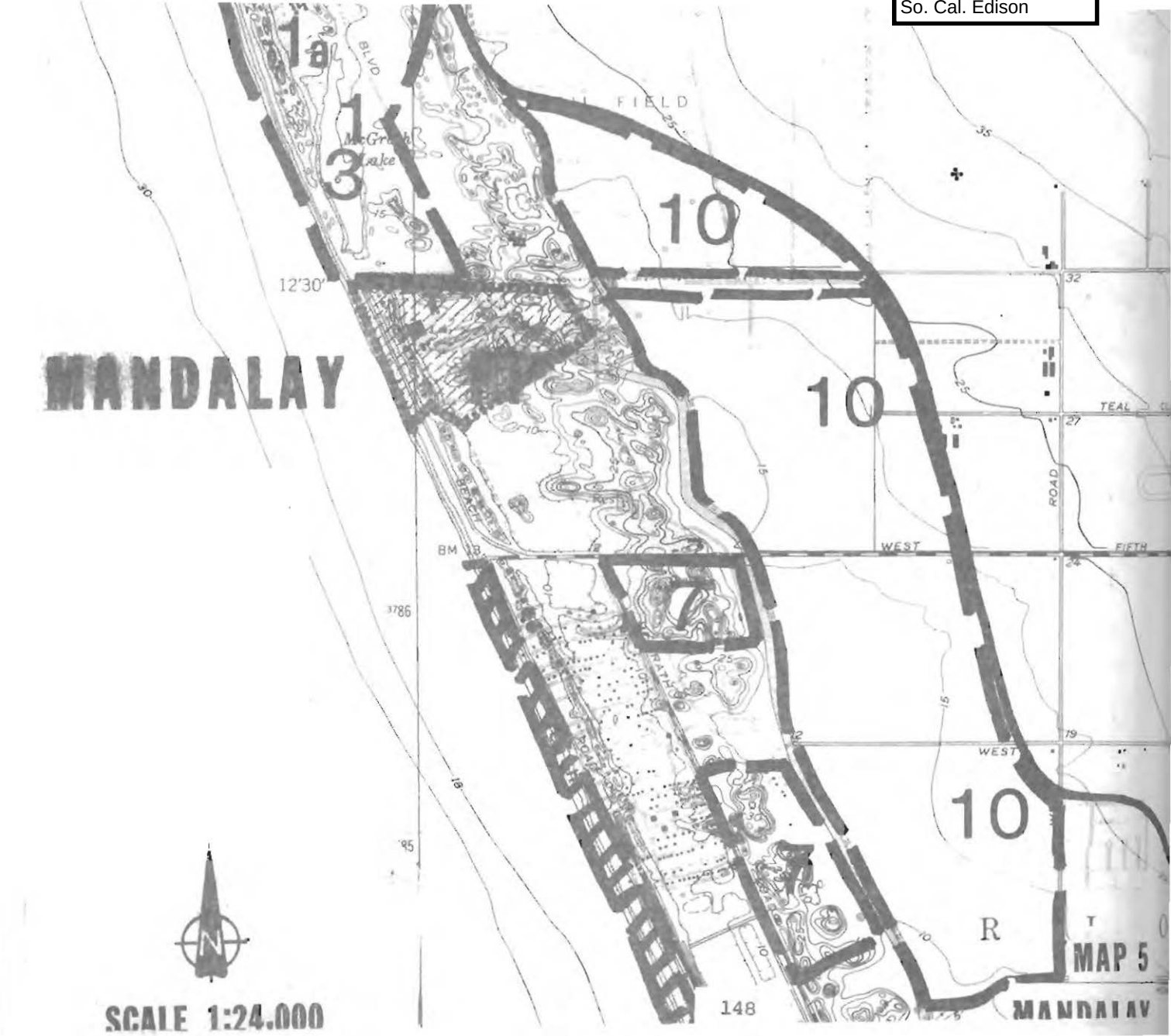
Wetlands

Wetlands and Power Plant

Endangered Species

Endangered Species and Power Plant

So. Cal. Edison



ALTERNATIVES

The California Coastal Commission (the Commission) is a certified regulatory agency under the California Environmental Quality Act (CEQA). As such, it prepares an EIR-equivalent document, in this instance a Staff Report, that either addresses alternatives and mitigation measures or otherwise states that there are no significant or potentially significant effects. The Commission's review of the Proposed Project, SCE's Oxnard peaker unit, has concluded that the Proposed Project will not have any significant or potentially significant effects on the environment. (April 24, 2008 Commission Staff Report at p. 5); see also Mitigated Negative Declaration (MND) at pp. 100-101.) Thus, the Commission does not need to conduct an alternatives analysis under Section 15252 of the CEQA Guidelines.

Nonetheless, in response to public comments received, the Commission requested that Southern California Edison (SCE) provide additional information on: (1) the siting criteria that were used to select the Proposed Project site, and (2) the alternatives that SCE considered, with particular consideration given to replying to the alternatives that were identified in public comments.

The following sections describe the Proposed Project and its objectives and analyze the seven alternatives categories that have been identified by the public:

Alternative 1: No Project Alternative (do not construct a "black start" peaker in the Ventura/Santa Barbara area);

Alternative 2: Renewable/Demand Side Management/Energy Efficiency Alternative;

Alternative 3: Local Cogeneration Alternative;

Alternative 4: EF Oxnard Alternative;

Alternative 5: East of Harbor Boulevard Alternative;

Alternative 6: Mandalay Generating Station Alternative; and

Alternative 7: Non-Coastal Location in the Ventura/Santa Barbara Area Alternative.

The alternatives analysis includes all information that SCE considered from Project inception through the present analysis related to the selection of the Proposed Project site.

I. Project Description

SCE proposes to build a 45-MW, natural gas-fired electrical generation facility – a peaker" plant – to be located on a 16-acre, SCE-owned vacant site adjacent to (and within the same Energy Coastal ("EC") subzone as) Reliant Energy's existing Mandalay Generating Station. The site was formerly occupied by oil storage tanks, and is separated from the ocean by the Mandalay plant to the west and northwest and by the DCOR oil

processing facilities to the southwest. The peaker would be capable of being started up and fully dispatched on short notice (approximately 10 minutes) and would operate primarily at times of peak electricity demand or times of system strain or imbalance when a major power plant or transmission line becomes suddenly unavailable. The peaker will also have "black start" capability, meaning it will have the ability to start up without any external power source. Thus, it will be able to provide the power needed to restart other power plants and restore electrical service during area-wide power outages, as well as provide power for a limited number of essential services while the larger, slower-starting plants come back on-line.

II. Project Objectives

The California Public Utility Commission's (CPUC's) August 2006 Assigned Commissioner Ruling[6] defined the Proposed Project's objectives: (1) to construct SCE-owned black-start capable generating facilities; (2) that are dispatchable; (3) with collateral benefits to SCE's transmission and distribution system as well as the CAISO grid; (4) immediately. In determining the specific type and location of generation to construct, SCE gave primary consideration to complying with the four mandatory directives contained in the CPUC order.

A. CPUC Directive

The CPUC ordered SCE to "pursue the immediate development and installation of up to 250 MW of black-start, dispatchable generating capacity within its service territory for Summer of 2007 operation." (ACR, p. 2) Additionally, "[s]uch units… should bring collateral benefits to SCE's transmission and distribution system as well as the CAISO grid." (ACR, p. 6).

In response to the CPUC directive, SCE built and is now operating four of the five planned "peaker" plants located in the cities of Norwalk, Ontario, Rancho Cucamonga and Stanton. Each of these four peaker projects was granted a mitigated negative declaration under CEQA. The Oxnard Peaker would be the final generating facility developed to fulfill the CPUC directive.

B. Black Start Generation

1. Black Start Capable Generation Unit – A "Peaker" Unit

The CPUC specifically directed SCE to develop black state capable generation. All five peakers were sited at locations where they could black start one or more major generating units. Emergency black start capability requires specific characteristics from the generation unit. The most important of these characteristics are as follows:

[6] *Assigned Commissioner's Ruling Addressing Electric Reliability Needs in Southern California for Summer 2007*, issued by CPUC President Michael Peevey on August 15, 2006 ("ARC")

- The black start generator must be able to start at all times with no external source of electricity;
- This unit must be able to be remotely operated at the direction of the Independent System Operator (CAISO);
- The unit must be able to self-regulate its frequency to 60 Hz.[7]
- The unit must be able to provide the needed startup power and sustain the high electric and magnetic fields of alternating-current equipment.[8]
- The unit must be capable of supplying stable, continuous power over an extended period of time (i.e., 12-24 hours).

The above five characteristics can only be supplied by a high megawatt (MW) fossil fuel fired unit located reasonably close to the generating unit to be started. When combined with the need for generation at times of peak energy demand, these requirements prescribe peaking units.

2. A Peaker Unit Must Be Located Reasonably Close to the Generation Unit to Be Black Started

The specific distance that a peaker unit can be located from the generating unit to be started is primarily determined by: (1) the resistance to flow (impedance) of the transmission line, (2) the equipment that is located between the two generators, and (3) the ability of the operator to restrict the electricity flow to the desired route. High capacity transmission lines are designed to optimize the efficient transmission of electricity over long distances. These lines have lower impedance; therefore, less power is lost during the transmission of electricity. Consequently, a peaker can be located farther from the generating unit to be black started when the power is being transmitted on a higher capacity line (230 kV) than on a lower capacity line (66 kV). This is because power is lost when it is transmitted and there is a minimum amount of power needed to effect a black start.

The maximum separation distance is specific to the exact route that will be followed by the electricity. In the Oxnard area, SCE estimates that the maximum distance a black start unit could be located from the Mandalay Generating Station, the generating facility to be black started (see detailed discussion below at "Ventura/Santa Barbara County Specific Local Reliability Benefits"), is approximately 10-12 circuit

[7] This characteristic requires a high mass spinning generator with the instrumentation and control system needed to regulate frequency to within tight parameters.

[8] In order to start a large generating unit such as the Mandalay Generating Station, multiple smaller motors that operate support equipment must be started prior to starting the generator itself. These motors include fuel gas compressors, circulating water pumps, and other process feed pumps. When an engine is at rest it requires additional energy ("inrush" energy) to break its inertia to bring it up to the required rotational speed. The amount of current required to start these large motors can be as high as three to seven times their basic operating requirements. This requires a black start unit capable of handling multiple high amperage, high VAR (Volt-Amp-Reactive) instantaneous draws. The larger the generating unit, the larger the black start unit must be to handle the needed startup power requirements.

miles on the 66 kV system. Circuit miles reflect the miles of the intervening conducting wire, as opposed to simply street distance. On the 230 kV system, the maximum distance that a black start unit can be located is farther away. SCE has estimated that this function could be performed from the Santa Clara Substation, but is unlikely to be successful from either the Goleta or Moorpark Substations.

C. Dispatchable Generation

Dispatchable generation refers to types of electric generating units whose operation is under the control of the CAISO, and can be called upon as needed to meet the energy or reliability requirements of the electric grid. Generation sources such as cogeneration units or renewable energy projects that provide power when it is available, and not at the direction of the CAISO, are not considered dispatchable generation.

D. Collateral Benefits

The primary benefit of the peakers is the reliability benefit they provide to the transmission and generation system – not their independent energy production value. Reliability benefits can occur at the systemwide or local level. Because energy production and systemwide reliability benefits can be provided from many sites, SCE asked its transmission and distribution team to identify the specific regions where peaking capacity would most benefit local reliability needs. Similar sites were ranked by the number of reliability needs or emergency contingency situations that could simultaneously be solved by a single project.

The reliability of the existing electric grid already takes into account the benefits provided by existing generating sources. Therefore, only new generating sources can provide the additional stability and reliability that the system needs.

Systemwide Reliability Benefits

a) Capacity - A peaker unit contributes a system capacity benefit simply by being a new generating source. The amount of energy that can be imported into the Los Angeles Basin from out-of-state sources is limited to a specified proportion of the generation that is produced from within the local area.[9] Thus, construction of new generation within this area (known as the ISO-defined SP15 transmission constrained area) allows additional out-of-state generation to be imported into Southern California to supply its energy demand.

b) Non-Spinning Reserve - When major generation or transmission equipment shuts down unexpectedly, it causes a disruption to the electric system that can result in widespread failure if the system is not quickly stabilized to meet control performance standards. Non-spinning reserve generators (generators that are not operated to generate electricity, but are held in reserve to operate on demand at the order of CAISO) provide voltage and frequency support that allows the system to recover from disturbances. This

[9] This is known as the Southern California Import Transmission (SCIT) limit.

benefit can only be provided by dispatchable generating units located within the control area. Because the proposed peaker has quick start ability, it can provide this benefit while it is shut down.

c) Renewable Energy Integration - The addition of intermittent renewable resources such as wind and solar generation to the electric grid requires the simultaneous availability of fossil fuel units[10] on the same electric subsystem as a backstop measure. This is because the power output from wind and solar resources fluctuates intermittently in time, for example, when wind levels decrease or clouds cover the sun. The electric system, on the other hand, must operate at a stable voltage and frequency, with a very low level of fluctuation. Dispatchable fossil fuel units such as the Proposed Project[11] are able to automatically adjust their output to fill in the gaps in the power supply that are caused by these fluctuations. These types of units can be controlled to increase or decrease their output to meet the electrical system demand. They also provide power when renewable resources are not available, such as at night or when the wind is not blowing.

General Local Reliability Benefits

a) Voltage Support - Due to electricity demand growth on the SCE system, certain areas on the system could benefit from additional local voltage or frequency support to improve power quality or relieve system overloads. In these cases, the existing transmission system was simply not constructed to supply the amount of energy now being demanded. Location of a peaker at these locations will avoid or defer future transmission or distribution projects that would otherwise be needed to address this issue. Voltage support is an ancillary benefit that was taken into consideration when discriminating between similar sites.

b) Line Loss Benefits – As discussed above, the farther electricity has to travel on the transmission system, the more power is lost. This is called line loss. This effect increases when the existing system is overloaded, such as on hot summer days. When a generator is connected close to the customers it serves, this loss is minimized and less electricity needs to be generated to serve the same load. Less generation means fewer air emissions and lower customer costs. Peakers operate for relatively few hours during the year; therefore, this benefit will occur primarily on the 66 kV system, where resistance to flow is higher. In the Santa Clara subsystem, the proposed peaker site is an optimal location to reduce line losses. Line loss is an ancillary benefit that was taken into consideration when discriminating between similar sites.

[10] In the future, a number of storage technologies currently under development will be capable of providing this benefit; however, these technologies will not be commercially available for a number of years.
[11] The peaker is capable of being fitted with a Remote Intelligent Gateway (RIG) that allows it to be used for Area Generation Control (i.e., automatic load following).

Ventura/Santa Barbara County Specific Local Reliability Benefits

Certain locations on the SCE grid require additional generation or transmission infrastructure to address identified emergency scenarios. These locations will require the construction of future projects to eliminate these system weaknesses. Siting a peaker at these locations has the effect of both solving existing issues and replacing future projects that would otherwise need to be constructed.

In the Ventura-Santa Barbara System, SCE has identified the following local reliability projects: (1) providing black start service for the Mandalay Generating Station, and (2) providing additional emergency generation to the Goleta subsystem.

a) Mandalay Generating Station Black Start

Electricity use in the Ventura/Santa Barbara System has increased steadily at 2-3% per year as former agricultural lands are converted to residential, commercial and industrial projects; as consumers increase their energy usage by purchasing new electronic devices such as plasma televisions and digital video recorders; and as more coastal homes are constructed with air conditioning.

Presence of Air Conditioning in New Homes
Coastal Climate Zone 6[12]

	Pre-1992	1992-2003
No AC	71%	35%
AC	29%	65%

Consequently, peak electric load in this area has grown to 1,700 MW in 2008. In an emergency situation, when this area is isolated from the main electric grid, both the Mandalay (430 MW) and Ormond Beach (1,500 MW) Generating Stations must be operated at close to full load in order to supply sufficient electricity to meet local needs.

During major electric system upsets, generating stations are automatically programmed to shut down to prevent damage to their mechanical, electrical and fuel handling systems. Once a power plant has shut down, it requires an external source of energy to restart. There are currently no black start generators in the area that are capable of restarting either of these major plants to allow power to be restored to the electric grid. Without such a source of power, the Ventura/Santa Barbara area is at risk of remaining without electricity from several days to several weeks, while repairs are made to the system.

[12] Data was extracted from the California Energy Commission's Residential Appliance Saturation Survey 2004 (RASS 2004), which surveyed air conditioner installations in new homes throughout the state. The City of Oxnard is located in Coastal Climate Zone 6 of the survey.

b) Goleta Subsystem Generation

The Santa Barbara area is currently served through a single bulk power substation, the Goleta Substation that receives its power through two 50-mile–long, 230 kV transmission lines. These two lines share common towers and are subject to a joint outage from a single event that affects the towers, e.g., a fire, earthquake, or other earth movement. Because the majority of the towers are located in remote mountain terrain, if such an event were to occur, the Santa Barbara area would be subject to an extended outage while these lines were repaired. Since local generation in this area is currently lower than demand, some level of forced service interruption would result during this interim period.

In this event, a limited amount of power could be supplied through the Santa Clara 66 kV system to meet certain essential emergency service requirements (police, fire stations, hospitals, etc). However, in order to supply this power, a minimum level of generation must be provided from within the Santa Clara 66 kV subsystem to ensure adequate voltage support and prevent electric equipment overloads. The proposed peaker would meet the required specifications – 66 kV connection within the Santa Clara subsystem – to be able to provide the needed system support to the Goleta subsystem over an extended period of time.

E. Immediate Development

In order to complete permitting and construction of five generation projects in less than one year from the date the CPUC directive was issued (which set forth a one year goal ending Summer 2007) for the peaker projects to be operational, sites that required minimal time to complete these activities were selected. Although the goal of constructing all five peakers by the Summer of 2007 has passed, the Project is still urgently needed[13] as was recently reconfirmed in the May 2, 2008 CAISO letter to the Commission.

[13] According to the CPUC, the surprising growth in electricity demand throughout the state, coupled with the July 2006 heat storm, exposed certain vulnerabilities in the electric generation and transmission infrastructure that required immediate attention to assure future reliability. The California Independent System Operator's ("CAISO") assessment for the Summer of 2006 had indicated that the system could handle a demand in excess of 48,000-MW, with limited or no impact on firm load customers. However, the peak demand during the heat wave was 51,000-MW, well above any of the scenarios that were assumed in CAISO's assessment. The Summer 2006 demand was 12% higher than 2005's record; 6% higher than the worst case scenario CAISO had analyzed in its assessment; and 38% higher than the peak demand of the crisis year 2001. Moreover, it represented a demand that was not forecast to occur for another five years. Across CAISO's service area, weighted average temperatures during the heat wave ranged between 106 and 110 degrees Fahrenheit on various days, which is higher than any temperatures recorded in the 30-year history of temperature models used by CAISO. Even with the additional installed and anticipated new generating resources that will have come on-line between the summers of 2006 and 2008, CAISO still predicts a 10% risk that operating reserves in Southern California could be insufficient this summer. Although new resources have been procured and will continue to come on-line, SCE predicts that there remains a significant need for additional peaking resources in the future.

Therefore, the following siting criteria that were used when initially comparing potential locations are still highly relevant. The identical criteria were utilized to site all five peakers within the SCE system.

a) Less than 50 MW Units

Given the grid's reliability issues and the need to swiftly comply with the CPUC directive, five 50 MW[14] units were selected for installation. Under the California Energy Commission's (the CEC) regulations, units less than 50 MW are exempted from the CEC's mandatory 12-18 month review period that is required for larger generating units. Further, constructing multiple units in different locations provides the highest degree of reliability benefits and has the potential to solve the greatest number of local reliability issues, in turn eliminating or deferring the maximum number of additional projects.

b) Existing SCE-Owned Property

The length of time required to purchase or condemn real estate for a potential peaker site would have prevented SCE from complying with the CPUC directive. Therefore, only existing SCE-owned properties were considered. Moreover, Project construction requires a minimum of 2-3 acres; therefore all candidate properties were screened to determine if sufficient space was available for the Proposed Project.

c) Transmission Availability

In locations where the transmission system is already overloaded, the existing infrastructure may not be capable of readily accepting additional energy. Therefore, only locations that had available capacity were selected. This is because the time and cost of upgrading the system would not be commensurate with either the schedule (delay to construct additional capacity would be too great) or size of the Proposed Project (the cost to provide additional transmission capacity would render the project infeasible).

d) No Significant Environmental Issues

Short list candidate sites were screened for environmental issues and rejected if any potentially significant environmental impacts were identified. To expedite permitting, SCE specifically selected sites that it believed would pose no significant adverse environmental impacts, and therefore would not require an EIR or lengthy permit processes.

[14] 50MW is the gross output rating of the selected LM6000 engine. After plant auxiliary loads and local temperature and elevation impacts, the net output of these units onto the SCE grid will be approximately 45MW.

e) Minimal Fuel Gas and Transmission Infrastructure Construction Requirements

Long interconnection distances increase permitting complexity, the potential for significant environmental issues, project costs, and the length of time needed for construction. Sites were screened to determine if the necessary natural gas and transmission inter-tie infrastructure was readily available and could be permitted and constructed in a relatively short time period. This entailed sites in close proximity to 66 or 115 kV tie-in locations and main gas lines with adequate capacity and pressure. SCE chose to interconnect the units on the lower voltage sub-transmission system, because the engineering and approval time needed to connect to the higher voltage 230 kV system was significantly greater due to the different process that must be followed. Connecting to the lower voltage system also provided greater local reliability benefits.

f) No Extraordinary Engineering or Construction Issues

Short list candidate sites were screened for geotechnical concerns, site access, equipment relocation, and other engineering and construction issues that would preclude the Proposed Project from meeting engineering or construction standards or would unreasonably delay the Proposed Project. Examples include significant grading or cut and fill site preparation which, in some cases, can only be conducted during certain times of year.

IV. Alternatives Analysis

Systemwide Site Selection

The number one location identified by SCE's transmission and distribution group as requiring a black start peaker and/or other projects to resolve local reliability needs was the Ventura/Santa Barbara system west of the Pardee Substation. In this area, the most important locational reliability criteria in order of importance are: (1) the ability to black start the Mandalay Generating Station; (2) providing additional generation capacity to the Goleta subsystem; and (3) providing local system reliability benefits such as voltage support and overload reduction.

In SCE's initial Fall 2006 assessment of potential locations, the primary criteria utilized when comparing sites was completing the Proposed Project by the Summer 2007, as required by the CPUC.

In February 2007, when it became apparent that Project approval was not forthcoming from the City of Oxnard, SCE reviewed the selection of the Mandalay site to determine if moving the Proposed Project to another site would be appropriate. At that time, SCE considered sites both within and outside of the Ventura/Santa Barbara system. However, because of the critical need for black start and local reliability projects in the Ventura/Santa Barbara area, which will require new generation and/or transmission projects to resolve these issues regardless of the Proposed Project, SCE determined that

the original location of the Proposed Project adjacent to the Mandalay Generating Station remained the best location on its system.

Through the various phases of the Proposed Project development process (including the various appeals), SCE has revisited project location to determine if greater need existed elsewhere. Every review has resulted in the same conclusion – that the Mandalay site is the optimal location for the Proposed Project on the SCE system.

Ventura/Santa Barbara Site Screening

At the time the CPUC directive was issued, SCE screened all available SCE-owned property inside its system according to the following criteria:

- SCE owned property
- 2-3 acres of available land within or adjacent to an existing 66 or 115 kV substation
- Not within 1,000 feet of a school or hospital

These criteria were used to assess general constructability, permitability, and speed of construction. Available land was first screened based on information provided by SCE's corporate real estate and transmission planning groups regarding parcel sizes. Promising sites were screened using Google Earth. As part of the current project reassessment, customer-owned substation properties were also reviewed, and all available sites in the Ventura/Santa Barbara area were screened using LandVision to confirm property acreages.

Substations Screened

Loc	Substation	City	Screening Assessment
SC	Camarillo	Camarillo	Not enough space. Residential on three sides. Across street on fourth.
SC	Camgen	Camarillo	Space available. Cogen. Serves CSU Channel Islands Campus. Greenfield.
G	Capitan	Naples/Goleta	Not enough space. Possibly a customer sub (Exxon). Hilly terrain.
G	Carpinteria	Carpinteria	Not enough space. Residential on one side.
SC	Casitas	Ventura	Not enough space. Residential on one side. Across street on second.
SC	Channel Island	Oxnard	Not enough space. Across the street from homes on the marina.
SC	Charmin	Oxnard	Space available. Cogen. Serves Proctor & Gamble.
G	Colegio	Isla Vista	Space available. Customer sub. Serves UC Santa Barbara.
SC	Colonia	Oxnard	Not enough space. Adjacent residence (Abel Ranch).
M	Crater	Calabasas	Not enough space.
G	Desal	Santa Barbara	Not enough space. Customer sub. City of Santa Barbara.
G	Ellwood	Goleta	Space available. Within 1,000 ft of Ellwood Unified school.
SC	Estero	Oxnard	Not enough space.
G	Exgen	Goleta	Space available. Cogen. Serves Exxon.
SC	Fillmore	Fillmore	Not enough space. Residential on three sides.
G	Gaviota	Gaviota	Not enough space. Possible transmission capacity issues.
SC	Getty	Ventura	Space available. Customer sub. Serves Chevron.

EXHIBIT NO. 13
Application
A-4-OXN-07-096
So. Cal. Edison

G	Goleta	Santa Barbara County	Space available. SCE sub.
SC	Gonzales	Oxnard	Not enough space. Residential on one side.
G	Isla Vista	Isla Vista	Not enough space. Residential on one side.
M	Latigo	Malibu	Not enough space. Nearby homes.
SC	Lehman	Oxnard	Not enough space. Customer sub. Serves Port Hueneme Seabee Base.
SC	Levy	Oxnard	Not enough space.
M	Malibu	Agoura Hills	Not enough space. Close to homes.
SC	Mandalay	Oxnard	Space available. SCE sub.
SC	Missile	Oxnard	Space available. Customer sub. Serves Point Mugu Air Station.
M	Moorpark	Moorpark	Space available. SCE sub.
M	Newbury	Thousand Oaks	Not enough space.
M	Oak Park	Thousand Oaks	Not enough space. Residential on two sides.
SC	Ojai	Ojai	Not enough space. Residential on three sides. Athletic club on the fourth.
G	Onshore	Goleta	Customer sub. Possibly serves the golf course.
SC	Ormond Beach	Oxnard	Not enough space. Available SCE land is mainly transmission line right of ways.
G	Ortega	Summerland	Not enough space. Residential on one side.
SC	Oxgen	Oxnard	Not enough space. Cogen. Serves Boskovich Farms food processing.
M	Pharmacy	Thousand Oaks	Customer sub.
M	Potrero	Thousand Oaks	Not enough space.
SC	Procgen	Oxnard	Space available. Cogen. Serves Proctor & Gamble.
M	Reclaim	Calabasas	Not enough space. Customer sub. Serves Las Virgines MWD.
M	Royal	Simi Valley	Not enough space.
G	San Marcos	Santa Barbara	Not enough space. Adjacent to condominiums.
SC	San Miguel	Ventura	Not enough space.
G	Santa Barbara	Santa Barbara	Not enough space.
SC	Santa Clara	Ventura	Space available. SCE sub.
SC	Saticoy	Saticoy	Not enough space. Across the street from residential housing.
M	Shelline	Calabasas	Customer sub.
SC	Shellsom	Somis	Not enough space. Customer sub. Serves industrial/petroleum customer.
SC	Somis	Somis	Not enough space. Customer sub. Serves industrial customer.
M	Tapia	Malibu	Not enough space.
SC	Tayshell	Ventura	Not enough space. Possibly a customer sub.
M	Thousand Oaks	Thousand Oaks	Not enough space. Residential on two sides.
SC	Three M	Camarillo	Space available. Customer sub. Serves Imation Corp.
SC	Unioil	Oxnard	Space available on adjacent SCE land. Customer sub. Serves DCOR.
M	Valdez	Calabasas	Not enough space. Residential on four sides.
G	Vegas	Goleta	Not enough space. Next to homes.
SC	Wakefield	Santa Paula	Not enough space. Within 1000 feet of Webster school.
SC	Wastewater	Oxnard	Not enough space. Customer sub. Serves City of Oxnard Wastewater Treatment.
SC	Williamette	Port Hueneme	Possible space available. Cogen. Serves Weyerhaeuser.

G = Goleta; M= Moorpark; SC = Santa Clara

Key:

	SCE Land – Space Available
	Customer Land – Space Available
	SCE/Customer Land – No Space Available

EXHIBIT NO. 13
Application
A-4-OXN-07-096
So. Cal. Edison

There are three bulk power substations located within the Ventura/Santa Barbara area. These are the Goleta, Santa Clara, and Moorpark Substations. All power in this area is supplied from one of these three electric systems. These three bulk substations and one generation site passed the initial screening process and were given more detailed analysis: the. These sites were:

- Goleta
- Mandalay
- Moorpark
- Santa Clara

This short list of potential sites was subjected to more detailed analysis. Based on the screening criteria listed above, additional transmission, environmental, and construction information was gathered to rank and assess each site. The criteria were:

- Transmission availability
- No significant environmental issues
- No significant engineering or construction issues
    - Minimum gas pipeline/transmission line infrastructure construction
- Local system reliability benefits
    - Black start Mandalay Generating Station
    - Provide emergency generation to the Goleta system
    - Provide local voltage support benefits

The information that was gathered is summarized below.

Goleta Substation

At this location the project site includes SCE-owned land both inside and outside the existing fenced substation, because insufficient space exists within the currently developed substation to house the Proposed Project. Therefore, the project would require clearing vegetation from previously undeveloped land, grading hillsides and redesigning the main access road. The gas connection would require trenching through several miles of undeveloped land and include one railroad and one highway crossing. Road redesign would require road realignment near the substation and road widening in several locations. This would require coordination with Santa Barbara County, which may require additional concurrent work along the full 3 mile length of the road. A minimum of four 66kV lines would require relocation to improve site accessibility.

Transmission Availability
The Goleta Substation has sufficient capacity to accept connection by the project. However, facility upgrades would be needed that require 12 months to construct.

Environmental Issues
Environmentally sensitive habitat is known to occur in the vicinity of this site and along the access road that would need to be expanded if the project were developed. The toxic endpoint[15] of a potential ammonia release would likely exit the fenced site boundary. The clearing of undeveloped land would likely cause permitting delay and additional environmental review requirements, which may include the preparation of an EIR. The Santa Barbara Air Pollution Control District (SBAPCD) permit processing time is expected to be lengthy based on recent permitting history for major projects. The required City permitting for road reconstruction would also likely be lengthy because of the need to negotiate ancillary road upgrades long desired by the County. Given the identified issues, permitting was unlikely to be completed in time for Summer 2007 operations, as required by the CPUC directive.

Construction Issues
Even if permits could be obtained, the necessary engineering and construction of the access road, pipeline, transmission upgrades, and developed site expansion made a project at this site unlikely to be completed by Summer 2007, as required under the CPUC Directive. Even after road reconstruction, access issues would still need to be addressed to get the required equipment to the project site due to the existing terrain.

Reliability Benefits
Siting a peaker at this location would provide generation to the Goleta subsystem, as well as local voltage and frequency benefits. However, it is unlikely that a peaker at this location would be able to black start the Mandalay Generating Station.

Summary
Potential environmental and construction issues have been identified at this location. This site will not fulfill the need for black start generation at Mandalay, the primary criteria guiding site selection. When SCE initially began the site selection process, this site was eliminated because it could not be completed in time for the 2007 start date required by the CPUC directive. Greater environmental impacts, greater costs, and fewer reliability benefits continue to weigh against its selection, particularly in light of the continuing and urgent need for black-start capable generating facilities in the region.

Mandalay Brownfield Site

At this location the project site is a previously developed brownfield site that contained a former tank farm that once served the adjacent Mandalay Generating Station. Gas and electrical connections are short and located in previously disturbed areas. The nearest homes are located 750 feet away from the Proposed Project site.

[15] The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour without experiencing or developing irreversible of other serious health effects or symptoms which could impair an individual's ability to take protective action.

Transmission Availability
The adjacent substation contains sufficient capacity to accept connection by the Proposed Project. Local system upgrades consisting of the replacement of 32 breakers will be required, but could have been completed expeditiously to meet a Summer 2007 schedule.

Environmental Issues
No significant environmental issues were identified at the proposed site. Houses are located a sufficient distance away that noise impacts can be mitigated. No known endangered species exist in the identified construction zones, and the project site does not encompass any environmentally sensitive habitat area. Sufficient land exists to site the ammonia storage and injection equipment at a location that will eliminate potential offsite impacts.

Construction Issues
No significant construction issues were identified at the proposed site. Minor geotechnical issues can be easily overcome based on past construction experience with the adjacent plant and the extensive existing geotechnical data.

Reliability Benefits
The proposed site is the best location to black start the adjacent Mandalay Generating Station. Power can be used to serve load in the Santa Barbara system during emergencies via the 66 kV system. The substation connection is deep within the distribution system and will create local reliability benefits, including voltage support, reduced equipment overloading, and reduced line losses.

Summary
No known significant or construction issues exist for this site. The site fulfills all identified local reliability criteria in the region, thereby avoiding the maximum number of additional future local generation and transmission projects. This location is the least cost, least impact, best fit of all sites that were considered.

Moorpark Substation

This project site is located in the previously graded and graveled southwest corner of the substation that fronts Los Angeles Avenue. Houses currently exist or are scheduled to be constructed immediately across the street and within approximately 200 feet of the project site on two sides. Future housing will also be constructed on the hillside to the north at elevations above the project site. There are no available gas lines in the immediate vicinity, which will require the construction of a 5.8 mile long gas line that is expected to run under paved city streets for its full length.

Transmission availability
The substation contains sufficient capacity to accept connection by the project. Local system upgrades consisting of the replacement of 32 breakers will be required.

Environmental Issues
Insufficient space may exist at this site to provide landscaping or a sound wall. This coupled with the fact that residences will be located at elevations above the project site may make it difficult to mitigate potential noise issues, resulting in a permitting delay or the inability to permit the site. Less available space in which to site the ammonia storage and injection system may prevent potential ammonia release hazards from being contained on site.

Construction Issues
Existing substation equipment would need to be relocated to make space for the peaker.

Reliability Benefits
A peaker sited at this location would not provide any local reliability benefits. It is unlikely that a peaker at this location would be able to black start the Mandalay Generating Station. This location cannot provide additional generation to the Goleta subsystem because the two systems do not have a common 66 kV connection. No local reliability benefits to the Moorpark subsystem would be produced because: a) voltage support is not an issue at this location; and b) the peaker would be connected to a bulk 230/66 kV transmission substation which eliminates the line loss benefits that would accrue if the peaker would be connected to at 66/12 kV local substation, such as is the case at the Mandalay site.

Summary
Potential environmental issues may exist at this location. This site will provide no local reliability benefits and no greater systemwide reliability benefits than a location elsewhere on SCE's system. In 2007, this site was rejected because it was less certain the site could be permitted and constructed within the required timeframe than the Mandalay site and it provided none of the desired local reliability benefits. Under the current analysis, this site would not be selected under any circumstances because it will not provide local reliability benefits.

Santa Clara Substation

At this location the only space available for a peaker project is outside the existing fence line at the southeast corner of the property, thereby impacting presently undeveloped land. Construction at this location would require extensive grading, leveling, filling, and relocation of the main drainage structure for the site to create sufficient space. Due to the existing, steep access road into the site on the East side, a massive retaining wall would have to be constructed to allow sufficient space and to contain the fill material.

Transmission availability
The substation contains sufficient capacity to accept connection by the project. Specific interconnection studies were not performed for this location, so it is not known if system upgrades will be required for connection.

Environmental Issues
Significant greenfield construction at this site suggests potential environmental impacts, and the preparation of an EIR may be required. Because the required permitting would have delayed development of the project at this site beyond the 2007 deadline, no additional environmental screening was performed.

Construction Issues
Construction at this site could not be completed in 2007. The significant engineering challenges at this site may make it non-constructible regardless of schedule. Construction at the available site is constrained by multiple existing 66 kV transmission lines. Gas pipeline construction would require a directional bore under the CA-126 freeway. Costs for this site would be significant and could be prohibitive. Because the site could not be constructed in 2007, no additional screening was performed.

Reliability
A peaker at this location would likely be capable of black starting the Mandalay Generating Station. Power from this location can be used to serve load in the Santa Barbara system during emergencies via the 66 kV system. No local reliability benefits to the Santa Clara subsystem would be produced from a connection at this location for the same reasons as the Moorpark connection.

Summary
This site possesses significant engineering challenges that may make it non-constructible. This site was rejected in 2007 because it could not be constructed on the required schedule and more favorable sites existed. Greater environmental impacts and fewer reliability benefits, coupled with the identified construction issues continue to weigh against this site.

Initial Site Screening Summary

At the time of its initial siting assessment, SCE would have preferentially sited the project at a site that could have been constructed by Summer 2007, even if that site would have provided fewer reliability benefits than alternate sites, due to its need to comply with the timing requirements of the CPUC directive. As such, constructability was ranked higher than reliability during the first pass screening.

Summary Site Ranking Criteria

Importance		1	2	3	4	5	6
Rank	Location	Available Transmission Capacity	No Significant Environmental Issues	No Significant Construction Issues	Black Start Mandalay	Goleta System Power	Local System Benefits
1	Mandalay	Y	Y	Y	Y	Y	Y
2	Moorpark	Y	N	Y	N	N	N
3	Goleta	Y	N	N	N	Y	Y
4	Santa Clara	Y	N	N	Y	Y	N

Based on the detailed screening information obtained for each site, the Mandalay site was determined to be superior in all respects. At the Mandalay site, the Proposed Project would have:

- No significant environmental impacts
- No construction issues
- Maximum reliability benefits

Furthermore, Mandalay was the site with the greatest potential to meet the required schedule, if permitting were to proceed expeditiously.

Moorpark was judged superior to Goleta as a backup site during the initial assessment period because it was judged to have the potential to achieve the 2007 deadline, even though this location did not provide the desired reliability benefits, as long as further analysis was able to demonstrate that the site could be quickly permitted.

Site Reassessment

As previously discussed, by February 2007, when it became apparent that the Mandalay project would not be constructed in time to meet Summer 2007 needs, SCE reassessed the Project to determine if the peaker would be better placed at a different location on the SCE system to provide needed reliability benefits. At this point, a project that was not already under environmental review could not be constructed by the required deadline. With this specific timing constraint eliminated, the most important criteria became finding a site that would provide the most local reliability benefits. The Ventura/Santa Barbara system remains the most important location on the SCE system in which to site new black start peaking generation. Therefore, this area ranks even higher when the specific timing requirements are no longer relevant. Although the initial Summer 2007 deadline has passed, timing is still an important criterion.

EXHIBIT NO. 13
Application
A-4-OXN-07-096
So. Cal. Edison

After removing criteria directly related to Summer 2007 timing, transmission capacity remains the threshold issue for project viability. Although the level of expected environmental impacts and the difficulty/cost of project construction are still important in distinguishing between similar sites, the primary consideration is now local reliability.

Importance		1	2	3	4	5	6
Rank	Location	Available Transmission Capacity	Black Start Mandalay	Goleta System Power	Local System Benefits	No Significant Environmental Issues	No Significant Construction Issues
1	Mandalay	Y	Y	Y	Y	Y	Y
2	Goleta	Y	N	Y	Y	N	N
3	Santa Clara	Y	Y	Y	N	N	N
4	Moorpark	Y	N	N	N	N	Y

Based on the most current assessment of potential project sites, Mandalay remains the preferred location for the same reasons it was initially selected. It is the site with: (1) the least environmental impacts (2) that best meets the purpose and need of the Proposed Project; and (3) entails the least complicated construction at lowest cost to SCE's customers.

In this analysis, Goleta ranks second, because even though this location does not provide black start capability, it provides important local reliability benefits to the Goleta subsystem that would otherwise require the construction of a new generation project in the Santa Barbara area. In this event, a second generation project would need to be proposed and constructed in the Oxnard area in order to provide black start capability. Santa Clara is ranked third because it is unlikely that a project could be constructed at this location under any circumstances or that project costs would be reasonable. In this analysis, Moorpark ranks fourth. Since it provides no local reliability benefits, a project would not be constructed at this location.

Non-SCE Owned Property

As part of the current assessment, SCE also reviewed existing customer substations with available adjacent land to determine if these locations could provide the same reliability benefits as the Mandalay site while allowing construction outside of the coastal zone. Because the Mandalay Generating Station can only be black started from within the Santa Clara subsystem when the peaker is connected is made to a non-bulk power 66 kV substation, only customer substations within Santa Clara were assessed. These sites included:

EXHIBIT NO. 13
Application
A-4-OXN-07-096
So. Cal. Edison

Substation	City	Screening Assessment
Camgen	Camarillo	Cogen. Serves CSU Channel Islands.
Charmin	Oxnard	Cogen. Serves Proctor & Gamble.
Getty	Ventura	Customer sub. Serves Chevron.
Missile	Oxnard	Customer sub. Serves Point Mugu Air Station.
Procgen	Oxnard	Cogen. Serves Proctor & Gamble.
Three M	Camarillo	Customer sub. Serves Imation Corp.
Unioil	Oxnard	Customer sub. Serves DCOR.
Williamette	Port Hueneme	Cogen. Serves Weyerhaeuser.

Circuit diagrams were reviewed to determine the circuit distance from these locations to the Mandalay Generating Station. These distances are as follows:

Substation	Distance
Camgen	28 miles
Charmin	18 miles
Getty	19 miles
Missile	30 miles
Procgen	18 miles
Three M	28 miles
Unioil	0.7 miles
Williamette	36 miles

In the Oxnard area, a black start generator must be located within 10-12 circuit miles to allow a successful black start. Only the Unioil Substation is located close enough to the Mandalay Generating Station for this to occur. The Unioil 66 kV substation is located within the DCOR oil processing facility located adjacent and to the west of the project site and between it and the ocean. Therefore, connecting the peaker to this location would not move its proposed footprint. As such, the existing site remains the preferred alternative.

Discussion of Project Alternatives

The following project alternatives were identified from a review of comment letters and testimony provided during both the City of Oxnard and the Commission's environmental review processes.

1) No Project Alternative

The Ventura/Santa Barbara system west of the Pardee Substation area has been identified as the area on the SCE system most in need of the Proposed Project. In this area, local reliability needs include: 1) providing black start service for the Mandalay Generating Station, and 2) providing additional emergency generation to the Goleta subsystem through the 66 kV system. No other projects have been proposed that will

provide the reliability benefits of the Proposed Project. If the Proposed Project is not constructed, one or more future generation or transmission projects will need to be constructed in this same area to address these issues.

This alternative does not satisfy the fundamental purpose and need for the project.

2) Renewable Energy/Demand Side Management/Energy Efficiency Alternative

Renewable energy, demand side management and energy efficiency projects are valuable to help reduce demand on SCE's system; however, they do not fulfill the purpose and need for the Proposed Project. Projects in these three categories are neither black start capable or dispatchable as required by the CPUC directive. More importantly, none of these project categories have the physical characteristics required to provide black start capability to the Mandalay Generating Station, nor to provide the voltage support inside the Santa Clara system that is required to allow additional emergency generation to be routed into the Goleta system via the 66 kV network.

Wind and solar project cannot be counted on to start at all times and provide stable, continuous power over an extended period of time (i.e., 12-24 hours) as is required during emergency situations. The wind is not always blowing and the sun is not always shining. Although demand side management and energy efficiency projects are effective in reducing the demand for electricity, they do not generate additional electricity, and therefore cannot provide reliability benefits.

The electric system needs many types of projects to function effectively. SCE is pursuing numerous renewable, demand side management, and energy efficiency projects in parallel with the Proposed Project. The same CPUC directive that directed SCE to install new peaking capacity also ordered SCE to aggressively expand its Air Conditioner Cycling Program by 300 MW.

> "… I direct Southern California Edison Company (SCE) to expand its Air Conditioning Cycling Program (ACCP, also referred to as Summer Discount Plans) to target an additional 300 megawatts (MW) of program capacity for the summer 2007 season." (ACR, p. 2)

In parallel with developing the proposed peakers by the Summer 2007, SCE was successful in adding 187 MW of new ACCP capacity to its program, resulting in a total demand response capability of 1,260 MW, the largest such program in the state. This capacity represents over 28 times the generation provided by the Proposed Project.

SCE is also recognized as the nation's leader in energy efficiency programs. Between 2004-2013, SCE plans to develop programs to achieve cumulative energy savings goal of 2,228 MW, more than 49 times the generation from the Proposed Project. Based on the programs that have been implemented to date (2004-2008), SCE is expected to achieve more energy efficiency benefits for its customers than any utility in the country by the end of this year. In the Ventura County area alone, SCE has contributed

EXHIBIT NO. 13
Application
A-4-OXN-07-096
So. Cal. Edison

$2.2 Million to the Ventura Country Regional Energy Alliance (VCREA), a joint powers agency composed of public agencies working in collaboration to implement energy efficiency programs in Ventura County. The City of Oxnard is a member of the alliance and benefits from these funds.

SCE also leads the nation in renewable energy procurement. SCE purchases more than one-eighth of all renewable electricity produced for sale in the U.S., including 90% of all solar power generated. Since 2002, SCE has entered into long term contracts for up to 4,500 MW of renewable capacity, more than 100 times the generation from the Proposed Project. A majority of these contracts are for the development of new facilities throughout the Southern California region. The State's renewable procurement targets are some of the most aggressive in the Nation and SCE is pursuing a variety of alternatives to help meet these goals.

At the local level, SCE is the administrator of $1 billion in funding under the California Solar Initiative that is available to all SCE customers, including customers in the Ventura/Santa Barbara area, on a first come, first serve basis to defer the cost of installing up to 805 MW of small scale (1 kW-5 MW) residential and commercial rooftop solar projects within SCE's service territory. SCE has also proposed the largest utility-owned industrial scale rooftop solar project in the world. This project would install 250 MW of solar panels on 65 million square feet of unused industrial rooftops in Southern California. Jointly, these two projects will provide over 23 times the amount of generation from the Proposed Project.

Nonetheless, despite the fact that SCE is conducting all of the above projects, they neither replace nor reduce the purpose and need of the Proposed Project.

3) Existing Local Cogeneration Alternative

Existing cogeneration units located within the Santa Clara subsystem do not meet the purpose and need of the Proposed Project. Cogenerators typically utilize similar hardware to the Proposed Project in order to simultaneously create steam for industrial processes and power for on-site equipment. Excess power is sold to SCE. Although similar hardware is used, the equipment is configured and operated differently than peakers. Cogenerators can also be operated at a relatively constant level without producing steam to either provide power to an industrial process or to burn a waste stream from an industrial process, such as a landfill. Again, these units are not configured to operate in the same fashion as a peaker.

The output of all existing generation resources, including cogenerators, was taken into account by the CAISO and the CPUC prior to their determination that more peak generation was necessary. Therefore, the CPUC order to construct 250 MW of new generation would not be satisfied by assuming that existing cogeneration units can provide the needed electricity.

Further, because the output of cogenerations are designed to remain stable to support industrial processes, they are not dispatchable on peak, nor can they provide the other system reliability benefits that would be provided by a peaker. Finally, these units are not configured for black start capability and have already been taken into consideration when determining the amount of generation needed within the Santa Clara Subsystem to allow emergency power to be routed into the Goleta subsystem.

Consequently, these units do not meet the purpose and need of the Proposed Project.

4) EF Oxnard Alternative

EF Oxnard contacted SCE in March 2007 suggesting that its site would be suitable for the Proposed Project. At that time, SCE conducted a preliminary screening investigation of the site and concluded that the site did not meet its initial screening criteria. SCE has reviewed this site again as part of its current review and has reached the same conclusion.

The primary reason the site is not suitable is that it does not posses the required amount of unoccupied land to house the project's 2-3 acre footprint. The land that was identified by EF Oxnard as available for SCE's use contains less than 0.5 acres of available space. Even assuming that existing structures could be removed, only 1 acre of space is available in which to construct both the project and a new substation. (See Attachment B)

The existing substation and transmission lines at this location were not designed to accommodate more than a single generating unit. The existing underground 66 kV transmission line is located in a vault that would need to be expanded to house a second line. In addition, a new loop substation would need to be constructed to accommodate the additional SCE peaking unit. This new substation would require an additional 0.25 acres of contiguous fenced space.

Because there is insufficient space at this location to construct the Proposed Project, this alternative does not meet the purpose and need of the Proposed Project.

5) East of Harbor Boulevard Alternative

At the time the Proposed Project was originally sited, the City of Oxnard asked SCE to consider constructing the peaker on SCE-owned land on the east side of Harbor Boulevard behind the Mandalay 66 kV substation. This location consists of previously undeveloped, but degraded dune habitat. SCE considered this site as requested, but concluded that a peaker at this location would:

1) Still be located within the coastal zone;
2) Require clearing 2-3 acres of undeveloped dune land for the project, as well as an additional 2-3 acres for laydown and the natural gas metering station;

3) Require the additional construction of a new transmission line and access road across currently undeveloped land;
4) Be more visible to residents, because it would not be viewed against the backdrop of the Mandalay Generating Station;
5) Have a toxic endpoint from a potential ammonia tank release that would extend outside the project site;
6) Be located closer to residences once the adjacent agricultural land is converted to residential development.
7) Not be consistent with the principal of preferentially using brownfield sites to construct new generation

It was concluded that this location would likely have significantly greater environmental impacts than the proposed location.

6) Mandalay Generating Station Alternative

Use The Existing Mandalay Generating Station Peaker

Using the existing Reliant Energy peaker does not meet the purpose and need of the Proposed Project. The output of this peaker was taken into account when the need for additional generation was identified by the CAISO and the CPUC. Therefore, the CPUC order to construct 250 MW of new generation would not be satisfied by assuming that the existing unit is providing the needed electricity.

Further, this unit is not capable of meeting the grid reliability requirements needed in the area. The Reliant peaker has been in operation since 1970 and is capable of producing up to 140 MW of energy on peak, although its operation is limited to approximately 85 hours per year due to air quality permit emission limits. The equipment is over 30 years old and has been discontinued, such that parts are no longer readily available in the event of a breakdown. This unit is not configured to either black start or to provide auxiliary power to the main Mandalay generators; therefore, it cannot provide black start services. Due to its limited hours of operation, it cannot provide energy to the Goleta subsystem during extended outages. For these reasons, the existing unit does not have the desired reliability characteristics for an emergency function.

Because it was concluded that unit does not conform to the requirements of the CPUC directive, and neither provides additional energy or capacity benefits nor the required local reliability benefits, this alternative does not satisfy the purpose and need of the Proposed Project.

Replace the Existing Mandalay Generating Station Peaker

The existing Mandalay Generating Station peaker is operated by Reliant Energy. SCE neither owns property nor makes business decisions on behalf of Reliant Energy. SCE is not aware of any plans for Reliant Energy to retire this unit, which currently supplies power to the SCE system and produces revenue for Reliant's shareholders.

Construction on the Reliant site was originally rejected in 2007 because SCE-owned land was needed to meet the required schedule. Although the Summer 2007 deadline has passed, timing is still an issue.

As noted above, the CPUC directive requires 250 MW of new SCE-owned generation. Therefore replacing the existing 140 MW peaker with the proposed 45 MW peaker would not meet the purpose and need of the Proposed Project. A project capable of supplying a net total of 185 MW of power would be needed to ensure that an additional 45 MW of power would be available. This would require designing and permitting a significantly larger and completely different project than what has been proposed. The Proposed Project does not include removal and replacement of existing equipment, only the construction of a project on clear and available land. Such a project would trigger lengthy CEC review, which is inconsistent with project objectives.

Finally, any new project would be SCE-owned. This would require independent support equipment in order to provide mechanical and electrical separation from the Reliant facility. Even assuming the original 45 MW project, this requirement would result in a larger footprint (2-3 acres) than is being utilized by the existing equipment, which would require siting the unit at a different location on the property.

For all these reasons, replacing the existing unit with the Proposed Project is not viable, and would not meet the purpose and need of the Proposed Project.

Build SCE's Peaker on the Mandalay Generating Station Property

As noted above, SCE does not own this property and Reliant Energy has not indicated its willingness to sell SCE a portion of its land for the proposed project. Attempting to negotiate a real estate transaction for a portion of its property would delay the project and has no guarantee of success.

Further, based on a review of the site layout, the only available parcel of land that is of sufficient size to house the Proposed Project is located to the north of the existing generating units. This land is located immediately adjacent to the beach, sensitive dune habitat, and McGrath State Beach. This location would place the Proposed Project closer to sensitive habitat and would require the construction of a new transmission line across undeveloped land.

At this location, the peaker would:

1) Still be located within the coastal zone;
2) Would be located immediately adjacent to the beach, dune habitat, and McGrath State Beach park;
3) Require the construction of a new transmission line across currently undeveloped land;
4) Possess potential ammonia tank hazards that would extend outside the project site into publicly accessible areas; and

5) Be inconsistent with the principal of preferentially using brownfield sites to construct new generation.

Because constructing the peaker at this location would have greater environmental impacts than at its current location, the current location remains the preferred alternative.

7) Non-Coastal Location in the Ventura/Santa Barbara Area Alternative

At the time the peaker project was originally sited, SCE considered all SCE-owned property on its system, including all locations in the Ventura/Santa Barbara County areas located at or near 66 or 155 kV subtransmission lines. Since that time, SCE has also reviewed potential customer substation properties against its required criteria. In all cases, the current project site is environmentally superior, less costly, and provides the greatest amount of system reliability benefits.

Conclusion

SCE has conducted a detailed needs and siting assessment for the Proposed Project, both at the time of its original siting and subsequent to that time. Based on all available information, the Proposed Project site on SCE-owned brownfield land adjacent to the existing Mandalay Generating Station is the best location to meet the purpose and need of the project among the various alternatives considered, and is also the environmentally-preferred site.

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

March 19, 2009

Ms. Alison Dettmer and Mr. Cassidy Teufel
California Coastal Commission
45 Fremont Street, Suite 2000
San Francisco, CA
94105-2219

Re: Appeal No. A-4-OXN-07-096 (Southern California Edison Company, McGrath Beach "Peaker" Power Plant)

Dear Ms. Dettmer and Mr. Teufel:

At the August 6, 2008 Commission hearing, it was asserted that Southern California Edison ("SCE") inappropriately under represented the true impacts from the McGrath Beach Peaker by manipulating the emissions and hazards modeling performed for the Ventura County Air Pollution Control District ("VCAPCD"). Specifically, there was concern that SCE had "averaged" its emissions, rather than assessing impacts based on reasonable worst case assumptions for the applicable averaging time.

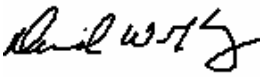
These assertions were incorrect and these concerns unfounded. The attached document, entitled Maximum Potential Air Quality Impacts From McGrath Peaker Project Operations, explains the assumptions SCE used and its modeling results. SCE assumed a "worst-case" exposure level and assumed multiple operating scenarios that exceed the peaker's permitted operating hours. The maximum predicted air quality concentrations and carcinogenic and non-carcinogenic risks associated with human exposure both at the Project fence line and in receptor areas located within 1 kilometer do not pose any significant risk to human health. As such, no established emissions/air quality standards or health-based exposure thresholds are exceeded.

EXHIBIT NO. 14
Application
A-4-OXN-07-096
So. Cal. Edison

Moreover, the maximum potential criteria pollutant and toxic air contaminant emissions from the proposed Project were modeled to the satisfaction of the VCAPCD (see attached email from Terri Thomas of the VCAPCD). The VCAPCD agrees with the conclusion that air emissions from the proposed Project will not result in significant long or short term adverse health effects.

Please contact me at (626) 302-2149 or david.kay@sce.com if you have any questions or need additional information.

Sincerely,



David W. Kay
Manager, Environmental Projects

Attachments: Maximum Potential Air Quality Impacts From McGrath Peaker Project Operations;
Terri Thomas of VCAPCD email dated 9/26/08 to Uve Sillat of SCE

EXHIBIT NO. 14
Application
A-4-OXN-07-096
So. Cal. Edison

September 8, 2008

Maximum Potential Air Quality Impacts
From McGrath Peaker Project Operations

Issue of Concern:

During the August 6, 2008 Coastal Commission hearing regarding the permitting of Southern California Edison's ("SCE") 45 Megawatt proposed Peaker Generator Project at McGrath Beach (the "Project"), one of the Commissioners expressed concern that the majority of the peaker emissions would occur only during June to September each year (see transcripts, P. 61, Lines 24-25; P. 62, Lines 1-7). The Commissioner was concerned that such emissions would occur during the time of year when the highest air pollution levels occur in Ventura County and that SCE had not fully or appropriately evaluated such air quality impacts from the Project. This is not the case. In fact, the SCE evaluation assumed a "worst-case" exposure level far greater than would actually occur during peaker operation, and assumed multiple operating scenarios that exceed the permitted operating hours for the unit. Under all of these scenarios, no established emissions and air quality standards are exceeded nor health-based exposure thresholds approached due to permitted operation of the peaker facility.

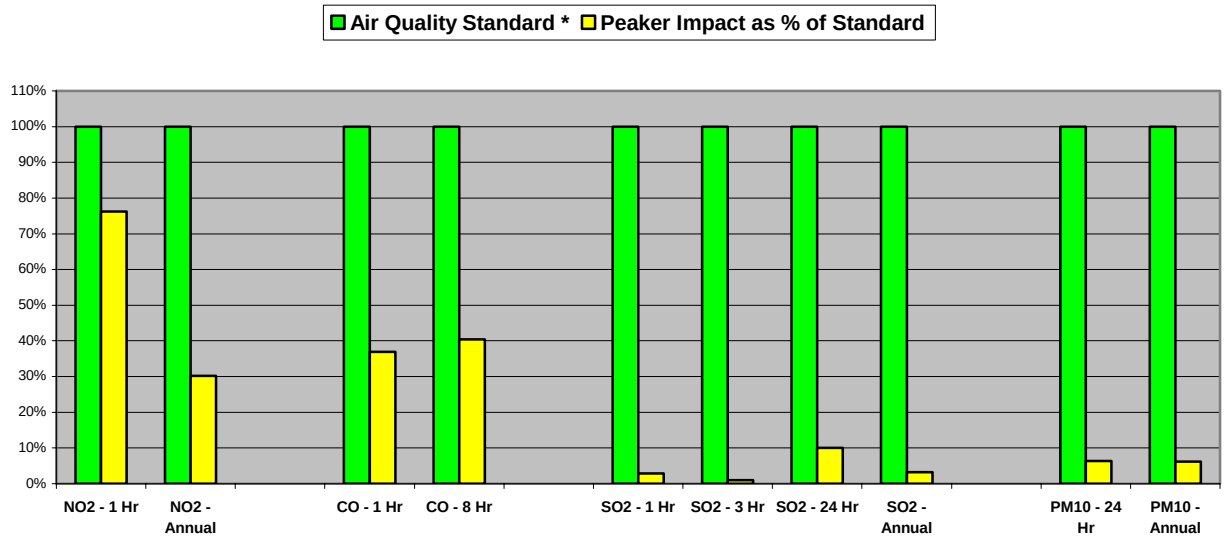
Air Quality Modeling of Project Impacts Compared to Ambient Air Quality Standards:

SCE supported the City of Oxnard Planning Division's Initial Study ("IS") of environmental impacts from the Project by analyzing the Project's permitted potential to emit for each of the criteria pollutants for which modeling is required by the Ventura County Air Pollution Control District ("VCAPCD"). The results of this air quality impact modeling assessment[1] are depicted in Figure 1 below as a percentage of the air quality standard for each pollutant and averaging period required by VCAPCD regulations. The data behind the graph are shown in the Appendix.

[1] The air quality impact modeling used for the air quality assessment was approved by the Ventura County Air Pollution Control District as part of SCE's application to the district for an Authority To Construct permit. The air quality standards modeling used the USEPA Industrial Source Complex – PRIME (ISC-PRIME, version 04269) dispersion model, used in accordance with VCAPCD guidance.

EXHIBIT NO. 14
Application
A-4-OXN-07-096
So. Cal. Edison

Figure 1. McGrath Peaker Maximum Predicted Air Quality Impacts As a Percentage of Ambient Air Quality Standards



*** Monitored PM 10 in Ventura County Exceeds the PM10 AAQS Without Peaker Operation. Therefore, EPA's Significant Impact Levels for PM10 are Used for Comparison with Peaker Impacts.**

These air quality modeling results assess both short-term (i.e., less than or equal to 24-hours) and long-term (annual) ambient air quality standards ("AAQS"). Cumulative air quality impacts were assessed by adding the model-predicted impacts to representative, pre-existing background air quality concentrations to determine total air quality concentrations for comparison against the AAQS. The chart demonstrates that all predicted total air quality concentrations associated with the proposed project are well below the AAQS.

To ensure that potential impacts from operation of the Project were evaluated under all meteorological conditions, the modeling was conducted for every hour of a 3-year period using VCAPCD-approved meteorological data. Potential impacts were evaluated under all meteorological conditions for each 1 hour, 3 hour, 8 hour, 24 hour, and annual period, as applicable, based on the averaging time of each corresponding air quality standard; the highest impact was identified in each case in regard to each air quality standard. The results are shown in the chart above. The impacts were assessed (1) at the Project fence line by receptors placed every 30 meters, and (2) from the fence line to one kilometer from the fence line by receptors with 100 meter spacing. The extent of the receptor grid is more than adequate to resolve the maximum predicted impacts due to facility operations since the majority of the maximum impacts occurred in the near-field of the Project site.

Air Quality Modeling of Project Impacts Compared to Air Toxics Risk Assessment Thresholds:

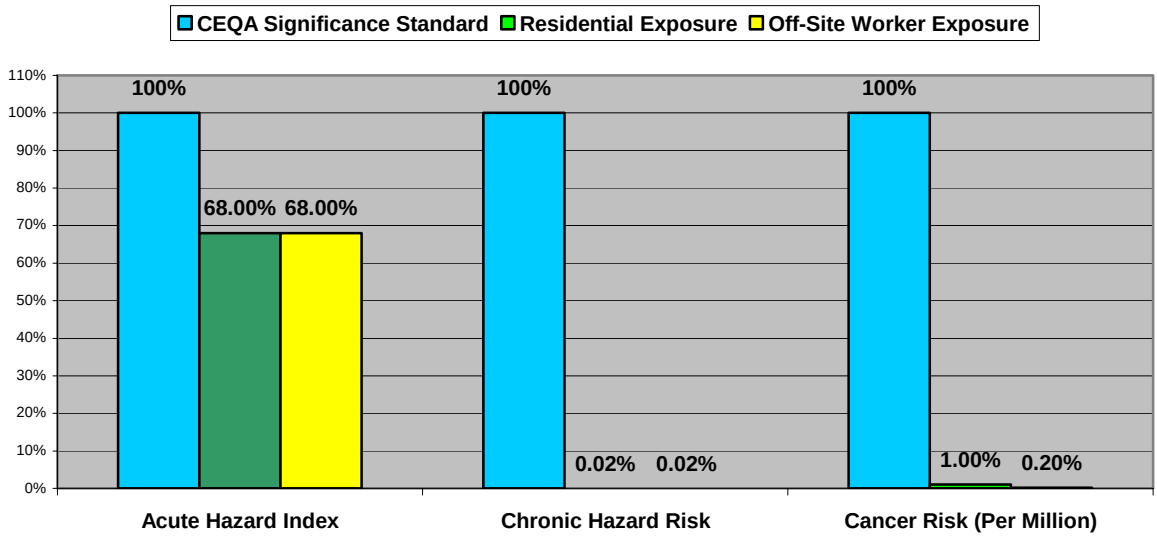
The IS also assessed the potential human health risks from emissions of Federal Hazardous Air Pollutants ("HAPs") and California Toxic Air Contaminants ("TACs") using

EXHIBIT NO. 14
Application
A-4-OXN-07-096
So. Cal. Edison

California Office of Environmental Health Hazard Assessment ("OEHHA") guidance,[2] and the California Air Resources Board ("CARB") Hot Spots Analysis and Reporting Program.[3] The TAC risk modeling used the same 3-year period of meteorological data and receptor spacing that was used in the criteria pollutant modeling to resolve the maximum predicted risks due to Project operation.

The results of this assessment show that the proposed Project's emissions of HAPs and TACs result in insignificant cancer risks and acute and non-carcinogenic chronic hazardous impacts from Project operations. Figure 2 below depicts these insignificant results from the Project. The data behind the graph are shown in the Appendix.

Figure 2. McGrath Maximum Predicted Air Toxics as a Percentage of The CEQA Significant Risk Thresholds



Conclusion:

The maximum potential criteria pollutant and toxic air contaminant emissions from the proposed Project were modeled to the satisfaction of the VCAPCD (March 19, 2007 VCAPCD Memorandum). The maximum predicted air quality concentrations, and carcinogenic and non-carcinogenic risks, associated with human exposure at the Project fence line, as well as in receptor areas located within 1 kilometer (including the nearby planned residential community) do not pose any significant risk to human health for both residents and off-site workers.

---

[2] "Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments," published by the California Office of Environmental Health Hazard Assessment (OEHHA) (OEHHA 2003).

[3] The IS assessment of project impacts from emissions of HAPS used The CARB Hot Spots Analysis and Reporting Program (HARP, Version 1.3).

EXHIBIT NO. 14
Application
A-4-OXN-07-096
So. Cal. Edison

The air quality standards are set by EPA and the state of California at levels that protect humans from health impacts with an added margin of safety, as required under federal and state laws. The air quality standards are designed with differing averaging times (e.g., 1-hour, 3-hour, 8-hour, 24-hour, and annual averaging) based on scientific health morbidity and mortality studies.

Therefore, the VCAPCD, OEHHA, and CARB approved methods used by the Project for assessing the criteria pollutant and toxic air contaminant health impacts provide the public with full assurance that SCE's McGrath Peaker Project results in insignificant impacts on human health and consequently, the Project authority to construct permits should not be withheld by the Commission based on assertions of air quality impacts.

Appendix

Predicted Air Quality Impacts and Toxic Air Contaminant Risk Levels – Initial Study Data Tables

Pollutant	Averaging Period	Maximum Predicted Impact ($\mu g/m^3$)	Background Conc. ($\mu g/m^3$)	Total Conc. ($\mu g/m^3$)	SIL ($\mu g/m^3$)	AAQS ($\mu g/m^3$)	Increment ($\mu g/m^3$)
NO_2	1-hour	160.70	97.8	258.50	n/a	338	n/a
	Annual	8.37E-03	16.9	16.90	1	56	25
CO	1-hour	204.62	8,280.0	8,484.62	2000	23,000	n/a
	8-hour	16.12	4,025.0	4,041.12	500	10,000	n/a
SO_2	1-hour	0.26	18.3	18.56	n/a	655	n/a
	3-hour	0.08	13.1	13.18	25	1,300	512
	24-hour	6.59E-03	10.5	10.51	5	105	91
	Annual	7.0E-05	2.6	2.60	1	80	20
PM10	24-hour	0.11	127.2	127.31	5	50	30
	Annual	1.11E-03	31.0	31.00	1	20	17

[1] Background PM10 concentrations exceed the California AAQS and increments. Project impacts are insignificant (i.e.,. less than the Significant Impact Level [SIL]), thus by definition the project impacts will not cause or contribute to a violation of the AAQS.

Receptor	Cancer Risk (Per Million)	Chronic Hazard Index	Acute Hazard Index
Residential	0.01	0.0002	0.68
Off-Site Worker	0.002	0.0002	0.68
CEQA Significance Thresholds	*1.0*	*1.0*	*1.0*
Significant? (Yes/No)	**No**	**No**	**No**

EXHIBIT NO. 14
Application
A-4-OXN-07-096
So. Cal. Edison

From: "Terri Thomas" <terri@vcapcd.org>
Sent: Friday, September 26, 2008 2:54 PM
To: Uve.Sillat@sce.com
Cc:
Subject: RE: Paper on McGrath Peaker Impacts

I reviewed the document titled "Maximum Potential Air Quality Impacts From McGrath Peaker Project Operations", dated September 8, 2008 and agree with the conclusion that air emissions from the project will not result in significant long term or short term adverse health effects.

Terri Thomas
VCAPCD
805/645-1405

EXHIBIT NO. 14
Application
A-4-OXN-07-096
So. Cal. Edison

Uve Sillat/SCE/EIX
09/26/2008 09:57 AM

To David Kay/SCE/EIX@SCE
cc
bcc
Subject Fw: Paper on McGrath Peaker Impacts

History: This message has been replied to.

FOR INTERNAL USE ONLY

----- Forwarded by Uve Sillat/SCE/EIX on 09/26/2008 09:56 AM -----

"Terri Thomas"
<terri@vcapcd.org>
09/25/2008 04:00 PM

To Uve.Sillat@sce.com
cc "John Harader" <johnh@vcapcd.org>, "Keith Duval" <keith@vcapcd.org>, "Kerby Zozula" <kerby@vcapcd.org>, "Mike Villegas" <mike@vcapcd.org>
Subject RE: Paper on McGrath Peaker Impacts

I reviewed the air toxics health risk assessment (HRA) for the proposed McGrath Peaker. The HRA adequately demonstrated that air emissions from the project will not exceed VCAPCD levels for permit issuance. Both long term (cancer and chronic noncancer) and short term (acute noncancer) impacts were addressed using reasonable worst case assumptions for the applicable averaging time.

My review memos are attached.

Terri Thomas
VCAPCD
805/645-1405

7891edisonpeakerrev.doc edisonpeakerceqa.doc

EXHIBIT NO. 14
Application
A-4-OXN-07-096
So. Cal. Edison

VENTURA COUNTY
AIR POLLUTION CONTROL DISTRICT
Memorandum

TO: Alicia Stratton DATE: June 6, 2007

FROM: Terri Thomas

SUBJECT: Health Risk Assessment for Southern California Edison

I reviewed the health risk assessment submitted for Southern California Edison. SCE proposes to operate an electricity peaker turbine adjacent to the Reliant Mandalay Generating Station. The peaker facility includes a gas turbine and a natural gas fired black start engine. Natural gas combustion produces a number of toxic compounds some of which are carcinogenic and others that have acute and chronic noncancer adverse health impacts.

In November 2006, I reviewed a very similar health risk assessment that was submitted for APCD Authority to Construct Application 07891-100. My comments on that risk assessment are attached.

The only significant difference between the current (February 2007) risk assessment and the November assessment is the emission estimates for the peaker turbine. The February 2007 assessment does not assume any reduction in organic toxics for the catalyst. The current analysis also assumes fuel consumption in the peaker of 957,207 MMBtu/yr vs. 849,000 MMBtu/yr in the Authority to Construct analysis.

I reran the assessment with the new emission rates and the conclusion remains the same.

EXHIBIT NO. 14
Application
A-4-OXN-07-096
So. Cal. Edison

VENTURA COUNTY
AIR POLLUTION CONTROL DISTRICT
Memorandum

TO: John Harader DATE: November 27, 2006

FROM: Terri Thomas

SUBJECT: Health Risk Assessment for Southern California Edison (Application 07891-100)

I reviewed the health risk assessment submitted for Southern California Edison. SCE proposes to operate an electricity peaker turbine adjacent to the Reliant Mandalay Generating Station. The peaker facility includes a gas turbine and a natural gas fired black start engine. Natural gas combustion produces a number of toxic compounds some of which are carcinogenic and others that have acute and chronic noncancer adverse health impacts.

The health risk assessment used the ARB HARP model. The equipment was assumed to have vertical stacks without raincaps. Receptors were placed at 25 meters intervals on the property line and from the source and every 100 meters to a distance of 300 meters from the source and every 100 meters to a distance of 2 kilometer. Receptors were also placed at a number of nearby residences, and proposed residences, and workplaces. Meteorological data from the District's Emma Wood (Ventura) station was used.

Emissions from the turbine were calculated using emission factors from the AP-42. The emission calculations looked correct. Note that 50% control of organic toxics was assumed for the catalyst. Emissions from the black start engine were calculated based on the ARB CATEF database. Emission factors for natural gas fired engines are available in AP-42, so it is not clear why CATEF factors were chosen over AP-42. I don't have any information to determine whether the CATEF or the AP-42 emission factor is more representative of the actual emissions from the proposed engine.

The maximum calculated acute hazard index was 0.8 at the eastern property line (Harbor Boulevard). The acute hazard index was due to emissions of acrolein from the black start engine. The CATEF emission factor that was used is an order of magnitude lower than the AP-42 factor. Use of the AP-42 factor would result in a calculated acute hazard index at the property line greater than 1. The hazard index would not exceed 1 at any point beyond the property line. There is no EPA or ARB approved stack test method for acrolein. ARB is currently recommending that, under the "Hot Spots" program, reporting of acrolein be postponed until a test method is available. (Proposed Amendments to the Emission Inventory Criteria and Guidelines Report for the Air Toxics "Hot Spots"

Program, Staff Report: Initial Statement of Reasons for Proposed Rulemaking, November, 2006). Due to the uncertainty in the data, I do not recommend that any action be taken regarding potential acrolein emissions from the engine.

The concentration and health risk calculations were correct based on the inputs used. The calculated health risks were below the District's permit issuance levels.

EXHIBIT NO. 14
Application
A-4-OXN-07-096
So. Cal. Edison

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

February 5, 2009

Mr. Cassidy Teufel
California Coastal Commission
45 Fremont, Suite 2000
San Francisco, CA
94105-5200

Agenda Item W7a

Re: Appeal No. A-4-OXN-07-096 (Southern California Edison Company, Oxnard "Peaker" Power Plant)

Dear Mr. Cassidy Teufel:

We are writing in response to questions raised at the August 6, 2008 Coastal Commission hearing as well as your request for additional analysis of the McGrath Beach Peaker project (the "Project") site conditions, specifically whether the condition of the areas that will be impacted by the placement of the transmission line poles and the natural gas pipeline might constitute sand dune habitat that qualifies as environmentally sensitive habitat area under the Oxnard local coastal program. To provide additional information about these areas, we asked biologist/botanist Tony Bomkamp, of Glenn Lukos Associates, to conduct a study quantifying the composition and approximate cover of the vegetation at the Project site (attached). For the reasons discussed in detail below, neither the proposed site of the peaker nor the areas where the transmission line poles or the natural gas pipeline will be located (collectively the "Project Site") qualify as environmentally sensitive habitat area because: (1) the City of Oxnard's coastal land use plan specifically designates sand dune habitat that qualifies as environmentally sensitive habitat area and the Project Site is not so designated; (2) the Project Site is so degraded that it does not fit within the definition of environmentally sensitive habitat areas established by either the Coastal Commission or the City, as confirmed by the attached biological survey; and (3) the designation of the Project Site as an environmentally sensitive habitat area would be inconsistent with the City's prior interpretation and application of its own local coastal program.

I. THE CITY'S LCP DOES NOT DESIGNATE THE PROJECT SITE ESHA

The City adopted the Oxnard Local Coastal Program ("LCP"),[1] which includes the Oxnard Coastal Land Use Plan ("CLUP") and sets forth the specific regulations implementing the Oxnard CLUP. The Coastal Commission reviewed the LCP to ensure it conformed to the policies and standards of the Coastal Act and subsequently certified it. The LCP defines ESHA

[1] The LCP is codified in Chapter 17 of the Oxnard Municipal Code as the Oxnard Coastal Zoning Ordinance.

EXHIBIT NO. 15
Application
A-4-OXN-07-096
So. Cal. Edison

as those areas designated ESHA in the CLUP -- ESHA is "[a]ny area, *as identified by the Oxnard coastal land use plan* [CLUP]...."[2]

Although the CLUP incorporates the Coastal Act's definition of ESHA -- defining ESHA as any "area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities or developments"[3] -- it explicitly designates and maps four specific habitat types as ESHA. None of the designated or mapped sensitive habitat areas identify or encompass any portion of the Project Site.

Specifically, the CLUP identifies "four examples of sensitive habitats" within the City's coastal zone: "wetlands, sand dune, riparian areas and McGrath Lake."[4] With respect to sand dunes, the relevant sensitive habitat at issue here, the CLUP designates five areas of sand dunes in the coastal zone that qualify as ESHA. The language used in the CLUP's designation of sensitive sand dune habitat is exhaustive – "Sand dunes are found in five areas of the coastal zone":

(1) "[a] 26-acre area of dunes at the intersection of Fifth Street and Harbor Boulevard,"
(2) the area "within the 54-acre parcel located between Harbor Boulevard and the Edison Canal, and south of Wooley Road,"
(3) an area "located at the northerly end of the "The Colony" property adjacent to the Oxnard State Beach Park site,"
(4) "[a] chain of dunes parallel the beach from the Santa Clara River mouth south to Fifth Street," and
(5) an area "located at Ormond Beach."[5]

These areas are set forth specifically in Map 7 of the CLUP. The Project Site is not located within any of the five designated sand dune areas (or any other specified sensitive habitat area). Thus, the Project Site is not ESHA.

The Project Site is divided into adjacent locations separated by Harbor Boulevard and the Mandalay Canal. At the location west of Harbor Boulevard, the peaker plant would be constructed. At two other locations east of Harbor Boulevard, the natural gas pipeline and transmission line poles would be installed. None of these locations are ESHA under the CLUP. The peaker plant, while located near the "chain of dunes parallel the Santa Clara River mouth to Fifth Street," most of which are within either "McGrath State Beach Park or the recently acquired, unimproved Mandalay Beach County Park,"[6] would not be constructed on any land containing sensitive sand dune habitat or any land so designated.

---

[2] Oxnard City Code § 17-3 (emphasis added).

[3] City of Oxnard CLUP p. IV-3.D (citing Coastal Act Policy 30107.5).

[4] City of Oxnard CLUP § 3.2.2 (III-7).

[5] City of Oxnard CLUP § 3.2.2 (III-8).

[6] *Id.*

The Project components east of Harbor Boulevard -- the natural gas pipeline and transmission line poles -- are not located in any area designated under the CLUP as a sensitive habitat area. Specifically, the two parcels of SCE-owned land where the natural gas pipeline and electrical transmission lines would run are isolated and separated from any of the CLUP's designated sensitive habitat areas. As such, pursuant to the City's detailed and exhaustive designation of ESHA, no part of the Project's natural gas pipeline or transmission line poles would be located on ESHA.

Therefore, because the LCP specifically designates the sand dune habitat that constitutes ESHA and this designation does not include any portion of the Project Site, a finding by the Coastal Commission that the Project Site contains ESHA is contrary to and inconsistent with the LCP.

Moreover, recent case law confirms that when an LCP identifies ESHA, the Coastal Commission's authority to designate ESHA is more limited than its general authority on *de novo* review of a CDP appeal. In *Security National Guaranty, Inc. v. California Coastal Comm'n*, 159 Cal. App. 4th 402 (2008), the Court of Appeal held that when a certified LCP is in place and a CDP is appealed to the Coastal Commission, the Commission's jurisdiction is limited to determining whether or not a proposed development conforms to the certified LCP.[7]

Accordingly, were the Commission to designate SCE's Project Site as ESHA, when it has not been designated ESHA in the CLUP, the Commission would contradict the City's certified LCP.

II. THE PROJECT SITE DOES NOT FALL WITHIN THE DEFINITION OF ESHA

While we do not believe the Project Site can be designated ESHA given the inconsistency such a designation would create with the LCP, even if a case-by-case determination of ESHA was made under the standard set forth in the Coastal Act, the conditions on the Project Site would not be considered ESHA. The City's CLUP incorporates the Coastal Act's definition of ESHA. It defines ESHA as any "area in which plant or animal life or their habitats are either

---

[7] *Security National Guaranty, Inc. v. California Coastal Comm'n*, 159 Cal. App. 4th 402 (2008), *request denied*, 2008 Cal. LEXIS 5546 (2008). This case involved an oceanfront site owned by Security National Guaranty ("SNG") in Sand City. The Commission approved Sand City's LCP, which designated and mapped areas of the city that were determined to be ESHA. However, the LCP maps did not include any ESHA on SNG's site and there were no provisions in the Sand City LCP that specifically provided that additional areas could be designated ESHA on a case-by-case basis. SNG proposed building a resort on its property and applied to Sand City for a development permit. The City approved the permit, which was appealed to the Commission. On appeal, the Commission denied the CDP based on a site specific biological review in the staff report that determined that the entire project site was ESHA. SNG filed a petition for writ of administrative mandamus, arguing that the Commission's ESHA designation exceeded the Commission's statutory grant of authority because the designation conflicted with the ESHA provisions in the certified LCP. The Court of Appeal agreed with SNG. The Court reasoned that by designating the area at issue ESHA, the Commission impermissibly exceeded its authority by attempting to amend part of Sand City's LCP, a power the Coastal Act expressly allocates to local governments. In addition, the court found that the Commission exceeded an express limitation on its jurisdiction in permit appeals. The Court held that the Commission's jurisdiction in the context of a CDP appeal is limited to determining whether or not a development conforms to the certified LCP. *See* Cal. Pub. Res. Code §30603(b)(1). By designating an area ESHA that was not so designated in the LCP, the Commission contradicted the LCP and imposed its own additional standard, thereby exceeding its jurisdiction.

rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities or developments."[8] Biological surveys demonstrate that the conditions on the Project Site do not satisfy the requirements of ESHA.

A. *Site Conditions at the Location of the Proposed Peaker Plant*

The proposed site of the peaker plant is a brownfield site that has been graded and is devoid of any significant vegetation. This portion of the Project Site was formerly occupied by oil tanks and is located immediately adjacent to the much larger Mandalay power plant and DCOR oil processing facilities. It does not contain any environmentally sensitive sand dune habitat. While there are areas known to support several special-status biological resources near the site, such as the Mandalay State Beach Park, no such areas exist on the site where the peaker plant would be built.[9] Therefore, this Project area does not meet the definition of ESHA and should not be so considered.

B. *Site Conditions East of Harbor Boulevard*

1. *The Natural Gas Pipeline*

The underground natural gas pipeline will be installed on a portion of the Project site east of Harbor Boulevard. The pipeline will be located within the Harbor Boulevard public right-of-way, a previously disturbed and existing pipeline corridor. The pipeline will be 6 inches in diameter, with a length of approximately 1,800 feet. The maximum depth of the pipeline may vary, but the line will be installed at a minimum depth of 36 inches, with a planned depth of 42 inches. The majority of the disturbance will be temporary in nature, with one permanent disturbance of approximately 6 square feet at the pipeline connection point to install an access lid.

The attached biological study by Tony Bomkamp quantified the composition and approximate cover of the vegetation along the proposed natural gas pipeline route. The study demonstrates that the pipeline route is highly degraded and therefore does not constitute coastal dune habitat that qualifies as ESHA. The survey revealed that the study area has been subject to various types of disturbance, including the installation of existing utilities and roads and the invasion and establishment of non-native invasive plants. Data collected from the pipeline route transect indicates a relatively high level of disturbance. Native plant cover along the transect comprises only approximately 10.7 percent of the total cover. The remainder is comprised of 48.4 percent non-native cover, 29.3 percent un-vegetated sand dune, 7.3 percent disturbed bare areas, and 4.3 percent asphalt. Furthermore, when just the vegetated areas are considered, the level of disturbance is very high, with approximately 82 percent of all vegetation consisting of non-native species. Because the Project site does not contain the vegetation and habitat consistent with sensitive coastal dune habitats, the study concluded that the Project site does not qualify as ESHA.

---

[8] City of Oxnard CLUP IV-II.D (citing Coastal Act Policy 30107.5).

[9] Given the proximity of the Project site to sensitive resources, the Commission imposed certain Special Conditions designed to protect sensitive species should they appear during construction and to address all comments made by USFWS and State Parks relevant to sensitive biological resources.

2. *The Transmission Line*

The new transmission line poles east of Harbor Boulevard will be added to the existing Channel Islands-Mandalay pole line to avoid the need for a second set of poles. To accommodate the new line, seven (7) existing poles will be replaced in approximately the same locations, with the replacement poles standing 5 feet higher than the previous poles to accommodate an additional circuit. Three (3) new poles will be added to the seven replacements to support the added stresses. Of these three new poles, one will be a steel pole (required to handle corner stress) requiring a 7-foot diameter concrete foundation. To the extent possible, new or replacement wood poles will be placed in the same location as the existing poles to be replaced to reduce ground disturbance. New pole placements will be located on bare ground or in stands of iceplant and non-native vegetation. The permanent ground disturbance impact of the new poles will be 87 square feet. The current design of the pole replacement program offers the best trade off between minimizing the number of poles, minimizing their height, minimizing the size of the pole bases, and replacing poles in the same location to minimize any incremental disturbance.

The biological study demonstrates that any transmission line impact will occur in a small disturbed area. The transmission line route from the proposed Project to its tap point on the existing 66kV Mandalay-Gonzales line would be located within an existing transmission corridor. Native plant cover along the transmission line transect only comprises approximately 14.9 percent of the total cover. The remainder is comprised of 40.9 percent non-native cover, and 44.1 percent of the area is un-vegetated. Moreover, when just the vegetated areas are considered, the level of disturbance is very high, with approximately 73 percent of all vegetation consisting of non-native species. Based on this study, the Project area does not qualify as ESHA and should not be so considered.

Therefore, even if the City or the Coastal Commission were able to undertake a *de novo* review of ESHA, under the Coastal Act's Chapter 3 policies, the Project Site cannot be designated ESHA because it does not meet the standard for what constitutes ESHA.

III. DESIGNATING THE PROJECT SITE ESHA IS INCONSISTENT WITH PRIOR APPLICATIONS OF THE CITY'S LCP

If the Coastal Commission were to designate the Project site ESHA, such a designation would be inconsistent with both the City's and the Coastal Commission's prior applications of the Oxnard LCP in the area adjacent to the Project site. Both the City and the Coastal Commission reviewed the immediately adjoining North Shore project[10] site, located at the

---

[10] By way of background, in July 1999, the City of Oxnard certified the FEIR for the North Shore Project, approved a General Plan Amendment, an LCP Amendment, Tentative Tract Map No. 5060, and a CDP. In August of 1999, the City's decision to approve the CDP was appealed to the Coastal Commission. In the fall of 1999, in connection with the pending appeal, Coastal Commission staff advised the City and North Shore applicant to proceed first with a LCP Amendment. As a result, the City revoked its CDP approval in January of 2000 and began preparation of site-specific amendment for the North Shore Project site. In April of 2002, the Coastal Commission reviewed and approved the City's LCP Amendment with suggested modifications. In May of 2002, the Oxnard City Council accepted the Commission's suggested modifications to the LCP Amendment and in June of that same year, the Coastal Commission certified the LCP Amendment.

northeast corner of the intersection of Harbor Boulevard and West Fifth Street -- adjacent to and just south of SCE's property east of Harbor Boulevard. The City and the Coastal Commission determined that because the area was degraded and did not contain vegetation characteristic of sensitive coastal dune habitat, none of the North Shore project site, including the dune areas, qualified as ESHA. This analysis is consistent with the information set forth in the attached biological study prepared by Glenn Lukos Associates at the Project Site east of Harbor Boulevard. Given both the City's and Commission's recognition of the highly degraded nature of the North Shore project site and the determination it was not ESHA, it would be inconsistent to declare the SCE Project site here, nearly identical to that of the North Shore project in its degraded nature, ESHA.

At all stages of the North Shore project's environmental review, habitat similar to the habitat found on SCE's Project site was determined to be too degraded to constitute ESHA. The Draft EIR prepared by the City of Oxnard noted that the southern dune scrub on the North Shore project site was "extremely disturbed"[11] and that the loss of 8.15 acres of this habitat would not be considered a substantial loss of wildlife habitat or sensitive resources.[12] The Final EIR ("FEIR") reiterated these findings, noting that the vegetation communities on the North Shore property have low to moderate biological values, largely due to the level of disturbance on the site. The FEIR notes that each of the dune patches on the site is relatively small, is characterized by a low diversity and low coverage of dune indicator plant species, is surrounded by non-sandy soils, is isolated and fragmented from each other as well as from off-site dune habitats, and does not support known species or populations of special status plant or animal species.[13] Consequently, the disturbed dune scrub habitats on the North Shore site were not considered representative of the unique and rare coastal dune scrub habitats that exist elsewhere in the region.[14]

The Coastal Commission's review of the City's determination concluded that the dune habitat on the North Shore project site did not qualify as ESHA. In April of 2002, the Coastal Commission reviewed and approved the City's LCP amendment for the North Shore project, with suggested modifications. The Staff Report concurred with the City that 43.5 acres of bare ground and iceplant vegetation on the North Shore project site had no biological value. The Staff Report's revised findings noted that there are 23.4 acres of dune scrub, coyote brush cluster, buckwheat and coastal sagebrush habitats present onsite that are in a degraded and disturbed state and thus have reduced biological value.[15] The Commission therefore likewise concluded that disturbed dune scrub did not qualify as ESHA.[16]

---

[11] North Shore at Mandalay Bay Draft EIR, 235.

[12] North Shore at Mandalay Bay Draft EIR, 244.

[13] North Shore at Mandalay Bay FEIR, 3.0-14-15.

[14] North Shore at Mandalay Bay FEIR, 3.0-14.

[15] City of Oxnard LCP amendment, OXN-MAJ-1-00, page 57.

[16] *Id.* However, the Commission did find that the Ventura Marsh milk vetch on the North Shore project site qualified as ESHA. The FEIR addendum responding to the Coastal Commission's findings associated with the

Like the habitat found at the North Shore project site, the conditions at the SCE Project site directly adjacent to North Shore project is highly disturbed and supports a lower diversity of plant and animal species compared to similar regional habitat. Like the North Shore site, each of the dune patches on the SCE Project site are relatively small, are characterized by a low diversity and low coverage of dune indicator plant species, and are isolated and fragmented from each other as well as from off-site dune habitats. Thus, it follows that like the North Shore project site, the SCE Project site does not contain ESHA. If the Commission were to designate the SCE Project site east of Harbor Boulevard ESHA, it would result in an inconsistent application of the City's CLUP.

IV. CONCLUSION

For the reasons stated above, the Project Site is not ESHA. The Oxnard CLUP specifically designates areas of sand dune habitat that qualify as ESHA within the City of Oxnard and the Project Site has not been so designated. Additionally, the Project fails to support a diversity of rare or especially valuable plant and animal species and is so degraded that it does not fit within the definition of ESHA. Finally, designating the Project site ESHA would be inconsistent with the City's and the Coastal Commission's prior interpretations and applications of the Oxnard CLUP.

Please contact me at (626) 302-2149 or david.kay@sce.com if you have any questions or need additional information.

Sincerely,

David W. Kay
Manager, Environmental Projects

Attachments: Glenn Lukos Associates' October 16, 2008 Report
North Shore at Mandalay Bay Draft EIR excerpts
North Shore at Mandalay Bay FEIR excerpts
North Shore at Mandalay Bay Addendum to FEIR excerpts
Coastal Commission Staff Report Revised Findings re City of Oxnard LCP Amendment, OXN-MAJ-1-00 excerpts

City's site-specific LCP Amendment reiterated that the dune scrub communities on the North Shore project site were degraded and of moderate biological value. Addendum North Shore at Mandalay Bay FEIR, 2.0-26-27.

MEMORANDUM

GLENN LUKOS ASSOCIATES

Regulatory Services

PROJECT NUMBER: 04760008MAND

TO: David Kay, Southern California Edison
cc: Wendy Miller, Southern California Edison
Damon Mamalakis, Latham & Watkins, LLP

FROM: Tony Bomkamp and Paul Schwartz

DATE: October 16, 2008

SUBJECT: Results of Studies to Quantify the Composition and Approximate Cover of Vegetation Associated with the McGrath Beach "Peaker" Power Plant Project East of Harbor Boulevard, Ventura, California

---

On October 13, 2008, GLA biologists/botanists Tony Bomkamp and Paul Schwartz conducted a study to quantify the composition and approximate cover of the vegetation along the proposed natural gas pipeline route (Pipeline Route) immediately adjacent to Harbor Boulevard as well as along the proposed transmission line corridor (Transmission Line) that would connect the Southern California Edison substation with the proposed McGrath Beach "Peaker" power plant.

The general study area consists of highly degraded coastal dune areas adjacent to Harbor Boulevard (Exhibit 1: Transect Map]. The Mandalay Canal (an artificial cooling channel constructed to service the existing Mandalay Generating Station) bisects, but is not included in the study area.

The study area has been subject to various types of disturbance, including the installation of existing utilities and roads, and the invasion and establishment of non-native invasive plants which has been exacerbated by its close proximity to Harbor Boulevard. Much of the general study area is dominated by non-native fig-marigold (a.k.a. iceplant) (*Carpobrotus edulis*), and native heather goldenbush (*Ericameria ericoides*). Fig-marigold is a highly invasive non-native ground cover plant that has become established on coastal dunes throughout much of coastal California. Heather goldenbush is a native shrub that is found in sandy dune habitats from Los Angeles County north to Sonoma County. Exhibit 2 [Site Photographs] depicts the general conditions associated with the transect locations. The methodologies and results of the vegetative study are discussed below in detail.

29 Orchard ▪ Lake Forest ▪ California 9263
Telephone: (949) 837-0404 Facsimile: (949) 83

METHODOLOGY

Linear transects were sampled to determine the composition and approximate cover of the vegetation within areas proposed for impacts associated with the installation of the natural gas pipeline and transmission line corridor. An approximate 1,500 foot transect was sampled along the center-line of the proposed natural gas pipeline route, and an approximate 1,000 foot transect was sampled along the center-line of the proposed transmission line corridor [Exhibit 1]. In accordance with vegetation sampling methodologies established by the California Native Plant Society, the biotic or abiotic cover along the transect was recorded every 0.5 meter.

The proposed natural gas pipeline would be installed within the Harbor Boulevard Bridge that spans the canal; therefore the pipeline has no potential impacts on the canal or associated banks and no transect data was recorded for these areas. In addition, work necessary for installation or removal of the transmission line poles would be conducted no closer to the banks of the canal than 50 feet. Therefore, data collection associated with the proposed transmission line was limited to the areas between the existing or proposed transmission pole locations, but not between the existing or proposed transmission poles located immediately north and south of Mandalay Canal. Exhibit 1 depicts the locations of the two transects.

RESULTS

Pipeline Route

Table 1 depicts the results of the transect data recorded for the Pipeline Route. Table 2 below summarizes the data from Table 1.

TABLE 1. Results of Transect Data for the Natural Gas Pipeline Route

Point Find	Number of "Hits"	Percent of Total
Un-Vegetated Sand Dune	263	29.2
Disturbed Bare	65	7.2
Carpobrotus edulis (NN)*	386	43.0
Ericameria ericoides	57	6.3
Asphalt	39	4.3
Bromus diandrus (NN)	36	4
Croton californicus	24	2.7
Cynodon dactylon (NN)	10	1.1
Heterotheca villosa	7	0.7
Lotus scoparious	4	0.4
Abronia umbellata ssp. *umbellata*	3	0.3

Ambrosia chamissonis	2	0.2
Bromus madritensis ssp. *rubens* (NN)	2	0.2
Eriogonum fasciculatum ssp. *fasciculatum*	1	0.1
Myoporum laetum (NN)	1	0.1
Total	**900**	**100***

(NN) - Denotes a plant species that is not native to California
* - Percentages were rounded to the nearest tenth resulting in a percent total slightly less than 100 percent (99.8 percent).

TABLE 2. Summary of Data for the Natural Gas Pipeline Route

Point Find	Number of "Hits"	Percent of Total
Native Cover	98	10.7
Non-Native Cover	435	48.4
Un-Vegetated Sand Dune	263	29.3
Disturbed/Bare	65	7.3
Asphalt	39	4.3
Total	**900**	**100**

Transmission Line Corridor

Table 3 depicts the results of the transect data recorded for the Transmission Line. Table 4 below summarizes the data from Table 3.

TABLE 3. Results of Transect Data for the Transmission Line

Point Find	Number of "Hits"	Percent of Total
Un-Vegetated Sand Dune	257	44.1
Carpobrotus edulis (NN)*	238	40.8
Bromus madritensis ssp. *rubens* (NN)	1	0.2
Lotus scoparious	13	2.2
Lessingia filanginifolia ssp. *filanginifolia*	5	0.9
Ericameria ericoides	59	10.1
Heterotheca villosa	8	1.4
Camissonia cheiranthifolia	1	0.2
Opuntia littoralis	1	0.2
Total	**583**	**100***

(NN) - Denotes a plant species that is not native to California
* - Percentages were rounded to the nearest tenth resulting in a percent total slightly more than 100 percent (100.1 percent).

EXHIBIT NO. 15
Application
A-4-OXN-07-096
So. Cal. Edison

TABLE 4. Summary of Data for the Transmission Line

Point Find	Number of "Hits"	Percent of Total
Native Cover	87	14.9
Non-Native Cover	239	41.0
Un-Vegetated Sand Dune	257	44.1
Total	**583**	**100***

* - Percentages were rounded to the nearest tenth resulting in a percent total slightly less than 100 percent (99.9 percent).

CONCLUSIONS

Data collected from the Pipeline Route transect indicates a relatively high level of disturbance. Native plant cover along the transect comprises approximately 10.7 percent of the total cover. The remainder is comprised of 48.4 percent non-native cover with fig marigold by far the most dominant, comprising 43 percent of the 48.4 percent non-native vegetation. 29.3 percent un-vegetated sand dune, 7.3 percent disturbed bare areas, and 4.3 percent asphalt make up the remainder of the cover along the transect. When just the vegetated areas are considered, the level of disturbance is very high with approximately 82 percent of all vegetation consisting of non-native species, with fig marigold accounting for approximately 73 percent of all the vegetation.

In addition, it is important to note that the natural gas pipeline will be installed between two existing pipelines (an 8 inch oil pipeline and a 10 inch natural gas pipeline) and Harbor Boulevard (see Photograph 5), resulting in very limited temporary impacts to highly disturbed habitat. Based on the highly degraded character of the vegetation, including significant relative cover by an invasive exotic (i.e., fig marigold), and the location between existing pipelines, the area to be affected by the pipeline installation does not warrant an ESHA determination under the Coastal Act.

Data collected from the Transmission Line transect shows a slightly lower level of disturbance within the sand dune habitat associated with the Transmission Line when compared to the Pipeline Route transects. Native plant cover along the Transmission Line transect comprises approximately 14.9 percent of the total cover. The remainder is comprised of 40.9 percent non-native cover, and 44.1 percent un-vegetated sand dune. When just the vegetated areas are considered, the level of disturbance is very high with approximately 73 percent of all vegetation consisting of non-native species, with fig marigold accounting for all but approximately 0.5 percent of the non-native cover. Based on the highly degraded character of the vegetation, including significant relative cover by an invasive exotic (i.e., fig marigold), and the location

within an existing transmission line corridor, the area to be affected within the transmission line corridor does not warrant an ESHA determination under the Coastal Act.

Southern California Edison (SCE) has agreed to prepare a Restoration Plan that includes the following: (1) removal of all fig marigold from 37 acres of SCE-owned property to the east of Harbor Boulevard and within the study area; (2) revegetation of those areas disturbed during placement/removal of transmission poles, installation of natural gas pipeline and associated staging, construction and access activities with native plant species representative of the southern dune scrub habitat community and grown from locally collected seed; and (3) monitoring of the fig marigold removal areas and native plant revegetation sites every six months and submit annual monitoring reports for five years from the date of issuance of the Coastal Development Permit. Such a restoration program would result in the conversion of dune habitat from an area with high levels of disturbance to an area that would consist of near-pristine dunes.

Legend

Natural Gas Pipeline Transect

Trasmission Line Transect

N

0 100 200

Feet

McGRATH PEAKER STATION

Transect Map

GLENN LUKOS ASSOCI

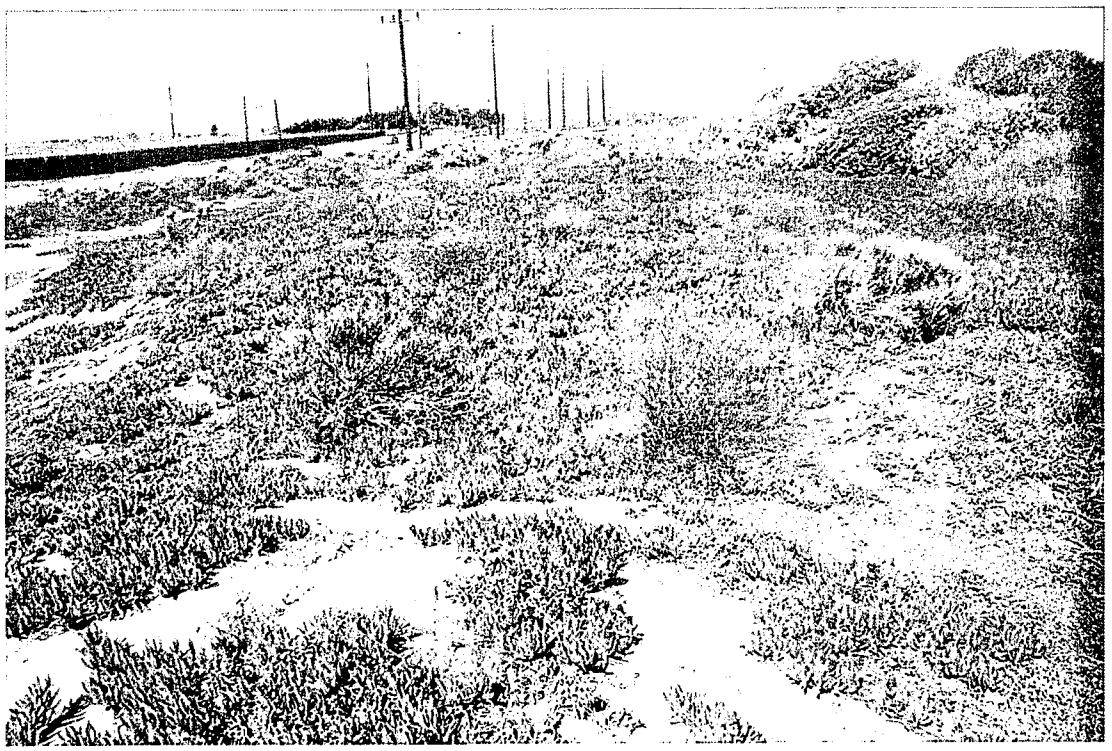
Exh

X:\0363-THE REST\0476-08MAND\476-8.

October 15, 200

EXHIBIT NO. 15
Application
A-4-OXN-07-096
So. Cal. Edison

Photograph 5. This photograph depicts the location of the existing pipeline corridor. The proposed natural gas pipeline route is to be installed between the existing pipeline corridor and Harbor Boulevard. Photograph taken on October 13, 2008.



Photograph 6. This photograph depicts an extensive stand of fig marigold typical throughout the 37-acres of southern dune habitat that SCE has agreed to enhance through the removal of fig marigold. Photograph taken on October 13, 2008.

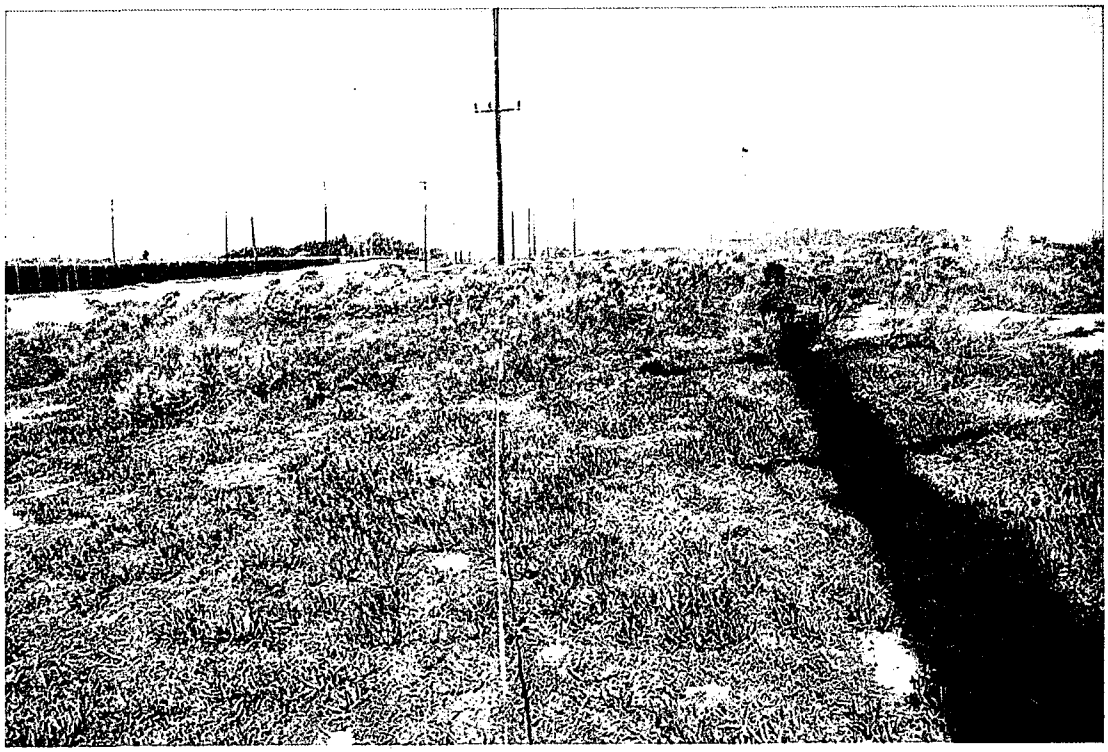
GLENN LUKOS ASSOCIATES

EXHIBIT 2

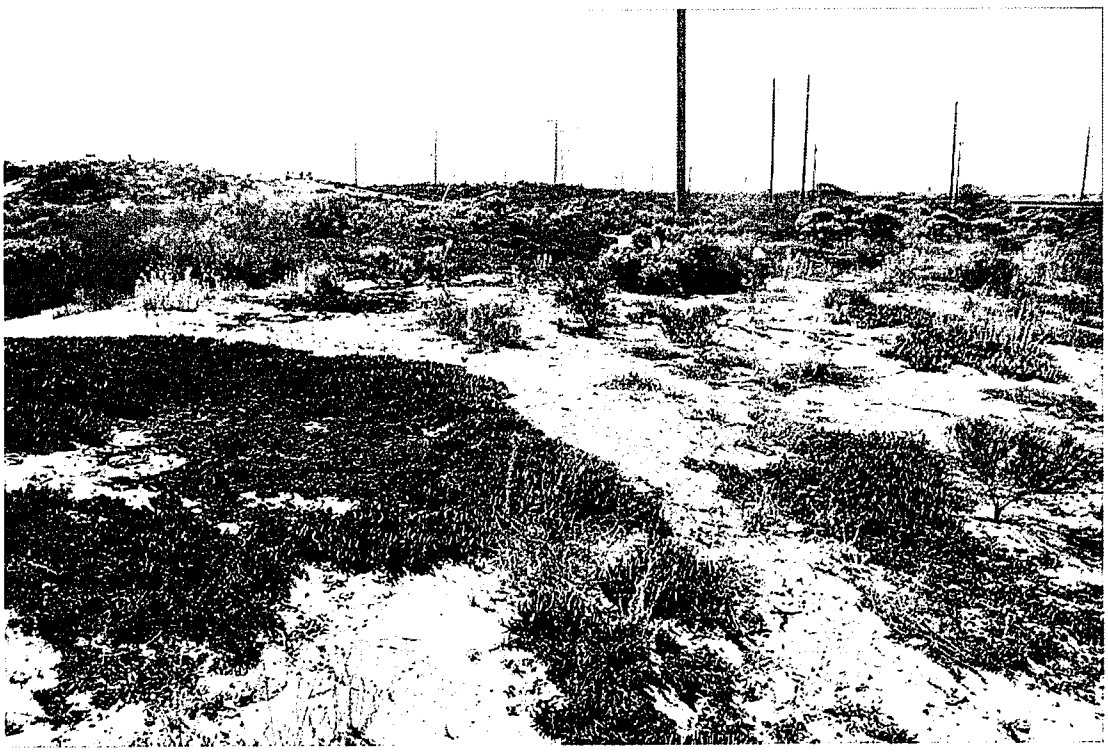
McGRATH PEAKER STATION

Site Photographs

EXHIBIT NO. 15
Application
A-4-OXN-07-096
So. Cal. Edison



Photograph 3. This photograph depicts the typical site conditions along the proposed transmission line corridor south of the Mandalay Canal. Here you can see an extensive stand of fig marigold in the foreground. Photograph taken on October 13, 2008.



Photograph 4. This photograph depicts the typical site conditions along the proposed transmission line corridor north of the Mandalay Canal. Photograph taken on October 13, 2008.

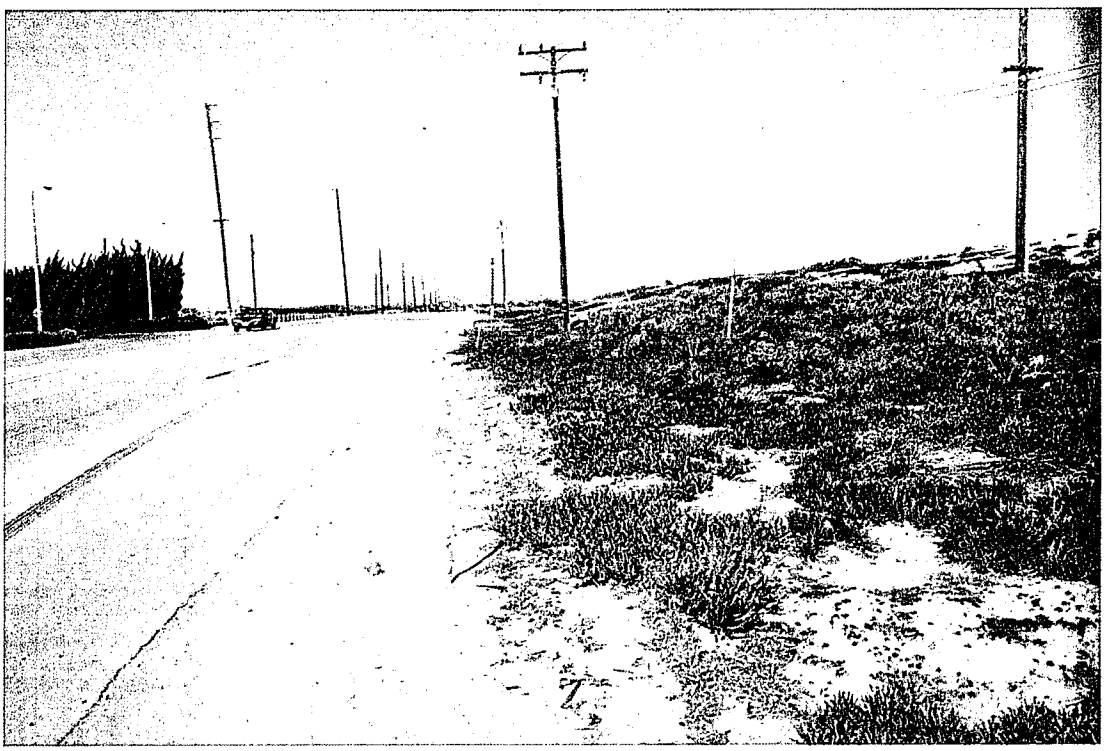
GLENN LUKOS ASSOCIATES

EXHIBIT 2

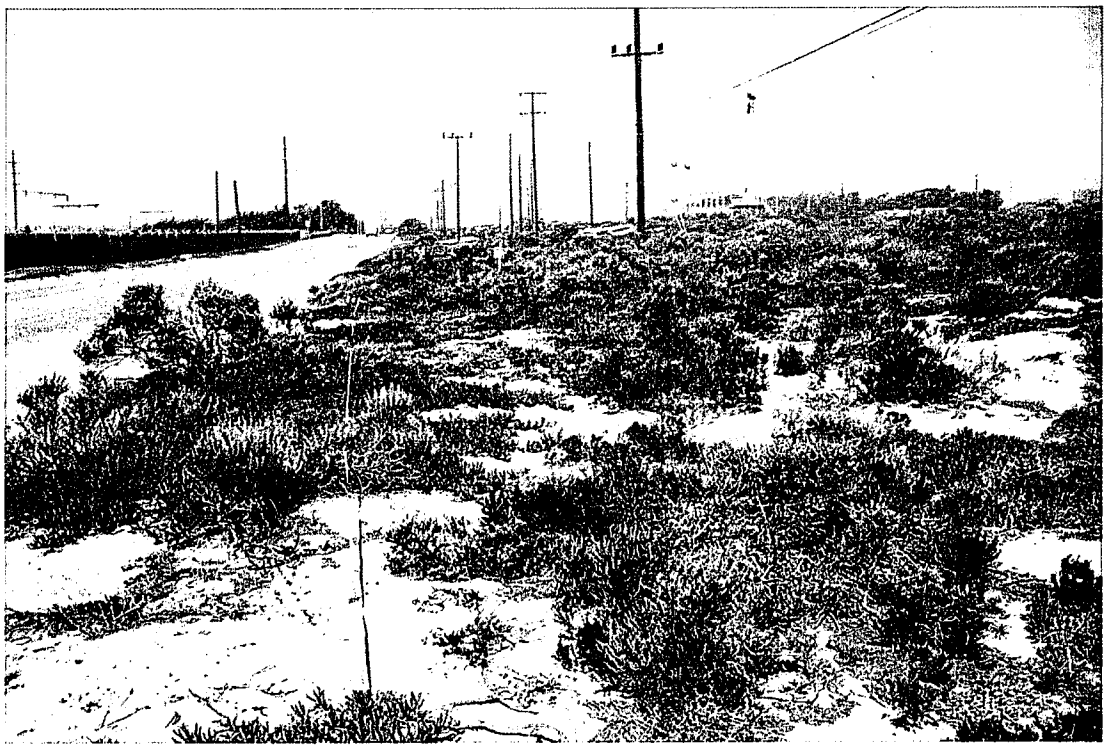
McGRATH PEAKER STATION

Site Photographs

EXHIBIT NO. 15
Application
A-4-OXN-07-096
So. Cal. Edison



Photograph 1. This photograph depicts the typical site conditions adjacent to Harbor Boulevard north of the Harbor Boulevard Bridge. The stake at center left shows where the proposed natural gas pipeline is to be installed. Photograph taken on October 13, 2008.



Photograph 2. This photograph depicts the typical site conditions adjacent to Harbor Boulevard south of the Harbor Boulevard Bridge. Here the transect tape shows where the proposed natural gas pipeline is to installed. Photograph taken on October 13, 2008.

GLENN LUKOS ASSOCIATES

EXHIBIT 2

McGRATH PEAKER STATION

Site Photographs

EXHIBIT NO. 15
Application
A-4-OXN-07-096
So. Cal. Edison

CALIFORNIA ADAPTATION PLANNING GUIDE

PLANNING FOR ADAPTIVE COMMUNITIES

Cal EMA California Emergency Management Agency

California natural resources Agency

FEMA

California Adaptation Planning Guide

PREPARED BY:
California Emergency Management Agency
3650 Schriever Avenue
Mather, CA 95655
www.calema.ca.gov

California Natural Resources Agency
1416 Ninth Street, Suite 1311
Sacramento, CA 95814
resources.ca.gov

WITH FUNDING SUPPORT FROM:
Federal Emergency Management Agency
1111 Broadway, Suite 1200
Oakland, CA 94607-4052

California Energy Commission
1516 Ninth Street, MS-29
Sacramento, CA 95814-5512

WITH TECHNICAL SUPPORT FROM:
California Polytechnic State University
San Luis Obispo, CA 93407

July 2012

Page Intentionally Left Blank

"It's time for courage, it's time for creativity and it's time for boldness to tackle climate change" - Governor Brown, September 2011

September 4, 2012

Dear reader,

We are pleased to present the "Climate Adaptation Planning Guide" prepared by California Emergency Management Agency and the California Natural Resources Agency. The Guide is designed to provide guidance and support for local governments and regional collaboratives to address the unavoidable consequences of climate change.

The State of California is leading the way on climate change adaptation in conjunction with local and regional efforts. Local and regional responses to climate change are identified in state-level planning documents including the California Emergency Management Agency's State Hazard Mitigation Plan, and the California Climate Adaptation Strategy. In addition, we anticipate on-going collaboration and engagement at the regional and local-scale. To that end, the Governor's Office of Planning and Research hosted a one-day conference earlier this year titled "Confronting Climate Change: A Focus on Local Government Impacts, Actions and Resources," and is promoting additional outreach and partnerships.

As climate change impacts your community, it is important for local governments to be prepared to meet this new reality. We hope you find this Planning Guide of value.

Sincerely,

Ken Alex
Senior Policy Advisor to Governor Edmund Brown and
Director of the Office of Planning and Research

John Laird
Secretary for Natural Resources Agency

Mark Ghilarducci
Secretary
California Emergency Management Agency

Page Intentionally Left Blank

Acknowledgements

The *Adaptation Planning Guide* (APG) has benefited from the ideas, assessment, feedback, and support from members of the APG Advisory Committee, local governments, regional entities, members of the public, state and local non-governmental organizations, and participants in the APG pilot program.

California Emergency Management Agency

Mark Ghilarducci	secretary	
Mike Dayton	undersecretary	
Christina Curry	assistant secretary	preparedness
Kathy McKeever	director	office of infrastructure protection
Joanne Brandani	chief	critical infrastructure protection division, hazard mitigation planning division
Ken Worman	chief	hazard mitigation planning division
Julie Norris	senior emergency services coordinator	hazard mitigation planning division
Karen McCready	associate government program analyst	hazard mitigation planning division

California Natural Resource Agency

John Laird	secretary	
Janelle Beland	undersecretary	
Julia Levin	deputy secretary for climate change	
Kurt Malchow	climate adaptation coordinator	

California Polytechnic State University – Project development team

Project Management

Adrienne Greve, Ph.D.	project director, co-principal investigator, associate professor	city and regional planning department
Kenneth C. Topping, FAICP	co-principal investigator, lecturer	city and regional planning department
Cindy Pilg	research support coordinator	city and regional planning department

Project Faculty and Staff

Michael Boswell, Ph.D., AICP	co-principal investigator, professor	city and regional planning department
William Siembieda, Ph.D.	co-principal investigator, professor, director	city and regional planning department planning, design, and construction institute
Christopher Dicus, Ph.D.	associate professor	natural resources management and environmental sciences
Kelly Main, Ph.D.	assistant professor	city and regional planning department
Robb Eric S. Moss, Ph.D., P.E.	associate professor	civil and environmental engineering department
Carol Schuldt	gis resources coordinator(ret.)	robert e. kennedy library

Graduate Research Assistants

Elizabeth Brighton	city and regional planning department
Megan Elovich	city and regional planning department
Michael Germeraad	civil and environmental engineering, city and regional planning department
Brian Provenzale	city and regional planning department
Jean Long	city and regional planning department, civil and environmental engineering
Steve Rogers	city and regional planning department

Consultants

Natalie Macris	planning editor
Monica Fiscalini	copy editor

Adaptation Planning Guide – Advisory Committee

Will Barrett	American Lung Association in California
Amy Vierra	Ocean Protection Council
Marian Ashe	California Environmental Protection Agency
Andrew Altevogt, PhD.	California Environmental Protection Agency
Abe Doherty	California Ocean Protection Council
Alex Westhoff	Delta Protection Commission
Kristal Davis Fadtke	Sacramento-San Joaquin Delta Conservancy
Chris Keithley	California Department of Forestry and Fire Protection
Guido Franco	California Energy Commission
Janna Franks	California Energy Commission
Joe Gibson	California Special Districts Association, Conejo Recreation and Park District
Elliot Mulberg	California Special Districts Association, Florin Resource Conservation District
Jon Elam	California Special Districts Association, Talpais Community Services District
Cara Martinson	California State Association of Counties
Garth Hopkins	California Department of Transportation
Andrew Schwarz	California Department of Water Resources
John Andrew	California Department of Water Resources
Dave Pegos	California Department of Food and Agriculture
Jay Chamberlin	California Department of Parks and Recreation
Kathy Dervin	California Department of Public Health
Amber Pairis	California Department of Fish and Game
Whitney Albright	California Department of Fish and Game
Kyra Ross	League of California Cities
Kate Meis	Local Government Commission
Scott Clark	Local Government Commission
Ben Rubin	Governor's Office of Planning and Research
Michael McCormick	Governor's Office of Planning and Research
Scott Morgan	Governor's Office of Planning and Research
Steve Goldbeck	San Francisco Bay Conservation and Development Commission
Will Travis	San Francisco Bay Conservation and Development Commission
Eric Oppenheimer	State and Regional Water Quality Control Boards
Linda Zablotny-Hurst	Sierra Club California
Rachel Dinno-Taylor	Trust for Public Lands
Sara Moore	Sonoma State University
Brian Holland	ICLEI - Local Governments for Sustainability
Steve Sanders	Institute for Local Government

Table of Contents

List of Figures

List of Tables

Page Intentionally Left Blank

Executive Summary

Planning for Climate Change

Climate change is already affecting California and is projected to continue to do so well into the foreseeable future. Current and projected climate changes include increased temperatures, sea level rise (SLR), a reduced winter snowpack, altered precipitation patterns, and more frequent storm events. These changes have the potential for a wide variety of impacts such as altered agricultural productivity, wildfire risk, water supply, public health, public safety, ecosystem function, and economic continuity.

The California Adaptation Planning Guide

The *California Adaptation Planning Guide* (APG), a set of four complementary documents, provides guidance to support communities in addressing the unavoidable consequences of climate change. The APG, developed by the California Emergency Management Agency and California Natural Resources Agency, introduces the basis for climate change adaptation planning and details a step-by-step process for local and regional climate vulnerability assessment and adaptation strategy development. The guide was developed to allow flexibility in the commitment of time, money, and scope.

California Adaptation Planning Guide Documents

START HERE

- *APG: Planning for Adaptive Communities* – Presents the basis for climate change adaptation planning and introduces a step-by-step process for local and regional climate vulnerability assessment and adaptation strategy development. All communities should start with this document.
- *APG: Defining Local and Regional Impacts* – This supplemental document provides a more in-depth understanding of how climate change can affect a community. Seven "impact sectors" are included to support communities conducting a climate vulnerability assessment.
- *APG: Understanding Regional Characteristics* – The impact of climate change varies across the state. This supplemental document identifies climate impact regions, including their environmental and socioeconomic characteristics.
- *APG: Identifying Adaptation Strategies* – This supplemental document explores potential adaptation strategies that communities can use to meet adaptation needs. Adaptation strategies are categorized into the same impact sectors used in the *APG: Defining Local and Regional Impacts* document.

Getting Started

Climate change has the potential to affect nearly all aspects of community function. To develop effective adaptation strategies, a team should be established made up of local and regional staff from multiple departments and community stakeholders. Also critical to the

process is community education and outreach. Climate adaptation requires a sustained, iterative process meaning both local and regional staff and community members should be engaged throughout the process.

Climate adaptation strategies can be implemented in a variety of ways from a freestanding adaptation plan to incorporation in existing plans and programs. Adaptation strategies can be incorporated into a variety of local plans including local coastal plans, local hazard mitigation plans, climate action plans, and general plans.

Steps in Climate Adaptation Strategy Development

The process of developing climate change adaptation strategies can vary from a short, initial qualitative process to a much more detailed, lengthy, comprehensive approach. Regardless of where a community falls in this spectrum, the basic steps are the same (Figure 1).

Vulnerability Assessment

1. Exposure: Identify the climate change effects a community will experience.
2. Sensitivity: Identify the key community structures, functions, and populations that are potentially susceptible to each climate change exposure.
3. Potential Impacts: Analyze how the climate change exposure will affect the community structures, functions, and populations (impacts).
4. Adaptive Capacity: Evaluate the community's current ability to address the projected impacts.
5. Risk and Onset: Adjust the impact assessment to account for uncertainty, timing, and adaptive capacity.

Figure ES-1. The nine steps in adaptation planning development. The gray steps are part of vulnerability assessment (steps 1-5) and the blue steps are adaptation strategy development (steps 6-9).

Adaptation Strategy Development

6. Prioritize Adaptive Needs: Based on the vulnerability assessment, prioritize the adaptive needs.
7. Identify Strategies: Identify strategies to address the highest priority adaptation needs.
8. Evaluate and Prioritize: Prioritize strategies based on the projected onset of the impact, projected cost, co-benefits, and other feasibility factors.
9. Phase and Implement: Develop an implementation plan that includes phasing of strategies and a monitoring system to assess effectiveness.

Introduction

The state of California began addressing climate change more than 20 years ago. Since that time, actions taken by the state have included scientific assessment, greenhouse gas emissions reduction measures, and climate change adaptation.

WHAT is the APG? WHO should use it? HOW should it be used?

The *California Adaptation Planning Guide* (APG), a set of four complementary documents, continues this effort by providing guidance to support communities in addressing the unavoidable consequences of climate change (see Box 1). This *APG: Planning for Adaptive Communities* document introduces the basis for climate change adaptation planning and details a step-by-step process for local and regional climate vulnerability assessment and adaptation strategy development.

The APG is a step-by-step process with a series of support documents that was designed to be flexible. This flexibility allows communities to use it in a way that best serves their needs. It can be used to conduct a preliminary, broad look at adaptation issues or it can be used to conduct a detailed, formal planning process; the logic is the same.

The ***California Adaptation Planning Guide: Planning for Adaptive Communities*** is supported by three supplemental documents that communities can use in adaptation planning (see Figure 1):

- *APG: Defining Local & Regional Impacts:* This supplemental document provides a more in-depth understanding of how climate change can affect a community. Seven "impact sectors" are included to support local communities conducting a climate vulnerability assessment.

- *APG: Understanding Regional Characteristics:* The impact of climate change varies across the state. This supplemental document identifies the distinct climate impact regions, including their environmental and socioeconomic characteristics.

- *APG: Identifying Adaptation Strategies:* This supplemental document explores potential adaptation strategies that communities can use to meet adaptation needs. Adaptation strategies were categorized into the same impact sectors used in the *APG: Defining Local and Regional Impacts* document. *APG: Identifying Adaptation Strategies* includes examples from jurisdictions already pursuing adaptation strategies and offers considerations for tailoring strategies to meet local needs.

This introductory section addresses basic questions about adaptation planning and ways to get started in the strategy development process. Following this introductory section, the steps in vulnerability assessment and strategy development are presented.

Box 1

WHAT IS THE APG, WHO SHOULD USE IT, AND HOW SHOULD IT BE USED?

This document, *APG: Planning for Adaptive Communities*, presents a step-by-step process that communities can use to plan ways to adapt to climate change. The APG also includes a series of supplemental documents that provide local and regional information and planning tools.

The APG is designed to be flexible. This flexibility allows communities to use it in a way that best serves their needs. The APG can be used to conduct a preliminary, broad look at adaptation issues or to conduct a detailed, formal planning process.

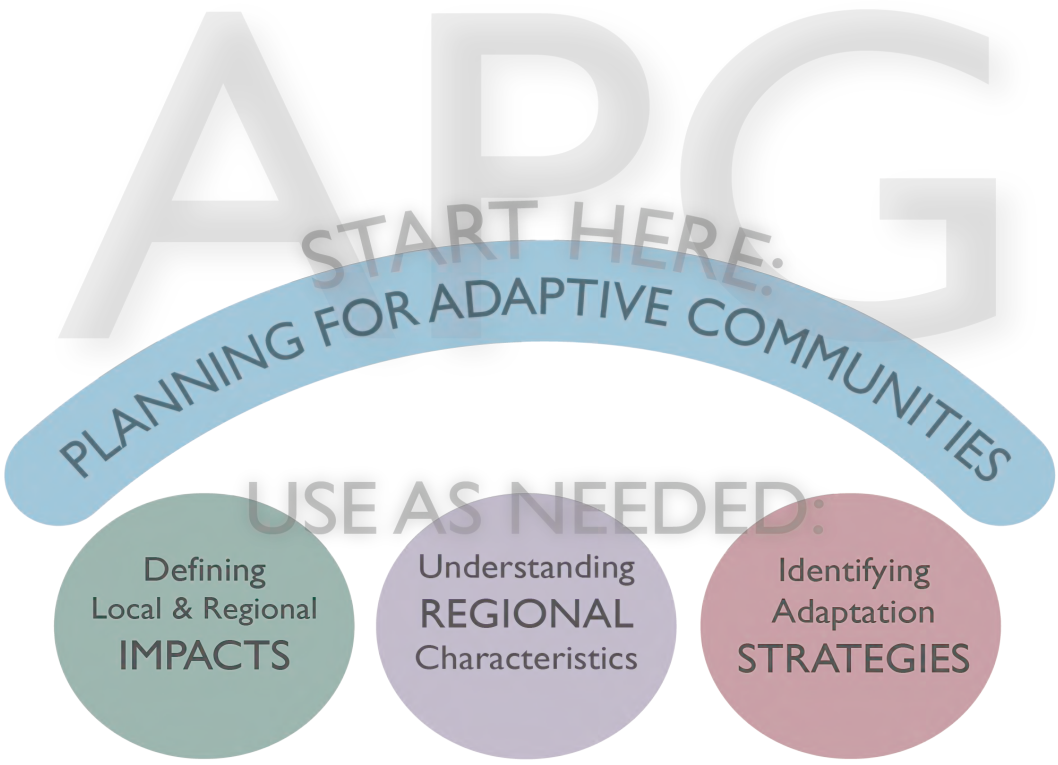


Figure 1. The four California Adaptation Planning Guide (APG) documents.
All APG users should start with the *Planning for Adaptive Communities* document. The other three documents support the process presented in the first document by providing additional information and greater detail.

How will California be affected by climate change?

Climate change is already affecting California and is projected to continue to do so well into the foreseeable future (CNRA, 2009; Moser et al., 2009). Current and projected climate changes include increased temperatures, sea level rise (SLR), a reduced winter snowpack, altered precipitation patterns, and more frequent storm events (see Box 2).

Over the long term, reducing greenhouse gases (GHG) can help make these changes less severe, but the changes cannot be avoided entirely. Unavoidable climate impacts can result in a variety of secondary consequences including detrimental impacts on human health and safety, economic continuity, ecosystem integrity, and provision of basic services (CNRA, 2009; CIG, 2007). These potential consequences can pose enough of a threat that they demand attention even if the outcomes are not certain.

Box 2

Climate Change Impacts of Concern to Communities

The 2009 California Climate Adaptation Strategy identified the following climate change impacts of concern:

- Climate change is expected to lead to increases in the frequency, intensity, and duration of extreme heat events and heat waves in California, which are likely to increase the risk of mortality and morbidity due to heat-related illness and exacerbation of existing chronic health conditions. Those most at risk and vulnerable to climate-related illness are the elderly, individuals with chronic conditions such as heart and lung disease, diabetes, and mental illnesses, infants, the socially or economically disadvantaged, and those who work outdoors. (p. 39)

- Higher temperatures will melt the Sierra snowpack earlier and drive the snowline higher, resulting in less snowpack to supply water to California users. (p. 84)

- Intense rainfall events, periodically ones with larger than historical runoff, will continue to affect California with more frequent and/or more extensive flooding. (p. 84)

- Droughts are likely to become more frequent and persistent in the 21st century. (p. 84)

- Storms and snowmelt may coincide and produce higher winter runoff from the landward side, while accelerating sea-level rise will produce higher storm surges during coastal storms. Together, these changes will increase the probability of levee failures in the Sacramento-San Joaquin Delta. (p. 85)

Box 2 (cont'd.)

- Warmer weather, reduced snowpack, and earlier snowmelt can be expected to increase wildfire through fuel hazards and ignition risks. These changes can also increase plant moisture stress and insect populations, both of which affect forest health and reduce forest resilience to wildfires. An increase in wildfire intensity and extent will increase public safety risks, property damage, fire suppression and emergency response costs to government, watershed and water quality impacts, vegetation conversions and habitat fragmentation. (p. 112)

- Sea-level rise will increase erosion of beaches, cliffs, and bluffs, threatening public and private property and structures and causing social, economic, and resource losses to coastal recreation and tourism through reduction in, or damage to, beaches, access ways, parks, trails, and scenic vistas. (p. 71)

- The economic cost associated with the required alteration, fortification, or relocation of existing infrastructure [due to sea level rise] is likely to be in the tens of billions of dollars. (p. 129)

Why do climate adaptation planning?

There are four primary reasons to pursue climate adaptation planning:

1. As stated in the 2009 California Climate Adaptation Strategy (CAS) (CNRA, 2009), the State of California recommends that "communities with General Plans and Local Coastal Plans should begin, when possible, to amend their plans to assess climate change impacts, identify areas most vulnerable to these impacts, and develop reasonable and rational risk reduction strategies using the CAS as guidance."
2. Many of the impacts of climate change will be localized and will vary based on a community's physical, social, and economic characteristics. Communities are best positioned to assess and address the implications of climate change at the local level.
3. Communities that begin planning now will have the best options for adapting to climate change. Although the impacts of climate change are already being felt in many communities, they are relatively small at this time. The onset of more significant impacts is likely many years away, but this is not a justification for inaction. Instead it calls for effective planning now while good options still exist. The longer communities wait, the greater the costs of the impacts and the costs to react to those impacts.
4. Many of the actions needed to reduce the impacts of climate change will provide additional benefits to the community, including increased public safety, reduced greenhouse gas emissions, and greater economic stability.

How can communities take action on climate adaptation?

One of the largest challenges to climate adaptation strategy development is the diversity in the potential impacts, which include effects on public health, economic vitality, ecosystem health, water supply, and natural hazards. Fortunately, many existing local and regional plans already address some of these impacts, meaning that communities are likely to have a good idea of the types of strategies likely to be most effective. In some cases, developing adaptation policy can simply involve bolstering existing policies through the periodic plan update process.

The ways to integrate climate adaptation strategies into policy documents can vary based on local adaptation needs and context (see Box 3). Adaptation policies can be integrated into local policy and programs in a variety of ways, from development of a stand-alone climate adaptation plan to integration of adaptation strategies into any number of local planning documents. The ultimate goal should be for climate adaptation to be included as one consideration in all local and regional policy-making processes.

Box 3

How should communities take action?

Communities have a range of possibilities available for taking action on climate change adaptation. Some common ways include:

1. Administrative policy, procedures, and initiatives: Strategies that do not require governing board action can be implemented by a coordinated approach within an agency.

2. General Plan: The community general plan, especially the safety element, is an appropriate document for codifying goals, objectives, and polices related to climate change adaptation. Other relevant policy areas within the general plan usually include land use, transportation, conservation, recreation and open space, public safety, and noise.

3. Local Hazard Mitigation Plan (LHMP): If the community has adopted an LHMP pursuant to the federal Disaster Mitigation Act of 2000, this would be an appropriate document for codifying adaptation strategies related to the mitigation of natural or human-caused hazards such as wildfire, flooding, coastal storms and erosion, drought, and heat emergencies.

4. Climate Action Plan (CAP): If the community has a CAP or other similar plan, this can be an appropriate document for codifying adaptation strategies.

5. Zoning Code and other land development codes, ordinances, and resolutions: Adaptation strategies that affect zoning and land use can be acted on through adjustments in the regulations and procedures governing these areas.

Box 3 (cont'd.)

6. Local Coastal Program (LCP): Local governments in the coastal zone must prepare a guide to development in the coastal zone that is consistent with the Coastal Act and certified by the Coastal Commission. LCPs contain the ground rules for future development and protection of coastal resources. Climate change issues, particularly sea-level rise and associated effects, should be addressed in the LCP.

7. Capital Improvement Plan/Program (CIP): For adaptation strategies that require capital expenditures (e.g., relocating a wastewater treatment plant, building a cooling center, etc.), The community CIP is an appropriate place to address priorities, funding, and scheduling of implementing adaptation strategies.

8. Climate Change Adaptation Plan: A community can choose to create a stand-alone adaptation plan to contain all of the background data and analysis as well as the adaptation strategies. With a stand-alone plan, all other plans and programs would slowly be adjusted to be consistent through periodic updates as they would normally occur.

9. Integrated Regional Water Management (IRWM) groups (48 in the state) are collaborative efforts to address regional water resources (http://www.water.ca.gov/irwm/). The regional approach supports local jurisdictions by providing coordination and information. The associated grant funding for the IRWM program supports adaptation strategy development and implementation.

What is the difference between greenhouse gas mitigation and climate adaptation?

Local planning documents can address climate change by establishing goals for greenhouse gas (GHG) emissions reduction (also called mitigation) and adaptation (Figure 2). These two goals should be pursued in parallel and, when possible, include strategies that serve both needs. While the two goals are complementary in most ways, there is potential for conflict (Moser, 2012). For example, a cooling center that provides relief for community members during extreme heat events may rely on air conditioning. Depending on the source of electricity, using air conditioning can increase GHG emissions. In addition, even when both goals are being met by a single strategy, the reasoning that led to the strategy can be different. For example, a tree-planting program will aid in sequestering carbon, a GHG reduction benefit, and help alleviate the effect of heat, which achieves both goals.

The challenge for local jurisdictions is to evaluate each strategy relative to local need. In a dense urban area where extreme heat also carries risks of decreased air quality and increased heat-related health consequences, a tree-planting

program alone may not be enough to address the threat posed by climate change on its own. For each strategy considered to address a climate adaptation need, GHG reduction should be viewed as a desirable co-benefit. Combining the two can lead to government efficiency, cost savings, and funding opportunities.

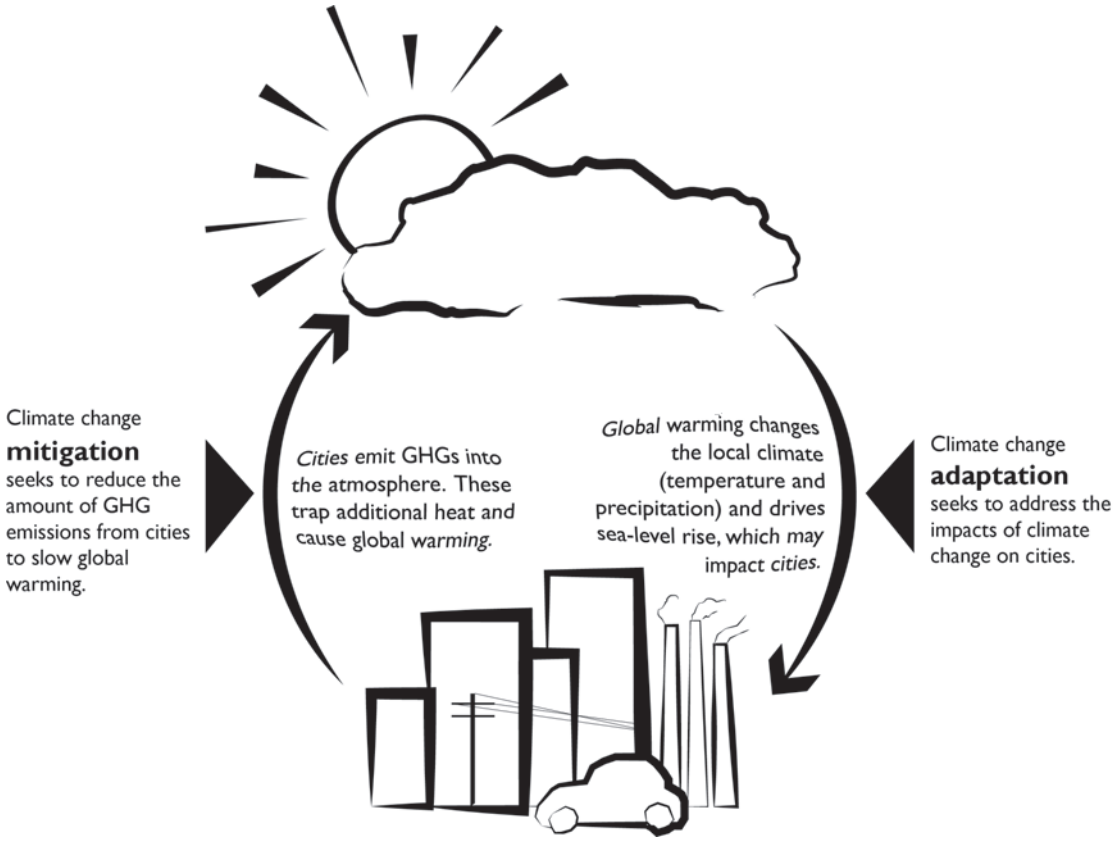


Figure 2. Illustration of the roles of mitigation, or greenhouse gas emission reduction, and adaptation in combating the causes and impacts of climate change.

How is climate adaptation related to hazard mitigation planning?

Natural hazard impacts are only one area that may be affected by climate change. Other areas that may be affected include agricultural, forestry, and fisheries productivity; ecosystem structure and function; and public health. Planning in all of these areas should be done in light of potential climate change impacts. For Local Hazard Mitigation Plan (LHMP) development, climate change should be incorporated into the assessment of hazards risk. Ideally, measures identified in the LHMP will address both current hazards needs and future climate-change-affected hazards.

Box 4

Types of information required for conducting climate adaptation planning:

- Information from the web-based Cal-Adapt tool (cal-adapt.org) that shows the type, magnitude, and onset of various effects of climate change that a community will experience (e.g., the extent of coastal inundation from sea-level rise expected by 2050).
- Information from local agencies on the types of assets, resources, and populations that will be sensitive to various climate change exposures (e.g., the location of infrastructure in the coastal zone or the types of people in the community prone to heat stress).
- Information from local agencies on their current ability to deal with the impacts of climate change (e.g., firefighting capacity to handle anticipated future changes in wildfire regimes).

How complicated is the climate adaptation planning process?

Communities can do as much or as little as they desire. This guide allows for flexibility in commitment of time, staffing, money, and scope. If communities want to do a basic plan drawing on readily available data (see Box 4) and minimizing staff commitment, then the APG can support that approach. If the community wants to do a more in-depth plan, then the APG can support that approach as well. The logic is the same; what will differ is the sophistication of the vulnerability assessment and the extent of the strategy development.

What is the product of this effort and how will it be used?

The two basic products of a climate change adaptation plan are a vulnerability assessment and adaptation strategies. The vulnerability assessment is an exercise to identify what and how climate change will impact the community. The adaptation policies/strategies are developed through a collaborative process and address how the community will address the impacts identified in the vulnerability assessment given its resources, goals, values, needs, and regional context. The climate change adaptation strategies can then be codified and implemented through a number of instruments that already exist in the community (see Box 3).

Who needs to be involved?

It is important to get the right organizations, people, and resources assembled for adaptation planning. In general these can be thought of as encompassing three groups:

- Local: Local organizations, people, and resources are key for gathering and analyzing local information, developing robust climate adaptation strategies, building political support, and creating a more informed and active community. This includes building support from community elected officials and civic leaders.

- Internal: Since climate adaptation affects a wide variety of community populations and assets, there should be an "adaptation team" assembled from local agency staff who can provide data, insight, and strategy ideas. The most common government agencies/departments include planning, community development, building, engineering, public works, emergency management, police, fire, finance, public health, and environment. The level of commitment needed from the team will vary depending on the level of intricacy of the plan.

- Non-local: National, state and regional government agencies and non-profit organizations can provide data, guidance, and sometimes funding in support of climate adaptation planning. In addition, neighboring communities should be approached about collaborating on adaptation planning.

How can the public be engaged?

Engaging the community (see Box 5) is essential to ensuring that adaptation policies and strategies can be adopted, that they are equitable, and that they can be implemented efficiently. Local political processes require some level of consensus around approaches to climate change impacts, but it is likely that "public opinion regarding climate change is divided and fluid" (Boswell et al., 2012, pg. 66). Local agencies cannot take for granted simple acceptance or agreement. Public engagement offers the opportunity to educate and build commitment and consensus among local decision-makers and community members.

Communicating about climate change can be challenging. Many people still tend to view climate change impacts and solutions as global rather than local, meaning they may not understand the potential for local impacts or the importance of local approaches to adaptation. Communities also may not understand the "human" impacts of climate change, which may influence the relevance of these concerns for some (Maibach et al., 2011). A number of approaches to addressing these challenges and several suggestions for community engagement in climate change issues are listed in Box 5.

Box 5

Suggestions for Engaging the Public:

- Set clear goals for why you are communicating with the public (e.g., informing, motivating action, soliciting participation) and consider how and from where your audience receives information.
- "Localize" the issues. Frame the issues in terms of local impacts and solutions.
- Clarify the human impacts of climate change along with other impacts.
- Emphasize the co-benefits of solutions and adaptation measures. For instance many actions taken to address and adapt to climate change (e.g. transit-oriented development that produces more walkable communities, urban greening) benefit a community's health and livability.
- Partner with other local agencies, non-governmental organizations (NGOs), community organizations and groups, and others and build on existing relationships with local communities.
- Use both traditional media (newspapers and television) and relatively new forms (blogs and other social media) to reach your audience.
- Consider the diversity of local groups within your community (e.g. consider special needs and cultural traditions) to maximize the diversity of groups participating. Local health departments may have pre-existing relationships with low-income and underrepresented communities and working with them can make the engagement process more inclusive.
- Include community members early in the process and throughout the implementation process.

Are there any special or creative sources of funding for implementing climate change adaptation policies?

Adaptation can be funded in a variety of ways and potential sources of funding, such as grant programs, continually change. A series of potential funding sources are identified below.

- Leveraging or directing existing funding can be an effective approach. For example, a local government that has already programmed a bridge replacement should take into consideration possible climate change impacts such as the potential for increased flood heights. The bridge could then be designed and built with these impacts in mind, possibly with little or no change in cost.
- Local governments should identify strategies that meet multiple community goals or needs. This will make available a greater number of potential funding mechanisms. For example, many energy efficiency efforts have climate change adaptation benefits. Wetland restoration or low-impact design can reduce flood vulnerability and increase groundwater recharge.
- For projects designed to address climate change impacts that exacerbate natural hazards, local governments should investigate state and federal grant opportunities that could apply. Cal EMA maintains a listing of these grants: http://hazardmitigation.calema.ca.gov/grants. Other agencies that have funding opportunities include the California Department of Water Resources (DWR) through the Integrated Regional Water Management (IRWM) grant program and the California Energy Commission (CEC).
- Local governments should look to partner with other jurisdictions, regional organizations, and agencies to address climate change impacts. Many impacts cross political boundaries and may require collaboration for long-term solutions. Collaboration can result in economic efficiency and additional funding sources.
- Since all state agencies are required to plan for climate change, local governments may find opportunities for jointly funded projects.

What is the best way to get started?

The most important step in preparing to develop climate policy is establishing a climate change adaptation team (see Box 6) to promote communication and collaboration among departments and with stakeholders. This team can take multiple forms such as a task force, committee, or workshop series. Communities can determine the best approach to meet local needs based on duration of the policy development period, the level of local commitment to the process, and availability of staff.

Adaptation policy development requires information and feedback from the staff members most familiar with local or regional activities vulnerable to climate

change impacts. Assessing vulnerability requires an evaluation of secondary impacts of climate change, which have the potential to involve local conditions as varied as ecosystem health, economic viability, infrastructure maintenance, emergency response, and public health. In addition to evaluating potential impact, a critical task of the climate change adaptation team is assessing how well existing policies and programs respond to projected climate changes.

Box 6

The Climate Change Adaptation Team

The critical members of the climate change adaptation team will vary by community. Categories of expertise that should be considered when assembling the team include the following:

- Long-range planning or community development
- Emergency response and natural hazards planning
- Economic development
- Parks and open space
- Transportation or engineering
- Utilities (water, wastewater, etc.)
- Administration/finance
- Chamber of commerce
- Public health
- Social services
- Regional entities (e.g. air districts, metropolitan planning organizations, regional transportation planning agencies, etc.)
- Regional science organizations or universities
- Local non-governmental organizations (NGOs) (environmental, social, etc)
- Professional organizations (agricultural, fisheries, communications, etc.)

What is the State doing to address climate adaptation and how can the State assist local governments?

The State of California addresses adaptation to climate change in a variety of ways. The overarching guidance document is the 2009 California Climate Adaptation Strategy (CAS), which is being updated. The CAS summarizes the science of climate impacts, specifies comprehensive state adaptation strategies, and analyzes the impacts to a variety of strategic sector areas. In implementing the CAS, the State is also developing the documents of the Adaptation Planning Guide (APG) to provide a decision-making framework intended for use by local and regional stakeholders to aid in the interpretation of climate science and to develop a systematic rationale for reducing risks caused, or exacerbated, by climate change. The California Natural Resources Agency and the California Energy Commission have released Cal-Adapt (cal-adapt.org), a web-based tool

which enables city and county planners, government agencies, and the public to identify potential climate change risks in specific areas throughout California. Finally, most state agencies are in the process of preparing their own plans and resource documents for addressing climate adaptation.

Communities should use this APG and the Cal-Adapt website as their primary resources for analyzing the impacts of climate change and preparing adaptation strategies. In addition, communities can look to state and regional entities with specialized information about their regions. For example, communities where wildfire occurrence/intensity is expected to increase should look to CAL FIRE for tools, guidance, and coordination. Likewise, a Bay Area community facing sea level rise should look to entities such as the California Coastal Commission, the San Francisco Bay Conservation and Development Commission, and the Association of Bay Area Governments.

Who developed the guide and why?

The APG was developed by the California Emergency Management Agency and the California Natural Resources Agency with funding from the Federal Emergency Management Agency and California Energy Commission to assist local and regional government agencies in planning for climate change adaptation. An Advisory Committee made up of climate change experts from state agencies and state-level NGOs informed the APG. The APG was also pilot-tested in seven communities. A faculty-led team at California Polytechnic State University, San Luis Obispo assisted the state agencies in developing and testing the APG.

Climate Change Adaptation Planning Process

Climate change adaptation strategies seek to reduce vulnerability to projected climate changes and increase the local capacity to adapt (Turner et al., 2003). The process of developing climate change adaptation strategies can vary from a short, initial qualitative process to a much more detailed, lengthy, comprehensive approach. Regardless of where a community falls in this spectrum, the basic steps are the same. This section details the steps in vulnerability assessment and strategy development.

The adaptation strategy development process must be viewed as iterative and ongoing. The nine steps in the strategy development process are related and can overlap. The progression through the steps will be iterative, where completing one step may raise issues important in an already completed step. When this occurs, prior steps should be revisited before the process continues. In other cases, communities may decide that two steps are most efficiently addressed concurrently. To better navigate the process and anticipate subsequent steps, participants are encouraged to read through this *APG: Planning for Adaptive Communities* document before initiating the process.

Development of strategies to address climate change impacts follows a sequence of steps (see Figure 3): (1) assessing exposure to climate change impacts; (2) assessing community sensitivity to the exposure; (3) assessing potential impacts; (4) evaluating existing community capacity to adapt to anticipated impacts; (5) evaluating risk and onset, meaning the certainty of the projections and speed at which they may occur; (6) setting priorities for adaptation needs; (7) identifying strategies; (8) evaluating and setting priorities for strategies; and (9) establishing phasing and implementation.

Once strategies have been identified and implementation has begun, the process should be repeated. Climate change progresses though time. The science that aids understanding of climate change is continually refined and the local conditions in which strategies are implemented can also be dynamic. As a result, adaptation strategies must be regularly assessed for effectiveness and adequacy for addressing the challenges being faced by a community.

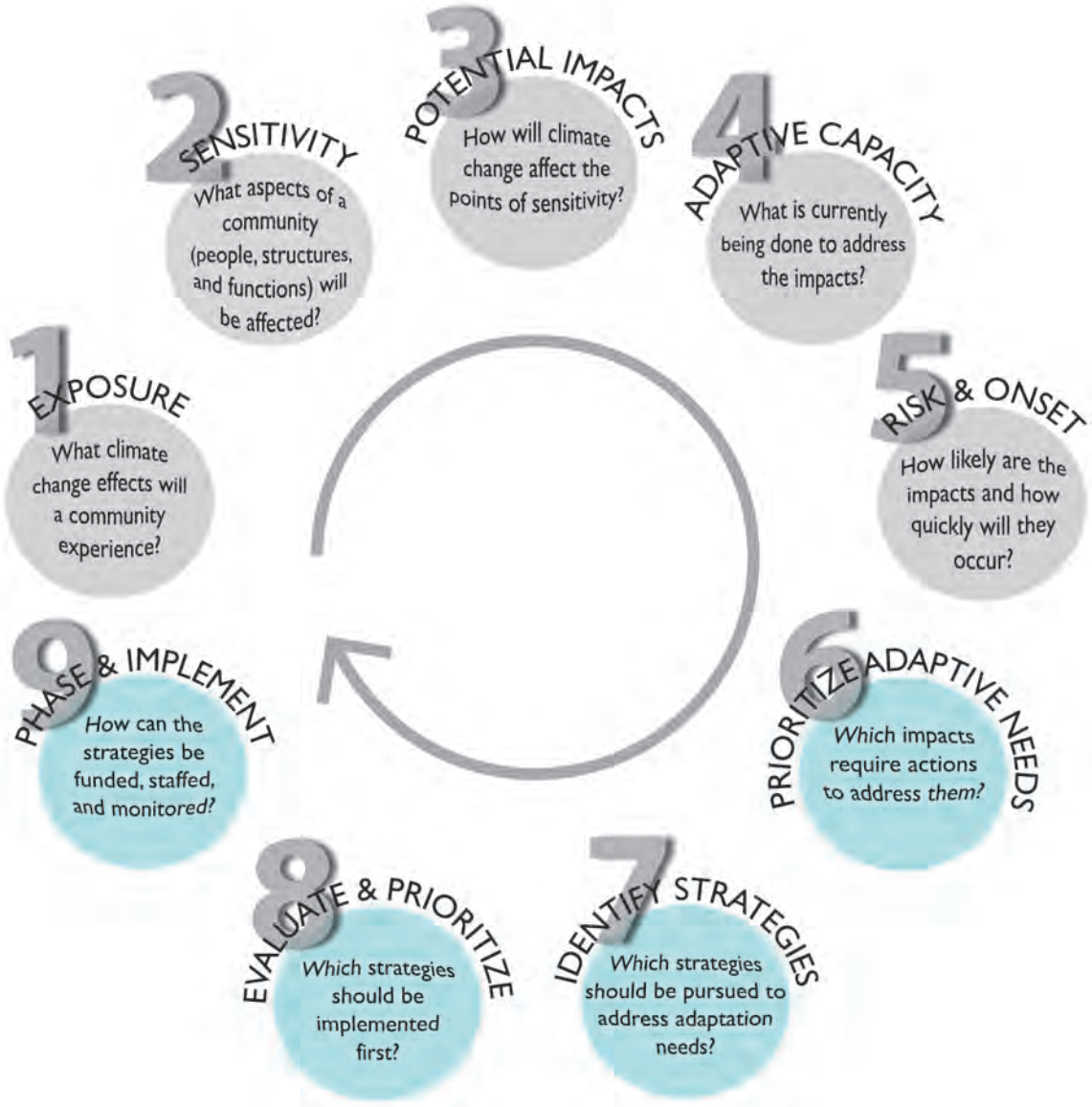


Figure 3. The nine steps in adaptation planning development.
The gray steps are part of vulnerability assessment (steps 1-5) and the blue steps are adaptation strategy development (steps 6-9).

The nine steps are arranged in sequence. The first five make up a vulnerability assessment (see Figure 3). Climate vulnerability assessment is a method for determining the potential impacts of climate change on community assets and populations. The severity of these impacts and the community's ability to respond will determine how these impacts affect a community's health, economy, ecosystems, and socio-cultural stability. Communities that understand these impacts can prepare climate adaptation policies and programs to increase resilience to climate change.

Climate Change Vulnerability Assessment

Vulnerability assessment involves the first five steps in climate change adaptation planning development (see Figure 3):

1. Exposure: What climate change effects will a community experience?
2. Sensitivity: What aspects of a community (people, structures, and functions) will be affected?
3. Potential Impacts: How will climate change affect the points of sensitivity?
4. Adaptive Capacity: What is currently being done to address the impacts?
5. Risk and Onset: How likely are the impacts and how quickly will they occur?

Climate change vulnerability assessment can require data collection and analysis. The level of detail required will depend on the depth desired by a community. Some of the data may be well documented for the community and some may exist only in the collective knowledge of community experts. The analysts conducting the vulnerability assessment will need to identify data needs and consider consulting a group of experts–i.e., a climate change adaptation team (see Box 6)–to create a robust assessment.

Step 1. Exposure: What climate change effects will a community experience?

Outcome: A list of the changes projected for each climate impact for 2050 and the end of the century. This list should identify the degree of change (difference from current conditions) and the location of the change.

The projected changes to the climate vary based on location. Communities or regions must first determine what climate change will mean locally. The direct changes include the following:

- Average temperature
- Annual precipitation
- Sea level rise

Severe storms and ocean acidification are also direct climate impacts, but projection data are less easily acquired. In the case of these impacts, potential local effects should be acknowledged.

Secondary impacts should be assessed as well. In California, three secondary impacts–heat wave frequency, wildfire risk, and snowpack (Cal-Adapt.org)–have been analyzed and projection data are available. For secondary impacts that do not have projection data, potential impacts can be identified based on the primary climate change impacts projected for a given location (see Table 1).

Table 1. Secondary impacts associated with primary impacts individually or in combination

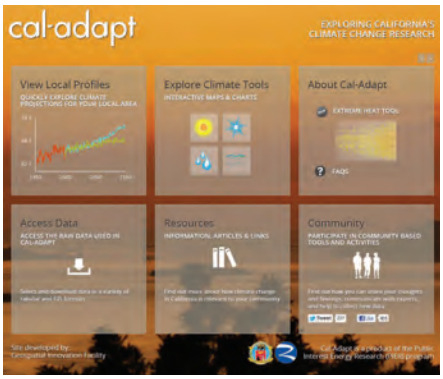
PRIMARY IMPACT	ASSOCIATED SECONDARY IMPACTS
Sea level rise	Inundation or long-term waterline change
	Extreme high tide*
	Coastal erosion*
	Saltwater intrusion*
Changed temperature and/ or precipitation patterns	Changed seasonal patterns*
Increased temperature	Heat wave
Increased temperature and/ or changed precipitation	Intense rainstorms*
Wildfire and/or increased precipitation	Landslide*
Increased temperature and/ or reduced precipitation	Drought*
	Wildfire
	Reduced snowpack

[*Indicate secondary impacts that do not have projections available through Cal-Adapt.org]
Source: IPCC. 2007. WG1 Physical Science Basis, Section 10 & 11.

For each of the projected changes, the goal is to answer the following questions:

- What is the difference between current conditions and those projected for 2050 and at the end of the century?
- How quickly are these changes projected to occur?
- Over how large an area are the changes projected to occur?

Communities should utilize the best available data for their location. If a university, science agency, or regional entity has developed a more specific assessment of local climate change, communities are encouraged to rely on this data.



Cal-Adapt.org and GIS

For a community that has staff with geographical information systems (GIS) expertise, the data displayed on Cal-Adapt.org can be downloaded by choosing the "Data Access" option. Combining climate projection data with local data layers such as land use may be helpful to communities conducting a vulnerability assessment.

In California, Cal-Adapt.org serves as a good starting point for determining climate exposure. It assembles a variety of data sources to show climate change scenarios for California at a regional level. The data can provide a general understanding of the types of changes that can be expected. All users of the tools should understand that the scenarios they are working with represent only a sample of the potential climate outcomes, contain a level of uncertainty, and become increasingly limited in usefulness as the area being assessed gets smaller.

Steps for Estimating Regional Climate Change Exposure

Communities can use the online Cal-Adapt tool (cal-adapt.org) or other regional data sources to determine local exposure to projected climate changes (use high emissions scenario in cal-adapt.org). While 2050 and 2100 serve as benchmarks, communities should also evaluate general plan buildout year and rate of change over time.

a. Sea level rise: Identify areas of the community that are currently subject to coastal flooding (100-year flood) and areas potentially subject to the 55-inch rise forecasted for 2100. Communities should be aware that while Cal-Adapt maps a 55-inch rise in sea level, this is an average value. The high emissions scenario can result in 43 to 69-inches of sea level rise (CO-CAT, 2010; NAS, 2012).
b. Precipitation: Identify the current annual precipitation and the forecasted change over time, specifically assessing 2050 and 2090. The rate of change should also be evaluated.
c. Temperature: Identify the current average seasonal temperatures and the forecasted change over time, specifically evaluating 2050 and 2100.
d. Heat waves: Identify the current number of extreme heat events and heat waves and the projected change through time.
e. Snowpack: Identify the current amount of water stored as snow during the winter and spring months and the projected change through time.
f. Wildfire: Identify the projected increase in area burned in 2020, 2050, and 2085.

Exposure Example 1

A community located in western Kern County identified the following changes as part of an evaluation of climate exposure using Cal-Adapt:

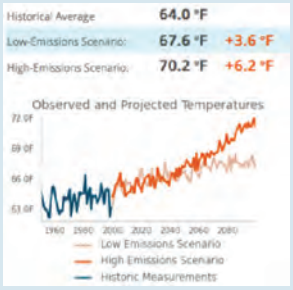


Figure 4. Example Cal-Adapt.org output for temperature

- Average temperature is projected to climb steadily, with increases of 2.5 ˚F by 2050 and 6.2 ˚F by 2100.
- The annual number of extreme heat days (with temperatures of more than 105˚F) is projected to increase from the current number of roughly 10 to nearly 30 by 2050 and over 65 by the end of the century (see Figure 4).
- Precipitation is projected to decline from the current annual total of 6 inches per year to 5 inches per year in 2050 and 4.5 inches per year in 2100.
- The location is also likely to experience altered seasons, drought, and intense rainstorms. These cannot be estimated on Cal-Adapt, but are acknowledged as possible outcomes.

Exposure Example 2

A community located in Nevada County in the Sierra identified the following changes as part of an evaluation of climate exposure using Cal-Adapt:

Figure 5. Example Cal-Adapt.org output for fire risk

- Average temperature is projected to climb steadily, reaching a 4.5˚F increase by 2050 and a 7.0˚F increase by 2100.
- Extreme heat is defined as days over 88˚F at this location. The number of extreme heat days is projected to increase from roughly 10 per year to 25 per year in 2050 and 65 per year in 2100.
- Heat waves (5 consecutive days over 88˚F) are projected to increase from 2 or fewer per year to roughly 3 per year in 2050 and more than 8 per year in 2100.)
- Precipitation is projected to decrease from annual total over 40 inches in 2010 to roughly 36 inches in 2050 and 33 inches in 2100.
- April snowpack is projected to decrease from roughly 6 inches of water equivalence to 2 inches in 2050 to less than 1 inch (a reduction of more than 85 percent) in 2100.
- Moderate increases in wildfire risk over current conditions are projected between 2020 and 2050 (1.17 and 1.46, respectively). A much larger increase in wildfire risk (2.65) is projected in 2100 (see Figure 5).
- The region is also likely to experience altered seasons, intense rainstorms, and landslides. Forecasts for these phenomena are not yet available on Cal-Adapt, but should be acknowledged as potential changes.

Step 2. Sensitivity: What aspects of a community (functions, structures, and populations) will be affected?

Outcome: A list of potentially affected community resources.

This step involves a systematic evaluation to identify community structures, functions, and populations that may be affected by the projected exposure to climate change impacts. The evaluation requires nothing more than "yes" and "no" answers (potentially affected or not). The next step (Step 3) evaluates how the impacts will occur and how severe they may be.

Categories useful for this evaluation are described below (FEMA, 2001). The categories are those used for the evaluation of natural hazards. The process used for climate adaptation is similar. The checklist is focused specifically on assessing the community resources potentially affected by climate change. These categories explain some of the reasoning behind the items on the checklist that follows. The checklist is intended to ensure that less obvious secondary climate impacts are identified. Communities need only identify those items on the checklist potentially affected by the projected local climate exposure.

- **Essential Facilities** such as hospitals and other medical facilities, police and fire stations, emergency operations centers and evacuation shelters, and schools. These facilities are essential to the health and welfare of the whole population and are especially important following climate-influenced hazard events. The potential consequences of losing them are so great that they should be carefully inventoried.
- **Transportation Systems** such as airways (airports, heliports, highways); bridges; tunnels; road beds; overpasses; transfer centers; railways (tracks, tunnels, bridges, rail yards, depots); and waterways (canals, locks, seaports, ferries, harbors, drydocks, piers).
- **Lifeline Utility Systems** such as potable water, wastewater, fuel, natural gas, electric power, and communication systems.
- **High Potential Loss Facilities**, such as nuclear power plants, dams, and military installations, where damage would have large environmental, economic, or public safety consequences).
- **Hazardous Material Facilities**, including facilities housing industrial/ hazardous materials such as corrosives, explosives, flammable materials, radioactive materials, and toxins.
- **Vulnerable Populations** such as non-English-speaking people or elderly people who may require special response assistance or special medical care after a climate-influenced disaster.

- **Economic Elements** such as major employers and financial centers that could affect the local or regional economy if disrupted.
- **Areas of Special Consideration** such as areas of high-density residential or commercial development where damage could result in high death tolls and injury rates.
- **Historic, Cultural, and Natural Resource Areas** such as areas that may be identified and protected under state or federal law.
- **Other Important Facilitie**s that help ensure a full recovery from or adjustment to changed climate conditions. These would include government functions, major employers, banks, and certain commercial establishments such as grocery stores, hardware stores, and gas stations.

SENSITIVITY CHECKLIST

Communities can use the following checklists to evaluate those functions, structures, and populations potentially affected by the exposure identified in Step 1.

Functions

- ☐ Government continuity
- ☐ Water/sewer/solid waste
- ☐ Energy delivery
- ☐ Emergency services
- ☐ Public safety
- ☐ Public health
- ☐ Emotional and mental health
- ☐ Business continuity
- ☐ Housing access
- ☐ Employment and job access
- ☐ Food security
- ☐ Mobility/transportation/access
- ☐ Quality of life
- ☐ Social services
- ☐ Ecological function
- ☐ Tourism
- ☐ Recreation
- ☐ Agriculture, forest, and fishery productivity
- ☐ Industrial operations

Structures

- ☐ Residential
- ☐ Commercial
- ☐ Industrial
- ☐ Government
- ☐ Institutional (schools, churches, hospitals, prisons, etc.)
- ☐ Parks and open space
- ☐ Recreational facilities
- ☐ Transportation facilities and infrastructure
- ☐ Marine facilities
- ☐ Communication infrastructure
- ☐ Dikes and levees
- ☐ Water treatment plant and delivery infrastructure
- ☐ Wastewater treatment plant and collection infrastructure

Populations

- ☐ Seniors
- ☐ Children
- ☐ Individuals with disabilities
- ☐ Individuals with compromised immune systems
- ☐ Individuals who are chronically ill
- ☐ Individuals without access lifelines (e.g. car or transit, telephones)
- ☐ Non-white communities
- ☐ Low-income, unemployed, or underemployed communities
- ☐ Individuals with limited English skills
- ☐ Renters
- ☐ Students
- ☐ Seasonal residents
- ☐ Individuals uncertain about available resources because of citizenship status

Sensitivity Example 1

A community located along the central coast may experience between 43 and 69 inches of sea level rise. This increase in sea level (including the related coastal flooding, extreme high tide, coastal erosion, and storms) has the potential to affect a wastewater treatment plant, a local power plant, roadways in and out of the community, downtown commercial areas, the local harbor, park and open space areas, and a middle-income residential area. The points of sensitivity (potentially affected community resources) identified for this exposure include the following:

Functions

- ☑ Government continuity
- ☑ Water/sewer/solid waste
- ☑ Energy delivery
- ☑ Emergency services
- ☑ Public safety
- ☑ Public health
- ☑ Emotional and mental health
- ☑ Business continuity
- ☑ Housing access
- ☑ Employment and job access
- ☑ Mobility/transportation/access
- ☑ Quality of life
- ☑ Ecological function
- ☑ Tourism
- ☑ Recreation
- ☑ Agriculture, forest, and fishery productivity
- ☑ Industrial operations

Structures

- ☑ Residential
- ☑ Commercial
- ☑ Industrial
- ☑ Parks and open space
- ☑ Recreational facilities
- ☑ Transportation facilities and infrastructure
- ☑ Marine facilities
- ☑ Wastewater treatment plant and collection infrastructure

Populations

- ☑ Seniors
- ☑ Children
- ☑ Individuals with disabilities
- ☑ Individuals with compromised immune systems
- ☑ Individuals who are chronically ill
- ☑ Individuals without access lifelines (e.g. car or transit, telephones)

Step 3. Potential Impacts: How will climate change affect the points of sensitivity?

Outcome: A list of potential impacts, each rated low, medium, or high.

This step can be completed with varying level of detail and relies heavily on the expertise of the staff and stakeholders on the climate change adaptation team. It is closely related to the following step of evaluating adaptive capacity. Vulnerability is assessed by determining how an identified point of sensitivity would affect a community (Step 3), and then evaluating existing tools to address this impact (Step 4).

The Federal Emergency Management Agency (FEMA), in its "how-to" guides, establishes methods for creating detailed assessments of hazard impacts (FEMA, 2001). Although these could be applied to climate and climate-related hazards, the required level of detail is high. Moreover, the uncertainty of climate scenarios lessens the usefulness of this approach. Given that climate change exposures at the community scale are inherently uncertain, it is recommended that communities conduct a qualitative assessment that describes the potential impact based on the exposure.

Accurately describing potential impacts relies on input from the climate change adaptation team (staff members and stakeholders most familiar with each of the affected sectors). The same impact can have very different meanings in different communities. Factors to consider in defining these terms should include the spatial and temporal extent of the impact, the degree to which it yields permanent or reversible consequences and/or endangers local population (physical safety, health, etc.), and the extent to which the impact would disrupt typical community function such as provision of services or economic continuity.

The climate change adaptation team can help assess the potential impacts of climate change by developing general descriptive scenarios. These scenarios should assess structural integrity and content value, as well as the effects on the interruption of the functions. Vulnerability is based on the service housed in a structure rather than simply its physical integrity. For example, if a particular facility such as a community center is threatened by climate change impacts, the facility and also the local residents reliant on that facility should be identified as at risk. Each description should include the following for each identified point of sensitivity:

a. The temporal extent of the impact
b. The spatial extent of the impact
c. The permanence of the impact
d. The level of disruption to normal community function

Potential Impacts Example 1: San Clemente, CA

In San Clemente, California, the city's marine safety building is located on the beach just north of the municipal pier. The building houses a number of activities, including administrative offices, public restrooms and showers, classrooms for lifeguards, emergency warning systems and response equipment, and beach maintenance operations. The building is already at risk for sea level rise damage during winter high tide events. The beach adjoining the building is a popular community and tourist destination.

San Clemente Marine Safety Building outlined in red

To identify potential impacts, San Clemente's adaptation team not only evaluated the physical threat to the structure, but also the potential impact on community members reliant on the services housed by the building. Table 2 shows a sample of the spreadsheet developed by the City to identify potential impacts resulting from water damage or destruction of the building. The City organized the impacts into categories: service level, lifeguard operations, and beach maintenance. Table 2 shows the potential impact ratings for service level impacts. In subsequent steps, each of the potential impacts was assessed based on the City's ability to provide these services to the identified populations elsewhere.

Potential Impacts Example 1 (cont'd.)

Table 2. Sample assessment of potential sea level rise impact on Marine Safety Building in San Clemente, CA

POTENTIAL IMPACTS	SENSITIVITY	TEMPORAL EXTENT	SPATIAL EXTENT	RATING
Water damage and destruction of marine safety building	Marine safety building	4 years+	One area (MS)	high
Service level impacts				
Loss of on-site offices–staff less available to respond to public emergencies	Potential impact on any of 2.5 million annual visitors to beach	4 years+	Entire beach	high
Loss of on-site supervision and reduced oversight	Potential impact on any of 2.5 million annual visitors to beach	4 years+	Entire beach	high
Loss of advanced first aid facilities for public	Impact on injured citizens	4 years+	One area (MS)	high
Loss of hot showers for hypothermic patients and lifeguards	Impact on public and employees	4 years+	One area (MS)	high
Loss of building providing public walk-in assistance	Impact on public and employees	4 years+	One area (MS)	medium
Loss of training facility/classroom for junior lifeguards	Impact on 650 students annually	4 years+	One area (MS)	medium
Loss of swimmer observation facility	Impact on approximately 30% of beach population	4 years+	One area (MS)	high
Loss of public clock visible to 50% of beach	Impact on approximately 50% of beach population	4 years+	50% of beach	low

Step 4. Adaptive Capacity: What is or can be currently done to address the impacts?

Outcome: The current capacity for a community to address each of the potential impacts is assessed and rated low, medium, or high.

Adaptive capacity is the current ability of a community to address the potential impacts. Many communities have existing policies, plans, programs, resources, or institutions that are already in place or can be implemented with little effort to adapt to climate change and reduce potential impacts. Step 4 asks that communities carefully evaluate existing measures to determine level of preparedness for projected impacts. Based on this information, adaptive capacity should be rated high, medium, or low. The adaptation team, comprised of local and regional staff and other stakeholders, should make these determinations. High adaptive capacity indicates that measures are already in place to address projected changes, where a low rating indicates a community is unprepared.

For example, a community that identifies reduced water supply due to rainfall and snowpack changes may already be developing new water sources or setting aside money to do so. This community has a high adaptive capacity in the case of water supply since a solution to the climate change impact is being developed or can be readily implemented. These existing resources should be identified to inform additional policy and program development.

For each policy or program that addresses a potential impact, the following tasks should be undertaken:

- Identify actions in progress, planned, or readily implemented to address the issue.
- If the policy or program is not yet implemented, evaluate the time and resources needed for implementation.
- Assess the extent to which the existing policy or program addresses potential impacts ("is it enough?").
- Note the degree to which the existing policy or program could be strengthened.

In addition to identifying measures that already directly address a climate change impact, an assessment of local plans and programs can provide insight into the type of actions most successful in a given community. The following types of city and county documents should be included in an audit of local measures (adapted from Boswell, Greve, and Seale, 2012):

Plans

General Plan
Climate Action Plan
Climate Adaptation Plan
Area and Specific Plans
Local Hazard Mitigation Plans
Local Coastal Plans
Urban Water Management Plan
Downtown Plan
Transit Plan
Sustainable Community Plans (SB375)
Regional Transportation Plans
Integrated Regional Water Management

Standards, Ordinance, and Programs

Capital Improvement Program
Zoning Code
Building Code
Fire Code
Tree Ordinance
Floodplain Ordinance
Stormwater Management Program

Adaptive Capacity Example 1: Heat-related health in Central Valley

A community in the Central Valley is projected to see a 7°F increase in average temperature by 2100 with an increase of one to three heat waves per year by 2050 and nearly 10 heat waves per year by 2100, according to Cal-Adapt.org. In this area, a heat wave is defined as four or more days over 102° F. Based on the 2010 U.S. Census, this community is 47 percent Hispanic, with an average household income well below the California average.

The community identified several points of sensitivity associated with the projected temperature changes, including the local economy due to agricultural impacts and public health concerns, particularly with respect to heat waves. Potential impacts associated with public health included cardiovascular disease; exacerbation of asthma, allergies, and chronic obstructive pulmonary disease (COPD); increased risk of skin cancer and cataracts; premature death; cardiovascular stress and failure; and heat-related illnesses such as heat stroke, heat exhaustion, and kidney stones. The evaluation of these impacts included identification of the populations most vulnerable, including the elderly, children, those who lack access to air conditioning, and those who work outdoors in agriculture or construction.

Adaptive Capacity Example 1 (cont'd.)

Adaptive capacity was assessed by evaluating the extent to which these potential impacts were already being addressed. The evaluation included the following:

- ☐ Have agencies and organizations been contacted that can identify and reach vulnerable populations and provide them with information on what they need to know about the risks of climate change and what can be done to address them?
- ☐ Are early warning systems in place for extreme heat events?
- ☐ Are cooling centers readily accessible and located in familiar places, both in terms of locale and transportation options, for vulnerable populations?
- ☐ Are there vulnerable members of the community without air conditioning? Are there programs available to provide air conditioning units?
- ☐ Do plans require or promote additional open space, green space, shade cover, urban forests, community gardens, parks, and trees and other vegetation that address the impacts of heat islands and heat events upon agricultural and tourism workers?
- ☐ Has the community considered adoption of community-level cooling strategies such as white or green roofs, cool pavements, cool parking lots, and land use and building design that can result in cooling?
- ☐ Does the local health department or department responsible for emergency preparedness have community-wide assessments of the location of the most vulnerable populations?
- ☐ What type of public education and community outreach efforts are underway and are they accessible to diverse groups and through a diversity of agencies and media?
- ☐ Are local employers and business associations participating in local efforts to address climate change and health and socioeconomic impacts upon employees?

Based on this evaluation, each potential impact associated with public health was rated high, medium, or low taking into account the adaptive capacity. High was defined as currently prepared to address the projected changes and low as unprepared for the temperature and heat wave projections.

Step 5. Risk and Onset: How likely are the impacts and how quickly will they occur?

Outcome: Each potential impact rated low, medium, or high based on certainty and rated near-term, mid-term, and long-term based on onset.

Although this is listed as a fifth step, it will likely be conducted in tandem with the previous two steps of identifying impacts and local capacity. This step asks the climate change adaptation team to rank impacts based on the level of risk and the projected timeframe.

Risk

Risk is the likelihood or probability that a certain magnitude/extent/scale of potential impact will occur. This is an assessment that combines the estimated certainty of the science projecting the climate change impact and the certainty of the sector sensitivity. In general, impacts with higher probability should be ranked at a higher priority for community action.

The following task is recommended:

1. For each impact, assign a low, medium, or high uncertainty, based on the certainty of the primary or secondary exposure estimated in Step 1 (see Table 3 and Table 4).

Table 3. Probability based on global models

DRIVER	% PROBABILITY (IPCC)	CERTAINTY RATING
Temperature change	> 90% probability	High
Precipitation change	> 66% probability	Medium
Sea level rise	> 90% probability	High
Snow season and depth change	> 90% probability	High

Source: IPCC, 2007.

Table 4. Secondary impact associations.

PRIMARY IMPACT	ASSOCIATED SECONDARY IMPACTS	CERTAINTY RATING
Sea level rise	Inundation or long-term waterline change	High
	Extreme high tide	High
	Coastal erosion	High
	Saltwater intrusion	High
Changed temperature and/or precipitation patterns	Changed seasonal patterns	Medium
Increased temperature	Heat wave	High
Increased temperature and/or changed precipitation	Intense rainstorms	Medium
Wildfire and/or increased precipitation	Landslide	Medium
Increased temperature and/or reduced precipitation	Drought	Medium
	Wildfire	Medium
	Reduced snowpack	High

Estimated based on most conservative driver from Table 3
Source: IPCC, 2007.

Timeframes

In general, impacts with a quicker onset should be ranked at a higher priority for community action. Like factors in other assessment steps, timeframe cannot be precisely estimated. However, it is possible to categorize impacts as near-, mid-, and long-term. These timelines can be obtained from the Cal-Adapt tool (www.cal-adapt.org).

The following task is recommended:

1. For each impact, designate the timeline for expected impacts:
    a. Current: Impacts currently occurring
    b. Near-term: 2020-2040
    c. Mid-term: 2040-2070
    d. Long-term: 2070-2100

Adaptation Strategy Development

The strategy development phase translates the identified climate vulnerability and risk into implementable actions. This process is difficult due to uncertainty of the projected changes and impacts, potentially high policy implementation costs, and the wide range of competing interests in any community. One way to navigate what can be a complex, time-consuming process is to use decision matrices. A decision matrix can aid a community in balancing adaptation needs against uncertainty, other community goals, and time and funding concerns. Setting priorities for adaptation needs and strategies must be based on the local social, political, economic, and environmental context. The same adaptation need may be critically important in one community and viewed as moderately important in another. These distinctions must be made collectively by community staff, key stakeholders, and concerned residents. The climate change adaptation team should lead this process.

This section outlines Steps 6 through 9 in the adaptation strategy development process (see Figure 3), as follows:

6. Prioritize Adaptive Needs: Which impacts require actions to address them?
7. Identify Strategies: Which strategies should be pursued to address adaptation needs?
8. Evaluate and Prioritize Strategies: Which strategies should be implemented first?
9. Phase and Implement: How can the strategies be funded, staffed, and monitored?

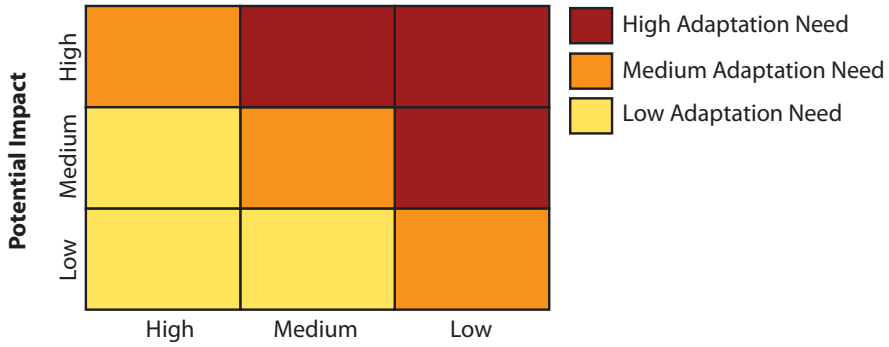
Step 6. Prioritize Adaptive Needs: Which impacts require actions to address them?

Outcome: Potential impacts divided into three categories: (1) develop strategies, (2) evaluate further, and (3) monitor.

The first step in adaptation strategy development is to identify the climate-related impacts that require action. Some identified impacts might not require immediate action because existing measures already address the impact, the certainty of the impact is low, or the projected onset of the impact is in the distant future. Other impacts might call for immediate action due to the potential severity of the impact, the low cost of addressing it, or the time that effective policy implementation may take. Setting priorities for adaptation needs increases a community's ability to dedicate the necessary staff and funds because the efforts do not need to occur all at once.

The prioritization of adaptation needs combines three pieces of information from the vulnerability assessment: potential impact, adaptive capacity, and risk and onset. The following tasks are recommended for combining these three sources of information.

1. Collect the categorical ratings for potential impacts (Step 3) and adaptive capacity (Step 4). The following risk matrix combines the assessment of impact with current capacity to address that impact (see Figure 6). Additional resources should not be allocated to an impact that is already being addressed. Instead, those impacts with far-reaching consequences for which a community is least prepared should be addressed first. The climate change adaptation team should determine the high, medium, and low ratings for the adaptation needs.



Adaptive Capacity - The current community capacity to address a potential impact.
[High = community is well prepared for an impact;
Low = community is unprepared for an impact]

Figure 6. A sample adaptation need matrix.
This matrix combines the ratings for the extent of impact and the current community capacity to address the impact. Those impacts with the most severe consequences and lowest local capacity to address them are rated the highest adaptation need.

2. Identify the level of certainty associated with climate change impacts. This is the information from Step 5. The following decision matrix balances certainty, or risk, with community priorities (see Figure 7). This approach allows room for strategy development to address impacts with the potential to be so disruptive that they deserve action even if the impacts are unlikely. The climate change adaptation team should determine the shading in the matrix.

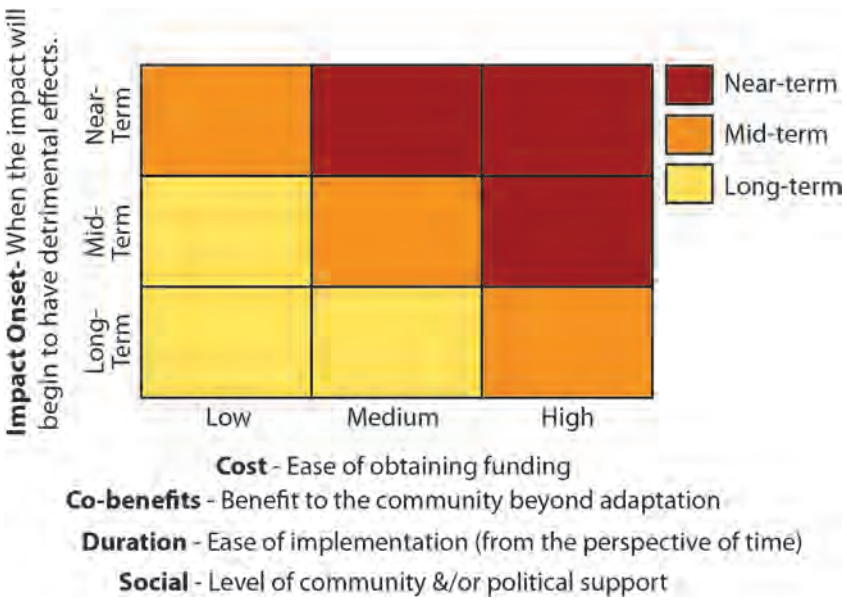


Figure 7. A sample decision matrix.
Intended to be adjusted depending on community characteristics. The sample matrix combines adaptation need with scientific certainty and community sensitivity to a given impact.

3. Using the decision matrix, develop a list of adaptation impacts that have been identified for immediate strategy development. In a sense, a jurisdiction should be able to organize all of its identified impacts (adaptation needs) into one of the cells on the matrix. The rating for each impact will vary by jurisdiction based on the jurisdiction's location and community characteristics.

Prioritize Adaptive Needs Example 1

A community located in the Sierras, with an economy largely reliant on the ski industry and other recreational endeavors, identified reduced snowpack as a critically important climate exposure, with the local economy and ecosystems being two aspects identified as sensitive to the loss of snowpack. These points of sensitivity relate to a far-reaching set of potential impacts, from ecosystem health, to hazards, to the economy. The potential impact of a more than 80 percent loss of spring snowpack by 2100 on the local economy is severe enough that the impact was labeled high by the local adaptation team.

EXAMPLE 1 (CONT'D)

While some measures have been enacted to diversify the local economy away from snow-based recreation, the measures are poorly developed. The adaptive capacity was defined as low because, while some actions have been taken, they are not at a scale adequate to address the severity of the projected snowpack reduction. The combination of high impact and low capacity makes the economic impact of snowpack reduction a high adaptation need.

Snowpack reduction is rated as a high certainty projection (see Table 4). Snowpack impacts on the local economy were designated for adaptation strategy development.

Step 7. Identify Strategies: Which strategies should be pursued to address adaptation needs?

Outcome: A strategy or set of strategies to address each adaptation need identified for strategy development.

Developing adaptation strategies is challenging because they address impacts that can be difficult to accurately predict and that may occur many years in the future. These strategies must be as varied as the biophysical settings and community types in the state. In addition, community and political support for these strategies may require that they address community needs above and beyond climate adaptation.

APG: Identifying Adaptation Strategies lists potential adaptation strategies and some of the necessary considerations for tailoring them for local use. The collection of strategies included in that document is not exhaustive. Jurisdictions should think creatively about the best way to address a community's adaptive needs.

Good adaptation strategies include the following characteristics (Smit et al., 2000; de Loe, Kreutzwiser, and Moraru, 2001; Smit and Wandel, 2006; Boswell, Seale, and Greve, 2012):

- **Flexible.** Adaptation planning occurs in a setting that is continually changing. Climate science is uncertain and evolving with new reports and updates being released regularly. Local conditions also evolve over time. As a result, adaptive policy should be robust, meaning it will be applicable even if conditions change. Strategies should be adjustable over time as conditions and projects change.
- **Cost-Effective.** Communities have a wide range of needs above and beyond climate adaptation. Setting priorities for adaptation planning development is made

even more difficult because successful implementation (benefits) may be in the distant future. As a result, the best adaptation strategies meet multiple community needs and provide both short- and long-term benefits.

- **Specific.** Adaptation needs often have specific characteristics by addressing, for example, a particular region of impact, speed of onset, or scale of consequences. The most effective strategies are tailored for these characteristics.
- **Integrative.** The most important impacts for a community are often secondary impacts such as wildfire, crop yield, or human health. These impacts commonly result from the interaction of multiple aspects of climate change (e.g., the interaction of temperature and precipitation). Local and regional entities often do not have the jurisdictional control to affect climate change directly. For example, no individual city is going to stop rising average global temperature or ocean acidification. As a result, climate change adaptation strategies should focus on secondary impacts by preparing an affected sector to be more resilient. For example, many climate change impacts have the potential to harm the local economic base.
- Adaptation policy, in this case, may be an economic diversification effort that will lessen the impact of climate-related economic outcomes. The outcome from this step should be a strategy or suite of strategies for each of the impacts identified in Step 6 as warranting policy development.

Strategy Identification Example 1

A community located in Siskiyou County is projected to experience an almost eight-fold increase in wildfire over 2010 levels. The adaptation team in this region identified this increased risk as a high potential impact due to the threats to infrastructure, public safety, ecosystem health, and other areas. The adaptive capacity evaluation evaluated existing wildfire policy including the general plan safety element and Local Hazard Mitigation Plan. Building and zoning codes were also evaluated to assess the vulnerability of areas at the wildland-urban interface (WUI). Finally, current fire response emergency procedures were evaluated.

Following this evaluation, it was determined that existing policy was inadequate for the size of increase in wildfire risk projected for the region. The adaptation team identified a set of complementary policies to prepare for the increased fire risk in the future. These strategies included the following:

- Update the general plan safety element and Local Hazard Mitigation Plan to reflect the changing risk profile for wildfire including emergency response capabilities and evacuation plans (Based on Strategy CA 1 from *APG: Identifying Adaptation Strategies*, p. 9.)

EXAMPLE I (CONT'D.)

- Adopt fire-safe development and landscaping standards for WUI areas. These measures were adapted for Northern California settings based on lessons learned from communities such as Rancho Santa Fe that have detailed, effective fire suppression and homeowner safety practices. (Based on Strategy FR 5 from *APG: Identifying Adaptation Strategies*, p. 42.)
- Establish a fuel load reduction program through thinning and brush removal. (Based on Strategy FR 6 from *APG: Identifying Adaptation Strategies*, p. 44.)
- Establish an ongoing public education program to raise awareness of the new standards for landscape management around homes in the WUI areas. (Based on Strategy CA 2 from *APG: Identifying Adaptation Strategies*, p. 10).

Step 8. Evaluate and Prioritize Strategies: Which strategies should be implemented first?

Outcome: For each strategy identified define the implementation timing: near-term, mid-term, and long-term.

This step is based on characteristics of the impact being evaluated and the strategies devised to address it. Similar to setting priorities for adaptation needs (Step 6), this step also relies on a decision matrix. The matrix not only aids in making decisions in the context of complexity, but also makes the strategy development process transparent and easier to communicate to community staff and residents. The relevant information about each climate change impact has already been identified through earlier steps in the process. The information needed for each strategy includes projected costs of implementation, community co-benefits, duration of implementation, and social acceptance. The information regarding each strategy should be developed by the climate change adaptation team. This step is likely most efficiently addressed if completed simultaneously with Step 7 as an iterative process.

The following tasks are recommended:

1. Evaluate each strategy. Information helpful for systematic assessment includes the following (Smit et al., 2000; Smith, Vogel, and Cromwell, 2009; Boswell, Seale, and Greve, 2012):
    a. **Costs.** This should include the initial costs, as well as any ongoing personnel or funding requirements. If possible, potential sources for the funding should also be identified.
    b. **Community Co-Benefits.** The other benefits that a community may experience if the strategy is implemented should be identified. These can include greenhouse gas reduction, economic improvement, and many other potential community goals. These co-benefits, particularly those

experienced in the near term, are often helpful in garnering community and political support for a strategy.

c. **Duration of Implementation.** Consider (1) the period of time necessary to initiate implementation, and (2) the length of the implementation period. Some strategies may rely on technological advancements or require policy change prior to implementation. This will delay the initiation of a strategy. Similarly, implementation duration can vary widely. Updating the building code to reduce fire vulnerability will take much less time than the eventual relocation of a coastal water reclamation facility.

d. **Social Acceptance.** This refers to the fact that many adaptation policies will be housed in plans that require community feedback, advisory board approval, and adoption by elected officials. To successfully navigate this process, a strategy's likely level of approval should be assessed. This does not mean that less popular strategies should be abandoned but that, if these strategies are pursued, additional time or outreach efforts should be developed to accompany the strategies.

2. Using the sample matrix in Figure 8, evaluate the ease of implementation (e.g., cost and time) in relationship to the impact onset. Create a series of individual matrices or a table that displays all of the potential considerations (see Table 4). The Figure 8 matrix combines impact potential and factors that influence strategy feasibility. As with the matrix in Step 6, the specifics should be determined by the climate change adaptation team. In particular, the adaptation team should determine the definition of near-, mid-, and long-term from a policy development perspective.

3. Organize the strategies according to when they need to be implemented (near-, mid-, and long-term; see Figure 8).

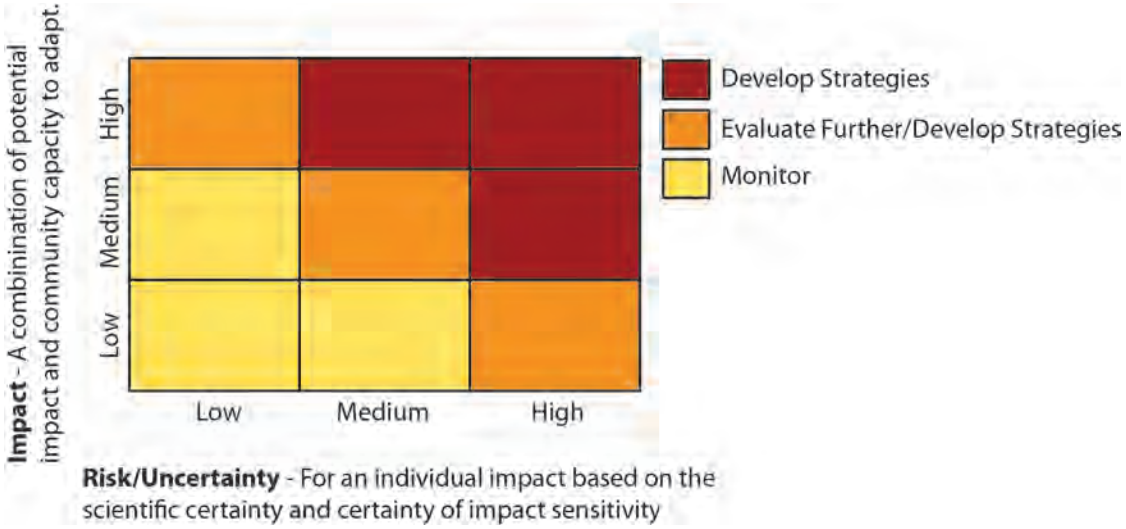


Figure 8. Sample adaptation strategy prioritization matrix.
[adapted from Boswell, Greve, & Seale, 2012]

Evaluate and Prioritize Strategies Example 1

A coastal community concerned about sea level rise has identified a series of potential strategies and completed a table identifying co-benefits and other feasibility considerations. The adaptation team completed the table. Based on this evaluation, strategies were identified as near-, mid-, and long-term (see Table 5).

Table 5. Example co-benefit and feasibility table for determining strategy phasing.

STRATEGY	IMPACT ADDRESSED	CO-BENEFITS	IMPACT ONSET	IMPLEMENTATION COST	FUNDING AVAILABILITY	PREPARATION TIME	IMPLEMENTATION TIME	COMMUNITY SUPPORT	IMPLEMENTATION PHASE
Strategic retreat – easement	SLR	Ecosystem & Biodiversity	Mid-term	High	Low	Medium	Medium to High	Moderate	Mid-term, as parcels available
Undeveloped land preservation	SLR	Ecosystem; Recreation & Open Space; Tourism	Mid-term	Medium	Medium	Medium	Medium	High	Near-term
Move roadway inland	SLR	Public Safety	Mid-term	Low to Medium	Medium	High	Medium	Medium	Mid-term
Re-locate water reclamation facility	SLR	Public Health	Long-term	High	Medium	High	High	Medium	Long-term

SLR: sea level rise.

Evaluate and Prioritize Strategies Example 2:

City of Santa Cruz Wastewater Treatment Facilities

The City of Santa Cruz evaluated potential climate impacts including wildfire, erosion, sea level rise, and more as part of preparation of a City Adaptation Plan.

The evaluation of impact was assessed based on two rating systems (City of Santa Cruz, 2012, p. 33-34):

Cost ratings

- High: Existing funding levels are not adequate to cover the costs of the proposed action and would require an increase in revenue through an alternative source to implement.
- Medium: The action could be implemented with existing funding but would require a re-apportionment of the budget or a budget amendment, or the cost of the action would have to be spread over multiple years.
- Low: The action could be funded under the existing budget. The action is part of, or could be a part of, an existing, ongoing program.

Benefit ratings

- High: Action would have a significant impact on the reduction of risk exposure to life and property.
- Medium: Action would have an impact on the reduction of risk exposure to life and property or action would provide an immediate reduction in the risk exposure to property.
- Low: Long-term benefits of the action are difficult to quantify in the short term.

The outcome of the evaluation resulted in the City concluding "Wastewater Treatment Facility appears to be the highest potential dollar loss under current climate science," (p. 10). As a result of the climate impact assessment the following strategies were defined (p. 34).

- A-4 Protect wastewater facility from ground water infiltration Public Works
- A-5 Seal wastewater pipes throughout system Public Works
- A-6 Seal pump gallery at wastewater treatment facility Public Works
- A-7 Monitor all wastewater and storm water pumping station sites Public Works

Source: City of Santa Cruz. (2012). City of Santa Cruz Climate Adaptation Plan. Retrieved from http://www.cityofsantacruz.com/Modules/ShowDocument.aspx?documentid=23643

Step 9. Phase and Implement: How can the strategies be funded, staffed, and monitored?

Outcome: An implementation plan and monitoring program for each of the identified strategies.

As with other types of planning strategies, success in phasing and implementation of climate change adaptation strategies depends on a number of factors. A responsible or lead department, staff member, or entity should be defined as responsible for implementation; a phasing program should be established; a funding source should be identified and obtained; and a monitoring program should be developed. In addition to these factors, long-term effectiveness relies on strong political leadership. Adaptation policies often address impacts projected to occur in the future and are unlikely to yield observable benefits in the short term. Successful implementation therefore relies on consistent and sustained support. Strong leadership is needed due to the diverse nature of adaptation planning and the necessity for continual updating. In the long term, actions by many departments must continue to be coordinated.

The following tasks are recommended:

1. **Identify the responsible party.** Defining a specific individual, department, agency, or organization as responsible for implementation is one component of assuring that a strategy is implemented rather than simply included in a plan or guidance document. The climate change adaptation team can define the responsible parties and can also provide a forum for implementation progress to be shared.

2. **Identify funding**. Perhaps the most difficult and important component of assuring implementation is identifying a funding source to support identified strategies. Each strategy should have an associated estimated cost that includes material cost of the strategy, staff time, administrative support, associated outreach, and long-term monitoring. Adaptation strategies must compete with all of the other needs in the community. This is why identifying strategies that can meet multiple community needs is suggested. There are a variety of ways in which adaptation strategies can be funded including government grants, general funds, taxes and fees (including impact fees), bonds, and more.

3. **Establish systems for monitoring and diffusion of information and technology.** Adaptation occurs in a dynamic setting. As a result, even while individual strategies require monitoring to assess effectiveness, the science that projected the impact being addressed is changing as well.

A comprehensive adaptation program must track scientific updates as well as the tools and technology available to address the impact projections. The State of California has established web resources that make available the findings from ongoing research on climate change and the tools available to address it. Communities should make an effort to stay informed of these advances.

4. **Establish feedback loops**. Monitoring strategy effectiveness and science advancements is only valuable if used to adjust adaptation strategies when necessary. An adaptation strategy should integrate periodic review and updates into its implementation plan. Given the uncertainty inherent in climate projections and impact assessment, an adaptive approach is critical to long-term policy effectiveness and efficient use of resources.

Completed Project Example: IRONHORSE AFFORDABLE APARTMENTS

In Oakland, the Ironhorse at Central Station Affordable Apartments provides a great example of a project that addressed a variety of community needs in addition to several climate change adaptation priorities. This multi-faceted project was able to acquire funding from multiple sources due to the diversity of community needs served by the project. The 1.6-acre project is part of a 29-acre master plan on former industrial land near the Port of Oakland and includes 99 units, all of which are designated for families at or below 50 percent of the median income in the area.

The project earned Bay-Friendly (landscaping) and Green-Point (green building) ratings and includes the following features:

- Solar panels and green roofs on the tops of buildings, providing the following benefits:
  - Runoff control (adaptation)
  - Reduced water need (adaptation)
  - Improved climate control and reduced need for heating and cooling for residents (adaptation and greenhouse gas emissions co-benefit)
  - Improved air quality (adaptation and public health co-benefit)
  - Reduced urban heat island (adaptation)
  - Renewable energy (adaptation and greenhouse gas emissions co-benefit)

Completed Project Example (cont'd.)

- Multi-function landscaping that serves to provide the following benefits:
  - Stormwater treatment (adaptation and water quality co-benefit)
  - Habitat (adaptation)
  - Reduced water demand (adaptation and greenhouse gas emissions co-benefit)
  - Food for residents (adaptation)

Ironhorse at Central Station: http://www.stopwaste.org/docs/ironhorse_final_090810.pdf
Bay-Friendly Rated Landscapes: http://www.stopwaste.org/home/index.asp?page=1115
Green Point Rated: http://www.builditgreen.org/greenpoint-rated/

Impact Sector Summary

The supporting documents for the APG (see Page 1) use sectors to categorize potential climate change impacts. These sectors can help assure a comprehensive assessment of climate vulnerability. The following discussion summarizes the seven sectors and potential impacts associated with each. Understanding the range of potential impacts can aid a community in conducting a vulnerability assessment and developing strategies. These sectors overlap, but they represent one way to organize the diversity of potential impacts. The document *APG: Defining Local & Regional Impacts* has a section focused on the assessment of vulnerability for each sector. The document *APG: Identifying Adaptation Strategies* organizes adaptation strategies based on sector. Where possible, points of overlap between the sectors are identified using the icons below.


Public Health, Socioeconomic, and Equity Impacts


Ocean and Coastal Resources


Water Management


Biodiversity and Habitat


Forest and Rangeland


Agriculture


Infrastructure

Public Health, Socioeconomic, and Equity Impacts

This sector includes the public health and socioeconomic impacts and related equity issues associated with climate change impacts. Public health impacts include the short-term effects of climate-related hazards—heat events, intense rainstorms and flooding, wildfires, and high tide and storm surges—and long-term impacts such as cardio-respiratory morbidity and mortality, food-, water- and vector-borne diseases, food insecurity and water contamination (Maibach et al., 2011). Socioeconomic impacts include potential effects upon California's economic growth (Sanstad et al., 2011; CEC, 2009) and on specific industries within the state, such as agriculture (Medillin-Azuara et al., 2011; Deschenes and Kolstad, 2011) and tourism (Pendleton et al., 2011). These changes increase the vulnerability of local populations that rely on these industries. Equity concerns are based on the idea that some populations bear a disproportionate burden of the climate change effects (Morello-Frosch et al, 2009).

Ocean and Coastal Resources

Changes such as sea level rise, intensification of coastal storms, and ocean acidification may affect ocean and coastal resources. Potential environmental impacts of these changes include coastal flooding/inundation, loss of coastal ecosystems, coastal erosion, shifts in ocean conditions (pH, salinity, etc.), and saltwater intrusion. The combination of sea level rise and possible intensification of coastal storms presents a threat to coastal development and infrastructure. Climate-related changes to marine ecosystems may result in altered population and ranges of fish species, which affect productivity and the commercial fishing industry. With 85 percent of California's residents living in coastal counties, sea level rise could potentially damage whole communities by affecting tourism, the provision of basic services (e.g. wastewater treatment), and recreational economies.

Water Management

Climate change may result in flooding, drought, and/or reduced water supply in communities. Although the scientific evidence regarding increased flooding related to climate change remains uncertain, it is prudent for communities to recognize that changes to precipitation regimes and rate/timing of snowmelt may increase flooding. The water supply includes both surface water and ground water, along with the infrastructure necessary for management, conveyance, and treatment. Water supply is expected to be affected in areas that experience less precipitation and areas dependent on snowpack.

Biodiversity and Habitat

Climate change may affect terrestrial and freshwater aquatic habitats and the species that depend on them. California is a unique hot spot of biodiversity (CEC, 2009). Changes in the seasonal patterns of temperature, precipitation, and fire due to climate change can dramatically alter ecosystems that provide habitats for California's native species. These impacts can result in species loss, increased invasive species' ranges, loss of ecosystem functions, and changes in growing ranges for vegetation.

Forest and Rangeland

Climate can have an influence on wildfire and forest health. In forest ecosystems, climate change can alter the species mix, moisture and fuel load, and number of wildfire ignitions. Changes in species mix and moisture due to dry periods can alter wildfire timing (seasonality and frequency), spatial distribution (fire size and complexity), and magnitude (intensity, severity, and type). These changes in wildfire character are related to a range of forest health indicators such as growth rate, invasive species, erosion, and nutrient loss.

Agriculture

The threats posed by climate change have the potential to influence crop and livestock productivity. These changes can have far-reaching impacts, from altering the local economy to affecting food supply. Climate change can affect agriculture through extreme events (e.g., flooding, fire) that result in large losses over shorter durations, or through more subtle impacts such as changes in annual temperature and precipitation patterns that influence growing seasons or livestock health. These impacts also have the potential to result in a range of associated consequences such as altered pest and weed ranges, reduced air quality, and reduced farm worker safety (heat and air quality).

Infrastructure

Infrastructure provides the resources and services critical to community function. Roads, rail, airports, marine ports, water (supply, storm, and sewer), electricity, gas, and communication systems are all needed for community function. Climate change increases the likelihood of both delays and failures of infrastructure. Temporary delays or outages can result in inconvenience and economic loss while larger failures can lead to disastrous economic and social effects. Climate impacts include direct events such as fire, flood, or landslide. Climate change can also alter the level of demand and required maintenance necessary to manage these systems.

Adaptation Resources

The following list of documents and websites is a resource that can aid a community developing climate change adaptation strategies. If a particular area of concern emerges during vulnerability assessment, these documents can provide additional information and guidance. The other three APG documents also supply information to further support the adaptation planning process.

Resources providing state guidance and recent studies

- General guidance on integration into local government policy: www.OPR.ca.gov
- Other climate change resources: www.climatechange.ca.gov

Climate adaptation resources developed by California State Agencies

California Department of Fish and Game (CDFG). 2007. *California Wildlife: Conservation Challenges - California's Wildlife Action Plan*. Retrieved from http://www.dfg.ca.gov/wildlife/wap/report.html

California Department of Fish and Game (CDFG). 2011. *Unity, Integration, and Action: DFG's Vision for Confronting Climate Change in California*. Retrieved from http://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=37647&inline=true

California Department of Public Health (CDPH). 2012. *Climate Action for Health: Integrating Health into Climate Action Planning*. Retrieved from http://www.cdph.ca.gov/programs/CCDPHP/Documents/CAPS_and_Health_Published3-22-12.pdf

California Department of Water Resources (DWR). 2011. *Climate Change Handbook for Regional Water Planning.* Retrieved from http://www.water.ca.gov/climatechange/docs/Climate_Change_Handbook_Regional_Water_Planning.pdf

California Emergency Management Agency (Cal EMA). 2010. *State of California Multi-Hazard Mitigation Plan.* Sacramento, CA: Retrieved from http://hazardmitigation.calema.ca.gov/docs/2010_SHMP_Final.pdf

California Natural Resources Agency (CNRA). 2009. *2009 California Climate Adaptation Strategy.* Retrieved from http://resources.ca.gov/climate_adaptation/docs/Statewide_Adaptation_Strategy.pdf

Moser, S., J. Ekstrom, and G. Franco. 2012. *Our Changing Climate 2012 - Vulnerability & Adaptation to the Increasing Risks from Climate Change in California.* California Energy Commission [CEC], CEC-500-2012-007, Retrieved from http://www.climatechange.ca.gov/adaptation/third_assessment/

Russel, N. & G. Griggs. 2012. *Adapting to Sea Level Rise: A Guide for California's Coastal Communities.* California Energy Commission Public Interest Environmental Research Program, Retrieved from http://calost.org/pdf/announcements/Adapting%20to%20Sea%20Level%20Rise_N%20Russell_G%20Griggs_2012.pdf

Page Intentionally Left Blank

References

Boswell, MR, AI Greve, & TL Seale. (2012). Local Climate Action Planning. Washington D.C.: Island Press, 284 p.

California Energy Commission [CEC]. (2009). The Impact of Climate Change on California's Ecosystem Services. Retrieved from: http://www.energy.ca.gov/2009publications/CEC-500-2009-025/CEC-500-2009-025-F.PDF

California Natural Resources Agency. (2009). 2009 California Climate Adaptation Strategy. Retrieved from: http://resources.ca.gov/climate_adaptation/docs/Statewide_Adaptation_Strategy.pdf

Coastal and Ocean Working Group of the California Climate Action Team (CO-CAT). 2010. *State of California Sea-Level Rise Interim Guidance Document.* Retrieved from http://opc.ca.gov/webmaster/ftp/pdf/agenda_items/20110311/12.SLR_Resolution/SLR-Guidance-Document.pdf

de Loe, R, R Kreutzwiser, & L Moraru. (2001). Adaptation Option for the Near Term: Climate Change and the Canadian Water Sector. Global Environmental Change, 11: 231-245.

Deschenes, O. & C. Kolstad. (2011) Economic impacts of climate change DOI 10.1007/s10584-011-0314-3

Federal Emergency Management Agency. (2001). Understanding Your Risks: Identifying Hazards and Estimating Losses. FEMA 386-2. Retrieved from: http://www.fema.gov/library/viewRecord.do?id=1880

IPCC. (2007). Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 996 pp. Retrieved from: http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_wg1_report_the_physical_science_basis.htm

Maibach E, Nisbet M, & Weathers M. (2011) Conveying the Human Implications of Climate Change: A Climate Change Communication Primer for Public Health Professionals. Fairfax, VA: George Mason University Center for Climate Change Communication.

Medellín-Azuara, J, R. Howitt, J. Duncan, J. MacEwan & J. Lund. (2011) Economic impacts of climate-related changes to California agriculture. Climatic Change, 109 (Suppl 1):S387–S405

Moser, S, G Franco, S Pittiglio, W Chaou, & D Cayan. (2009). The Future is Now: An Update on Climate Change Science Impacts and Response Options for California. California Energy Commission Report CEC-500-2008-071. Retrieved from: http://www.energy.ca.gov/2008publications/CEC-500-2008-077/CEC-500-2008-077.PDF

National Academy of Sciences (NAS). 2012. *Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future.* Retrieved from http://www.water.ca.gov/climatechange/docs/NRC_SLR_Draft-06-22-2012.pdf

Pendleton, L. P. King, C. Mohn, D. Webster, R. Vaughn & P. Adams. (2011). Estimating the potential economic impacts of climate change on Southern California beaches. Climatic Change, 109 (Suppl 1):S277–S298. DOI 10.1007/s10584-011-0309-0

Smit, B & J Wandel. (2006). Adaptation, Adaptive Capacity and Vulnerability. Global Environmental Change, 16: 282-292.

Smit, B, I Burton, R.J.T. Klein, & J. Wandel. (2000). An Anatomy of Adaptation to Climate Change and Variability. Climatic Change 45: 223-251.

Smith, JB, JM Vogel, & JE. Cromwell III. (2009). An Architecture for Government Action on Adaptation to Climate Change: An Editorial Comment. Climate Change, 95: 53-61.

Snover, AK, LW Binder, J Lopez, WJ Kay, D Howell, & J Simmonds. (2007). Preparing for Climate Change: A Guidebook for Local, Regional, and State Governments. In association with and published by ICLEI – Local Governments for Sustainability, Oakland, CA.

Turner, B.L., Kasperson, R.E., Matson, P.A., McCarthy, J.J., Corell, R.W., Christenson, L., Eckley, N., Kasperson, J.X., Luer, A., Martello, M.L., Polsky, C., Pulsipher, A., & Schiller, L. (2003). A framework for analysis in sustainability science. Proceedings of the National Academy of Sciences of the United States of America, 100(14): 8074-8079.

Ashley Golden
Planning Manager

Development Services

214 South C Street
Oxnard, CA 93030
(805) 385-7858
www.ci.oxnard.ca.us

Emergency Coastal Permit
No Public Hearing Required
City of Oxnard, Ventura County

September 14, 2016	Prepared by: Chris Williamson, Principal Planner
Application Filing Date:	April 6, 2015
Permit No.:	PZ 15-000-17
Applicant:	NRG Mandalay Generating Station 393 North Harbor Blvd, Oxnard, CA
Assessor Parcel Number:	183002301
Project Location:	Westward of the Mandalay Beach Rd ROW
Description:	Periodic removal of sand barrier that obstructs the proper flow of the generating station discharge, and minor repairs to the existing fence for safety and plant facility security
Time Period:	To be completed within 30 days, and extended upon request as needed up to 180 days until a Coastal Development Permit is issued for same ongoing beach and fence management.

This letter constitutes approval of the emergency work requested by Mr. Thomas Di Ciolli, Plant Manager for the NRG Mandalay Generating Station located at 393 North Harbor Blvd, in his letter dated April 6, 2015 to this office. The periodic relocation of sand that naturally berms and partially or completely blocks the permitted power plant cooling water discharge is required for the safe operation of the power plant and to prevent ponding of the discharge laterally on the beach to the north and south, potentially flooding Least Tern and Snowy Plover nesting areas and creating a hazard to the public utilizing the beach. Berming can occur within days depending on the offshore littoral current, storm surge, and other naturally occuring events. The power plant, a peaker facility that does not run continuously, may be called on to run at any time which, then, requires the discharge channel to be open to the ocean.

After review of the facts, upon receipt of an application for an emergency permit and verification of facts including the existence and the nature of the emergency to assure the emergency is a sudden, unexpected occurrence demanding immediate action to prevent or mitigate loss or damage to life, health, property or essential public service, I find that the unknown and periodic blocking of the discharge channel is an emergency situation that requires prompt action to prevent or mitigate loss or damage to life, health, property, and an essential public service (peaker power plant operation dispached by the ISO), pursuant to Section 30624(a) and 30611 of the Coastal Act and City Code Section 17-57(C)(3).

The Planning Manager hereby determines that:

(a) An emergency exists which requires action more quickly that permitted by the procedures for administrative or ordinary permits, and the development can and will be completed within 30 days, and repeated within 180 days as needed upon request and approval of an extension pending processing of the Coastal Development Permit for same actions;

(b) Public notice is not required; and

(c) As conditioned, the work proposed would be consistent with the requirements of the Oxnard certified Local Coastal Plan.

The as-needed emergency sand relocation and fence repair work is hereby approved, subject to the conditions of approval. This emergency permit is statutorily exempt from CEQA under Public Resource Code 21080(b)(2).

[signed]

Ashley Golden
Planning Manager

PROJECT CONDITIONS

1. This permit is granted for the property described in the application on file with the Planning Division, and may not be transferred from one property to another.

2. This permit shall automatically become null and void 30 days months from the date of its issuance, or upon approval and issuance of an extension in a period not to exceed 180 days pending approval of a superseding Coastal Development Permit for the same project.

3. This permit shall be acknowledged by the Applicant and returned to the Planning office within 5 working days from date of issuance.

4. Only the work described herein and for the specific property listed is authorized. Any additional work requires a separate authorization from the Development Services Department and/or the Coastal Commission, depending on the location and type of project. The applicant is advised that the work authorized by this permit has undergone minimal review to address immediate Applicant-stated needs, and portions of the project may need to be revised after review of the Coastal Development Permit. Other potential issues include, but are not limited to, geologic stability, biological resources, and public safety and access.

5. The applicant shall ensure that no debris shall remain on the beach or wash into the Pacific Ocean.

6. The Applicant shall submit an application for a Coastal Development Permit pursuance to City Code Section 17-57 within 14 working days from the date of this permit for sand relocation and fence repair work.

7. Developer agrees, as a condition of adoption of this resolution, at Developer's own expense, to indemnify, defend and hold harmless the City and its agents, officers and employees from and against any claim, action or proceeding to attack, review, set aside, void or annul the approval of the resolution or any condition attached thereto or any proceedings, acts or determinations taken, done or made prior to the approval of such resolution that were part of the approval process.

8. Applicant shall take all reasonable care to avoid crushing dune grass and other habitat in traveling to and from the work site.

9. If people are observed walking the beach in the vicinity of the work area, applicant shall take reasonable efforts to ask the public to avoid the work area. If a member of the public refuses and appears ready to enter the work area, the applicant shall cease work until the public has left the work area.

10. If, during any work period, questions arise as to the appropriateness of specific activities and/or interaction with members of the public, the applicant should cease operations if feasible, contact the Planning Division at 805-385-7858 on the next City work da, and request the Planning Manager or senior staff on duty for direction.

PERMIT ACCEPTANCE ACKNOWLEDGEMENT

Emergency Coastal Permit PZ 15-000-17

"By signature below, I attest that I represent the Applicant and understand all the conditions of approval for the emergency permit herein being issued and agree to abide by them. I understand the emergency permit is not to exceed six months and requires a Coastal Development Permit application be filed within 10 calenday days"

_____[printed] _____[signature]

Authorized Representative
NRG Mandalay Generation Station

_____
Date