Minute Item
02

04/09/07
W 25941
W 30151
M. Hays
D. Sanders

BHP BILLITON LNG INTERNATIONAL, INC. (APPLICANT)

Regular Item 02: The Commission listened to staff reports from various state and federal agencies and BHP Billiton. After hearing testimony from elected officials and concerned citizens the Commission voted on the item as follows:

The State Lands Commission, by a 2-1 vote, voted to not certify the final Environmental Impact Report and to deny a lease for the BHP Liquified Natural Gas terminal proposed off Oxnard/Malibu.

CALENDAR ITEM
02

A 37, 38, 41

S 17, 19, 23

04/09/07
W25941
W30151
M. Hays
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CONSIDER CERTIFICATION OF A FINAL ENVIRONMENTAL IMPACT REPORT (FINAL EIR) AND THE ISSUANCE OF A GENERAL LEASE – RIGHT OF WAY USE

APPLICANT:
BHP Billiton LNG International, Inc.
1360 Post Oak Boulevard, Suite 150
Houston, TX 77056

AREA, LAND TYPE, AND LOCATION:
126.61 acres, more or less, of sovereign lands in the Pacific Ocean, offshore of Ormond Beach, Ventura County as described on Exhibit C. The area, as described, includes the temporary construction work area.

AUTHORIZED USE:
Construction, operation, use and maintenance of two 24-inch diameter pipelines for the transport of natural gas.

LEASE TERM:
Beginning on April 9, 2007, and continuing until April 8, 2039, or 30 years from the date construction on the leased lands begins, whichever is earlier..

CONSIDERATION:
Base Rent: Base Rent of $155,000 for the first year, with rent each year thereafter adjusted upward by application of the Consumer Price Index (CPI), subject to the provision that the adjusted annual rent would never be lower than the base rent. This CPI adjustment would continue until the tenth anniversary of the lease, when a new base rent may be established.

Temporary Construction Rent: In addition to the Base Rent, a monthly rent in the amount of $36,000 for the use of the temporary construction area during the construction phase on the Lease Premises.

SPECIFIC LEASE PROVISIONS:
Insurance:
Liability Coverages: over $1,000,000,000 in Aggregate

Bonds (Non-Cancellable) :	
Surety -	$ 8,000,000
Construction Performance -	$47,000,000
Mitigation Monitoring Performance -	$ 2,000,000
Revegetation/Reclamation Performance -	$ 1,000,000
Parent Guarantee Agreement:	BHP LTD, Australia to provide a parent guarantee for the performance of the lease obligations of its subsidiary, BHP Billiton LNG International, Inc.

BACKGROUND INFORMATION:

I. PROJECT DESCRIPTION

A. LIQUIFIED NATURAL GAS:

Liquefied natural gas (LNG) is natural gas that, when cooled to a temperature of approximately minus 260°F, condenses into a liquid. Once the natural gas is converted to a liquid form, it can be shipped in specially designed refrigerated ships and delivered to ports equipped with specialized facilities. The LNG is then re-gasified and distributed to customers through pipelines in the same manner as any other natural gas. The considerable costs associated with processing and transporting LNG have previously made it an expensive source of fuel. However, evolving technology has reduced the costs for both liquefaction and transportation. Such lower cost, together with substantially increased prices that the natural gas market has seen in recent years, have made LNG a more viable delivery option.

B. PROPOSED PROJECT

Under the Applicant's proposal, LNG would be imported into California from overseas with the expected primary source to be gas fields off northwestern Australia. Once the natural gas is extracted, it would then be chilled through a liquefaction process at the export location. The LNG would then be loaded onto tank vessels owned and operated by the Applicant and transported to California.

Upon arrival offshore California in Federal waters, the LNG tank vessels would be moored alongside the Floating Storage and Regassification Unit (FSRU), approximately 12 nautical miles offshore in the Pacific Ocean as shown on Exhibit D. The LNG would be offloaded and stored in three Moss tanks aboard the FSRU. In order to regasify the LNG for delivery to market, the LNG would be sent from the Moss tanks through a closed, high-pressure piping system submerged in a tank of warm water on the FSRU.

The regasification tank would contain only fresh water warmed by burners fueled with boil-off gas from the delivered LNG. Once re-vaporized, the natural gas would then be transferred to shore via pipelines.

The natural gas would be transported to shore via two 24-inch diameter subsea pipelines. These two pipelines would be approximately 23 miles in length and would cross approximately 4.53 miles of State sovereign land as shown on Exhibit B. These two subsea pipelines would be directly laid approximately 100 feet apart on the ocean floor below the FSRU and would come to shore at Ormond Beach.

Utilizing horizontal directional boring (HDB) technology, approximately 4,265 feet of the near shore portion of the pipelines would be buried between 50 and 75 feet below the ocean bottom. The two subsea pipelines would come ashore and extend beneath the beach at a depth of approximately 50 feet to the endpoint at the proposed metering station located on the grounds of the Reliant Energy Generating Station at Ormond Beach and from the metering station connect with the Southern California Gas Company's (SoCalGasCo) natural gas pipeline system.

At the metering station, ownership of the natural gas would pass from the Applicant to SoCalGasCo. The gas would be transferred to a new 36-inch diameter pipeline that would be built between the Reliant metering station and the existing Center Road Valve Station. This new 36-inch pipeline would run north from the Reliant plant to Hueneme Road, run east along the South side of Hueneme Road for approximately two miles and then proceed in a generally northerly direction across land lying to the east of the city of Oxnard to the Center Road Station. This new pipeline, while paid for by the Applicant, would be constructed, owned and operated by SoCalGasCo as part of its existing natural gas pipeline network.

A second pipeline, approximately 7.71 miles in length, would be built in the city of Santa Clarita between the Honor Rancho Valve Station and the Quigley Valve Station. The purpose of this 30-inch diameter pipeline would be to ensure that deliveries of new natural gas from the proposed Project to the Los Angeles basin are not constrained by deliveries in existing pipelines between the San Joaquin Valley and Los Angeles. As with the onshore pipeline in Ventura County, this pipeline would be paid for by the Applicant and constructed, owned and operated by SoCalGasCo.

Although the onshore pipelines would be constructed, owned and operated by SoCalGasCo, both SoCalGasCo and the Applicant have agreed that neither would seek reimbursement of those construction costs through increased gas rates. SoCalGasCo would not pay the Applicant for the onshore facilities, so there would be no costs to pass on. Furthermore, SoCalGasCo has agreed to buy the natural gas that would be delivered by the Applicant's proposed Project at market rate; i.e., at the rate it would pay for similar gas from any source, without any premium for having it delivered through the Project. The cost to State consumers of the natural gas passing through the Project

would therefore be comparable to the cost for natural gas delivered by any other means. If the Applicant were to ask a higher price for its natural gas, it would not be competitive, and potential buyers would likely seek competing suppliers.

The Applicant is willing to pay for the cost of construction for the onshore pipelines because the Applicant's stated purpose of the Project is to provide a means of delivering to market the natural gas it is producing from fields off northwestern Australia. The Applicant may use the proposed Project to deliver gas from other sources, but the stated purpose for its construction is to deliver the Applicant's own gas production to buyers in California. The cost of the proposed Project would be borne by the Applicant as a cost of marketing and delivery.

The delivery of the natural gas through the pipelines and to SoCalGasCo's existing network would essentially be the same as any other natural gas in the State. The fact that the natural gas was once in a liquid state, in and of itself, does not give rise to any differences, once re-vaporized, between it and other natural gas produced in or delivered into the State through traditional means.

C. ACTION REQUESTED OF THE COMMISSION

In order to carry out the proposed Project, the Applicant will need a right of way across State-owned sovereign lands for construction, use, operation and maintenance of the two proposed 24-inch pipelines. While the 4.53-mile long right of way is just a small portion of the overall Project, it is essential. The natural gas cannot be brought ashore from the FSRU at this location without use of pipelines crossing State-owned lands. Since the right of way is a property interest that the Applicant needs before obtaining other State and local permits, the Commission is also serving as Lead Agency for purposes of the California Environmental Quality Act (CEQA). Two actions are therefore required of the Commission: 1) determine whether to certify that the Final Environmental Impact Report (EIR) prepared for the proposed Project fully conforms to the requirements of the CEQA, and 2) determine whether to approve issuance of the lease for the right of way. Pursuant to Section 6501.2 of the Public Resources Code and Article 2, Section 2000(b) of the California Code of Regulations, the Commission must consider whether issuance of the lease the terms thereof are in the best interests of the State.

II. THE ENVIRONMENTAL IMPACT REPORT (EIR)

Because the Project requires approvals from Federal, State and local governmental entities, both an EIR under CEQA and an environmental impact statement (EIS) under the National Environmental Protection Act (NEPA) are required. The United States Coast Guard (USCG) and Maritime Administration (MARAD) are acting as lead agencies under NEPA. In order to facilitate the review, the Commission, the USCG and

MARAD agreed to prepare jointly a combined EIS/EIR. As indicated above, the Commission must now determine if the EIR meets the requirements of the CEQA.

A. ENVIRONMENTAL PROCESS/PUBLIC PARTICIPATION – FEBRUARY 2004 TO MARCH 2007

Preparation of the October 2004 Draft EIS/EIR began on February 3, 2004. A Notice of Intent/Notice of Preparation (NOI/NOP) was provided to the California State Clearinghouse for release on February 24, 2004, and was published in the Federal Register (Vol. 69, No. 39) on February 27, 2004. During the scoping period, which ended on March 31, 2004, MARAD, the USCG and the Commission held three open houses and three scoping meetings: two in Oxnard on March 15, 2004, and one in Malibu on March 16, 2004. All scoping meetings were held in wheelchair-accessible sites, and the NOI/NOP provided information for requesting special accommodations for the scoping meetings, such as simultaneous Spanish translation. The informal open house format allowed meeting participants to review displays, maps, and literature and to meet agency staff, members of the EIS/EIR project team, and the Applicant's personnel for one-on-one discussions. Repositories were provided to receive written comments. Approximately 305 persons attended the scoping meetings and open houses in Oxnard and Malibu.

Due to the number of Spanish-speaking residents in the Project area, fact sheets and other information about the proposed Project were provided in both English and Spanish throughout the scoping process. The Project public-access website (http://www.cabrilloport.ene.com) includes English and Spanish versions of the NOI/NOP and related information regarding the proposed Project, LNG, the Deepwater Port Act (DWPA), and the open houses and scoping meetings. Spanish-speaking individuals were available at all three open houses and scoping meetings for participants who required translations, and literature provided at the open houses was available in both English and Spanish. Several participants made public, oral comments in Spanish, which the Spanish-speaking EIS/EIR Project team translated and recorded.

In addition to comments received during these scoping meetings, the USCG and the Commission received more than 150 electronic-mail messages, postcards, and letters from elected officials, agencies, organizations, and private citizens.

On October 29, 2004, the USCG submitted the October 2004 Draft EIS/EIR to the United States Environmental Protection Agency (USEPA) for inclusion in the Federal Register, and the Commission submitted a Notice of Completion and the Draft EIS/EIR to the State Clearinghouse. On November 5, 2004, the Notice of Availability was published in the Federal Register (Vol. 69, No. 214). The public comment period initiated by the Notice of Availability (45 days) and Notice of Completion (52 days) ended on December 20, 2004. In addition to the USEPA headquarters and the State

Clearinghouse, copies of the EIS/EIR were distributed to Federal, State, and locally elected officials; Federal and State agencies, regional regulatory boards, local planning staffs, and the public.

The following list summarizes examples of the types of public communication activities conducted by the USCG, MARAD, and the Commission:

- Mailed more than 1,330 postcards announcing the availability of the October 2004 Draft EIS/EIR and the dates for the public meetings and open houses;

- Mailed the Notice of Availability, scoping meetings, and open houses announcement to 981 interested parties;

- Published paid advertisements in local newspapers: the Malibu Surfside News; the Malibu Times; the Signal (Santa Clarita); the Ventura County Star (Notice published in English and Spanish); and Vida Newspaper (a bilingual Spanish and English newspaper distributed in Ventura County);

- Posted the October 2004 Draft EIS/EIR on the Commission and Project public-access websites.

Due to the number of Spanish-speaking residents in the Project area, fact sheets and other information about the proposed Project were provided in both English and Spanish. The October 2004 Draft EIS/EIR was translated into Spanish and was available to anyone who requested it.

During the comment period, the USCG, MARAD, and the Commission held four open houses and four public meetings:

- One open house and one public meeting in Santa Clarita at the City Council Chambers on November 29, 2004;

- Two each in Oxnard at the Performing Arts Center on November 30, 2004; and

- One each in Malibu at the Webster Elementary School on December 1, 2004.

The format of the informal open houses allowed meeting participants to review displays, maps, and literature and to meet agency staff, members of the EIS/EIR Project team, and the Applicant's personnel for one-on-one discussions. Approximately 676 persons attended the public meetings and open houses in Santa Clarita, Oxnard, and Malibu, and 195 people gave oral comments at these meetings.

All public meetings were held in wheelchair-accessible sites, and the Notice of Availability provided information for requesting special meeting accommodations, such as simultaneous Spanish translation. No one requested simultaneous Spanish translation services for these public meetings. Spanish-speaking individuals were available at all four open houses and public meetings for participants who required translations, and literature provided at the open houses was available in both English and Spanish.

In addition to the 195 people who gave oral comments during the public meetings on the October 2004 Draft EIS/EIR, the USCG and the Commission received more than 500 electronic-mail messages, postcards, and letters from elected officials, agencies, organizations, and private citizens on the October 2004 Draft EIS/EIR. All of the comments received during the scoping process and comment period for the October 2004 Draft EIS/EIR were reviewed by the lead agencies, and the March 2006 Revised Draft EIR (and the Final EIR) addresses environmental issues raised by public comments during the review period for the October 2004 Draft EIS/EIR. Table 1.4-1 at the end of Chapter 1 of the Final EIR identifies the sections of this document where the issues are addressed.

The State CEQA Guidelines Section 15088.5(a) states, "A lead agency is required to recirculate an EIR when significant new information is added to the EIR after public notice is given of the availability of the draft EIR for public review under Section 15087 but before certification." As State lead agency, the Commission determined that the Project modifications and potential impacts thereof constituted "significant new information" as defined in the State CEQA Guidelines § 15088.5(b). However, MARAD and the USCG determined that there was not a need to recirculate the Draft EIS under NEPA. Therefore a Revised Draft EIR was published in March 2006.

On March 13, 2006, the Commission submitted a Notice of Availability and the Revised Draft EIR to the California State Clearinghouse. The public comment period initiated by the Notice of Availability (45 days) was subsequently extended and ended on May 12, 2006. In addition to the USEPA headquarters and the State Clearinghouse, copies of the Revised Draft EIR were distributed to Federal, State, and locally elected officials and agencies; regional regulatory boards; local planning staffs; and the public. A Spanish translation of the Revised Draft EIR was published and made available upon request.

The following list summarizes examples of the types of public communication activities conducted by the USCG, MARAD, and the Commission:

- Mailed more than 2,600 postcards announcing the availability of the March 2006 Revised Draft EIR and the dates for the public meetings;

- Published paid advertisements in local newspapers announcing the availability of the March 2006 Revised Draft EIR and the dates for the public meetings: the Malibu Surfside News, The Malibu Times, The Signal (Santa Clarita), the Ventura County Star (Notice published in English and Spanish), and Vida Newspaper (a bilingual Spanish and English newspaper distributed in Ventura County); and

- Posted the Revised Draft EIR in both English and Spanish on the Commission and Project public-access websites.

During the public comment period, the Commission held four public meetings attended by the USCG and MARAD, as follows:

- One in Santa Clarita at the Santa Clarita Activities Center, Santa Clarita Room, on April 17, 2006;

- One in Malibu at the Malibu High School on April 18, 2006; and

- Two in Oxnard at the Performing Arts Center, Oxnard Room, on April 19, 2006.

More than 1,000 persons attended the public meetings in Santa Clarita, Malibu, and Oxnard, and 214 people gave oral comments at these meetings.

All public meetings were held in wheelchair-accessible sites, and the Notice of Availability provided information for requesting special meeting accommodations. Simultaneous Spanish translation services were provided for the Oxnard public meetings in response to the request of the Oxnard City Manager's Office. Spanish-speaking individuals were available at all four public meetings for participants who required translations, and literature provided at the public meetings was available in both English and Spanish

The Commission received more than 500 electronic-mail messages, postcards, and letters from elected officials, agencies, organizations, and private citizens on the March 2006 Revised Draft EIR.

All of the comments received during the comment period for the March 2006 Revised Draft EIR were reviewed by the lead agencies, and the Final EIR identifies and addresses environmental issues raised in the comments. Table 1.4-1 at the end of Chapter 1 of the Final EIR summarizes the issues that were raised by public comments during the review period for the March 2006 Revised Draft EIR and identifies the sections of this document where the issues are addressed. Responses to all comments on the March 2006 Revised Draft EIR (and the October 2004 Draft EIR/EIS) are provided in Volume IV of the Final EIR.

B. PREDOMINANT ENVIRONMENTAL ISSUES AND COMMENTS ON THE MARCH 2006 DRAFT EIR.

1. Air Quality

Ambient air quality and air pollutant emissions from stationary and mobile sources are managed under a framework of Federal, State, and local rules and regulations. The USEPA is the principal administrator responsible for overseeing enforcement of the Federal Clean Air Act (CAA) and implementing regulations. The California Air Recourses Board (CARB) is the primary administrator for the State's air pollution and air quality management rules and regulations. The Ventura County Air Pollution Control District (VCAPCD) is the administrator of Ventura County air pollution rules, and the South Coast Air Quality Management District (SCAQMD) is the administrator of air pollution rules for the South Coast Air Basin, which includes the non-desert portion of Los Angeles County.

Project-related activities that would occur onshore within Ventura County or the South Coast Air Basin would be subject to all pertinent Federal and State regulations, as well to the applicable VCAPCD or SCAQMD air pollution rules. The administration of air quality regulations and permits for Project activities in Ventura County and Los Angeles County would be under the jurisdiction of the VCAPCD and the SCAQMD, respectively.

Pursuant to the Deepwater Port Act, the USEPA has jurisdiction to administer air quality regulations and issue required air quality permits for applicable Project activities that occur outside of the seaward boundaries of California counties, including operation of the FSRU. The Deepwater Port Act deems the law of the "nearest adjacent coastal state" to be Federal law and requires it to be applied to the deepwater port "to the extent applicable and not inconsistent with any" Federal law or regulation (33 U.S.C. § 1518(b)). Thus, in addition to enforcing the CAA, the USEPA is required to apply the applicable law of California with respect to air pollution control when issuing air permits for deepwater ports. California has created local air pollution districts and, pursuant to California Health & Safety Code, Division 26, Part 3, each district establishes and enforces local air pollution control regulations to attain and maintain all State and Federal ambient air quality standards. To apply the applicable law of California with respect to air pollution therefore requires determination of the appropriate air pollution control district. For purposes of the Project, the USEPA has determined that the VCAPCD portion of the California State Implementation Plan (SIP) contains the applicable air permitting regulations. The FSRU would be located 12.01 NM (13.83 miles or 22.25 km) offshore the mainland of Ventura County.

In an action that has generated controversy, the USEPA proposes to permit Cabrillo Port in the same manner as sources in the federal attainment area would be permitted, i.e., in the same manner as stationary sources on the Channel Islands. Under current

federal law, mobile emission sources, such as the LNG carriers, tugs and supply boats, are not regulated.

Several of the Channel Islands are in the geographic jurisdiction of Ventura County. The USEPA further concludes, "Because EPA is permitting the FSRU in the same manner as sources in the federal attainment area, the emission units onboard the FSRU are not subject to the provisions of Rule 26.2" (USEPA 2006b). VCAPCD Rule 26 outlines new source review (NSR) requirements and the applicability of requirements to offset relevant emission types should they reach prescribed levels.

In September 2005, the VCAPCD staff concurred with the USEPA's interpretation of VCAPCD Rule 26 that exempted the Project from emission offset and best available control technology (BACT) requirements. However, the VCAPCD has since changed its position on the applicability of VCAPCD Rule 26 (primarily on the exemptions listed under VCAPCD Rule 26.3) and now disagrees with the USEPA's interpretation of Rule 26.

In November 2006, the VCAPCD issued a letter to USEPA Region 9 that objects to the USEPA's Statement of Basis for the Proposed CAA Permit as it relates to NSR. The letter concludes, "...based on the information and analysis above, the APCD is now of the opinion that Rule 26.2 (the requirements including Best Available Control Technology and emission offsets) applies to the proposed Cabrillo Port project..." and "...on November 14, 2006, the Ventura County Air Pollution Control Board went on record as strongly supporting the current APCD staff interpretation that Rule 26.2 applies and Rule 26.3 does not apply to the Cabrillo Port project..." (Villegas 2006). The boundaries of the Ventura County APCD are coincident with the area contained in Ventura County (1845 square miles) and Anacapa and San Nicolas Islands, which are "unclassified/attainment" and part of Ventura County.

The document takes special note of the above regulatory disagreement and states, "However, the lead agencies have confirmed that regardless of whether Rule 26.2 applies, all Project emissions have been properly quantified and disclosed in this document. Additionally, as has been stated throughout the document, any MARAD license issued would contain conditions requiring compliance with all applicable Federal, State, and local laws, which could include VCAPCD Rule 26.2, if the USEPA determines that it is applicable."

In addition, by a memorandum of October 4, 2005, to Commission staff, the staff of the California Air Resources Board (CARB), indicated, "It is the position of the ARB staff that it has jurisdiction within California Coastal Waters as discussed in the documents, 'Report to the California Legislature on Air Pollutant Emissions from Marine Vessels, June 1984, Volume 7, Appendix H and Appendix J'." The staff of CARB further indicated that, "With the proposed LNG project, vessel emissions of visiting tankers are direct emissions. These emissions must be counted in determining the impact of the

proposed project and whether the impact has the potential to have a significant adverse affect on air quality." California Coastal Waters at the project location extend approximately 90 nautical miles offshore and in which, as determined by the CARB, any "..emissions that are released, are transported on-shore."

The memorandum advised the staff of the Commission that, "For purposes of this project, ARB staff believes it is appropriate to mitigate emissions that occur within 24 nautical miles of the California mainline coastline. We believe this will address the majority of emissions from this project and maximize the potential on-shore benefits." The analysis of air quality within the March 2006 Revised Draft EIR is consistent with the above guidance.

While offsets to Project emissions are not required under the above described regulatory determination of the USEPA, the Applicant has reached an agreement with the USEPA to "offset" the NO_x emissions associated with the operations of the FSRU and a carrier offloading its cargo, which are regarded as a stationary source as the FSRU will be anchored at the proposed location 12.01 nautical miles offshore. The Applicant has submitted an emissions reduction program, which it believed, in combination with modifications to the proposed Project described below, would provide sufficient emission reductions to compensate for all offshore NO_x emissions of the proposed Project (FSRU and off-loading carrier, as well as emissions of the LNG carriers within California Coastal Waters and the tugs and service vessel associated with FSRU operations) to the USEPA and the CARB for their analysis.

Subsequent to the release of the March 2006 Revised Draft EIR, the Applicant proposed the following modifications to reduce the emissions associated with the proposed Project:

- Reduction in the Number of LNG Carriers and Change in Crew Vessel Trips: The number of dockings is reduced and would range from 65 to 99 per year, depending on the size of the LNG carriers that are used. Previously the Applicant had proposed up to 130 LNG carrier dockings per year. Since a crew vessel would be present during the berthing and deberthing of every LNG carrier, crew vessels would travel twice from Port Hueneme to Cabrillo Port for each LNG carrier docking;

- Use of Natural Gas to Power LNG Carriers in California Coastal Waters: LNG carriers that would operate in California Coastal Waters, as designated by the CARB, instead of only within 24 NM of the coastline as endorsed by the staff of the CARB, would be fueled with a 99 percent natural gas/1 percent diesel mixture; and

- Diesel-Fueled Support Vessels with Emission Controls: Instead of fueling tugboats and the crew/supply vessel with LNG during Project operations, the

Applicant would use diesel engines equipped with air pollution control technology that would reduce emissions of carbon monoxide, oxides of nitrogen, and reactive organic compounds below levels that would have resulted from the use of natural gas-fueled engines.

The analyses of the emission reduction package by the USEPA and the CARB come to different conclusions as to the levels to which the reductions compensate for the offshore emissions of the proposed Project. Specifically, each agency's analysis of the engine performances of the two offshore tugs that the Applicant proposes to reconvert to achieve emission reductions in coastwise voyages over a 15-year period of Project operations allow different amounts of reductions to be applied to the proposed Project. In spite of these differing calculations, the USEPA and the CARB agree that there are sufficient reductions available to compensate for all of the emissions of the stationary sources, specifically the FSRU and an unloading carrier.

When the remaining emission reductions are applied to the emissions of the LNG carriers within California Coastal Waters, the two onsite tugs and the service vessels associated with the proposed Project, the reductions are 61.2 tons annually less than all vessel emissions according to the USEPA's analysis and 19.5 annually less than all vessel emissions according to the analysis of the CARB. For those vessel emissions of primary concern to the CARB, i.e., those occurring within 24 NM of the coastline (LNG carriers, tugs, and service vessel), the reductions are, according to the USEPA, 23.2 tons annually less than produced emissions, while under the CARB's calculations, the reductions are the same as such emissions, therefore fully compensating. In its February 9, 2007, memorandum to staff of the Commission, CARB states, "BHP's mitigation proposal provides all but about 19 tons per year (TPY) of NO_x emissions pursuant to ARB calculations and represents more than what would otherwise be required by the current determination of applicable regulations." (Emphasis added)

On Thursday, March 22, 2007, the Applicant provided information submitted to the USEPA that documents that no further emission control technology can be implemented to further reduce emissions through the application of selective catalytic reduction technology to the submerged combustion vaporizors (SCVs) on the FSRU. However, through a redesign of the SCV technology, the Applicant has identified a modification to the SCV burners, which would further reduce emissions of NO_x (as well as other air pollutants). The new burners in the SCV are certified for a maximum NO_x emission concentration (4-hour average) of 15 ppm at 3% oxygen. Use of this equipment would result in a reduction of annual NO_x emissions from the FSRU (including emissions attributable to powering of the LNG transfer pumps) to 61.3 tons per year, a reduction of 15 tons per year.

The Table below accounts for the above additional emission reduction and contains a comparison of NO_x emissions from all project vessels to the level of proposed emission

reductions remaining after the emissions/reductions associated with the FSRU and an unloading LNG carrier are accounted for.

COMPARISON OF EMISSIONS OF OXIDES OF NITROGEN FROM PROJECT VESSELS TO PROPOSED EMISSION REDUCTIONS (Does not include the FSRU and LNG Carriers while offloading at the FSRU)

Parameter	Basis for Emission Reduction Estimate[1]	Within 24 Nautical Miles of Shore (LNG carriers and service vessels/tugs)	From 24 to 90 Nautical Miles to Shore (LNG carriers only)	TOTAL: Within 90 Nautical Miles of Shore (LNG carriers and service vessels/tugs)
NO_x Emissions - Project Vessels	-	49.2 tpy	35.5 tpy	84.7 tpy
NO_x Emission Reductions[2]	CARB	49.2 tpy	29.9 tpy	79.1 tpy
	USEPA	37.4 tpy	0 tpy	37.4 tpy
Balance of Unmitigated NO_x Emissions	CARB	0 tpy	4.7 tpy	4.7 tpy[2]
	USEPA	11.8 tpy	35.5 tpy	47.3 tpy

Key:
CARB = California Air Resources Board
NO_x = oxides of nitrogen
Tpy = tons per year
USEPA = United States Environmental Protection Agency

Notes:

1. The reported NOx emission reductions were calculated by subtracting the following values from the total NOx emission reduction estimates: (i) any emission reductions proposed for the Bay Area Air Quality Management District and (ii) emissions from FSRU equipment and LNG offloading equipment on LNG carriers.

2. This figure includes an additional reduction of .9 tpy, as determined by the staff of the California Air Resources Board, from the conversion of auxiliary engines on the two ocean going tugs for which BHP will convert main engines in their proposed Emissions Reduction Program.

2. Public Safety

The site-specific independent risk assessment (IRA) for the EIR applies only to the proposed Project FSRU at its proposed offshore location. The results and conclusions from that assessment do not apply to any other offshore or onshore LNG import and regasification facility.

On behalf of the Commission, the USCG, and MARAD, the consultant hired to help prepare the EIS/EIR, Ecology and Environment, Inc. (E&E), sponsored a security and vulnerability assessment (SVA) workshop and a hazard identification and analysis (HAZID) workshop for the proposed Project. The purpose of the workshops was to identify and analyze potential hazards related to the proposed Project. The workshops represent one component of the early agency consultation process the Project team used to identify issues to be addressed in the October 2004 Draft EIS/EIR. The Project team invited Federal, State, and local agencies to nominate representatives with expertise in key disciplines such as engineering, hazard response, marine transportation, terrorism, fire protection, emergency response, security, safety, and risk-related expertise to attend and participate in the workshops.

More than 55 technical specialists and engineers were invited to attend the workshops. In addition to the EIS/EIR team, 21 agency participants attended the SVA workshop, and 17 agency participants attended the HAZID workshop. These participants included representatives from the City of Oxnard, Port of Long Beach, the Commission, the California Energy Commission (CEC), the California Public Utilities Commission (CPUC), the California Department of Fish and Game (CDFG), the USCG, the U.S. Department of Energy, and the Federal Bureau of Investigation. Representatives of the Applicant and SoCalGasCo also attended specific sessions to answer questions about the design and operations of the proposed Project.

The one-day SVA workshop was held on April 5, 2004. The Applicant provided a general overview of security measures planned for the proposed Project and was then excused from further participation in the SVA workshop. The workshop participants then explored a wide range of potential security scenarios along with current and potential preventive and mitigative risk-reduction measures.

Following the SVA, the EIS/EIR team held a three-day HAZID workshop on April 6–8, 2004, to identify safety and environmental hazards, focusing on those concerns that could potentially affect members of the public. A representative from the University of California at San Diego's Scripps Institution of Oceanography provided an introduction to offshore meteorology conditions in the vicinity of the proposed DWP location. The Applicant described specific systems and operations of the proposed facility to familiarize the workshop participants and was then excused from further participation in the workshop sessions. A consensus listing of accident scenarios was recorded, which formed the basis of the IRA for the proposed DWP.

The workshop participants also discussed concerns identified through the public scoping process, including various terrorist scenarios, e.g., use of airplanes from local airports or shoulder-fired missiles to attack the facility, or LNG-vessel hijacking, the potential for catastrophic and smaller LNG releases due to equipment failure and human error, the integrity of the offshore and onshore pipelines, accidents involving other vessels, earthquakes, emergency response, validation of computer modeling, and other topics.

The security and vulnerability and hazard identification workshops focused on identifying and documenting possible security threats and accidental hazards that potentially could impact the public and/or environment. Representative examples of the threats that were considered include delivery of a bomb by small craft; use of a commercial airliner, fixed wing airplane or helicopter to strike the FSRU; a diver assault with a shape charge to the FSRU; and an intentional release of LNG. Each threat was evaluated as to its likelihood of success and the nature of the potential damage it could cause.

Some events were not considered further. The possibility of a deliberate attempt to disconnect the FSRU from its mooring was considered not to be credible because intentional disassembly of the mooring system would require heavy equipment and/or demolition support and would be detected and intercepted by the crew of the FSRU or the one or two boats patrolling the safety zone with enough time to deter the attack. Similarly, the takeover of an LNG carrier or a deliberate collision of an LNG carrier with the FSRU was not considered credible by the USCG and others due to recent changes in security in the maritime industry as well as the fact that LNG carriers would be in frequent communication using secure channels, making early detection of an attempted takeover very likely.

Representative events that were evaluated during the hazard identification workshop included an LNG spill overboard, loading arm failure, the presence of an ignition source in the submerged combustion vaporizers, a ship collision with the FSRU, a ballast system malfunction, and fires on LNG carriers or the FSRU. The group evaluated the potential consequences of each event using a structured process, reviewed any existing safeguards, and prepared recommendations and comments. One event that was evaluated was the potential for the FSRU to lose one or more mooring lines or become disconnected from the mooring system as a result of an operational incident, which could result in drifting of the FSRU toward the shipping lanes or shore. This event was considered to be very unlikely due to visual inspection to detect failed mooring lines, the availability of at least one standby tug to rescue the drifting FSRU, and response by the USCG.

The technical information provided with the FSRU's design concept was adequate for purposes of hazard identification, but the design has not been finalized and would be

subject to further review. An underlying assumption was that the classification rules, USCG rules, and standards of practice would be met.

Based on the results of the security and hazard identification workshops discussed above, five main scenarios and several variations were identified for consequence analysis of LNG spills. They represented a range of both accidental and intentional events that could produce breaches of the LNG tanks and ranged from several smaller but potentially more frequent events to the simultaneous release of the entire contents of all three LNG storage tanks on the FSRU. The 2004 IRA concluded that none of the releases would produce consequences to the public, for example, at either the coastwise Traffic Separation Scheme (TSS) or the shore.

The 2004 IRA for the proposed Project was prepared prior to the December 2004 publication of the Sandia National Laboratories (Sandia) report entitled "Guidance on Risk Analysis and Safety Implications of a Large Liquefied Natural Gas (LNG) Spill Over Water" (Sandia 2004). The Commission and USCG commissioned the authors of the Sandia guidance report to conduct a third-party technical review of the 2004 IRA. "The goal of Sandia's technical evaluation of the Cabrillo Port IRA was to assist the USCG in ensuring that the hazards to the public and property from a potential LNG spill during transfer, storage, and regasification operations were appropriately evaluated and estimated" (Sandia 2006).

Sandia reviewed the scenarios studied in the 2004 IRA and recommended that the proposed breach and spill conditions be reassessed, stating that "more credible threats exist and may be more likely than the catastrophic total release scenario originally considered in the Cabrillo Port IRA" (Sandia 2006). Sandia agreed to discuss its findings to date on cascading issues including foam insulation degradation and to provide open access information on ship impact analysis and intentional event threat analysis that could be used to formulate scenarios for consideration in the 2006 IRA.

Sandia (2006) found that the three-tank simultaneous release was not credible:

> The intentional breach analysis originally in the IRA considered only a catastrophic, simultaneous, three-tank release, which may be unrealistic based on the current understanding of credible events, as identified by intelligence agencies and the Department of Homeland Security (DHS). Therefore, Sandia recommended that the intentional threats be reexamined based on emerging guidance from DHS and from the intelligence community and noted in the recent Sandia report and the associated classified report on possible intentional threats. (Sandia 2006)

Sandia evaluated the potential size of breaches of the FSRU based on a range of possible credible threats. The exact type and scale of these threats is discussed in a recent classified report by Sandia, but included a range of insider and external attacks

from sea and air with a range of weapons. Based on considering this range of threats and the physical characteristics of the FSRU, including hull and storage tank design and standoff, Sandia suggested a range of potential hole-sizes to use for spill and dispersion analyses; however, a massive LNG release, as described above, was not considered to be credible.

The 2006 Revised IRA studied several scenarios involving the release of LNG to the marine environment in the immediate vicinity of the FSRU, including vessel collisions and intentional events. Based on the technical review conducted by Sandia and on current knowledge and modeling techniques for collisions, breaches, and potential spills for double-hulled vessels, the following scenarios were addressed in the IRA. Each of these is explained in the IRA, including a description of the scenario, consequence modeling, and frequency estimation, where applicable:

- Accidental explosion in hull void;
- Accidental explosion in Moss tank;
- Accidental explosion between vessels;
- Intentional two Moss tank breach;
- Accidental/intentional cascading multiple (two or three) Moss tank release (escalation); and
- Accidental/intentional marine collision.

Sandia concluded, "...the accidental breach scenarios and analyses for the FSRU were reasonable relative to the current knowledge and modeling techniques for collisions, breaches, and potential spills for double-hull vessels" (Sandia 2006).

Of the six scenarios analyzed in the IRA, the first two and the accidental explosion between vessels are limited in scope and were determined to not affect the general public. Evaluation of the first scenario (accidental explosion in a hull void) determined that it produced only a localized effect. The second includes representative accidents that would affect only one tank that could have a number of causes. For example:

> Overall, the processing system layout and safety considerations in the conceptual design suggest that the potential threats from off-normal events in the processing area would probably impact initially only one FSRU storage tank. (Sandia 2006)

Similarly, the accidental explosion between the vessels did not cause a breach of an LNG storage tank.

Sandia agreed that the intentional two-Moss-tank breach scenario was the case that resulted in the greatest distance to the lower flammable limit. Because of timing issues and the fact that the results of other scenarios initially identified by Sandia were believed to be bracketed by the marine collision and intentional/accidental scenarios, Sandia agreed to the final scenarios.

The intentional two-Moss-tank breach (a simultaneous release of LNG from two tanks) was calculated to have the potential to affect the greatest distance from the FSRU with a vapor cloud (flash) fire resulting from dispersion. The escalation case involving failure of all three cargo tanks produces the greatest distance at which serious injuries from a pool fire could occur; these results are discussed in more detail below. No vapor cloud dispersion or vapor cloud (flash) fire would result from the escalation case since immediate ignition is presumed for this scenario.

The evaluations identified two governing intentional events that should be considered for spill and hazard analyses. One event includes the possibility of the breach of two tanks with up to a 7 m^2 hole in each tank. The other event suggests the possibility of a breach of one tank of up to 12 m^2. These events, depending on the location of the hole, may not lead to the full release of all the LNG from each tank onto the water, but for conservative estimates of hazard distances, full tank volume releases could be assumed.

Although it is not one of the governing cases, the marine collision scenario is summarized below because it has the potential to affect one of the vessel traffic lanes. Since the consequence distances were found to be less than those for the intentional event, the other marine collisions initially recommended by Sandia were not analyzed.

The worst credible case scenario involved an intentional event resulting in the release of 53 million gallons (200,000 m^3) of LNG to the ocean surface. As discussed in the Final EIR, subsequent to the release, there would be three likely potential consequences: a pool fire, vapor cloud dispersion with no ignition, or a vapor cloud (flash) fire. Each is discussed below.

Pool Fire: Under the escalation scenario, a release of 53 million gallons (200,000 m^3) of LNG would form a pool on the ocean surface approximately 0.4 NM (0.5 miles or 0.8 km) in diameter. The entire amount of LNG stored on the FSRU is not released because with immediate ignition; some of the LNG would remain in the storage tanks instead of spilling out. With immediate ignition, a significant amount of LNG remaining in the tanks would be burned within the tanks without spilling or otherwise contributing to the pool fire on the water. This scenario addresses both an intentional event and an accident in which one tank is breached causing one or both of the others to fail. For

example, Sandia concluded that "...the processing system layout and safety considerations in the conceptual design suggest that the potential threats from off-normal events in the processing area would probably impact initially only one FSRU storage tank"(Sandia 2006).

Beyond the limits of the pool, methane would be present in the atmosphere above the ocean surface. Assuming ignition of the gas would occur at the time of the release, computer modeling calculates that a pool fire capable of causing injury to a person, i.e., a heat flux value of 5 kW/m^2 or greater, could occur at a distance of about 1.7 NM (2.0 miles or 3.2 km) from the FSRU.

This distance is less than the proposed Area to be Avoided (ATBA) of 2 NM (2.3 miles or 3.7 km) around the FSRU. Therefore, under this scenario a pool fire would not be expected to impact either the nearest point on the mainland or the nearest marine vessel traffic lane, the closest of which is about 2 NM (2.3 miles or 3.7 km) from the FSRU. Sandia noted that its results are in close agreement with the results from the IRA, and concluded that "The model used is appropriate given the absence of obstacles. The assumptions made are reasonable given the current knowledge of the required input parameters and should provide a conservative estimate of thermal hazard distances."

Vapor Cloud Dispersion: Dispersion modeling was used to determine the distance from the FSRU at which a vapor cloud, having a methane content of at least 5 percent and therefore in the flammable range, would extend under three different wind speeds, i.e., 2, 4, and 6 meters per second (m/s) (4.5, 8.9, and 13.4 mph or 7.2, 14.4, and 21.6 km/hr). These wind speeds were selected as they represent the typical lower, average, and upper velocities experienced in the vicinity of the FSRU based on available weather data from a nearby buoy.

For the worst credible intentional or accidental event release of 53 million gallons (200,000 m^3) from two tanks of LNG, it was determined that a wind speed of 2 m/s (4.5 mph) resulted in the worst case in which the flammable vapor cloud extended about 6.3 NM (7.3 miles or 11.7 km) downwind from the FSRU. (Higher wind speeds would cause the gas to dissipate more quickly to below the lower flammable limit; therefore, the potential impact distance would not be as great.) If the wind were blowing toward the northeast, the vapor cloud would not reach shore but would extend across both the Southbound and Northbound Coastwise Traffic Lanes.

For this same scenario, Sandia's results were significantly less than those calculated in the IRA—about 7,000 m versus about 11,000 m. Sandia attributes this to differences in the size and speed of computing power:

> The 2-tank, 7-m^2 hole case was performed by ACE with a relatively coarse, stretched mesh with a minimum of 20 m width cells in each

> direction. Sandia performed a simulation of this case using FDS but with a finer uniform mesh, 10 m cell widths in each direction for a total of 22.4 million computational cells, and found results for vapor dispersion to be somewhat less than the ACE results. Thus, the final result from ACE for 2-tank, 7-m^2 hole case appears to be reasonable and should provide a conservative estimate of dispersion distances. (Sandia 2006)

For purposes of transparency, and to permit members of the public to replicate the analysis if desired, the lead agencies directed the consulting team to use only models that are in the public domain, and that could be run without extraordinarily large or fast computing power. Thus, the IRA modeling overestimates the impact distances when compared with Sandia's results due to differences in the computational cell resolution.

Further, Sandia confirmed that the Fire Dynamics Simulator (FDS) (a computational fluid dynamic model of fire-driven fluid flow) is an appropriate model for dispersion analysis:

> FDS simulations performed by Sandia to date, as well as evaluation of the mathematical models of the code indicate that FDS is capable of simulating LNG dispersion, but a large number (10 million to 100 million) computational cells are required. It would be optimum to perform these dispersion simulations with finer resolution, however lower resolution simulations result in longer distances to lower flammable limit due to the turbulent mixing being under resolved. Therefore, the current FDS analyses provide a conservative assessment of safety hazard distances.

Vapor Cloud (Flash) Fire: A vapor cloud fire could occur if the released LNG were to evaporate and disperse downwind before encountering an ignition source but then was subsequently ignited. The fire would be expected to burn back to the FSRU. Again, under the worst case wind conditions of 2 m/s (4.5 mph or 7.2 kph), computer modeling indicated that a vapor cloud fire capable of causing injury to a person, i.e., a heat flux value of 5 kW/m^2 or greater, could extend 6.3 NM (07.3 miles or 11.7 km) from the FSRU approximately 60 minutes after release the LNG release occurred. This vapor cloud (flash) fire would occur within the proposed ATBA and would not impact the nearest marine vessel traffic lanes; also, it would not affect persons on the mainland shore 12.01 NM (13.8 miles or 22.2 km) away.

The IRA concluded that impact distances from accidental releases and intentional events would not reach the nearest shoreline and that the members of the public who would be at risk would be those in the vicinity of the FSRU or in the coastal shipping lane, approximately 2 NM (2.3 miles or 3.7 km) offshore. The IRA recommended specific mitigation measures to reduce the risks to as low as reasonably practical. The IRA's recommendations are incorporated into the mitigation measures specified in the Final EIR.

The IRA considered a scenario in which a large marine vessel, such as a container ship, oil tanker, or passenger ship, collided with the FSRU resulting in the breach of a Moss tank aboard the FSRU. The analysis involved the instantaneous release of 50 percent of the volume of one tank, or about 13.2 million gallons (50,000 m^3) of LNG. A spill of this volume would form a pool of LNG having a maximum diameter of 2,395 feet (730 m). If this pool encountered an ignition source before dispersion were to occur, the resulting distance to the minimal thermal radiation threshold of 5 kW/m^2 would be 1.6 NM (1.8 miles or 3 km). This distance extends beyond the 1,640-foot (500 m) safety zone but would be within the 2 NM (2.3 miles or 3.7 km) from the FSRU ATBA and would not impact the shipping lanes.

If the LNG were to evaporate and disperse before encountering an ignition source then, using a worst case wind speed of 2 m/s (4.5 mph or 7.2 km/hr), the outer boundary of the lower flammable limit (5 percent methane) would extend approximately 2.9 NM (3.3 miles or 5.3 km) downwind. Therefore, an area beyond the ATBA would be impacted including one of the two shipping lanes. However, it would take approximately 28 minutes for the vapor cloud to reach the closest shipping lane and 55 minutes to dissipate below the lower flammability limit, and it would take 50 minutes for the vapor cloud to reach its maximum extent. Vessels in the area could be notified during this time.
The potential frequency of a collision of a large marine vessel with the moored FSRU that would cause the breach of an LNG storage tank was estimated to be 2.4×10^{-6}, i.e., one occurrence every 417,000 years, based on information regarding the numbers and sizes of large vessels that might be transiting near the FSRU.

The IRA states that the proposed Moss tank demonstrates a very robust design against marine collisions. Only vessels with very specific geometry, strength, and speed would have the physical capacity to penetrate the hull's structural steel and breach the cargo containment. The IRA states that the frequency estimation for the accidental marine collision scenario is a conservative overestimate and that the scenario is improbable.

Sandia reached a similar conclusion regarding the FSRU:

> The FSRU, which is a double-hull vessel design, makes it particularly robust for normal collisions or ship accidents. Based on the FSRU double-hull design, which provides even greater standoff between the storage tanks and the outer hull than a typical LNG vessel, the identified collision events and the suggested breaching results appear reasonable relative to other double hull tanker collision studies using similar analysis methods and threats. Therefore, the spill and breach conditions suggested for LNG transfer and handling appear reasonable and appropriate.

In summary, of the scenarios studied, the IRA determined that the greatest distance from the FSRU within which public impacts would occur is 6.3 NM (7.3 miles or 11.7 km), which would result from the intentional breach of two Moss tanks. This hazard distance encompasses the TSS shipping lanes, but extends no closer than 5.71 NM from the nearest mainland landfall. As discussed above, Sandia's model showed a smaller dispersion distance (about 7,000 m instead of roughly 11,000 m). The hazard to the shipping lane would occur about 30 minutes after the initiating event, which could allow for notification and response, such as moving away from the accident or sheltering in place and implementing emergency response measures on the impacted vessel. The exposure time within the shipping lane would be for about another 30 minutes until the vapor cloud dispersion falls below the lower flammability limit. An average of three vessels would be exposed to this vapor cloud hazard based on marine traffic frequency estimates.

However, in a worst credible case scenario, an ignition source would most likely be present, which would result in a pool fire instead of vapor cloud dispersion or a vapor cloud (flash) fire (Congressional Research Service 2005). The robust structure of the Moss tanks and double-hulled FSRU, and the nature of the events that could produce this scenario (such as a deliberate attack with various types of weapons or aircraft), make it very likely that an ignition source would be present. Because an exceptionally large amount of force is needed to damage an LNG tank, and because the amount of energy required to breach containment is so large, in almost all cases a pool fire and not a vapor cloud (flash) fire would result from this type of terrorist attack.

Pool fire hazards were not predicted to reach the coastwise shipping lane. An escalation event resulting in the cascading breach of three Moss tanks with subsequent pool fire would produce an injury level threshold that would reach 1.7 NM (2 miles or 3.2 km) from the release point at the FSRU. Although considered a credible intentional or accidental event, more likely scenarios would result in smaller pool fire hazards, e.g., 1.6 NM (1.8 miles or 3 km) for the marine collision scenario, and 1.4 NM (1.6 miles or 2.6 km) for the intentional two Moss tank breach.

Sandia reviewed all of the scenarios and modeling results and concluded:

> Overall, the final results for both fire and dispersion hazard distances, after incorporating the recommended Sandia changes, appear to provide reasonable estimates of hazard levels and distances for what are considered credible events. The analyses developed should provide conservative estimates of expected hazard distances. (Sandia 2006).

3. Marine Biology

Comments submitted on the March 2006 Revised Draft EIR focused on three Impacts identified within resource Section 4.07, Marine Biology. Each is discussed below.

a. Noise Impacts to Marine Mammals:

Increasing levels of manmade noise in the world's oceans has been suggested to be a habitat concern for whales and particularly for baleen whales that may communicate using low-frequency sound. Such sounds may not only affect communications but also may cause whales to divert from normal migration paths or to stop feeding or reproductive activities. Such sounds may also reduce the abilities of marine mammals to detect prey or predators and, in the case of *odontocetes* (toothed whales, dolphins, and porpoises) the ability to navigate.

The nearby waters of the Channel Island National Marine Sanctuary (CINMS) are heavily affected by anthropogenic noise (noise caused by humans). The natural background noise levels in the undisturbed ocean at the Project site vary from around 90 dB reference (re) 1 µPa – rms to 110 dB re 1 µPa - rms, depending on ambient weather conditions. This natural undisturbed background noise level will be raised by other marine activities, such as shipping movements in the nearby shipping channel, so that at the FSRU location the lower level of background noise would generally be closer to 110 dB re 1 µPa – rms.

The greatest concentrations of marine mammals in the region lie off the north shores of the Santa Barbara Channel, immediately south of the traffic lane and oil platforms. Other concentrations sometimes occur to the southeast of San Miguel and Santa Rosa Islands, toward San Nicolas Island. By contrast, comparatively few marine mammal sightings have been reported at or near the proposed Project site, probably because it is not in an area characterized by vigorous upwelling and food production known to attract marine mammals.

Exposure to very loud sounds or continued exposure to loud noise can result in a temporary (hearing) threshold shift or a permanent (hearing) threshold shift in which part or all of an animal's hearing is reduced or eliminated throughout part or all of its hearing range, either temporarily or permanently. With extremely powerful impulse noises such as those generated by explosives, geophysical exploration using airguns, certain sonar equipment, pile driving, and other impulse power sources, physical trauma or mortalities are possible. No impulse power sources would be generated by the proposed Project activities.

The collective knowledge of the hearing frequency ranges of various species is extremely limited, however. One of the few assumptions that might be made is that animals can be harassed by loud noises within the frequency range of their vocalizations. Assumptions cannot be made that an animal would not be disturbed by loud noises beyond its range of vocalization; it may still be able to hear such sounds even though it cannot produce them. Moreover, extremely powerful sounds, such as

those generated by explosives, can still injure or kill an animal even if the predominant frequencies are beyond the animal's hearing frequency range.

Frequencies are measured in hertz (Hz). One Hz equals one cycle per second, while one kHz represents 1,000 Hz. Humans with excellent hearing can detect sounds as low as 20 Hz or as high as 20 kHz. The known hearing frequency ranges of most species that occur in the Southern California Bight ranges from 12 Hz to 180 kHz. Sound frequencies are of concern because the ears and other parts of a marine mammal may be particularly sensitive to certain frequencies or resonances applied over a period of time. Low-frequency sounds (under 1000 Hz) are of special interest because they can propagate long distances and are peak frequencies for many anthropogenic sound sources. Conversely, high-frequency sounds attenuate with distance. (The sound sources for this Project were calculated from 22 Hz to 11.3 kHz.) The longer that substantial pressure from a given frequency range is applied to an animal, the greater the potential for harassment or damage.

A potential exists for adverse behavioral impacts on marine mammals as a result of continuous noise from construction and operation vessels or equipment associated with the Project. Presently there is limited published information considering the effects of anthropogenic noise on marine mammal behavior, and most studies have been observational rather than experimental in nature. In most instances, particularly with regard to the effects of noise from large vessels on marine mammal behavior, the available data has lacked appropriate controls.

Data indicate that various dolphin and whale species exposed to close physical approaches as well as noise from different vessels may alter motor behaviors, which have direct energetic costs and potential effects on foraging, navigation, and reproductive activities.

Over the years, the National Marine Fisheries Service (NMFS) has been using take thresholds — the sound exposure level at which harassment or injury may occur — to determine when marine activity that produces sound might result in a "take" of marine mammals. Currently, NMFS is developing new science-based thresholds with guidelines based on exposure characteristics that are derived from empirical data and are tailored to specific species groups and sound types to improve and replace the current criteria (Federal Register 2005). NMFS is in the process of preparing the required NEPA document that will address the proposed changes and any alternatives. The final decision documents have not been published as of the publication date of the Final EIR. Until a final decision is made, NMFS requires that the current acoustic criteria be used for impacts analysis.

As provided in the significance criteria for marine mammals, acoustic impacts on marine mammals are considered significant if the Project causes injury or mortality or results in an action that could be considered a Level A take under the Marine Mammal Protection

Act (MMPA) or causes a Level B take of a listed or candidate species or a Level B take of significant numbers of non-listed marine mammals. ("Level A Harassment" has the potential to injure a marine mammal or marine mammal stock in the wild. "Level B Harassment" has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering but which does not have the potential to injure a marine mammal or marine mammal stock in the wild.) The NMFS acoustic criterion for Level A take is 180 dB re 1 µPa – rms and for Level B take is 120 dB re 1 µPa – rms (continuous). In addition, NMFS (2006) requested that a zone of noise influence be defined for the 190 dB re 1 µPa – rms noise level, which would only occur during certain operational scenarios.

Based on the limited duration of the construction activities and the occurrence of these activities outside of gray whale migration season, significant acoustic impacts from offshore pipeline construction are not anticipated.

The zone of responsiveness, in which avoidance behaviors could possibly occur with some species, is estimated based on estimated sound pressure levels of 120 dB re 1 µPa – rms. At this range, Level B takes under the MMPA could possibly occur. This zone would include a radius of up to approximately 0.5 NM (0.6 mile or 1 km) from construction activities. This would correspond to an area of up to approximately 3.1 km^2 centered around pipeline construction activities.

Although the zone of physical damage may differ substantially among marine mammal species, for the Project, the estimate is based on a continuous level of 180 dB re 1 µPa – rms, in accordance with the current NMFS criterion for Level A takes. This zone would include a radius of up to approximately 3.3 feet (1 m) from pipeline construction activities. This would correspond to an area of up to 33.4 square feet (3.1 m^2). At these ranges, Level A takes under the MMPA could possibly occur.

Noise levels beyond the 190 dB re 1 µPa – rms level would not occur during pipeline construction activities or during installation of the FSRU and its mooring and riser systems.

Operational vessels generate steady, continuous noises that vary somewhat in intensity, depending upon a given operation scenario. Noise produced by the LNG carriers would likely be loudest at cruising speeds and reduced in volume when moored and discharging LNG. During the transfer process, the LNG carrier would be moored to the FSRU and would only generate minimum noise; the LNG carriers would not be using propulsion systems while docked at the FSRU. The main noise associated with LNG carrier docking would be associated with tugs and the FSRU thrusters. The total level for the combination would be 192 dB re 1 µPa – rms broadband. Similarly, crew and supply vessels would be loudest when underway, but such sounds would be

transitory and short-lived. Supply vessels would generate a maximum of 181 dB re 1 µPa – rms, reducing to 174 dB re 1 µPa – rms at 1 m from the source.

Reactions exhibited by marine mammals to underwater noise from vessels (and platforms) vary widely. In general, pinnipeds and small cetaceans seem little affected by transitory or continuous noise and may become habituated to it. For example, California sea lions regularly haul out on mooring buoys and lower decks of oil platforms, and several species of dolphins regularly bow-ride vessels moving through the water. Baleen whales generally ignore stationary or distant sounds. If a vessel approaches slowly, with no aggressive moves, whales may shy away from such vessels in subtle ways.

Operation of the pipeline from the FSRU to shore may generate noise caused by the friction from the natural gas flowing through the risers, pipeline, and through various valves and fittings. A study was developed to estimate the underwater-radiated noise from the pipeline using 10 different flow cases. The analysis found that the total level of underwater radiated noise under normal operating conditions (800 MMscfd) was 96 dB, which is 6 dB higher than background noise on a calm day. The potential noise generated from the pipeline when the FSRU is operating at maximum capacity (1,200 MMscfd) was 106 dB, 16 dB above background on a calm day and less than background on a windy day.

The FSRU would generate less noise when it is stationary than when the thrusters are in use. The FSRU would generate the most noise when its thrusters are being used and tugs are nudging the LNG carrier into position. Noise levels and distances from the FSRU of take thresholds for marine mammals were estimated for seven operating scenarios, as shown in Table 4.7-13 above. Level A (180 dB re 1 µPa – rms) and Level B (120 dB re 1 µPa – rms, continuous) were used. Level B 160 dB re 1 µPa – rms (impulse) was not used, as the noise generated by the FSRU would be continuous rather than impulsive in nature. NMFS (2006) also requested zones of influence for noise levels at 190 dB re 1 µPa – rms. These estimates were made using engine manufacturers' noise specifications and factor in the structural elements of the FSRU design.

Total broadband frequencies from the FSRU range from 22 Hz to 11.3 kHz. The low frequency sound produced by the FSRU above 99 Hz would probably not be heard by pinnipeds (whose hearing ranges from 22 Hz to 99 Hz) but would be heard by other marine mammals whose hearing frequency ranges from 99 Hz and higher. Frequencies over 11.3 kHz would not be produced by the FSRU. The higher the frequency of sound, the greater the attenuation (reduction) is over distance.

For the four operation scenarios that would occur most of the time as described in the Final EIR, the originating broadband level of 178.2 to 182.5 dB would fall to ambient noise levels (90 dB re 1 µPa – rms) at a maximum of approximately 21.6 NM (24.9

miles or 40 km) from the FSRU. For three less common or unlikely operating scenarios, the originating broadband level of 184.7 to 192.6 dB would fall to ambient noise levels (90 dB re 1 µPa – rms) at a maximum of approximately 70.2 NM (80.8 miles or 130 km) from the FSRU. The increasingly shallow depths near the shores of the islands and mainland, in the Anacapa Passage, and along the Pilgrim Banks to the southeast of the Project site, would also help to attenuate sound from the Project.

The waterborne noise level from the FSRU would be above the known background level, but its relationship to background level would depend on ambient weather conditions and other marine activities. The zones of noise influence presented in the following text are the maximum distance from the noise source and associated areas centered around the noise source that would occur.

For the Project, the zone of audibility is based upon the range at which Project sounds could be detected above the quietest background noise levels, in this case above approximately 90 dB re 1 µPa – rms. During standard operations, this would include a radius of up to approximately 21.6 NM (24.9 miles or 40 km) from the FSRU for normal operational scenarios (cases 1-4, Table 4.7-13 within the Final EIR) and up to 70.2 NM (80.8 miles or 130 km) from the FSRU for less likely or uncommon operational scenarios (cases 5-7, Table 4.7-13 within the Final EIR). This is a maximum projection; the actual zone of audibility could be much closer in to the FSRU during rough sea conditions and with much vessel traffic in the shipping lane. Sound levels that would occur solely within the zone of audibility and not in other zones closer to the noise source would not be expected to result in adverse impacts on marine mammals.

The zone of responsiveness, in which avoidance behaviors could possibly occur with some species, is estimated based on estimated sound pressure levels of 120 dB re 1 µPa – rms. At this range, Level B takes under the MMPA could possibly occur. This zone would include a radius of up to approximately 0.9 NM (1.0 miles or 1.6 km) from the FSRU for normal operational scenarios and up to 9.7 NM (11.1 miles or 17.9 km) from the FSRU for less likely or uncommon operational scenarios. This would correspond to an area of up to 8.0 km^2 for normal operations and up to 1,006.6 km^2 for less common and unlikely operational scenarios.

Although the zone of physical damage may differ substantially among marine mammal species, for the Project, the estimate is based on a continuous level of 180 dB re 1 µPa – rms, in accordance with the current NMFS criterion for Level A takes. This zone would include a radius of up to approximately 4.3 feet (1.3 m) from the FSRU for normal operational scenarios and up to 14.1 feet (4.3 m) from the FSRU for less likely or uncommon operational scenarios (!84.7 – 192.6 dB re 1 µPa – rms). This would correspond to an area of up to 5.3 m^2 for normal operations and up to 58.1 m^2 for less common and unlikely operational scenarios. At these ranges, Level A takes under the MMPA could possibly occur.

For two operational scenarios that would be expected to occur approximately 11.5 hours per week, source noise levels would be 192.6 dB re 1 µPa – rms. This zone, defined by a threshold of 190 dB re 1 µPa – rms, would include a radius of up to approximately 4.6 feet (1.4 m) from the FSRU. This would correspond to an area of up to 6.2 m^2. At these ranges, Level A takes under the MMPA could possibly occur.

Between the outer limit of the zone of responsiveness and the outer limit of the zone of physical damage under normal and likely operational scenarios, frequencies between 22 Hz and approximately 2,828 Hz would dominate and frequencies higher than 2,828 Hz would be heard above background levels. Species whose hearing range is higher than 2,828 Hz and thus would not be affected include spotted dolphin, striped dolphin, pygmy sperm whale, northern fur seal and southern sea otter. Other species, whose hearing range would be only marginally within the noise produced between these zones, i.e., hearing ranges above 1 kHz, include Pacific white-sided dolphin, northern right whale dolphin, false killer whale, Blainville's beaked whale, harbor porpoise, and sei whale. While noise produced between 120 and 180 db re 1 µPa – rms may be audible to these species, it would be unlikely to result in response behaviors. Species with hearing ranges in the low frequency ranges, i.e., below 500 Hz, would be most susceptible to noise impacts from the FSRU, including Risso's dolphin, bottlenose dolphin, Hubb's beaked whale, sperm whale, gray whale, minke whale, Bryde's whale, blue whale, fin whale, humpback whale, California sea lion and northern elephant seal.

Implementation of recommended mitigation measures would reduce the intensity and duration of anthropogenic noise introduced to the marine environment and would thus reduce impacts on marine mammals, but it is unclear whether impacts would be reduced to a level below significance criteria. Additionally, avoiding the marine mammal migration season would reduce the numbers of certain marine mammals exposed to noise in the Project site during the construction activities.

Whale Migration: As indicated above, "Data indicate that various dolphin and whale species exposed to close physical approaches as well as noise from different vessels may alter motor behaviors, which have direct energetic costs and potential effects on foraging, navigation, and reproductive activities."

California gray whales migrate annually from their winter breeding and calving grounds in the lagoons of Baja California, Mexico, to their summer feeding grounds in Alaska. In the Southern California Bight, the southbound migration generally begins in December and ends in mid-February, with a few southbound individuals appearing as early as late October or as late as April. The northbound migration within the Southern California Bight begins in mid-February and ends in May, with rare stragglers in the summer months. Although comparatively more individuals hug the coast on the route north, the majority of animals during both migrations favor the Channel Islands rather than the mainland coast along the Southern California Bight.

Several migration corridors exist near the Project site and are depicted in Figure 4.7-1 of the Final EIR. The migration routes depicted have been developed from numerous sources (Hill and Barlow 1992; Lee 1993; Carretta and Forney 1993; Forney et al. 1995; Carretta et al. 2000), including recent anecdotal information from commercial vessel and whale watch operators in the region (Howorth 2005). The fidelity of California gray whales to these migration corridors is extremely well-known (Rugh et al. 1999; Sheldon et al. 2002). To the south, one corridor leads from Santa Catalina Island along an escarpment southwest of the Santa Monica Basin to Anacapa and the Santa Cruz islands. This corridor passes offshore of the proposed FSRU location. One inshore track hugs the coast the entire way, with individuals remaining just outside the surf to up to 1 NM (1.2 miles or 1.9 km) offshore. At least one other track appears to follow the bathymetric contours just inshore of the Northbound Coastwise Traffic Lane. This track appears to diverge as it enters the Anacapa Passage, northwest of the Project site.

The main track continues just inshore from the Northbound Coastwise Traffic Lane and immediately seaward of Platforms Gail and Grace. This track branches, however, with one fork stretching across the broad alluvium of what is colloquially known as the Ventura Flats. This track ranges from 60 to 150 feet (18.3 to 46 m) in depth, converging within 2 to 3 NM (2.3 to 3.5 miles, or 3.7 to 5.6 km) offshore off Coal Oil Point, northwest of Santa Barbara. Another branch may extend along the north shore of the northern Channel Islands, joining one of the branches of the track offshore of the FSRU area. Gray whales may be encountered periodically at or near the Project site, at least from December through May.

Construction activities for the proposed offshore subsea pipelines could affect the behavior of California gray whales. However, construction activities would not occur during gray whale migration season and, therefore, significant acoustic impacts from offshore pipeline construction are not anticipated.

b. Impingement and Entrainment:

Impingement or entrainment of marine organisms during seawater uptakes on the FSRU or LNG carriers could adversely impact fish species or Essential Fish Habitat (EFH) in the Project site. Impingement can occur when fish and other aquatic life are trapped against seawater intake screens. Entrainment can occur when aquatic organisms, eggs, and larvae are drawn into a water system, and then pumped back out. Seawater is used aboard the FSRU for several operational functions including fire systems, cooling systems and ballast water. Ballast water exchange is required to maintain the balance and floating depth (draft and trim) of the FSRU and the LNG carriers when loading or unloading cargo, e.g., when LNG carriers are unloading LNG to the FSRU. The LNG carriers and the FSRU load/discharge seawater to/from ballast tanks via a system of dedicated pumps, pipelines, and valves that together comprise the ballast system. The exchange of ballast water would occur at the bottom of the FSRU's hull at a depth of approximately 42.7 feet (13 m).

The following information is provided as a summary for the purposes of analyzing potential impacts on EFH and ichthyoplankton. The proposed ballast pump configuration provides a maximum pumping capacity of 1.59 million gallons (6,000 cubic meters [m^3]) of water per hour. Ballast water intakes would be screened and flow rates maintained per the Federal Clean Water Act § 316, i.e., flow rates of less than 0.5 feet per second (0.15 meter [m] per second), to minimize impingement of aquatic organisms. A typical sea chest inlet design is fitted with an external coarse filter grill with grading clearance spacing of 1 inch (2.5 centimeters [cm]) to prevent large matter from being taken in and/or blocking the intake systems and to prevent organic matter accumulating in the sea chests and ballast tanks. Further downstream from the grill, a secondary fine filter would be fitted in place with a screen size of approximately 0.25 inches (0.6 cm). This screen would prevent the intake of some marine matter or organisms, e.g. those larger than 0.25 inches (0.6 cm), and could be accessed for cleaning. These screen sizes are based on preliminary engineering designs and common practice in LNG carrier and Floating Production Storage and Offloading (FPSO) design and are approximate. It may be possible to adjust the screen sizes if it would not adversely affect other essential systems.

As discussed above, operational and maintenance activities on the FSRU would require the use and uptake of seawater. Although specific design plans have not been finalized, a typical vessel of this type would have several seawater uptake systems, including eight sea chests and six seawater intakes. All six intakes would be at a depth of approximately 42.7 feet (13m) and would maintain flow rates of less than 0.5 feet (0.15 m) per second.

The 4.17 million gallons (15,785 m^3) per day of seawater uptake which is a weighted average proposed for the Cabrillo Port Project are significantly (orders of magnitude) lower than typical volumes used by other LNG or a power generation facility's cooling systems, both nearshore and offshore and 60% lower than the seawater uptake values presented in the March 2006 EIR. For example, cooling water intake structures used on many nearshore power generating plants in California are designed to withdraw well over 50 million gallons (189,250 m^3) of seawater per day (California Energy Commission 2005). Some facilities (for example, the Moss Landing Power Plant and Ormond Beach Power Plant) can use between 562 and 864 million gallons (2,127,401 and 3,270,596 m^3) per day. Additionally, although the flow rate is also less than 0.5 feet per second, the intake valves for many of these facilities are located in nearshore or estuary environments where ichthyoplankton densities can be higher than offshore locations.

An ichthyoplankton impact analysis was developed to determine potential impacts of the proposed Project. The results of the analysis indicate that the daily mortality for eggs would be approximately 42,704 eggs and 7,614 larvae per day, representing

<0.00000019 percent of the 21,464,100,000,000 eggs and 3,824,100,000,000 larvae found within the site of the FSRU.

In addition to the weighted average, the minimum and maximum operating conditions were also evaluated for comparative purposes. The minimum operating condition is expected to occur 322 days per year with a seawater intake of approximately 3.93 million gallons per day. This resulted in entrainment values of approximately 40,169 eggs and 7,162 larvae per day. The maximum operating condition (use of the original seawater cooling system during maintenance of the SCVs or when the inert gas generator is operating) assumed operations 4 days per year and a water intake of approximately 16.33 million gallons per day. This resulted in entrainment values of approximately 166,963 eggs and 29,768 larvae per day.

Based on the California Cooperative Fisheries Investigation (Cal/COFI) data used in this assessment, commercially harvested species managed by the Pacific Fishery Management Council make up approximately 49,713,300 larvae or 0.000013 percent of the total larval density and 214,641,000 eggs or 0.000010 percent of the total egg density estimated to be present in the source water body (Figure 1, Cabrillo Port Ichthyoplankton Impact Analysis, February 2006). Based on the small numbers of these species expected to be entrained in the seawater uptake systems, the impacts on these species would be less than significant.

Impacts on ichthyoplankton can be difficult to interpret due to the low natural survival rates of fish eggs and larvae. In fact, many (84.9 percent) of the entrained organisms are eggs, which are subject to high rates of natural mortality. Although no consensus currently exists within the scientific community or responsible agencies regarding the level of impacts on ichthyoplankton that is considered significant, the density of ichthyoplankton within the Project site represents typical low-level values expected in offshore areas, and specifically in the Project site, where upwelling events are limited compared to other areas within the Southern California Bight.

To determine whether changing the depth of the intake valve would actually reduce entrainment impacts for the proposed Project, species occurrence and densities at alternative depths within the water column were investigated. To analyze the potential impacts at various depths, vertical distribution data are required. A literature search was performed to identify all available data, including additional consultation with the CalCOFI. Table 4.7-9 shows data for vertical distribution available in the literature for managed species with EFH in the Southern California Bight. A more detailed table containing all of the vertical distribution data found in the literature is provided in the ichthyoplankton analysis (Appendix H1). Vertical distribution data are only available for 29 species out of the 113 species identified in the ichthyoplankton analysis. Despite the availability of some limited information, the data do not provide sufficient information to fully assess potential impacts at alternative depths.

However, the data do indicate that species occur at various depths and exhibit widely varied seasonal distributions and migration patterns in the water column. For example, Pacific hake was identified in one study at all strata down to 250 m (820 feet), with highest densities below 50 m (164 feet). Generally, rockfish larvae typically occurred in the upper 80 m (262 feet), highest densities were in the 40-80 m (131-262 feet) stratum offshore, with extremely low densities in the upper 30 m (98 feet). Additionally, certain species exhibit vertical migration patterns where they move between depths at various points during the day (daylight hours, evening hours, or at dawn and dusk) in response to daylight or predator/prey presence. The ichthyoplankton analysis developed for Cabrillo Port was developed based on the best available data within the proposed Project area; however, the data do not provide adequate detail for developing an analysis or providing recommendations on alternative depth locations for the seawater intake valves that would reduce potential impacts.

The daily density values determined for the Cabrillo Port Project represent impacts on fishery populations that can be considered adverse but less than their significance criteria when considered relative to the area potentially impacted by Project activities requiring seawater uptake. Considering the species, densities, and percentages affected by the proposed Project, entrainment impacts on any special status species (listed, candidate, sensitive, or managed species with EFH in the Project area) would be adverse but less than the significance level. The known density and species occurrence near the Project site, the amount of seawater that would be taken in the FSRU and LNG carriers during operations, the depth and location of the ballast water pumps, and the flow rates at the uptake valves, indicate that a significant impact on ichthyoplankton or managed species with EFH in the Project area from impingement or entrainment would not occur.

4. Aesthetics

During the public review period for the March 2006 Revised Draft EIR, comments concerning aesthetics impacts involved night lighting, the size of the FSRU, views from State parks and national recreation areas, views to scenic view corridors, and requests for visual simulations from higher elevations and a location map of simulation. The location of the FSRU is shown on visual simulations within the Final EIR, but not on photographs depicting the existing viewsheds. In response to public comments on the March 2006 Revised Draft EIR, Figure 4.4-20, which shows the locations of the key observation points (KOPs), has been added to the end of Section 4.4, Aesthetics, and four new simulations have been added to Appendix F of the document. Also in Appendix F is a detailed discussion of the methods and tools used to prepare the simulations presented in the Final EIR.

The Project consists of four main components: (1) the offshore FSRU, which would be anchored and moored in Federal waters 12.01 nautical miles (NM) (13.83 miles or 22.25 kilometers [km]) off the coast of Ventura and Los Angeles Counties, in waters

2,900 feet (884 meters [m]) deep, where the LNG would be offloaded and regasified; (2) two 24-inch (0.6 m) diameter parallel subsea pipelines to transport the re-gasified natural gas to shore; (3) a shore crossing where the offshore pipelines would pass beneath the beach and connect to a coastal metering station; and (4) two onshore buried pipelines that would tie into existing natural gas pipelines, one within the Oxnard city limits and Ventura County and the other in the City of Santa Clarita within Los Angeles County. After construction, only the FSRU would remain visible offshore; the new metering station would be located at the Reliant Energy Ormond Beach Generating Station and other structures would be small.

The FSRU, similar in appearance to an oceangoing LNG carrier, would be double-hulled with three spherical Moss (storage) tanks (see Figure 4.4-1 for a representative illustration of the FSRU). It would measure approximately 971 feet (296 m) long, not including the mooring turret, and 213 feet (65 m) wide (see Figure 2.2-1 in Chapter 2, "Description of the Proposed Action"). The tops of the LNG storage tanks would be approximately 102 feet (31 m) above the main deck, placing them approximately 161 feet (49 m) above the waterline when loaded and 164 feet (50 m) when ballasted. The tallest part of the FSRU would be the cold stack, which would be approximately 266 feet (81 m) above the waterline and approximately 105 feet (32 m) above the top of the LNG storage tanks when loaded and approximately 269 feet (82 m) above the waterline and 108 feet (33 m) above the top of the LNG storage tanks when ballasted. The cold stack is a small-diameter exhaust pipe located at the bow of the ship to vent natural gas vapors in the event of an emergency. Since the cold stack pipe is small in diameter, it would not be seen distinctly from any significant distance away from the FSRU.

The proposed FSRU is comparable in length to typical LNG carriers, but it is about 50 percent wider than and twice as tall as the average LNG carrier. The Applicant has proposed that the FSRU hull be painted Admiralty Pacific Gray or a similar shade. The USCG would determine the final paint color and scheme for the FSRU hull based on navigational safety, among other considerations. Lighting onboard the FSRU would comply with regulatory requirements and would be designed to minimize nighttime impacts. The lighting would be used only to ensure safety and security and when operations require lighting. Movement sensors would be employed where practicable, and floodlight use would be minimized. Where used, floodlights would employ high-efficiency, low-glare fittings such as sodium and metal halide types.

LNG carriers would also be illuminated for safety and would include five footcandles at transfer connection points and one footcandle in transfer operations work areas. Lighting would be located or shielded so as not to mislead or otherwise interfere with navigation on the adjacent waterways, and would minimize impacts on migratory and coastal birds. Typically, the LNG carriers must be illuminated continuously from one hour before sunset to one hour after sunrise and during any periods of reduced visibility while the vessel is moored to the FSRU.

The FSRU would be permanently moored and would use a turret system, i.e., a revolving tower-like structure, to allow the FSRU to weathervane (rotate) around a fixed point. The FSRU would swing around this fixed anchor point influenced by prevailing water and wind currents in a fashion similar to ships at anchor. Since prevailing winds in the Project vicinity come from a west to west-northwest direction, the most common orientation of the FSRU would be roughly parallel to the coast with the bow pointing into the wind. Visiting LNG carriers would tie up to the FSRU along its starboard side (which faces the coast), but because the LNG carriers are substantially shorter in overall height, the LNG carrier would not typically be distinguishable as a separate vessel to an onshore observer beyond 12.01 NM (13.83 miles or 22.25 km). Winter storm winds tend to be from a more northwesterly direction, and under these circumstances the orientation of the FSRU would not be substantially different, i.e., still roughly parallel to the coast. For observers who are on commercial or recreational vessels offshore, the view of the FSRU and an offloading LNG carrier would vary, depending on distance and directional heading to the FSRU.

Views of the Project area from shoreline areas consist mainly of open ocean. The profiles of Anacapa Island (maximum elevation 930 feet [283 m]) and Santa Cruz Island (maximum elevation approximately 2,300 feet [701 m]), located offshore 10.8 and 16.5 NM (12.4 and 19 miles or 20 and 30.6 km) from the nearest mainland points, are visible; however, under typical marine layer conditions, shapes, lines, and textures can be difficult to distinguish. Four offshore platforms can be seen from the coastline under good visibility conditions. From the nearest point on the coast in Ventura County, at Leo Carrillo State Beach near the Ventura/Los Angeles County line, Platform Grace is 9 NM (10.4 miles or 16.7 km) offshore; Platform Gilda is 7.6 NM (8.8 miles or 14.1 km); Platform Gail is about 8.7 NM (10 miles or 16.1 km); and Platform Gina is the closest at 3.2 NM (3.7 miles or 5.9 km). These platforms are lighted and visible at night.

Good visibility occurs in the nearshore and offshore Project areas primarily between November and May, when distances greater than 9 NM (10.4 miles or 16.7 km) may be visible about half the time. Heavy marine layer conditions occur from mid-May to mid-July in Ventura County, where visibility offshore is often reduced to less than 0.9 NM (1.04 mile or 1.67 km) (see Table 4.1-6, "Visibility Distances by Month at Point Mugu," in Section 4.1, "Introduction to the Environmental Analysis"). Nearshore and offshore areas in Ventura County are characterized by a light marine layer condition consisting of clear sky with surface haze, with visibility limited to 9 to 13 NM (10.4 to 15 miles or 16.7 to 24.1 km) offshore. The sky and water appear as a uniform gray color, and any contrast in color or texture between the sky and water is usually not discernible. As discussed below, residential communities with views of the proposed Cabrillo Port site are approximately 17 to 22 NM (19.6 to 25.3 miles or 31.5 to 40.8 km) from the proposed Cabrillo Port site.

Visibility statistical data for the vicinity of Point Mugu show that a visibility threshold of ≥9 NM (10.4 miles or 16.7 km), i.e., good visibility, occurs approximately 37 percent of

the year (November through April) (see Table 4.1-7, "Visibility Frequency (Percent) at Point Mugu (PM) and San Nicholas Island (SNI)" in Section 4.1, "Introduction to the Environmental Analysis"). The FSRU is 12.01 NM (13.83 miles or 22.25 km) from the nearest mainland shore at Leo Carrillo State Beach near the Ventura/Los Angeles County line.

The FSRU would be anchored approximately 16 NM (18.4 miles or 29.6 km) south-southeast of the Reliant Energy Ormond Beach Generating Station, which is located in the City of Oxnard (see Figure 2.1-2 in Chapter 2, "Description of the Proposed Action"). It would be located in waters 2.02 NM (2.3 miles or 3.7 km) farther from shore from the southern edge of the nearest shipping lane (the southbound coastwise traffic lane). Commercial fishing, naval, and recreational vessels are also a common feature of the marine viewshed. More than 5,000 commercial vessels transit the traffic separation scheme in the Santa Barbara Channel annually, roughly 14 ships every 24 hours; there is almost always a ship in one's field of view for a person on the mainland. If no marine traffic is visible, it is more likely due to smog, atmospheric haze, fog, or darkness of the night sky rather than an absence of shipping traffic.

Hollywood Beach, Mandalay Beach, Ormond Beach, Silver Strand Beach, and Port Hueneme Beach are popular destinations for residents and tourists. The proposed FSRU would be located approximately 17.6 to 21.5 NM (20.3 to 24.8 miles or 32.6 to 39.8 km) away from these beaches.

Hiking trails in the Santa Monica Mountains National Recreation Area (NRA) and the 55-mile (88.5 km) scenic corridor associated with Mulholland Drive provide local residents and hikers with views of the Pacific Ocean, and therefore, potential views of the FSRU. The NRA attracts approximately 500,000 visitors each year.

The views from the Channel Islands consist mainly of open ocean, the California coastline in the distance, and commercial and recreational vessels in the foreground. Offshore Platforms Grace, Gilda, Gail, and Gina are also visible from the islands under good visibility conditions. The FSRU anchorage would be approximately 18.71 NM (21.5 miles or 34.7 km) from Anacapa Island, the nearest island of the Channel Islands, and 26 NM (29.9 miles or 48.2 km) from Santa Cruz Island. Depending on a viewer's elevation, all or portions of the FSRU would be visible (but only as a very small object on the horizon) from other locations within the Channel Islands National Park, mainly from higher elevations on Anacapa and Santa Cruz Islands.

At some locations along the Pacific Coast Highway there is both residential and commercial development. The tops of the Moss tanks of the FSRU would be visible from State Route 1 at one location, specifically, at KOP 6 in Section 4.04 of the Final EIR.

The Final EIR concludes, based on its simulations, that all of the aesthetic impacts identified would be adverse, but not significant with the exception that the FSRU would change the visual character of the ocean view for recreational boaters, a significant, long term impact.

C. IMPACTS THAT REMAIN SIGNIFICANT AFTER APPLICATION OF ALL FEASIBLE MITIGATION

Of the 66 potentially significant environmental impacts identified by the Final EIR, 20 cannot be mitigated to below their significance criteria by the application of all feasible mitigation. These impacts, which are Class I impacts under CEQA, are listed below as either "Temporary" (returns to baseline conditions after the activity stops), "Short-term" (returns to baseline conditions on its own within one year of the activity), "Long-term" (returns to baseline conditions after restoration and monitoring), and "Permanent" (never returns to baseline conditions): .

Temporary impacts include the following six impacts:

- **Impact AIR-1.** Project construction activities in Ventura and Los Angeles Counties would generate emissions that exceed quantitative thresholds for criteria pollutants in designated air quality nonattainment areas.

- **Impact AIR-2.** Onshore Project construction activities would generate particulate emissions that could cause or contribute to existing or projected violations of ambient air quality standards.

- **Impact AIR-3.** An LNG spill from the FSRU or a pipeline rupture would result in a natural gas release and/or a fire that could cause temporary increases in ambient air concentrations of criteria pollutants in excess of air quality standards, expose sensitive receptors and the general public to substantial concentrations of toxic air contaminants, and/or create objectionable odors.

- **Impact NOI-4.** HDB at the shore crossing and HDD or other drilling techniques at onshore waterways and intersection crossings could temporarily increase noise levels for sensitive receptors. Noise levels could exceed local noise ordinances or permit conditions.

- **Impact NOI-5.** HDB, HDD, boring, trenching, and other construction activities could temporarily create vibration levels at sensitive receptors.

- **Impact NOI-6.** Site preparation, pipeline installation, and construction of aboveground facilities could temporarily increase noise levels for sensitive receptors, such as schools and residences. Noise levels may exceed county and/or city noise

ordinances or permit conditions during the installation of the onshore pipeline and associated structures.

Short term impacts include the following impact:

- **Impact WAT-5b:** An accidental release of diesel fuel to marine waters violates Federal and State water quality standards or objectives.

Long term impacts include the following six impacts:

- **Impact BioMar-6.** An accidental release of a natural gas, fuel, or oil could cause morbidity or mortality of marine biota, including fish, invertebrates, seabirds, and special status species such as sea turtles, through direct contact or ingestion of the material.

- **Impact BioMar-8.** A release of LNG, natural gas, fuel, or oil could cause injury or mortality of marine mammals through direct contact or ingestion of the material.

- **Impact PS-2.** A high-energy collision of another vessel with the FSRU or an LNG carrier or an intentional attack could cause a rupture of the Moss tank(s) holding LNG, leading to a release of an unignited flammable vapor cloud that could extend beyond the 1,640-foot (500 m) radius safety zone around the FSRU, impact any members of the boating public in the identified potential impact area, and impact boats traveling in the Traffic Separation Scheme.

- **Impact PS-3.** Fishing gear could become hung up on the pipeline and potentially damage one or both of the subsea pipelines. Similar damage may occur due to a seismic event or subsea landslide.

- **Impact PS-4.** The potential exists for accidental or intentional damage to the onshore pipelines or valves carrying odorized natural gas. Damage, fires, and explosions may occur due to human error, equipment failure, natural phenomena (earthquake, landslide, etc.). This would result in the release of an odorized natural gas cloud at concentrations that are likely to be in the flammable range.

- **Impact PS-5.** In the event of an accident, there is a greater likelihood of injury, fatality, and property damage near Center Road Pipeline MP 4.1, an HCA.

Permanent impacts include the following seven impacts:

- **Impact AES-3.** The FSRU would change the visual character of the ocean view for recreational boaters.

- **Impact AGR-2.** Expansion of the Center Road Valve Station in Ventura County would require conversion of approximately 0.1 acre (0.04 ha) of agricultural land to non-agricultural uses.

- **Impact AIR-5.** Emissions of NOx and ROC generated from LNG carriers, tugboats, and the crew/supply vessel operating in California Coastal Waters could contribute to ambient ozone impacts in the areas located downwind of the Project.

- **Impact BioMar-5.** Noise from construction and operation vessels or equipment could disrupt migrations; interfere with or mask communications, prey and predator detection, and/or navigation; cause adverse behavioral changes; or result in temporary or permanent hearing loss.

- **Impact NOI-2.** Recreational boaters and fishers at certain distances from the facility could hear noise generated by FSRU operations over the long-term.

- **Impact NOI-3.** LNG carriers, crew boats and supply vessels, or helicopters could temporarily increase noise levels for sensitive receptors, such as recreational boaters and fishers.

- **Impact REC-3.** The presence of the Project would alter the recreational experience of recreational boaters, including tourists and visitors on whale-watching trips and other visitors to the Channel Islands National Park.

D. ADEQUACY OF THE FINAL EIR

The State CEQA Guidelines, Section 15151, along with annotations from the Resources Agency, provide as follows:

> An EIR should be prepared with a sufficient degree of analysis to provide decision-makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection but for adequacy, completeness, and a good faith effort at full disclosure.
>
> **Note:** Authority cited: Section 21083, Public Resources Code; Reference: Sections 21061 and 21100, Public Resources Code; *San Francisco*

Ecology Center v. City and County of San Francisco, (1975) 48 Cal. App. 3d 584.

Discussion: This section is a codification of case law dealing with the standards for adequacy of an EIR.

In *Concerned Citizens of Costa Mesa, Inc. v. 32nd District Agricultural Assoc.* (1986) 42 Cal. 3d 929, the court held that "the EIR must contain facts and analysis, not just the agency's bare conclusions or opinions." In *Browning-Ferris Industries of California, Inc. v. San Jose* (1986) 181 Cal. App. 3d 852, the court reasserted that an EIR is a disclosure document and as such an agency may choose among differing expert opinions when those arguments are correctly identified in a responsive manner. Further, the state Supreme Court in its 1988 *Laurel Heights* decision held that the purpose of CEQA is to compel government at all levels to make decisions with environmental consequences in mind. CEQA does not, indeed cannot, guarantee that these decisions will always be those which favor environmental considerations, nor does it require absolute perfection in an EIR.

Staff believes that the Final EIR meets or exceeds the above standard.

Two predominant criticisms of the Final EIR have been advanced by commenters on the March 2006 Revised Draft EIR: 1) the document does not analyze the "whole of the project" and 2) the document's discussion of alternatives to the proposed Project is deficient. Each is discussed below.

1. Whole of the Project

Section 15378, State CEQA Guidelines, states, in part, "'Project' means the whole of an action, which has a potential for resulting either in a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment...." Commenters maintain that to comply with the above, the proposed Project must be analyzed from "cradle to grave", that is, from the development of the natural gas in Australia to the potential end uses of such gas in California. The Commission staff respectfully disagrees with this interpretation as indicated in the following responses to comments to this end.

The proposed Project is not under the regulatory control of any single jurisdiction; it is governed by the laws, rules and regulations of the involved jurisdiction. As indicated in Section 1.3 of the Final EIR, the activities within Australia are subject to the Commonwealth Environmental Protection and Biodiversity Conservation Act of 1999 and the Western Australian Environmental Protection Act of 1986 (Macfarlane 2005, see Appendix L). Environmental legislation similar to NEPA/CEQA is also in effect in

both Malaysia and Indonesia. Marine transport is governed by international law, treaty, etc. As required by law, the Final EIR identifies the potential direct and indirect impacts within Federal, State and local jurisdictions. Information from each of the above sources is included in the public record and will be taken into account by decision-makers when they consider the proposed Project.

Table 1.4.1 and Section 1.5 of the Final EIR contain information on scoping comments received. Section 1.3 of the document contains information on all phases of the project, including the extraction of natural gas.

The proposed Project, or "whole of the action" (State CEQA Guidelines Section 15378) involves the construction and operation of the Cabrillo Port LNG Deepwater Port and related facilities by a private applicant. This is the action for which the Applicant has applied for a lease from the Commission and for which it will be required to obtain approvals from the USCG, MARAD, and other Federal, State, and local agencies. The production of natural gas in other countries, which may serve as the supply of LNG, is related to the proposed Project, but is a separate undertaking that is not a component of this Project. The Project or "whole of the action" must be distinguished from the indirect effects that may be attributed to the proposed Project or how the Project contributes to a cumulative impact. In compliance with the CEQA, the Final EIR analyzes the indirect and cumulative effects of this proposed Project on a broad geographic area, including effects within California Coastal Waters associated with shipping LNG to the FSRU.

The Applicant is required to adhere to all applicable Federal, State, and local laws, regulations, and permit requirements in the execution of all phases of the Project. Section 4.2.6 of the Final EIR states, "The environmental and occupational safety record for the Applicant's worldwide operations, including, for example, mining ventures overseas, was not considered in evaluating potential public safety concerns associated with this Project because such operations are not directly comparable to the processes in the proposed Project." The conclusions in the EIR are based on the analyses of potential environmental impacts of the proposed Project and the implementation assumptions stated in Section 4.1.7..

Section 15000 of the State CEQA Guidelines states, in part, "The regulations contained in this chapter are prescribed by the Secretary of Resources to be followed by all state and local agencies of California in the implementation of the California Environmental Quality Act."

Any position that the analysis of the proposed Project should include impacts from, for example, the production and liquefaction of natural gas in Australia, must also be viewed within the context of sections 15040 and 15041 of the State CEQA Guidelines, which specifically define and correspondingly limit the authority provided to State and local agencies under the CEQA. . Section 15040 provides as follows:

(a) CEQA is intended to be used in conjunction with discretionary powers granted to public agencies by other laws.

(b) CEQA does not grant an agency new powers independent of the powers granted to the agency by other laws.

(c) Where another law grants an agency discretionary powers, CEQA supplements those discretionary powers by authorizing the agency to use the discretionary powers to mitigate or avoid significant effects on the environment when it is feasible to do so with respect to projects subject to the powers of the agency. Prior to January 1, 1983, CEQA provided implied authority for an agency to use its discretionary powers to mitigate or avoid significant effects on the environment. Effective January 1, 1983, CEQA provides express authority to do so.

(d) The exercise of the discretionary powers may take forms that had not been expected before the enactment of CEQA, but the exercise must be within the scope of the power.

(e) The exercise of discretionary powers for environmental protection shall be consistent with express or implied limitations provided by other laws.

Section 15041 provides:

Within the limitations described in Section 15040:

(a) A lead agency for a project has authority to require feasible changes in any or all activities involved in the project in order to substantially lessen or avoid significant effects on the environment, consistent with applicable constitutional requirements such as the "nexus" and "rough proportionality" standards established by case law (Nollan v. California Coastal Commission (1987) 483 U.S. 825, Dolan v. City of Tigard, (1994) 512 U.S. 374, Ehrlich v. City of Culver City, (1996) 12 Cal. 4th 854.).

(b) When a public agency acts as a Responsible Agency for a project, the agency shall have more limited authority than a Lead Agency. The Responsible Agency may require changes in a project to lessen or avoid only the effects, either direct or indirect, of that part of the project which the agency will be called on to carry out or approve.

(c) With respect to a project which includes housing development, a Lead or Responsible Agency shall not reduce the proposed number of housing units as a mitigation measure or alternative to lessen a particular

significant effect on the environment if that agency determines that there is another feasible, specific mitigation measure or alternative that would provide a comparable lessening of the significant effect.

Section 15378(a) of the State CEQA Guidelines states, in part, "Project means the whole of an action..." This must be interpreted in conjunction with section 15378(a)(3), which states, "An activity involving the issuance to a person of a lease, permit, license, certificate, or other entitlement for use by one or more public agencies." When read in conjunction with section 15000, it is clear that the law and any document prepared under its provisions apply solely to the jurisdiction and authority of California public agencies.

2. Alternatives

Section 15126.6(a), State CEQA Guidelines, states:

> Alternatives to the Proposed Project. An EIR shall describe a range of reasonable alternatives to the project, or to the location of the 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. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decisionmaking and public participation. An EIR is not required to consider alternatives which are infeasible. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason. (*Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553 and *Laurel Heights Improvement Association v. Regents of the University of California* (1988) 47 Cal.3d 376).

Section 15126.6(c), State CEQA Guidelines, states:

> Selection of a range of reasonable alternatives. The range of potential alternatives to the proposed project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects. The EIR should briefly describe the rationale for selecting the alternatives to be discussed. The EIR should also identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination. Additional information explaining the choice of alternatives

may be included in the administrative record. Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are: (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts.

"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 (California Public Resources Code § 21061.1.).

The Applicant's objectives for the Cabrillo Port LNG Deepwater Port can be summarized as follows:

- Address California's growing demand for clean-burning natural gas for electric power generation, industrial, residential, and commercial uses, thus furthering the national goal of energy sufficiency;

- Provide California consumers access to sources of natural gas from the Pacific Rim and provide greater flexibility and reliability in gas providers; and

- Deliver an annual average of 800 MMcfd (22.7 million m^3) of natural gas per day into the Southern California area via the existing SoCalGasCo natural gas transmission system.

In consideration of the above, the following alternatives are discussed in the Final EIR within the designated sections. The components in **bold text** are part of the proposed Project, the items in regular text are evaluated as alternatives in the Final EIR, and the items in *italicized text* are those alternatives that were eliminated from further analysis because each would not "feasibly accomplish most of the basic objectives of the project" and would not "avoid or substantially lessen one or more of the significant effects" of the proposed Project.

Alternative Concept	**Options/Locations (Section Discussed)**	
No project	No Action Alternative (3.4.1)	
Other sources of energy	*Energy Conservation* (3.3.1)	
	Renewable Energy Sources (3.3.2)	
	Retrofitting Existing Power Plants (3.3.3)	
	New or Expanded Pipeline Systems (3.3.4)	
Terminal locations	Regional offshore locations	*Baja California, Mexico* (3.3.5)
		Washington/Northern Oregon (3.3.6.1)
		Southern Oregon/Northern California (3.3.6.2)
		San Francisco Bay to Point Conception (3.3.6.3)

Alternative Concept	**Options/Locations (Section Discussed)**	
		Los Angeles to the Mexican border (3.3.6.4)
	Onshore California	*Horno Canyon at Camp Pendleton, Rattlesnake Canyon, Little Cojo at Point Conception, Deer Canyon, Channel Islands* (3.3.7.3)
	Offshore California	**Cabrillo Port (2.0)**
		Santa Barbara Channel (Ventura Flats), including offshore pipeline via Platform Grace, Reliant Energy Mandalay Generating Station Shore Crossing, and Gonzales Road Pipeline (3.4.2)
		Gaviota Pass, Offshore of Camp Pendleton, Deer Canyon, Anacapa Island, Chinese Harbor, Smugglers Cove, San Pedro Point, West side of the Channel Islands (3.3.7.4)
Deepwater port concepts	Floating terminal	**Floating storage and regasification unit (FSRU) (2.2)**
		Single-point mooring direct regasification (3.3.8.3)
		Multiple-point mooring direct regasification (3.3.8.3)
	Fixed terminal	*Platform* (3.3.8.1)
		Gravity-based structure (3.3.8.2)
Alternative technologies	Regasification methods	**Submerged combustion vaporizer (2.3.1.3)**
		Alternative vaporizer technologies (3.3.9.1)
	Technologies used on the FSRU	**Moss tank storage (2.2.2.3)**
		Membrane storage (3.3.9.2)
		Onshore power source (3.3.9.3)
		Alternative diesel engine cooling (3.3.9.4)
Pipeline routes and installation methods	Offshore pipeline route	**Project offshore pipeline route (2.3)**
		Offshore Pipeline Route 1 (3.3.10.1)
		Offshore Pipeline Route 2 (3.3.10.2)
		Offshore Pipeline Route 3 (3.3.10.3)
	Shore crossing pipeline	**Reliant Energy Ormond Beach Generating Station Shore Crossing (2.3.2)**
		Point Mugu Shore Crossing/Casper Road Pipeline (3.4.3.1)
		Arnold Road Shore Crossing/Arnold Road Pipeline (3.4.3.2)
		Reliant Energy Mandalay Generating Station Shore Crossing (3.4.2)
	Shore crossing pipeline installation methods	**Horizontal directional boring (2.6.1)**
		Horizontal directional drilling (3.3.11)
		Trenching (3.3.11)

Alternative Concept	Options/Locations (Section Discussed)	
	Center Road onshore pipeline route	**Center Road Pipeline (2.4.1.1)**
		Center Road Pipeline Alternative 1 (3.4.4.1)
		Center Road Pipeline Alternative 2 (3.4.4.2)
		Center Road Pipeline Alternative 3 (3.4.4.3)
		Center Road Pipeline Alternatives 1A and 1B (3.3.12.1)
	Line 225 Pipeline Loop onshore route	**Line 225 Pipeline Loop (2.4.2.1)**
		Line 225 Pipeline Loop Alternative 1 (3.4.4.2)
		Line 225 Pipeline Loop Alternative 2 (3.12.2)

Sections 1.2.2, 1.2.3, 1.2.4, 1.2.5 and 3.3 of the Final EIR contain information on the adequacy of alternatives. As indicated above, section 15126.6(a) of the State CEQA Guidelines states, in part," [t]he lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives." The California Supreme Court in the Citizens of Goleta Valley case recognized that while an agency's jurisdiction was only one factor to consider, "the law does not require in-depth review of alternatives that cannot be realistically considered and successfully accomplished." In addition, the discussion in section 15364 of the State CEQA Guidelines states that, " [t]he lack of legal powers of an agency to use in imposing an alternative or mitigation measure may be as great a limitation as any economic, environmental, social, or technological factor."

Each of the Alternative Concepts is discussed below:

a. No Project

The selection of the No Action Alternative by decision-makers, for which they have full discretion, would not fulfill the purpose and need of the Project to supply natural gas to California consumers but would maintain, for an indeterminate time, the status quo of California's and the nation's existing and projected energy supply mix, including conservation and renewable energy sources.

b. Other Sources of Energy

As stated in Section 1.2.3 of the Final EIR, "[t]he California Legislature recognizes that the CEC is the State's principal energy policy and planning organization and the CEC is responsible for determining the energy needs of California." Section 1.2.3 also states, "(t)he CEC demand forecasting models assume that the California investor owned utilities (and suppliers from other Western states), which are required to meet a Renewable Portfolio Standard, will meet their obligations (Marks 2006). According to the CEC, although increases in conservation, efficiency, and use of renewable energy

sources are expected to moderate future demand, the policies and mandates in place do not suggest that incorporating conservation, energy efficiency, and the use of renewable energy resources will meet all future investor owned utility portfolio needs (Miller 2006)."

Chapter 3 of the Final EIR discusses energy conservation, efficiency, and renewable sources of energy, and explains why these potential alternatives were not studied in detail in the document. The range of alternatives studied in detail is reasonable and conforms to the CEQA requirements.

The Final EIR acknowledges the contribution of energy conservation and renewables to meet California's energy needs in Sections 3.3.1, 3.3.2, and 4.10.1.3. As discussed in Sections 3.3.1 and 3.3.2, energy conservation and use of renewable energy sources do not meet the projected energy needs of California, as determined by the California Energy Commission in its 2005 Integrated Energy Policy Report Committee Final Report. The projected energy gap is to be filled by seeking additional supplies of natural gas, including LNG. However, the 2005 California Energy Action Plan states explicitly that "California must also promote infrastructure enhancements, such as additional pipeline and storage capacity, and diversify supply sources to include liquefied natural gas (LNG)." The project goal of fulfilling California's and the nation's short- and mid-term natural gas supply needs or diversifying the supply of natural gas should be viewed in this context.

As discussed in Section 3.3.2, "[t]he CEC's projections of future natural gas supply needs for the State include the assumption that renewable energy projects will be implemented, yet still conclude that additional natural gas supplies are necessary."

As also discussed in Section 4.10.1.3 of the document, the CPUC recently reaffirmed that both the State's Integrated Energy Policy Report and Energy Action Plan recognize the need for additional natural gas supplies from LNG terminals on the West Coast: "However, even with strong demand reduction efforts and our goal of 20% renewables for electric generation by 2010, demand for natural gas in California is expected to roughly remain the same, rather than decrease, over the next ten years. This is because a substantial portion of the other 80% of electric generation (not met by renewable energy sources) will need natural gas as its fuel source, and natural gas will still be needed for the growing number of residential and business customers of the natural gas utilities."

c. Terminal Locations

The Final EIR initially evaluated 18 locations for the FSRU as potential locations for the deepwater port. It built on previous California Coastal Commission studies that evaluated nearly 100 locations. The "California Coastal Commission Final Report Offshore LNG Terminal Study"(Appendix E of the Final EIR) concluded that "the most

appropriate siting area for a liquefied natural gas (LNG) terminal off the shoreline of California appears to be in international waters of the southeast part of Ventura Flats". For this reason, the Ventura Flats site was carried forward for further analysis. After review, it was determined that the Ventura Flats alternative location would result in more environmental impacts than the proposed location.

North Baja, Mexico

While potential impacts of a Baja California LNG offshore terminal would not occur in California, such a terminal would not necessarily result in fewer potential environmental effects than the proposed Project because many of the offshore effects would be equivalent to those that would occur in California waters. However, the onshore effects could be greater than those of the proposed Project because any onshore LNG terminal would have a large onshore footprint.

The infrastructure associated with the Shell/Sempra Energia Costa Azul facility currently under construction, which will export natural gas to the U.S., was not analyzed further in the Final EIR because it is evaluated by the FERC and the CSLC in a Joint EIS/EIR for the North Baja Expansion Project (FERC Docket No. PF05-14-000, SCH# 2006081127). To date, Sempra's proposed expansion of its Costa Azul facility has not been permitted; therefore, it would be speculative to evaluate this portion of the project. The use of Northern Baja Mexico LNG Terminals as a potential reasonable alternative to the proposed Project was eliminated from further analysis in this document because, in part, it is presently uncertain whether such projects could meet the Project objective of supplying 800 MMcf (22.7 million m^3) of natural gas per day from the Pacific Rim directly into the existing Southern California natural gas distribution infrastructure. LNG terminals in Northern Baja would also supply the growing demand for natural gas in Northern Baja. Neither the State of California nor the Federal government has jurisdiction over LNG terminals in another sovereign nation or over contracts governing the distribution of natural gas imported through such terminals.

d. Deepwater Port Concepts

The alternative deepwater port concepts examined in the Final EIR include: 1) floating, i.e., single and multiple buoy designs, and 2) fixed, i.e., use of an existing or installation of a new offshore platform structure, or a gravity-based structure.

Floating Buoy/Single and Multiple

The basis of a floating buoy system is a single submerged turret loading buoy moored to the seabed that remains submerged 82 to 131 feet (25 to 40 m) below the water surface. When an LNG carrier with the proper fittings approaches the buoy location, the LNG carrier retrieves the buoy into a mating cone in the bottom of the vessel. Ocean basin tests have verified the feasibility of these types of mooring systems for water

depths ranging from 131 to 2,958 feet (40 to 900 m). With a submerged turret loading technology, specially designed LNG carriers with onboard regasification equipment are required. After mooring, the LNG carrier would regasify the LNG onboard and send the natural gas through the mooring point via a flexible riser to a subsea pipeline. The multiple-point mooring system uses the same technology as the single-point mooring system, but a multiple-point mooring system would have multiple separate buoys. The purpose of the latter system would be to provide continuous service at the same capacity as the FSRU. In order to have comparable capacity as the FSRU, a two-buoy system would be needed, based on the current size of LNG regasification carriers of 36.4 million gallons (138,000 m^3). The next generation of LNG regasification carriers is projected to carry 39.9 million gallons (151,000 m^3).

The relatively large number of traditional LNG carriers that could call at the FSRU (220 with an additional 137 on order) would add to the Projects reliability, in contrast to the few specifically designed LNG carriers (three are currently operational, two are on order) equipped to attach to the above described floating buoy and regasify on board. The single-point mooring DWP concept cannot, therefore, meet the objective of a continuous supply of natural gas; therefore, this type of project would not be a feasible alternative to the proposed Project.

As indicated above, a two-buoy system could provide comparable capacity to the proposed FSRU. However, depending on whether an open loop or closed loop regasification system were used, either impacts on marine biota or air emissions could be greater than Cabrillo Port's impacts; the seabed footprint would be approximately two times that of Cabrillo Port; and the area with access restrictions and/or recommended speed limits would be twice Cabrillo Port's area. In addition, since the existing projects using this type of technology have very different impacts, it would be speculative to evaluate what the exact configuration of this type of LNG facility offshore of California. The nature and extent of impacts associated with the Woodside Natural Gas Project, which proposes a two-buoy system, cannot be predicted with any certainty at this time because the necessary environmental analyses have not yet begun. Therefore, a dual-point mooring was eliminated from further consideration as an alternative to the proposed Project because it would be speculative to estimate the full spectrum of environmental impacts of such a project offshore of California.

Use of Existing or Installation of New Fixed Platform Structure

An LNG terminal at an offshore oil platform may not have the capacity to provide a continuous and reliable supply of natural gas at reasonable rates, which is one of the purposes of the Cabrillo Port DWP. The existing platform-based terminal was eliminated as an alternative to the proposed Project because it would not provide sufficient storage capacity "to enable a continuous, reliable supply to local energy markets." Also, due to its lack of storage at the terminal, the regasification process, which is generally slower than carrier unloading, could not proceed independently of

unloading, and the delivery vessel(s) would need to remain moored longer at the terminal. In addition, sufficient information is not available to analyze the potential environmental impacts to a level sufficient to determine whether a platform-based LNG terminal alternative "...would avoid or substantially lessen any of the significant effects" of the proposed Project (State CEQA Guidelines § 15126.6).

The proposal by NorthernStar to construct an offshore LNG terminal at Platform Grace (the Clearwater Port project) will be evaluated in a separate EIS/EIR. However, since it may be licensed and could operate simultaneously with Cabrillo Port, it is appropriate to evaluate its potential effects within the context of cumulative impacts.

A new platform would have not only visual effects for those who live in and use the viewshed, but also greater potential environmental effects than conversion of an existing platform, since the impacts associated with installation of existing platforms have already occurred.

A fixed platform-based LNG terminal may also have to be constructed closer to shore than the proposed Project location due to considerations of water depths in the area, as previously discussed. If one were installed closer to shore within feasible water depths, the platform could create an additional navigational hazard in the Santa Barbara Channel, and the necessary safety zone would affect maritime commercial and recreational activities because it would be in a high vessel-traffic area. Given that a new platform would be fixed to the seafloor, the potential adverse effects of local seismic activity to the structure would be greater than the effects to a floating facility.

As indicated in the Final EIR, the new platform-based terminal alternative was eliminated as an alternative to the proposed Project because, unless storage capacity is provided, it would not provide a continuous and reliable supply of natural gas to local energy markets, and, if storage is also included, the potential environmental and safety effects could be greater than those of the proposed Project. In addition, sufficient information is not available to fully analyze the potential environmental impacts to a level sufficient to determine whether this LNG facility configuration "...would avoid or substantially lessen any of the significant effects" of the proposed Project (State CEQA Guidelines § 15126.6).

Gravity-Based Structure

An additional alternative offshore concept is a fixed LNG terminal, such as a gravity-based structure. A gravity-based structure is one that remains secured to the seafloor, primarily by gravity. A gravity-based structure can be constructed onshore (usually from concrete), floated to a site, and installed to provide an offshore enclosure and foundation for LNG tanks and a stable deck for regasification equipment. Such a facility could be placed on a level and stable part of the seabed. Factors influencing this

concept include constructability, weather, safety, shipping, environmental setting, geology of the seabed (including water depth), and regulatory permitting.

This potential alternative terminal technology was eliminated from further consideration because of the technical infeasibility of installing it at the location of the proposed Project or any other location with similar attributes, e.g., distance from shore, and because a location closer to shore would pose greater visual effects and potential marine traffic issues than the proposed Project.

III. THE LEASE

A. BENEFITS TO THE STATE FROM THE PROJECT

The environmental effects of the proposed Project as identified in the Final EIR should be viewed within the context of the potential benefits that the State may derive from the proposal. As provided in Section 15093(a) of the State CEQA Guidelines:

> CEQA requires the decision-making agency to balance, as applicable, the economic, legal, social, technological, or other benefits of a proposed project against its unavoidable environmental risks when determining whether to approve the project. If the specific economic, legal, social, technological, or other benefits of a propos[ed] project outweigh the unavoidable adverse environmental effects, the adverse environmental effects may be considered "acceptable."

While the State would, of course, receive some rent for the lease, the primary benefit would be increased natural gas supplies, enhancements to gas supply and transportation capacity into the state, and diversification of both supply sources and means of transportation. These objectives have been of increasing interest in the State in light of the volatility in gas prices since 2000 and the State's increasing reliance upon natural gas for electrical generation. In addition to the general discussion provided here, further detailed information is included in Exhibit F, entitled "CEQA FINDINGS."

1. Need for Natural Gas and Diversification of Supply: The California Energy Commission and the Public Utilities Commission Conclusions

In its 2005 Natural Gas Assessment Update, the California Energy Commission (CEC) found that, even with projected efforts toward implementation of conservation and alternative energy programs, natural gas demand in California will continue to increase by at least 0.7% per year for the foreseeable future. Against this increased demand, the CEC has found that existing natural gas supply sources in California, New Mexico and Western Canada are maturing and that California is facing increased competition for these supplies from other states.

The CEC has consequently concluded that California would benefit from the importation of LNG. In the event that North American production declines or is available only under more competitive demand scenarios resulting in higher prices, California would also have access to supplies from Australia or other overseas locations.

Besides increasing potential natural gas supplies into the State, the Project would also contribute to the diversity of natural gas sources. Diversification would help reduce the impacts of any potential disruptions in supply from existing source, as happened in California in 2001. Whether those past disruptions were caused by true shortages or market manipulation, diversification of supply would help reduce the likelihood that such disruptions would happen again. A new supply source may be expected to help prevent market manipulation by introducing increased competition. The greater the number of suppliers, the less opportunity there is for any one party to affect supplies and prices. Opponents of the proposed Project raise the point that the Applicant would itself become a significant market participant, in that the 800 million cubic feet per day of gas proposed for delivery through the facility would constitute 13.5% of the State's total 2005 natural gas usage, as reported by the CEC. Commission staff is not in a position to determine whether that market share would be sufficient in itself to enable the Applicant to affect prices artificially. However, whatever market share the Applicant might assume would be taken from other current market participants, thereby still enhancing competition in the State over and above current conditions.

The California Public Utilities Commission (CPUC) has joined in the conclusion that LNG imports are appropriate for California's energy needs, as reflected in the joint CEC/CPUC September 21, 2005 publication, "Energy Action Plan II, Implementation Roadmap for Energy Policies." A memorandum dated December 12, 2006, from CPUC Staff members to the CPUC President addressing these issues is attached as Exhibit H.

In order to evaluate this issue, the Commission Staff, not having the expertise itself to evaluate energy markets and prepare economic forecasts, must rely upon the conclusions reached by the CEC. As a general policy, as stated under Section 25300 of the Public Resources Code (P.R.C.), all State agencies in California are to cooperate with the CEC with respect to energy policy. P.R.C. Section 25302 requires certain listed State agencies to carry out their respective energy-related duties and responsibilities based upon the information and analyses contained in a biennial integrated energy policy report by the CEC. Although, the Commission is not included in that list, it is generally the practice of the State to rely upon the CEC with respect to these issues. The CEC's staff has the expertise to evaluate energy supply and demand; the Commission's staff does not. The recommendations here provided are therefore based upon the most recent Integrated Energy Policy Report by the CEC, adopted on November 21, 2005.

It should be noted that the CEC is currently updating natural gas supply and demand forecasts. That update, though, is not expected to be completed until some time near

the end of 2007. Commission staff has therefore relied upon the existing 2005 analysis at this time.

2. Sufficiency of Other Supply Sources

a. Existing Supply Sources

Opponents to the proposed Project contend that natural gas supplies coming into the State would be adequate for decades, given current projections. These supplies currently come from within California, the San Juan Basin in New Mexico, the Rocky Mountains and from Western Canada. Supplies from out of State are currently delivered through eight pipelines crossing the Colorado River, one crossing through Nevada and Utah from Wyoming, and three from Oregon.

The CEC disagrees with this assertion. It has concluded that North American production is maturing and that other states are now looking at the supply sources that have heretofore been primarily used to supply California natural gas needs. The existence of pipeline capacity alone, then, does not assure sufficient supply for California's needs.

The Project would serve as a hedge against the possibility North American production declines and increased competition, should they in fact occur as predicted by the CEC. If the predictions are not realized and the proposed Project is built, then natural gas prices may be expected to drop. The State's energy consumers would benefit in either case. The position opponents to the project take is that these benefits are insufficient to justify the environmental impacts the Project would entail.

b. Supplies through Energia Costa Azul (ECA) and Jordan Cove

It has been suggested that the new LNG port currently under construction north of Ensenada in Baja California could provide the means to deliver natural gas supplies sufficient, along with existing supply sources, to meet California's needs. The new ECA port will be able to deliver up to one billion cubic feet per day of natural gas when completed. Approximately one half of that is contracted to be used in Mexico. The remaining 500 million cubic feet per day would be delivered to the United States and could be used either in California or Arizona.

It is not ultimately clear how much supply coming through ECA would end up in California. That may depend upon market conditions and Mexico's own needs. From the CEC's conclusions, with respect to the State's future energy needs, it would appear that any such amounts may not be sufficient, at least within the time frame of the Applicant's proposed Project, to meet the growing needs of the State when coupled with existing supply sources. The CEC projects an increase in natural gas demand of approximately 0.7% each year for the foreseeable future, even with conservation efforts

and increased use of renewable energy sources. Today's natural gas usage in California averages 6.25 billion cubic feet per day. Demand would therefore be expected to increase by about 44 million cubic feet per day at least in the first year and by a similar amount in each subsequent year. Therefore, it may take over 10 years for the increase to use up an incremental 500 million cubic feet per day.

One of the additional LNG terminals proposed to be located on the west coast of North America is currently under consideration in Coos Bay, Oregon. This facility, called Jordan Cove, would if completed as proposed, be used to deliver gas in part to Northern California. This facility has not yet begun the Federal environmental review process; it is, therefore, uncertain whether it and the pipelines necessary to bring the resultant natural gas to California, will be approved or built.

c. Conservation and Use of Renewable Energy Sources

Project opponents have also asserted that conservation efforts and increased use of renewable energy sources could provide a level of energy to make any additional natural gas supplies unnecessary. They have said that, rather than approve the subject Project, the State should put its resources toward conservation and use of renewable resources.

It should first be noted that the CEC conclusions with regard to future natural gas needs takes into account aggressive foreseeable gains in conservation and use of renewable energy. The CEC and CPUC are establishing new requirements to promote or require such efforts. However, even with and in consideration of these new requirements, the CEC and CPUC project increased need for natural gas supplies and recommend diversification of such supplies.

Denial of the proposed Project would not make funds that would otherwise be used for natural gas available for development for renewable energy sources. The Applicant's interest in developing the proposed Project derives from its efforts to produce and sell natural gas. If it cannot do so, it does not intend, instead, to invest in development of renewable energy sources. No Federal, State or local funds are to be used for the proposed Project; therefore, denial would not make any such funds available for other uses.

Alternative energy sources and conservation, though, might theoretically benefit indirectly from a denial of the project if, as a result, gas supply disruptions were to develop, accompanied by substantial price increases. Interest in conservation and renewable sources increased during the supply disruptions of 2000/2001. A similar disruption in the future, accompanied by significant increases in prices, may also provide new incentives for individuals to utilize those alternative sources. In the event, however, that, contrary to the conclusions of the CEC and CPUC, natural gas supplies delivered through existing means continue to be sufficient, as opponents to the

proposed Project claim would be the case, then denial could not, in itself, lead to disruption or indirectly benefit alternatives and conservation. In any case, it has not been the policy or practice of the State to date to employ increased market prices for traditional energy sources for the purpose of promoting conservation or use of alternative energy sources.

B. PROPOSED LEASE PROVISIONS

The Applicant has submitted an application for a right of way lease of State owned sovereign lands for the construction, use, operation and maintenance of two proposed 24-inch diameter subsea natural gas pipelines that would be used to transport natural gas from the proposed Cabrillo Port Deepwater Port LNG terminal to the shore at the Reliant Energy Power Generation Station at Ormond Beach.

The Applicant has agreed to the provisions of the proposed lease. The lease contains specific provisions that relate to the use of State lands and for the project as a whole. The lease acknowledges the Commission's exercise of authority to administer, monitor and enforce the entire Mitigation Monitoring and Reporting Plan (MMP) as the Lead Agency under CEQA. Contained in the Lease are specific provisions that reiterate certain requirements outlined in the MMP and specify the level of Commission staff involvement in the design review, construction, inspection, operation and maintenance process beginning with the design pre-construction phase to the post construction operational phase of the pipeline facilities on the Lease Premise and the FSRU, anchoring, mooring, transfer and pipeline facilities in federal waters.

1. Provisions Relating Specifically to the Pipeline on State Sovereign Lands

The pipelines would be designed, constructed, inspected, tested, operated and maintained to meet or exceed, U. S. Department of Transportation (DOT) construction and safety standards outlined in the Pipeline Safety Improvement Act of 2002; Title 49 Code of Federal Regulations (CFR) Part 192, Transportation and Other Gas by Pipeline; and reporting requirements in Title 49 CFR Part 191. These laws and regulations, which are intended to protect the public and to prevent natural gas facility accidents and failures, include specifics for material selection and qualification; odorization of gas; minimum design requirements; and protection of the pipeline from internal, external, and atmospheric corrosion. While the primary focus of the federal standards is prevention of accidents, the Applicant would have in place safety related policies and procedures, and an emergency response plan that would be coordinated with emergency management agencies.

Current seismic engineering standards at all fault crossings and potential liquefaction zones in California have been incorporated into the lease. These standards include provisions such as the *Guidelines for the Design of Buried Steel Pipe* (American Lifeline

Alliance), *Guidelines for the Seismic Design of Oil and Gas Pipeline Systems* (American Society of Civil Engineers), and other recognized industry standards.

Beginning with the design phase and through the construction phase of the pipelines for the entire project, both offshore and onshore, the Commission's Mineral Resources Management Division (MRMD) staff will review and approve all engineering design calculations, drawings, construction contract specifications, seismic hazard evaluation reports, geotechnical reports, weld specifications, welder qualifications and weld testing, construction contractor's work execution plans, horizontal directional drilling and/or boring (HDD/HDB) program and procedures, hydrotest procedures, hazardous spill contingency plans, critical operations and curtailment plan and a vessel anchoring plan. Prior to placing the pipeline in service, Commission staff will review and approve the facility's operation and maintenance plan which will address internal and external maintenance inspections including frequency and details of pipeline integrity testing methods, corrosion monitoring and testing of the cathodic protection system, and leak monitoring.

Once constructed, the pipeline system will be operated and maintained in accordance with all applicable Federal and State regulations.

2. Provisions Relating Specifically to the FSRU, Anchoring, Mooring, Transfer and Pipelines in Federal Waters

Pursuant to a provision of the Lease, the Commission's Marine Facilities Division (MFD) staff would have access to the FSRU and other associated facilities located in federal waters. Such access would be for the term of the Lease for monitoring and inspection for compliance with the terms of the Lease and also to monitor and inspect for compliance with other laws, regulations and requirements as they pertain to the FSRU and other related facilities and associated activities that are applicable pursuant to the Deepwater Port Act.

The purpose of this lease provision is to ensure that the State has the ability to observe operations and evaluate facilities in federal waters to ensure that unsafe practices or regulatory violations do not result in an incident that affects the State. The Commission's MFD includes inspection staff who have very extensive experience in monitoring marine terminal activities. For the last 16 years, MFD field personnel have monitored and inspected facilities and operations at marine oil terminals throughout the State on a daily basis. A LNG terminal is very similar, in most respects, to a marine oil terminal. MFD staff's experience would ensure that inspections take place to determine if activities are undertaken that threaten public safety or the environment.

At the request of other state and local agencies, MFD field staff would also inspect to ensure that activities do not violate any other requirements outside of the Commission's jurisdiction. Section 1518(b) of the Deepwater Port Act,

governing issuance of the license for the facilities in federal waters, provides as follows:

> The law of the nearest adjacent coastal State, now in effect or hereafter adopted, amended, or repealed, is declared to be the law of the United States, and shall apply to any deepwater port licensed pursuant to this chapter, to the extent applicable and not inconsistent with any provision of regulation under this chapter or other Federal laws and regulations now in effect or hereafter adopted, amended, or repealed. All such applicable laws shall be administered and enforced by the appropriate officers and courts of the United States. For purposes of this subsection, the nearest adjacent coastal State shall be that State whose seaward boundaries, if extended beyond 3 miles, would encompass the site of the deepwater port.

Under this provision, then, if, for example, the Office of Spill Prevention and Response Certificate of Financial Responsibility requirements would be applicable to a vessel at the FSRU if it were located in State waters, and if that regulation was not inconsistent or superseded by an applicable federal regulation, then that requirement would apply to the FSRU in federal waters. MFD field personnel could therefore, at the request of the Office of Spill Prevention and Response, check for compliance.

Because State law is incorporated by the Deepwater Port Act into federal law, enforcement would be carried out through appropriate federal agencies. Any violations of applicable safety or other requirements that MFD field personnel discover would be reported to the appropriate federal agency for enforcement action.

However, in the event Commission staff determines that a violation of the lease has occurred, the Commission would be in a position to terminate the lease or take other appropriate action as authorized under the lease and under State law.

The Applicant would be required to provide additional safety analysis, plans and information for MFD staff review that includes, but is not limited to, the project's hazards analysis and subsequent updates, an emergency response plan for small or large scale releases of LNG, a hazardous materials business plan, and annual engineering inspection reports. In addition, MFD staff would be a member of the annual engineering inspection team and the Project must comply with the Liquefied Natural Gas Terminal Engineering and Maintenance Standards (LNGTEMS) at such time as the standards are implemented.

Once the Project is operational, before any modification, alteration, repair or construction that would be significant in nature can take place, the Applicant is required to notify Commission staff and submit detailed engineering plans for staff's review. At the end of the Lease term or early termination, for the improvements located in State

waters, the Applicant would be required to provide a complete detailed abandonment and/or removal plan for the Commission's approval.

3. Financial Responsibility

The Applicant is required to provide the Commission evidence of adequate liability insurance coverage for the entire project, performance bonds and a parent company guarantee agreement that unconditionally guarantees the full performance of all the obligations under the lease by the Applicant.

CEQA INFORMATION

A. Pursuant to the Commission's delegation of authority and the State CEQA Guidelines (Title 14, California Code of Regulations, section 15025), the staff has prepared an EIR identified as CSLC EIR No. 727, State Clearinghouse No. 2004021107. Such EIR was prepared and circulated for public review pursuant to the provisions of the CEQA. A Mitigation Monitoring Program has been prepared in conformance with the provisions of the CEQA (Public Resources Code section 21081.6) and contained in attached Exhibit E.

B. Findings made in conformance with the State CEQA Guidelines (Title 14, California Code of Regulations, section 15091) are contained in Exhibit F, attached hereto.

C Statement of Overriding Considerations made in conformance with the State CEQA Guidelines (Title 14, California Code of Regulations, section 15093) is contained in Exhibit G, attached hereto.

D. This activity involves lands identified as possessing significant environmental values pursuant to Public Resources Code sections 6370, et seq. Based upon the staff's consultation with the persons nominating such lands and through the CEQA review process, it is the staff's opinion that the project, as proposed, is consistent with its use classification.

FURTHER PERMITS, APPROVALS AND REQUIREMENTS:

Major Federal, State and Local license and permit approvals and consultation requirements for the proposed project include, but are not necessarily limited to, those agencies listed below:

Federal

U. S. Maritime Administration
Deepwater Port Act Record of Decision and License Application

USEPA
Clean Water Act Stormwater and Wastewater Discharge Permits
Authority to Construct Permit in accordance with Ventura County Air Pollution Control District Rule 10 for the FSRU

Advisory Council on Historic Preservation
Section 106, National Historic Preservation Act

U.S. Army Corps of Engineers
Waterways Permit under Section 404, Clean Water Act
Section 10, Rivers and Harbors Act

U.S. Fish and Wildlife Service
Section 7, Endangered Species Act

U.S. Minerals Management Service

U.S. Department of Transportation
Encroachment Permits
Transportation Permits
Transit Noise and Vibration Impact Assessment

National Oceanic and Atmospheric Administration (NOAA)
Section 7, Endangered Species Act (NOAA Fisheries)
Magnuson-Stevens Fishery and Conservation and Management Act (NOAA Fisheries)
Marine Mammal Protection Act

Federal Communication Commission
Telecommunications License

California

Governor of California
Approval, Approval with Conditions, or Disapproval of Federal Deepwater Port Act Record of Decision and License Application

California State Lands Commission
Approval of Lease Application

California Coastal Commission
Consistency with the California Coastal Management Program
Coastal Development Permit

Appeal, if any, of local government action on the Coastal Development Permit for the Onshore Portion of the Project within the Coastal Zone

California Coastal Conservancy
Easement for Use of Upland Shore Crossing Portion of Project at Ormond Beach

California Department of Transportation
Encroachment Permits

Los Angeles Regional Water Quality Control Board
Clean Water Act Section 401 Certification
Hydrostatic Test Water Discharge Permit

California Department of Fish and Game
California Endangered Species Act Consultation
Stream Alteration Agreements
CDFG Office of Spill Prevention Response
Oil Spill Contingency Plan and Certificate of Financial Responsibility for FRSU and Support Vessels

State Historic Preservation Office
Section 106 National Historic Preservation Act Consultation

Local

City of Oxnard or Ventura County
Coastal Development Permit for the Portion of the Shore Crossing within Local Coastal Program (LCP) Jurisdiction

County of Ventura
Watershed Protection District – Review and Permitting
Public Works Agency Transportation Department – Encroachment Permits
Planning Division – Establish Noise Ordinances

City of Oxnard
Public Works Department – Encroachment Permits
Planning and Environmental Services – Establish Noise Ordinances

City of Santa Clarita
Public Works Department – Encroachment Permits
Oak Tree Permit
Planning and Environmental Services – Establish Noise Ordinances.

EXHIBITS:

A. Location Map of Lease Area
B. Site Map of Lease Area
C. Land Description-Lease Area
D. Project Location Map(s) – Onshore and Offshore
E. Mitigation Monitoring and Reporting Program
F. CEQA Findings
G. Statement of Overriding Considerations
H. Memorandum dated December 12, 2006, from Richard A. Myers, Energy Division, CPUC, and Harvey Y. Morris, Legal Division, CPUC, to President Peevey for the CPUC

PERMIT STREAMLINING ACT DEADLINE:

September 16, 2007 or within 180 days after Certification of the Environment Impact Report.

RECOMMENDED ACTION:

IT IS RECOMMENDED THAT THE COMMISSION:

CEQA FINDING:

CERTIFY THAT AN EIR NO. 727, STATE CLEARINGHOUSE NO. 2004021107, WAS PREPARED FOR THIS PROJECT PURSUANT TO THE PROVISIONS OF THE CEQA, THAT THE COMMISSION HAS REVIEWED AND CONSIDERED THE INFORMATION CONTAINED THEREIN AND THAT THE EIR REFLECTS THE COMMISSION'S INDEPENDENT JUDGMENT AND ANALYSIS.

ADOPT THE MITIGATION MONITORING AND REPORTING PROGRAM, AS CONTAINED IN EXHIBIT E, ATTACHED HERETO.

ADOPT THE FINDINGS, MADE IN CONFORMANCE WITH TITLE 14, CALIFORNIA CODE OF REGULATIONS, SECTION 15091, AS CONTAINED IN EXHIBIT F, ATTACHED HERETO.

ADOPT THE STATEMENT OF OVERRIDING CONSIDERATIONS MADE IN CONFORMANCE WITH TITLE 14, CALIFORNIA CODE OF REGULATIONS, SECTION 15093, AS CONTAINED IN EXHIBIT G, ATTACHED HERETO.

SIGNIFICANT LANDS INVENTORY FINDING:

FIND THAT THIS ACTIVITY IS CONSISTENT WITH THE USE CLASSIFICATION DESIGNATED BY THE COMMISSION FOR THE LAND PURSUANT TO PUBLIC RESOURCES CODE SECTIONS 6370, *ET SEQ.*

AUTHORIZATION:

1. AUTHORIZE ISSUANCE TO BHP BILLITON LNG INTERNATIONAL, INC., OF A GENERAL LEASE – RIGHT OF WAY USE, BEGINNING APRIL 9, 2007, AND TERMINATING 30 YEARS AFTER THE START OF CONSTRUCTION ON THE LEASE PREMISES OR APRIL 8, 2039, WHICHEVER IS SOONER, FOR THE CONSTRUCTION, OPERATION, USE AND MAINTENANCE OF TWO 24-INCH DIAMETER NATURAL GAS PIPELINES, ON LAND DESCRIBED IN EXHIBIT C ATTACHED AND THIS REFERENCE MADE A PART HEREOF; ANNUAL BASE RENT IN THE AMOUNT OF $155,000, WITH THE ANNUAL ADJUSTMENTS ACCORDING TO THE CONSUMER PRICE INDEX AND WITH THE STATE RESERVING THE RIGHT TO ESTABLISH A NEW BASE RENT AT EACH TEN-YEAR ANNIVERSARY OF THE LEASE; AND MONTHLY RENT ABOVE THE BASE RENT IN THE AMOUNT OF $36,000 FOR THE USE OF THE TEMPORARY CONSTRUCTION AREA DURING THE CONSTRUCTION PHASE ON THE LEASE PREMISES; LIABILITY INSURANCE COVERAGES OF AN AGGREGATE OF NO LESS THAN $1,000,000,000; SURETY BOND IN THE AMOUNT OF $8,000,000; CONSTRUCTION PERFORMANCE BOND IN THE AMOUNT OF $47,000,000; MITIGATION MONITORING PERFORMANCE BOND IN THE AMOUNT OF $2,000,000; AND REVEGETATION AND RECLAMATION PERFORMANCE BOND IN THE AMOUNT OF $1,000,000; AND ACCEPTANCE OF THE PARENT GUARANTEE AGREEMENT.

2. AUTHORIZE AND DIRECT STAFF TO TAKE WHATEVER ACTION IS NECESSARY AND APPROPRIATE TO IMPLEMENT AND ENFORCE THE TERMS OF THE LEASE ISSUED TO THE APPLICANT.

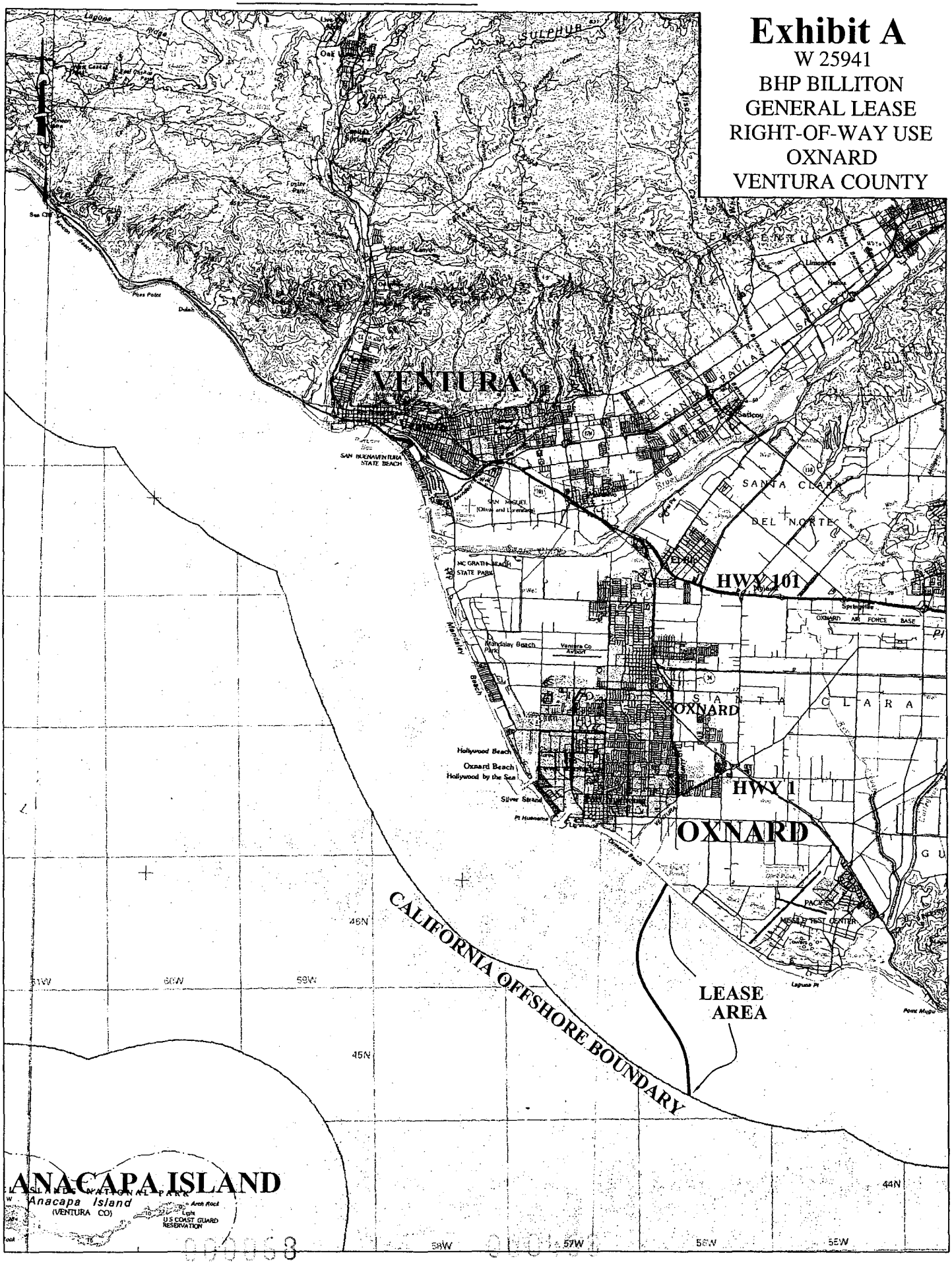
3. AUTHORIZE AND DIRECT STAFF TO MONITOR COMPLIANCE BY THE APPLICANT WITH ALL TERMS AND CONDITIONS OF THE LEASE AND THE MITIGATION MONITORING PROGRAM MADE A PART THEREOF.

NO SCALE

LOCATION MAP

Exhibit A

W 25941
BHP BILLITON
GENERAL LEASE
RIGHT-OF-WAY USE
OXNARD
VENTURA COUNTY



MAP SOURCE: USGS QUAD

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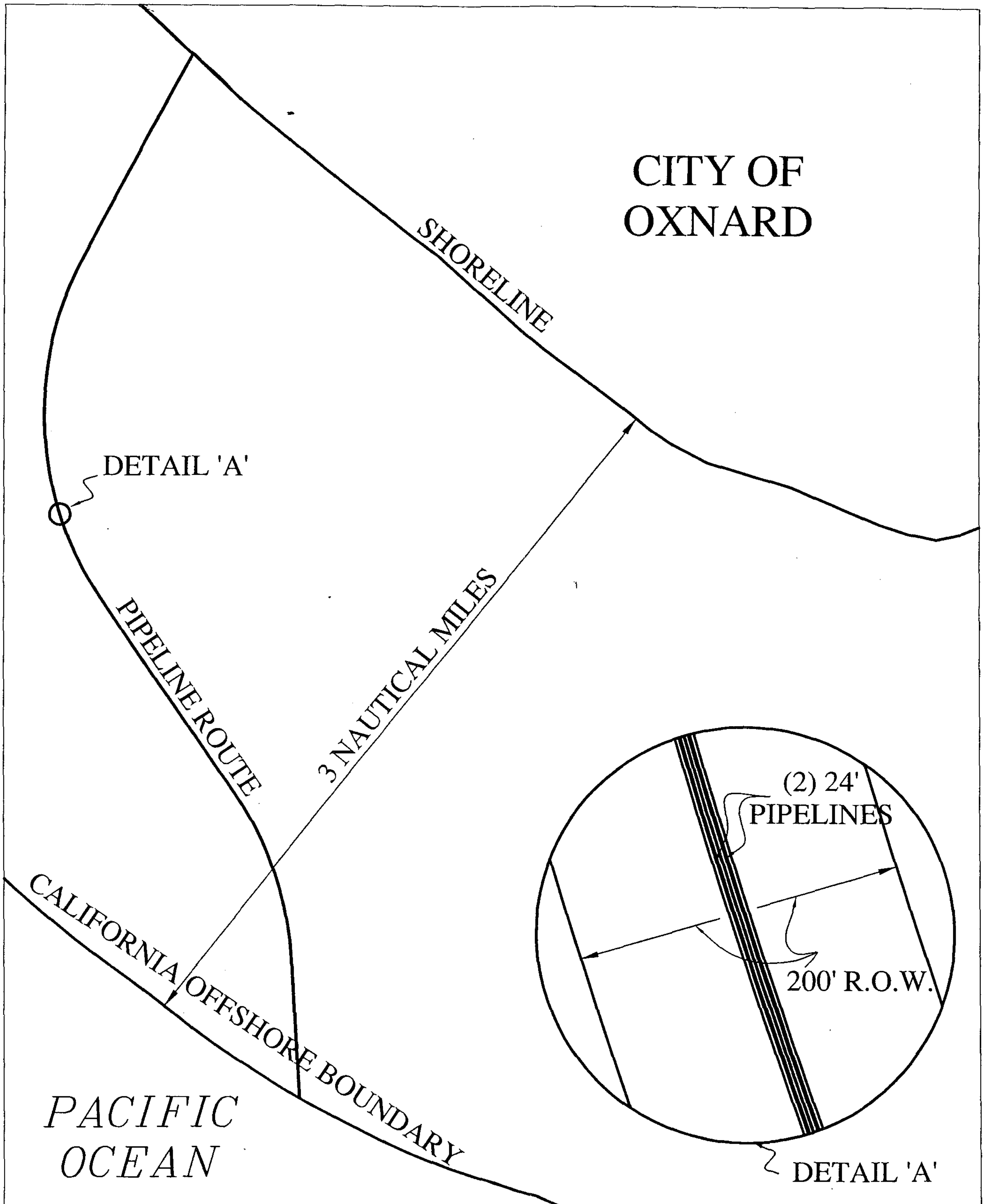
NO SCALE

SITE MAP



This Exhibit is solely for purposes of generally defining the lease premises, is based on unverified information provided by the Lessee or other parties and is not intended to be, nor shall it be construed as, a waiver or limitation of any State interest in the subject or any other property.

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Exhibit B
W 25941
BHP BILLITON
GENERAL LEASE
RIGHT-OF-WAY USE
OXNARD
VENTURA COUNTY

File Ref: W25941

EXHIBIT C

LAND DESCRIPTION

A 200 foot (60.960 meter) wide strip over those portions of the tide and submerged lands of the bed of the Pacific Ocean lying between the Ordinary High Water Mark and the State of California Offshore Boundary, Ventura County, State of California, the centerline of said strip more particularly described as follows:

BEGINNING at a point on the Ordinary High Water Mark of 1939, as surveyed by the State Lands Commission and shown on the map recorded in Book 28 at Page 76 of Records of Survey of said county, said point being distant North 49°46'38"West 28.131 meters from Station Number 7 of said survey (said Ordinary High Water Mark of 1939 shown as North 50°19'43" West on said Record of Survey), said Station Number 7 being located at North 3,778,158.214 meters and East 299,914.033 meters of the Universal Transverse Mercator System Grid, Zone 11, NAD 83; thence along said centerline the following courses,

1st) South 28°32'53" West 1656.528 meters to the beginning of a curve concave to the east having a radius of 2438.405 meters; thence,

2nd) Southerly 2664.640 meters along said curve through a central angle of 62°36'42"; thence,

3rd) South 34°03'54" East 1750.786 meters to the beginning of a curve concave to the southwest having a radius of 2438.408 meters; thence,

4th) Southeasterly 1315.210 meters along said curve through a central angle of 30°54'14"; thence,

5th) South 03°09'41" East 1017.851 meters to a point on the Point of Termination of said centerline on said California Offshore Boundary, said point lying on a non-tangent curve concave to the northeast and having a radius of 5556.000 meters, from which a radial line bears South 29°34'51" West.

The sidelines of said 200 foot (60.960 meter) wide strip of tide and submerged land to be lengthened or shortened to terminate at said Ordinary High Water Mark and said California Offshore Boundary.

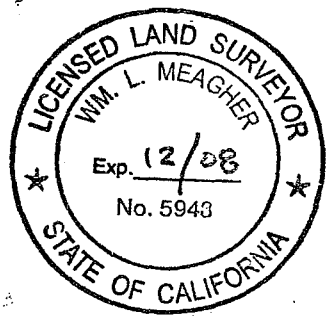
EXCEPTING THEREFROM any portion of said 200 foot (60.960 meter) wide strip of tide and submerged lands lying easterly of said OHWM and westerly of said California Offshore Boundary.

The basis of bearings and distances for this description is UTM North American Datum of 1983, Zone 11. All distances are grid.

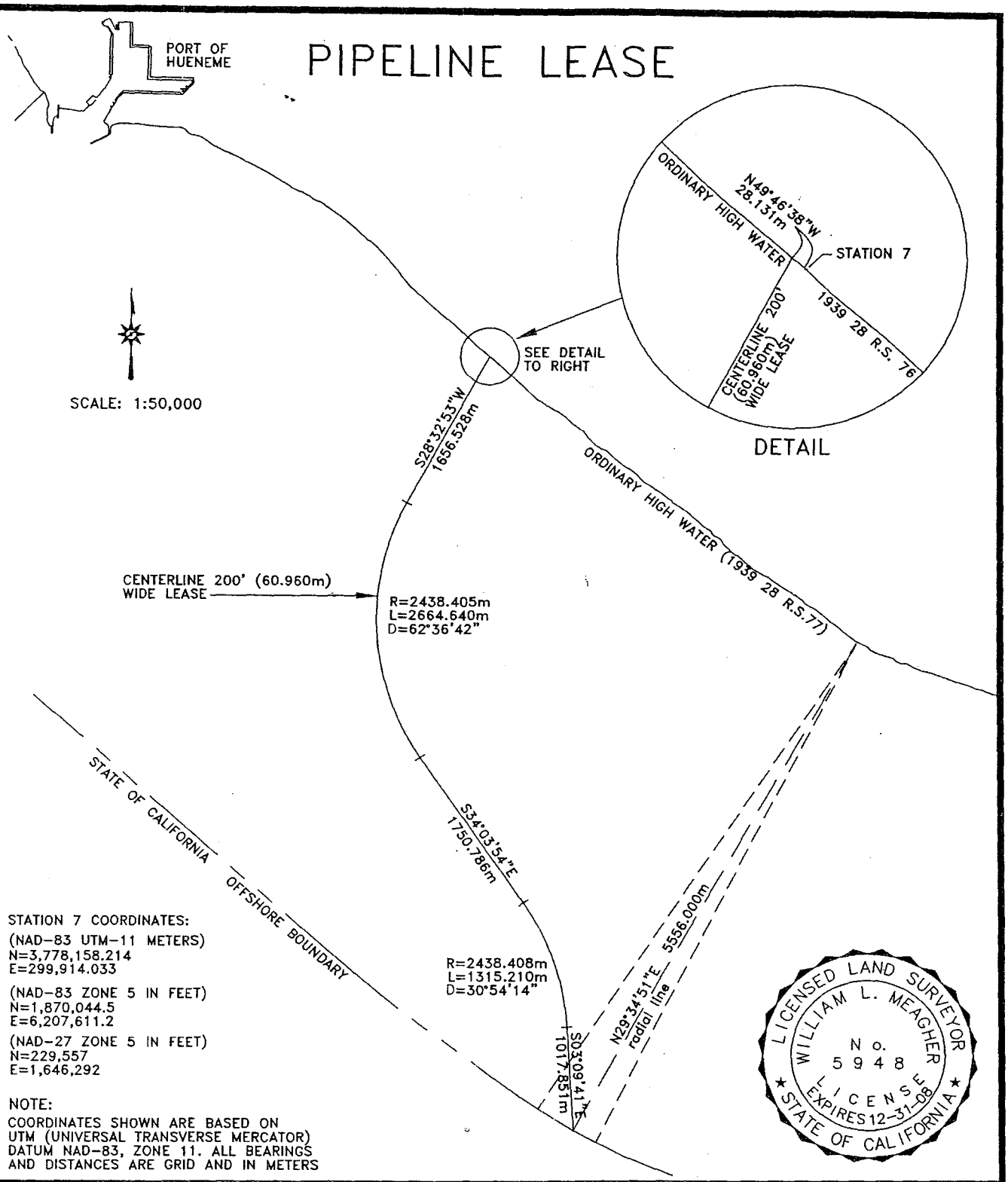
END OF DESCRIPTION

Prepared on March 22, 2007 by:

William L. Meagher
LS 5948 (Expires 12/08)



PIPELINE LEASE



STATION 7 COORDINATES:

(NAD-83 UTM-11 METERS)
N=3,778,158.214
E=299,914.033

(NAD-83 ZONE 5 IN FEET)
N=1,870,044.5
E=6,207,611.2

(NAD-27 ZONE 5 IN FEET)
N=229,557
E=1,646,292

NOTE:
COORDINATES SHOWN ARE BASED ON UTM (UNIVERSAL TRANSVERSE MERCATOR) DATUM NAD-83, ZONE 11. ALL BEARINGS AND DISTANCES ARE GRID AND IN METERS

LICENSED LAND SURVEYOR
WILLIAM L. MEAGHER
No. 5948
LICENSE EXPIRES 12-31-08
STATE OF CALIFORNIA

WM HOLDINGS INC. W.L. Meagher 2747 Sherwin Ave. #12 Ventura, Ca. 93003 (805) 677-4850	**PLAT MAP** **W25941** **BHP BILLITON LNG INT.** **VENTURA COUNTY, CA.**		NORTH NOT TO SCALE
DATE: 03-22-2007	JOB No.: B04146	DRAWN BY: J. HENRY	SHEET: 1 OF: 1

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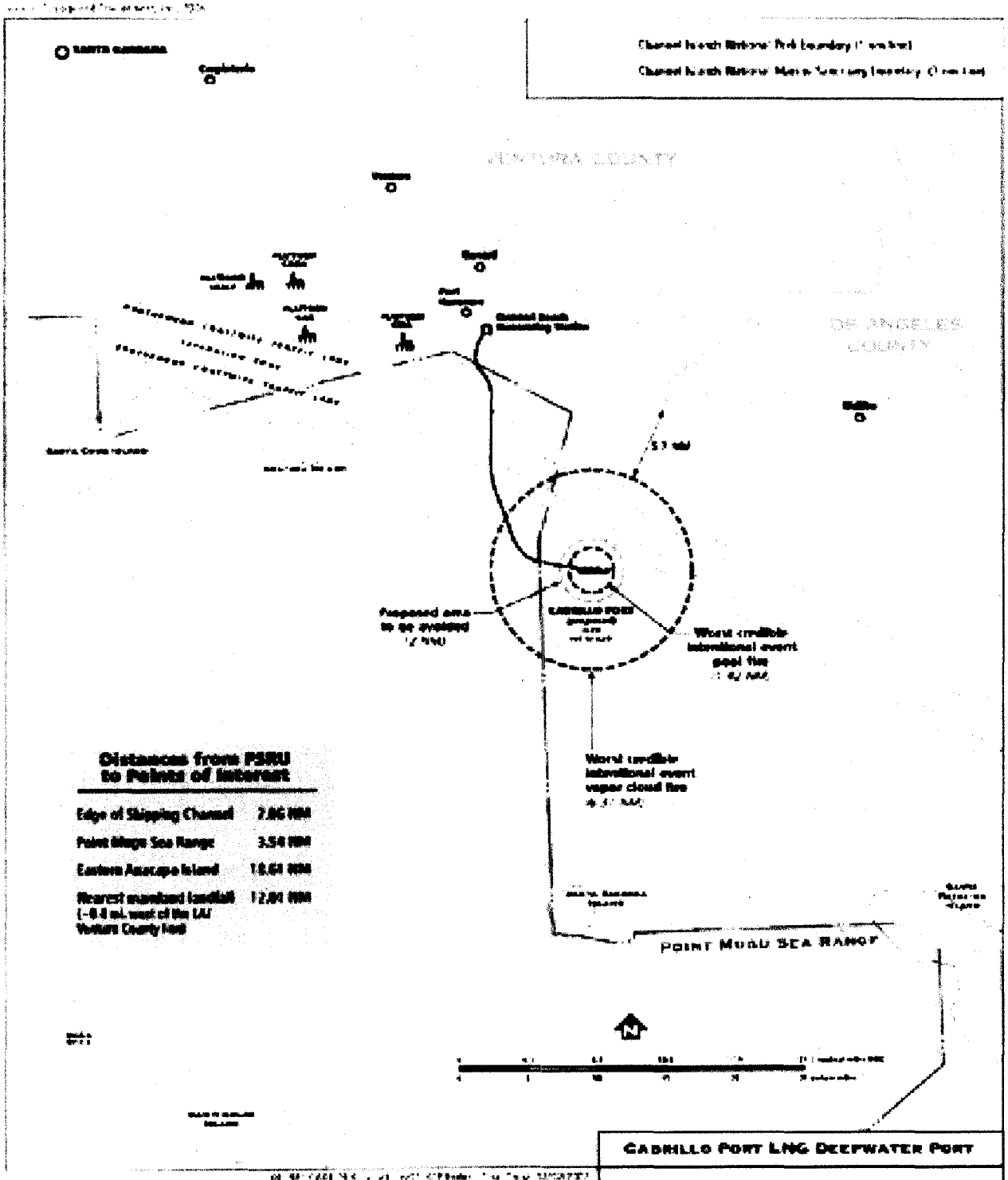


CABRILLO PORT LNG DEEPWATER PORT

Figure ES-1

Consequence Distances Surrounding the FSRU Location for Worst Credible Events

EXHIBIT D-1

Proposed Project
Project Alternatives
PACIFIC
OCEAN
Proposed Cabrillo Port
LNG Deepwater Port Facilities

EXHIBIT D-2

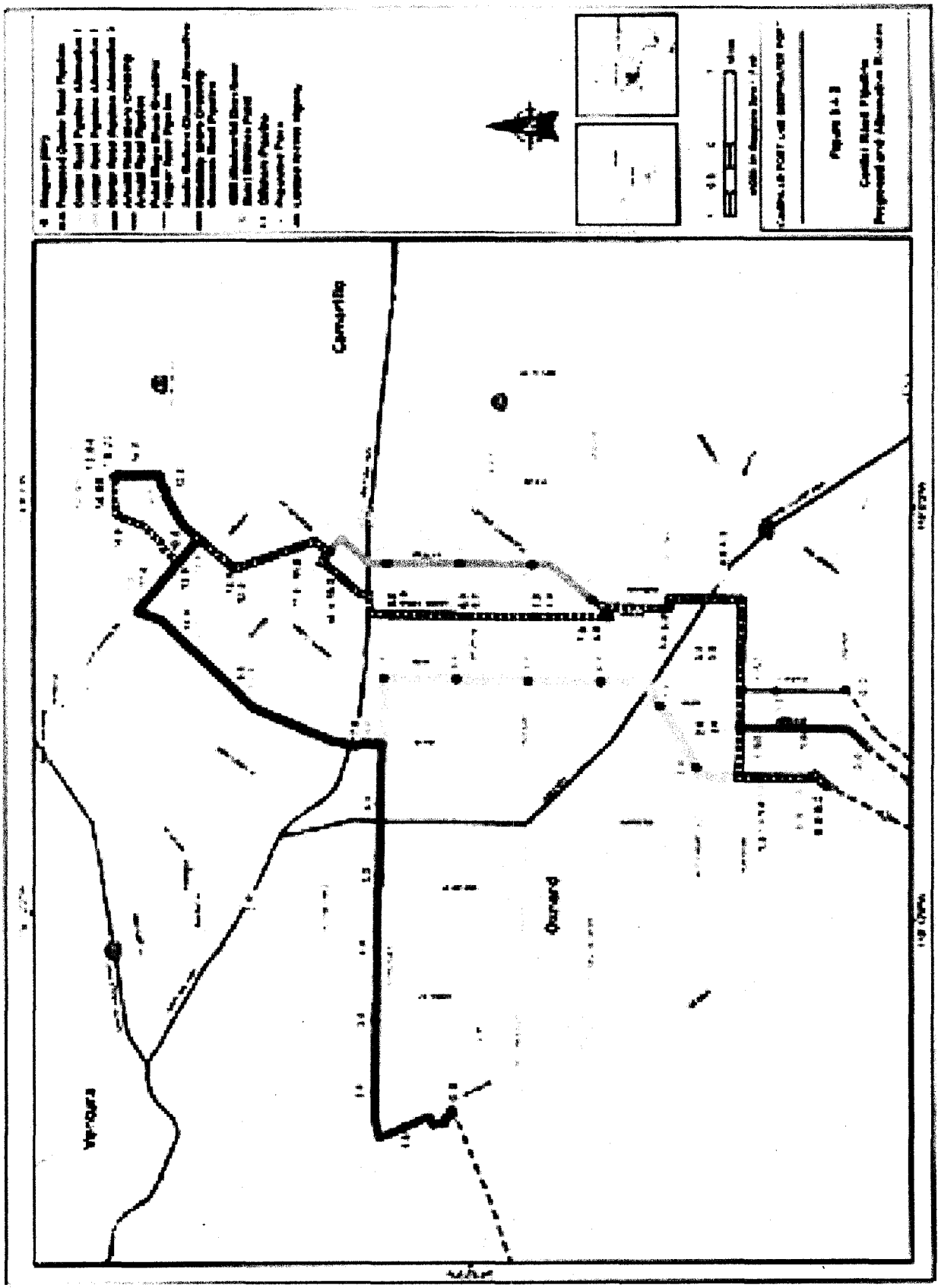
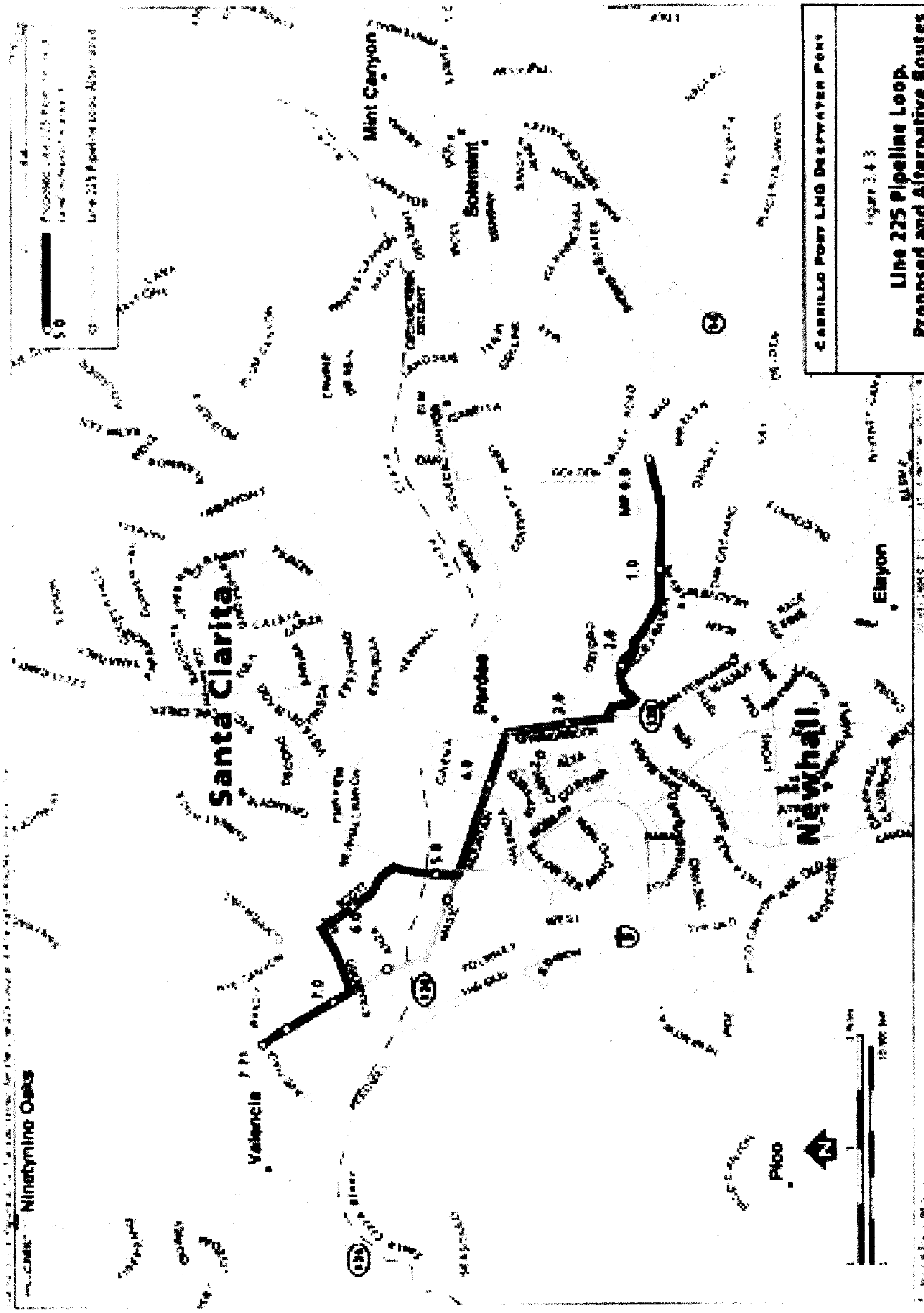


EXHIBIT D-3



Cabrillo Port LNG Deepwater Port
Line 225 Pipeline Loop, Proposed and Alternative Routes
Santa Clarita
Newhall
Valencia
Ninetymine Oaks
Mint Canyon
Solemint
Pico

EXHIBIT D-4

EXHIBIT E

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
PUBLIC SAFETY (Section 4.2)				
FSRU				
PS-1: *Potential Minor Release of LNG due to Operational Incident or Natural Phenomena at the FSRU or an LNG Carrier* An incident at the FSRU or LNG carrier due to human error, upsets, or equipment failures, or as a result of natural phenomena (severe wave conditions, high winds, etc.) could cause a release of LNG from the FSRU or an LNG carrier that would have a limited area of effect (CEQA Class II; NEPA minor adverse, long-term).	**AM PS-1a. Applicant Engineering and Project Execution Process.** The Applicant would undertake—regardless of any less stringent regulatory requirements—the following steps to design, build, and operate the proposed Project: 1) Prior to final internal Project funding, undertake a full Front End Engineering Design (FEED) exercise with a suitably qualified and experienced contractor under the management of an Applicant technical team. This would define the engineering requirements for the complete Project and identify sources for all remaining detailed information and data, to be ready for internal Project sanction and final detailed engineering. 2) Undertake a comprehensive offshore site survey to determine bathymetry, geology, and geotechnical characteristics of the area in and immediately around the locations of each element of the Project. This would require mobilization of specialized marine vessels and crews to perform the acoustic surveying and soil coring for the shallow water horizontal directional boring (HDB) of the pipelines crossing under the beach to the FSRU mooring in deep water. The survey results would provide additional information for the final detailed design of the HDB, pipelines, cable crossings, pipeline end manifolds, and mooring system anchors. 3) Fully implement the proposed Project under a self-imposed "Safety Case" process for the detailed design of the proposed Project.[3] This would begin with the FEED but could be completed only when the level of the facility definition is in the advanced detailed design phase. This would require a complex series of	Offshore	USCG	Pre-construction, Construction, Post-construction, and Operations

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	additional detailed safety checks and balances be put into place, including HAZID, hazard and operability studies (HAZOPs), quantitative risk analyses (QRAs), formal safety assessments (FSAs), and associated safety engineering exercises such as process plant modeling and analyses. This would be finalized during the detailed design of the FSRU safety systems, the process plant and deck layouts, and the associated systems such as piping and utilities, and the control systems and procedures. Upon start-up, the safety case would become a "living tool" for the facility operating team—one that would be updated and reanalyzed as needed based on operational experience—to ensure that the proposed Project meets or exceeds required standards during all phases of operation.[3] 4) Upon internal Project sanction/funding, ensure detailed engineering would be conducted for all components by suitably qualified and experienced contractors under the management of an Applicant technical team and in accordance with demanding technical requirements that would be carefully defined in contractual documents. The selected qualified engineering contractors would likely be different for the contractor designing the hull, regasification topsides, mooring, pipelines, etc. Using this process, the Applicant would ensure that all engineering is executed to meet or exceed the regulatory and Applicant's internal requirements. 5) Commission a series of model tests of the FSRU facility at an experienced and well-established model test			

[3] A safety case is a documented body of evidence that provides a demonstrable and valid argument that a system is adequately safe for a given application and environment over its lifetime.

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	basin. More advanced detailed theoretical analyses would be completed first to identify the governing criteria and cases to be modeled in the basin. These model tests would cover both the survival sea states without an LNG carrier moored alongside and the operational sea states with the carrier moored alongside the FSRU. FSRU motions and mooring system loads would be measured under survival storm conditions to confirm the calculated results. Similarly, relative and absolute motions of and between the FSRU and the berthed carrier would be measured to confirm the operability limits of the berth mooring, fender, and loading arm systems. This would also provide information about FSRU motions for the detailed design of the topsides equipment. 6) The Applicant would require independent third-party verification of detailed engineering, procured equipment, fabrication, construction, and offshore installation and commissioning of all Project components. Where such independent third-party verification would be required by a regulatory agency, or in order to obtain class certification, a single verification process would be conducted to ensure efficiency of this verification. 7) During the construction phases of the proposed Project, both quality and safety audits at major fabrication/ construction sites would be undertaken by the Applicant to ensure quality and safety of the Project components. Actual safety and quality performance during construction would be a contractual obligation for the various contractors selected by the Applicant. 8) Before releasing the FSRU from its inshore commissioning, i.e., before towing to the proposed Project site, and after offshore installation of all components, but before facility start-up, the Applicant			

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	would conduct a formal pre-startup review. The status of the facility, quality assurance, "outstanding items," operational preparedness, and compliance with legal and regulatory commitments would be carefully reviewed in a team session with final checks before proceeding first with the tow and second with initial start-up of LNG operations. A number of action items would generally be identified in such sessions; some would require closure before proceeding to the next step, and others would be identified for action by specific deadlines or milestones. This process and any findings would be formally documented. **AM PS-1b. Class Certification and a Safety Management Certificate for the FSRU.** Class certification and a safety management certificate are required under international agreements, i.e., through the IMO, for vessels engaged in international voyages. Although this would not be required for the stationary FSRU, the Applicant would obtain class and safety management certification for the facility, including the subsea pipelines, pipeline end manifold, and risers. The Applicant would voluntarily provide a documented management system that would comply with the International Safety Management Code and the Applicant's internal health, safety, engineering, and construction standards. When operational, the FSRU would be certifiable under the International Safety Management, International Organization for Standardization (ISO) ISO-9000 quality standards and ISO-14000 environmental standards.[4]			

4. A comprehensive safety management audit determines if the facility is complies with the tenets of the ISM Code and the vessel is operated safely and responsibly for the safety of personnel and the environment). The audit must be conducted by third party auditor (normally a classification

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	society such as ABS, Lloyds, DNV) to ensure a fair and objective determination is made. The audit must be conducted in accordance with IMO Resolution A.788(19), Guidelines on Implementation of the ISM Code by Administrations. Once the audit is satisfactorily completed, the vessel operator is issued either a Document of Compliance or Safety Management Certificate (for U.S. flag vessels), which is valid for 5 years.			
	AM PS-1c. Periodic Inspections and Surveys by Classification Societies. The Applicant would conduct periodic inspections of the FSRU by classification societies, including annual inspections and a full survey after five years of facility operation and every five years thereafter. This would help ensure that shipboard procedures are regularly reviewed and updated and that processing and emergency equipment would be maintained appropriately and repaired or upgraded as necessary.			
	AM PS-1d. Designated Safety Zone and Area to be Avoided. The Applicant would monitor a 1,640-foot (500 m) radius safety zone to be designated by the USCG around the FSRU where public maritime traffic would be excluded. The Applicant has also proposed designating an Area to be Avoided with a radius of 2 NM (2.3 miles or 3.7 km) around the FSRU. Each of these zones would be marked on nautical charts and would serve as part of the Notice to Mariners to avoid this area.			
	AM MT-3a. Patrol Safety Zone would apply to this impact (see Section 4.3, "Marine Traffic").			
	AM MT-3d. Control Room Team Management Techniques would apply to this impact (see Section 4.3, "Marine Traffic").			
	AM MT-3e. Broadcast of Navigational Warnings would apply to this impact (see Section 4.3, "Marine Traffic").			
	MM PS-1e. Cargo Tank Fire Survivability. The Applicant shall provide safety engineering, HAZIDs, HAZOPs, and			

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	QRA supporting the detailed engineering design, including cases where cargo tank insulation is presumed to fail in the event of a fire. **MM PS-1f. Structural Component Exposure to Temperature Extremes.** The Applicant shall provide safety engineering, HAZIDs, HAZOPs, and QRA supporting the detailed engineering design, including cases where decking, hulls, and structural members are exposed to both cryogenic temperatures from spilled LNG and exposure to extreme heat from a fire, e.g., the Moss storage tanks would be designed with a steel outer shell to provide a barrier against excessive heat and fire in the event of an emergency in the regasification area, and to minimize impacts on multiple tanks. **MM PS-1g. Pre- and Post-Operational HAZOPs.** The Applicant shall conduct HAZOPs that address all LNG operations prior to beginning operation and after one year of operation. The results of these reviews shall be used to improve and refine operations practices and emergency response procedures. After the initial and first post-operational HAZOPs, additional HAZOPs shall be conducted every two years unless there has been a change in equipment or other significant change. The results of these reviews shall be reviewed as part of configuration management when any equipment, operational, or procedural changes have been undertaken that would necessitate conducting an additional HAZOP review for the new configuration. HAZOPs may be conducted by the Applicant or by a qualified third party, including participation by the CSLC. **MM MT-3f. Live Radar and Visual Watch** would apply to this impact (see Section 4.3, "Marine Traffic").			

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
PS-2: *Potential Release of LNG due to High-Energy Marine Collision or Intentional Attack* A high-energy collision of another vessel with the FSRU or an LNG carrier or an intentional attack could cause a rupture of the Moss tank(s) holding LNG, leading to a release of an unignited flammable vapor cloud that could extend beyond the 1,640-foot (500 m) radius safety zone around the FSRU, impact any members of the boating public in the identified potential impact area, and impact boats traveling in the Traffic Separation Scheme (CEQA Class I; NEPA major adverse, short-term).	**AM PS-2a. AIS, Radar, and Marine VHF Radiotelephone.** The Applicant would equip the FSRU with an AIS and with real-time radar and marine VHF radiotelephone capabilities. **AM PS-1a. Applicant Engineering and Project Execution Process.** **AM PS-1b. Class Certification and a Safety Management Certificate for the FSRU.** **AM PS-1c. Periodic Inspections and Surveys by Classification Societies.** **AM PS-1d. Designated Safety Zone.** **AM MT-3a. Patrol Safety Zone.** **AM MT-3b. LNG Carrier Monitoring by the FSRU.** **AM MT-3c. One LNG Carrier in Approach Route.** **AM MT-3d. Control Room Team Management Techniques.** **AM MT-3e. Broadcast of Navigational Warnings.** **MM PS-1e. Cargo Tank Fire Survivability.** **MM PS-1f. Structural Component Exposure to Temperature Extremes.** **MM PS-1g. Pre- and Post-Operational HAZOPs.** **MM MT-3f. Live Radar and Visual Watch** (see Section 4.3, "Marine Traffic"). **MM MT-3g. Information for Navigational Charts** (see Section 4.3, "Marine Traffic").	Offshore	USCG	Pre-Construction, Construction, Post-Construction, Operations
Offshore Pipelines				
PS-3: *Potential Release of Odorized Natural Gas due to Damage to Subsea Pipelines.* Fishing gear could become hung up on the pipelines and potentially damage one or	**AM PS-3a. More Stringent Pipeline Design.** The Applicant would design and install pipelines to meet seismic criteria to ensure that pipeline integrity is maintained during severe seismic events that might be expected to bend or bow the pipelines.	Offshore	USCG/CSLC	Pre-Construction, Construction, Post-Construction, Operations

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
both of the subsea pipelines. Similar damage may occur due to a seismic event or subsea landslide (CEQA Class I; NEPA major adverse, short-term).	**MM PS-3b. Emergency Communication/Warnings.** The Applicant shall institute emergency plans and procedures that require immediate notification of vessels in any offshore area, including hailing and Securite broadcasts, and immediate notification of local police and fire services whenever the monitoring system indicates that there might be a problem with subsea pipeline integrity. **MM PS-3c. Areas Subject to Accelerated Corrosion, Cathodic Protection System.** The Applicant shall identify any offshore or onshore areas where the new transmission pipelines may be subject to accelerated corrosion due to stray electrical currents, and implement precautions and mitigation measures as recommended in a November 12, 2003 Federal OPS pipeline safety advisory (68 FR 64189). Cathodic protection systems shall be installed and made fully operational as soon as possible during pipeline construction. **MM MT-1d. Securite Broadcasts** (see Section 4.3, "Marine Traffic"). **MM MT-3g. Information for Navigational Charts** (see Section 4.3, "Marine Traffic").			
Shore Crossing				
PS-4: *Impact PS-4. Potential Release of Odorized Natural Gas due to Accidental Damage to Onshore Pipelines* The potential exists for accidental or intentional damage to the onshore pipelines or valves carrying odorized natural gas. Damage, fires, and explosions may occur due to human error, equipment failure, natural phenomena (earthquake, landslide, etc.). This would	**AM PS-4a. Class 3 Pipeline Design Criteria.** The Applicant or its designated representative would construct all pipeline segments to meet the minimum design criteria for a USDOT Class 3 location, which would improve safety and reduce the need to reconstruct the pipeline segments as additional development and population densities increase along the onshore pipeline corridor. **MM PS-4b. Pipeline Integrity Management Program.** The Applicant shall develop and implement a pipeline integrity management program, including confirming all	Onshore	USCG/CSLC	Pre-Construction, Construction, Operations

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
result in the release of an odorized natural gas cloud at concentrations that are likely to be in the flammable range (CEQA Class I; NEPA major adverse, short-term).	potential HCAs (including identification of potential sites from "licensed" facility information [day care, nursing care, or similar facilities] available at the city and county level) and ensuring that the public education program is fully implemented before beginning pipeline operations. **MM PS-4c. Install Additional Mainline Valves Equipped with Either Remote Valve Controls or Automatic Line Break Controls.** The Applicant shall install five approximately equally spaced sectionalizing valves with appropriately sited and sized blowdown stacks on the Center Road Pipeline. The Applicant shall install three approximately equally spaced sectionalizing valves with appropriately sited and sized blowdown stacks on the Line 225 Pipeline Loop. The number of valves includes the station valves at each end of these pipelines. All valves shall be equipped with either remote valve controls or automatic line break controls. **MM PS-4d. Treat Shore Crossing as Pipeline HCA.** The Applicant shall treat any onshore public beach area, under which is located a pipeline(s) that is carrying natural gas, as an HCA. **MM PS-4e. Safety Marker Indicating the Presence of Buried Natural Gas Pipeline at Ormond Beach.** Prior to the operation of the shore crossing pipelines, the Applicant shall install signage indicating the presence of the buried natural gas pipeline at Ormond Beach. The sign shall list the Operator's name and shall include a toll free number to call for information, in case of plans to dig in the area, or to report a leak, or an emergency. **MM PS-4f. Emergency Response.** The Applicant shall implement emergency plans and procedures as specified in its operations plan and shall immediately dispatch trained personnel to the area to investigate the emergency and secure the area until the release has been stopped and			

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Impact	Mitigation Measure	Location	Responsible Agency	Timing
	pipeline integrity under the beach is assured as verified by the Applicant. The emergency plans shall be in compliance with OPS Advisory Bulletin ADB-05-03, which requires preplanning with other utilities for coordinated response to pipeline emergencies. **MM PS-3c. Areas Subject to Accelerated Corrosion, Cathodic Protection System.**			
PS-5. *Increased Potential for Injury, Fatality, and Property Damage Due to Fire or Explosion in Areas with Less Robust Housing Construction and Outdoor Activity.* In the event of an accident, there is a greater likelihood of injury, fatality, and property damage near Center Road Pipeline MP 4.1, an HCA (CEQA Class I; NEPA major adverse, short-term).	**AM PS-4a. Class 3 Pipeline Design Criteria**. **MM PS-5a. Treat Manufactured Home Residential Community as a High Consequence Area.** The Applicant shall treat as a HCA those areas where the potential impact radius includes part or all of a manufactured-home residential community, including outdoor gardens and areas with one or more normally occupied mobile homes or travel trailers used as temporary or semi-permanent housing.` The Applicant shall enact for these areas the pipeline safety requirements contained in 49 CFR Part 192 Subpart O.	Onshore	USCG/CSLC	Pre-Construction, Construction
MARINE TRAFFIC (Section 4.3)				
Offshore Construction				
MT-1: *Temporary Increase in Maritime Traffic during Installation of the Mooring System, FSRU Mooring, Offshore Pipeline Construction, and Shore Crossing Resulting in Increased Safety Risks.* Marine activities associated with site preparation, transportation, and installation of the mooring system, FSRU, and subsea pipelines could temporarily increase maritime traffic congestion and increase the risk of vessel collision (CEQA Class II; NEPA minor adverse, short-term).	**AM MT-1a. Safety Vessel Warnings**. During offshore construction, a safety vessel would be stationed 3 to 5 NM (3.5 to 5.8 miles or 5.6 to 9.3 km) from the pipelaying barge in the direction of predominant traffic flow to warn vessels approaching construction that deviation from their course and speed is necessary. **AM MT-1b. Automatic Identification System**. The pipelaying barge and associated vessels would be equipped with AIS. **MM MT-1c. Notices to Mariners.** The Applicant shall ensure that Notices to Mariners contain planned positions of vessels for the entire construction period, planned traffic lane closures, speed restrictions in the vicinity of vessels,	Offshore	USCG/CSLC	Pre-Construction, Construction, Operations

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	and alternative routes and radio channels that Project vessels shall monitor and work. These notices shall include vessel names, if available, and shall mention the presence of the safety vessel(s) identified in MM MT-1e. The Applicant shall submit unforeseen short-notice changes to the USCG for dissemination as a Broadcast Notice to Mariners and shall include such changes in the Securite broadcasts identified in MM MT-1d. **MM MT-1d. Securite Broadcasts.** The Applicant shall ensure that a Project vessel in the construction area makes Securite broadcasts on VHF-FM at half-hour intervals, informing mariners about the current construction location, any lane restrictions, and preferred speed and standoff distances from the Project vessels and trailing pipeline. The vessel could be the safety vessel identified in MM MT-1e. **MM MT-1e. Safety Vessel.** The Applicant shall ensure that a safety vessel is present at all times during construction, be equipped with radar and marine VHF radio, be of sufficient size and type, and have a sufficiently trained crew to respond to emergencies. This vessel's captain shall instruct intercepted vessels as to the location of construction vessels and the standoff distances from vessels and the pipelines to ensure that the intercepted vessel safely avoids the construction zone. This vessel shall be of sufficient speed to intercept vessels failing to alter course or answer radio hails. Alternatively, more than one vessel of this type shall be used and stationed in various positions around the construction site to ensure full coverage of the construction area. **MM MT-1f. Guard Boats.** The Applicant shall station two guard boats, in addition to the safety vessel identified in MM MT-1e, on watch while construction takes place in waters less than 656 feet (200 m) deep where trawling			

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Impact	Mitigation Measure	Location	Responsible Agency	Timing
	occurs to warn or intercept commercial fishing vessels before they reach the construction area. These smaller guard boats shall be stationed on either side of the construction vessels to intercept the faster recreational vessels that may not have marine radios. The guard boats shall be equipped with spotlights for identification of non-answering vessels at night and loud hailers or bullhorns to warn these vessels about the construction area. **MM MT-1g. Construction Schedule Signs.** The Applicant shall post signs at local marinas and ports to inform the public of the nearshore construction schedule at least one month prior to the first day of construction. One week prior to construction the Applicant shall replace any signs that are no longer present.			
MT-2: *Long-Term Increase in Maritime Traffic during Offshore Operations* LNG carriers, tugs, and attending vessels transiting to and from the FSRU, could increase maritime traffic congestion during Project operations (CEQA Class II; NEPA minor adverse, long-term).	**AM MT-2a. Provisions for Delays.** Project vessels for Project operations (including LNG carriers) would not use anchorages except possibly in emergency situations. If there is a delay in docking, LNG carriers would slow their speed to arrive at a suitable time or stop or drift between 100 and 200 NM (115 and 230 miles or 185 and 370 km) offshore. **AM MT-2b. Established Routes to and from Port Hueneme.** Vessels would use the routes depicted on Figure 4.3-3 to travel to and from Port Hueneme. **AM MT-2c. Compliance with JOFLO Vessel Traffic Corridors.** The Applicant would abide by the JOFLO corridors that direct traffic into specified patterns within 30 fathoms (180 feet) of shore established by JOFLO. Although JOFLO is not a governmental agency and has no jurisdiction to set marine traffic corridors, the Applicant would respect its established corridors. **MM MT-2d. Incorporation of Procedures for Delays.** To formalize AM MT-2a, the Applicant shall incorporate	Offshore	USCG/CSLC	Pre-Construction, Construction, Operations

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	procedures that mandate early notification of possible delays into the facility operations manual for LNG carriers so that a carrier might reduce transit speed in order to arrive at a later time and shall contact the incoming ship once it is determined that a delay may occur to instruct them to stay at least 100 NM (115 miles or 185 km) offshore. **MM MT-2e. Evaluation of Routes to and from Port Hueneme.** After operating for six months, the Applicant and the Port of Hueneme Safety Committee shall assess the volume of vessel traffic, types of vessels, frequency of encounters, if any, and any reported incidents to determine whether Project vessel operations should be modified. The Applicant shall be required to comply with any requested modifications.			
MT-3: *Long-Term Increase in Safety Hazards due to the Presence of the FSRU and LNG Carriers* The FSRU mooring location would be situated approximately 2 NM (2.3 miles or 3.7 km) from the Southbound Coastwise Traffic Lane of the Santa Barbara Channel TSS, which has relatively high levels of maritime traffic. In addition, vessels entering/leaving Port Hueneme or other local marina could pass nearby; thus, maritime traffic could be substantially increased with Project operations and the risk of vessel collision could be increased (CEQA Class II; NEPA minor adverse, short-term).	**AM MT-3a. Patrol Safety Zone.** Two tugboats on standby duty would patrol Cabrillo Port's designated safety zone, except during docking and undocking operations. Dedicated personnel aboard the FSRU would monitor marine traffic. **AM MT-3b. LNG Carrier Monitoring by the FSRU.** LNG carriers inbound and outbound would be monitored by the FSRU's own marine traffic management system. Specific required reporting and traffic information exchange protocols would be implemented. Appropriate adjustments to scheduling of LNG carriers would be in place to avoid routine collision possibilities. **AM MT-3c. One LNG Carrier in Approach Route.** Only one LNG carrier would be permitted to transit the approach route at any given time (see Figure 4.3-2). Minimum distances between LNG carriers when enroute within the LNG carrier approach route would be prescribed. **AM MT-3d. Control Room Team Management**	Offshore	USCG/CSLC	Pre-Construction, Operations

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	Techniques. The Applicant would ensure that all members of the control room team are aware of possible dangers of upcoming operations and would inform all crew members that it is their responsibility to bring indication of danger to the attention of higher authorities.			
	AM MT-3e. Broadcast of Navigational Warnings. The FSRU would broadcast navigational warnings of arriving and departing LNG carriers on radio, TOR, NAVTEX, and Sat-C.			
	MM MT-3f. Live Radar and Visual Watch. The Applicant shall ensure that a live radar and visual watch is maintained at all times on board the FSRU. The watch supervisor shall be an experienced and qualified officer in charge of the navigation watch and have a STCW endorsement. The watch supervisor and all watchstanding support personnel shall be qualified in accordance with the criteria outlined in Sections II and VIII of the STCW-95 Code with demonstrated proficiency in the use of all electronic navigational and communications equipment. The watchstanders shall properly operate equipment in order to detect and identify approaching vessels and note approaching aircraft at all times. The watchstanders shall provide a full-time radio watch, which shall monitor VHF-FM frequencies commonly used for emergency and normal ship-to-ship communications, and contact approaching vessels to inform them of the FSRU's location, intentions, and the nature of safety and/or security zones in effect. Guidance for these FSRU positions shall be included in the facility operations and security manuals.			
	MM MT-3g. Information for Navigational Charts. The Applicant shall ensure that all required information is provided to the USCG and other agencies, as necessary, to place the FSRU location, safety zone information, and subsea pipeline locations and warnings on navigational			

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	charts. This shall include a Notice to Mariners for chart correction and inclusion on the next edition of applicable navigation charts. These data shall be provided sufficiently early to allow these changes to be made on charts when FSRU mooring occurs. The Applicant shall coordinate with the USCG to identify acceptable deadlines currently in place.			
MT-4: *FSRU or LNG Carrier Accident Impact on Marine Traffic* An incident at the FSRU or on an LNG carrier could adversely affect marine traffic (CEQA Class II; NEPA minor adverse, short-term).	**AM PS-2a. AIS, Radar, and Marine VHF Radiotelephone** (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **AM MT-3a. Patrol Safety Zone.** **AM MT-3b. LNG Carrier Monitoring by the FSRU.** **AM MT-3c. One LNG Carrier in Approach Route.** **MM PS-3b. Emergency Communication/Warnings** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **MM MT-3f. Live Radar and Visual Watch** would apply to this impact.	Offshore	USCG/CSLC	Operations
MT-5: *Temporary Interference with Operations in the Point Mugu Sea Range or the SOCAL Range Complex during Offshore Construction* Marine activities associated with site preparation, transportation, and installation of the mooring system, FSRU, or subsea pipelines could temporarily burden maritime traffic tracking systems or make clearing of some warning areas impossible; thus, temporary disruption of operations in the Point Mugu Sea Range or the SOCAL Range Complex could occur (CEQA Class II; NEPA minor	**MM MT-5a. Avoid Point Mugu Sea Range.** The Applicant shall ensure that Project-related vessels, unless such vessels are related to pipeline construction, do not intrude into the waters in the Point Mugu Sea Range. When construction must take place in a Point Mugu Sea Range warning area, such as where the subsea pipelines cross the range, the Applicant shall give notice of at least one month, and preferably six months, to the U.S. Navy to allow for adequate coordination. **MM MT-5b. Daily Safety Briefs.** The Applicant shall ensure that daily safety briefs aboard all Project vessels include instructions to avoid use of Point Mugu Sea Range waters. **MM MT-5c. Daily Coordination with the U.S. Navy.** The	Offshore	USCG/CSLC	Construction, Operations

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
adverse, short-term).	Applicant shall coordinate daily (or at an interval that the U.S. Navy deems sufficient) with the U.S. Navy to ensure that no conflicts exist between Navy operations and Project construction when Project vessels would be expected to be in any warning area. If a Navy warning area needs to be used by construction vessels, construction shall be postponed until the situation is resolved to the satisfaction of Project management and the U.S. Navy. Coordination with the U.S. Navy shall be completed at least one month prior to the date that construction begins. **MM MT-5d. Monitor U.S. Navy Securite Broadcasts.** The Applicant shall ensure that Project vessels monitor all U.S. Navy Securite warning broadcasts on VHF-FM. This would likely require switching from normally monitored frequencies, when prompted by a preliminary broadcast by the U.S. Navy, for additional information. Instructions to do so shall be included in daily safety briefs. Conflicts, actual or perceived, shall be addressed immediately by the Project person-in-charge on site, or by individual Project vessel captains via VHF communications with the U.S. Navy.			
MT-6: *Long-Term Interference with Operations in the Point Mugu Sea Range and the SOCAL Range Complex* Marine activities associated with Project operations could burden maritime traffic tracking systems or could make clearing of some warning areas impossible; thus, disruption of operations in the Point Mugu Sea Range or the SOCAL Range Complex could occur (CEQA Class II; NEPA minor adverse, long-term).	**MM MT-6a. Follow U.S. Navy Securite Broadcasts.** The Applicant shall heed U.S. Navy Securite broadcasts and coordinate with the U.S. Navy range scheduling authorities regarding LNG carrier shipments to ensure that they do not conflict with range operations. **MM MT-6b. LNG Carrier Schedules.** The Applicant shall provide long-range LNG carrier schedules in advance and master schedules at least quarterly to the U.S. Navy so that transits can be coordinated. **MM MT-6c. Coordinate with the U.S. Navy.** The Applicant shall notify the U.S. Navy range scheduling authorities when approaching LNG carriers are 24 to 48	Offshore	USCG/CSLC	Construction/ Operations

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	hours from the FSRU.			
MT-7: *Long-Term Interference with Operations at Port Hueneme* Activities associated with Project operations could increase traffic at Port Hueneme; thus, disruption of operations at Port Hueneme could occur (CEQA Class II; NEPA minor to moderate adverse, long-term).	**MM MT-7a. Project Pilots.** The Applicant shall have all masters of Project tugboats obtain an endorsement on their master's license and a pilot's license from the USCG and the Port of Hueneme Pilots Association before construction begins. **MM MT-7b. U.S. Navy Exemption.** The Applicant shall apply for an U.S. Navy exemption to the requirement that operations cease in the Port of Hueneme channel. **MM MT-7c. Scheduling of Tug trips to the Port of Hueneme.** The Applicant shall make arrangements for use of a dedicated berth and coordinate at least 48 hours in advance with the Port of Hueneme to schedule tugboat arrivals and departures such that they do not conflict with commercial fish offloading operations.	Offshore	USCG/CSLC	Construction, Operations
AESTHETICS (Section 4.4)				
AES-1: *Alter Ocean Views from Onshore and Channel Islands Viewpoints* The FSRU in an unobstructed viewshed could alter views from beach areas, residences near sea level, residences at higher elevations, and from hiking trails at higher elevations (CEQA Class III; NEPA minor adverse, long-term).	None.	Offshore and Onshore	USCG/CSLC	N/A
AES-2: *Alter Nighttime Ocean Views* Night lighting on the FSRU could be visible to residents, thereby altering night vistas (CEQA Class III; NEPA minor adverse, long-term)	**AM BioMar-3a. Construction/Operation Lighting Control** would apply to this impact (see Section 4.7, "Biological Resources – Marine").	Offshore and Onshore	USCG/CSLC	Construction, Operations

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
AES-3: *Alter Views for Recreational Boaters* The FSRU would change the visual character of the ocean view for recreational boaters (CEQA Class I; NEPA major adverse, long-term).	None.	Offshore	USCG/CSLC	N/A
AES-4: *Alter Offshore Views from an Eligible State Scenic Highway* The FSRU would be visible to travelers on an eligible State Scenic Highway (CEQA Class III; NEPA minor adverse, long-term).	None.	Offshore and Onshore	USCG/CSLC	N/A
AES-5: *Alter Ocean Views During Construction* Night lighting during offshore construction could be visible from the shore and to residents living in the foothills and higher elevation areas in Malibu, thereby temporarily altering the nighttime viewshed (CEQA Class III; NEPA minor adverse, long-term).	**AM BIOMAR-3a. Construction Lighting/Operation Control** applies here (see Section 4.7, "Biological Resources – Marine").	Offshore and Onshore	USCG/CSLC	Construction
AES-6: *Substantial Damage to Onshore Scenic Resources Along a State Scenic Highway* Construction of the onshore pipelines could alter the scenic qualities of a highway eligible for the State Scenic Highway System (CEQA Class III; NEPA minor adverse, long-term).	**MM GEO-1b. Backfilling, Compaction, and Grading** would apply to this impact (see Section 4.11, "Geologic Resources and Hazards").	Onshore	USCG/CSLC	Construction
AGRICULTURE AND SOILS (Section 4.5)				
AGR-1*: Temporary Loss of Agricultural Land* Construction activities could temporarily	**AM AGR-1a. Compensation for Temporary and Permanent Loss of Agricultural Land, Crop Loss, Future Loss of Production, and Other Negative**	Onshore	USCG/CSLC	Pre-Construction, Construction, Post-Construction

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Impact	Mitigation Measure	Location	Responsible Agency	Timing
cause a loss of agricultural land, crops, or crop production (CEQA Class II; NEPA minor adverse, short-term).	**Impacts.** In compliance with California Government Code § 7267 et seq., the Applicant or its designated representative would make every reasonable effort to acquire easements (temporary and permanent) expeditiously by negotiation. The easement rights would be appraised before the initiation of negotiations, and the property owner or the property owner's designated representative would be given an opportunity to accompany the appraiser during the inspection of the property. SoCalGas would establish an amount that it believes to be just compensation for the easement rights, based upon the appraisal. SoCalGas would provide the property owner with a written statement and summary of the basis for the amount it established as just compensation, which amount would not be less than the appraised value of the easement rights. The appraisal process would consider the value of the easement rights being acquired, and where applicable, crop loss, future loss of production, and any other negative impacts that SoCalGas' acquisition and use of the easement areas would have upon agricultural operations. **AM AGR-1b. Coordinate Pipeline Installation with Farmers**. The Applicant or its designated representative would schedule construction to begin immediately after harvest or before planting if the construction and planting/harvest schedules coincide closely enough to not compromise the overall pipeline construction completion schedule. The Applicant or its designated representative would let the farmer decide whether the farmer or the Applicant's contractor would remove seed/crops. **AM AGR-1c. Post-Construction Restoration Measures.** The Applicant or its designated representative would protect all substructures, such as drain tiles or other types of irrigations systems, during construction and replace any substructures if damaged. The Applicant or its designated			

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	representative would restore the grade of the TCE to match the surrounding field for drainage or compensate the farmer if the farmer chooses to have a contractor perform precision grading. **MM AGR-1d. Minimize Orchard Tree Removal.** Recognizing that no trees can grow within 15 feet (4.6 m) of the pipeline, the Applicant or its designated representative shall remove, box, maintain, and replant small orchard trees in the area between the TCE and the permanent ROW. The Applicant or its designated representative shall minimize the number of mature trees removed.			
AGR-2: *Permanent Conversion of Agricultural Land to Non-Agricultural Use* Operational activities could cause a loss of agricultural land, crops, or crop production. Construction of permanent facilities could cause a permanent loss of agricultural land, crops, or crop production. Agricultural land that is preserved under the Williamson Act could be permanently converted from agricultural land to non-agricultural land. Prime Farmland or Farmland of Statewide Importance could be converted to non-agricultural uses (CEQA Class I; NEPA major adverse, long-term).	None.	Onshore	USCG/CSLC	N/A
AGR-3: *Topsoil Loss, Mixing, and/or Compaction* Construction activities could result in topsoil and subsoil mixing, soil compaction, and/or introduction of weed/invasive species, thereby reducing agricultural productivity (CEQA Class II;	**AM TerrBio-4a. Weed Management Plan** would apply to this impact (see Section 4.8, "Terrestrial Biology"). **MM AGR-3a. Topsoil Salvage and Replacement**. The Applicant or its designated representative shall ensure that the upper 12 inches (0.3 m) of topsoil (or less, depending on the existing depth of the topsoil) is salvaged, segregated from the rest of the soil, and replaced on top of the	Onshore	USCG/CSLC	Pre-Construction, Construction, Post-Construction

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Impact	Mitigation Measure	Location	Responsible Agency	Timing
NEPA minor adverse, short-term).	disturbed areas and replaced wherever the pipeline is trenched. **MM AGR-3b. Landowner Compensation for Soil Productivity Losses.** Prior to construction, the Applicant or its designated representative shall negotiate with landowners regarding measures to ensure that soil productivity is maintained and that the criteria for determining loss of soil productivity and the terms for compensation for such loss are determined.			
AGR-4: *Dust Deposition* Dust generated during construction could be deposited on adjacent agricultural lands with planted crops, temporarily reducing productivity (CEQA Class II; NEPA minor adverse, short-term).	**MM AIR-2b. Construction Fugitive Dust Plan** would apply to this impact (see Section 4.6, "Air Quality"). **MM AGR-4a. Dust Suppression Water Quality.** For dust suppression, the Applicant or its designated representative shall use potable water sources or water sources approved for discharge near agricultural uses. Water used on agricultural fields shall not be treated with chemicals such that it could adversely affect agricultural fields.	Onshore	USCG/CSLC	Pre-Construction, Construction
AGR-5: *Loss of Tree Rows* Loss of tree rows could reduce agricultural productivity (CEQA Class II; NEPA minor adverse, short-term).	**MM TerrBio-2g. Tree Avoidance and Replacement** applies to this impact (see Section 4.8, "Biological Resources – Terrestrial").	Onshore	USCG/CSLC	Construction, Post-Construction
AGR-6: *Impacts from a Leak or Fire Associated with the Natural Gas Transmission Line* If the natural gas transmission line leaked and/or were ignited, the resulting fire could cause the loss of crops or the contamination of the soil in the vicinity of the leak or fire (CEQA Class II; NEPA minor adverse, short-term).	**AM PS-3a. More Stringent Pipeline Design** (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **AM PS-4a. Class 3 Pipeline Design Criteria** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **MM AGR-6a. Restoration After a Natural Gas Transmission Line Accident.** The Applicant or its designated representative shall restore the area that was either contaminated or burned as a result of a breach in the natural gas transmission line. **MM PS-3c. Areas Subject to Accelerated Corrosion, Cathodic Protection System** (see Section 4.2, "Public	Onshore	USCG/CSLC	Operations

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	Safety: Hazards and Risk Analysis"). **MM PS-4b. Pipeline Integrity Management Program** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **MM PS-4c. Install Additional Mainline Valves Equipped with Either Remote Valve Controls or Automatic Line Break Controls** (see Section 4.2, "Public Safety: Hazards and Risk Analysis").			
AGR-7 Alt: *Potential for Use of Agricultural Land for Staging Areas.* Under the Arnold Road Shore Crossing/Arnold Road Pipeline Alternative, construction activities associated with staging areas could temporarily cause a loss of agricultural land, crops, or crop production. Agricultural land that is preserved under the Williamson Act could be temporarily converted from agricultural land to non-agricultural land. Prime Farmland or Farmland of Statewide Importance soils would temporarily be converted to non-agricultural uses (CEQA Class II; NEPA minor adverse, short-term).	**AM AGR-1a. Compensation for Temporary and Permanent Loss of Agricultural Land, Crop Loss, Future Loss of Production, and Other Negative Impacts.** **AM AGR-1b. Coordinate Pipeline Installation with Farmers.** **AM AGR-1c. Post-Construction Restoration Measures.** **MM AGR-1d. Minimize Orchard Tree Removal.**	Onshore		Pre-construction, construction
AGR-8 Alt: *Permanent Conversion of Agricultural Land to Non-Agricultural Use.* Under the Arnold Road Shore Crossing/Arnold Road Pipeline Alternative, construction of permanent facilities could cause a permanent loss of agricultural land, crops, or crop production. Agricultural land that is preserved under the Williamson Act could be permanently converted from agricultural land to non-	None	Onshore		N/A

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
agricultural land. The pipeline corridor could convert Prime Farmland and Farmland of Statewide Importance soils to non-agricultural uses (CEQA Class I; NEPA major adverse, long-term).				
AGR-9 Alt: *Potential for Use of Agricultural Land for Staging Areas.* Under the Point Mugu Shore Crossing/Casper Road Pipeline Alternative, construction activities associated with staging areas could temporarily cause a loss of agricultural land, agricultural soils, crops, or crop production. Agricultural land that is preserved under the Williamson Act could be temporarily converted from agricultural land to non-agricultural land (CEQA Class II; NEPA minor adverse, short-term).	**AM AGR-1b. Coordinate Pipeline Installation with Farmers.** **AM AGR-1c. Post-Construction Restoration Measures.** **MM AGR-1d. Minimize Orchard Tree Removal.**	**Onshore**		Pre-construction, construction
AGR-10 Alt: *Permanent Conversion of Agricultural Land to Non-Agricultural Use.* Under the Point Mugu Shore Crossing/Casper Road Pipeline Alternative, construction of permanent facilities could cause a permanent loss of agricultural land, crops, or crop production. Agricultural land that is preserved under the Williamson Act could be permanently converted from agricultural land to non-agricultural land. Prime Farmland and Farmland of Statewide Importance soils could be converted to non-agricultural uses. (CEQA Class I NEPA major adverse, short-term).	None.	Onshore		N/A

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
AIR QUALITY (Section 4.6)				
Offshore				
AIR-1: *Net Emission Increases of Criteria Pollutants from Construction Activities in Designated Nonattainment Areas* Project construction activities in Ventura and Los Angeles counties would generate emissions that exceed quantitative thresholds for ozone precursors (NO_x and ROCs) and CO (CEQA Class I; NEPA major adverse, short-term).	**AM AIR-1a. USEPA Nonroad Engine Standards.** At a minimum, all onshore construction equipment would utilize engines compliant with USEPA Tier 2 nonroad engine standards. To the extent possible, onshore equipment would utilize engines compliant with USEPA Tier 3 or 4 nonroad engine standards. **AM AIR-1b. Offshore Construction Equipment Standards.** All vessels (and associated offshore equipment) used during shore crossing construction, offshore pipeline installation, and mooring/FSRU installation, would utilize only engines that emit CO, PM, NO_x, and ROC at rates less than or equal to USEPA Tier 1 nonroad engine standards (as outlined in 40 CFR 89.112, Table 1). **AM AIR-1c. Ultra Low Sulfur Diesel.** All Project operational vessels (including LNG carrier, tugs, and crew boat), FSRU equipment, and construction vessels and equipment would be fueled with ultra low sulfur diesel (less than 15 parts per million sulfur). This is consistent with California regulations (starting January 2007) that require that the sulfur content of all vehicular diesel fuel and non-vehicular diesel fuel supplied in California (including fuel for locomotives and harborcraft) not exceed 15 parts per million by weight. As it is anticipated that some of the operational and construction vessels/equipment would be transported from outside of California, this measure applies to vessels regardless of place of origin. **MM AIR-1d. Gasoline-Fueled Equipment.** The Applicant or its designated representative shall use only gasoline-fueled equipment that meets the exhaust emission	Offshore and Onshore	USCG/CSLC	Pre-Construction, Construction

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	standards for CO and NO_x (as listed for engine displacements greater than 1.0 liter) outlined in 13 CCR § 2433: Exhaust Emission Standards and Test Procedures – Off-Road Large Spark-Ignition Engines. **MM AIR-1e. USEPA Tier 3 Nonroad Engine Standards.** All onshore construction equipment with a rating between 100 and 750 hp would be required to utilize engines compliant with USEPA Tier 3 nonroad engine standards. **MM AIR-1f. Construction Emissions Reduction Plan.** The Applicant shall prepare a Construction Emissions Reduction Plan to be incorporated into all contracts and contract specifications for construction work. This plan shall specify all Applicant measures and mitigation measures related to construction equipment emission standards/controls as contractual requirements. The plan shall also outline additional specific measures, as contractual requirements, to reduce or eliminate potential impacts associated with construction-related emissions of criteria air pollutants and toxic air contaminants. At a minimum, the plan shall include the following additional specific measures: • As feasible, reduce emissions of particulate matter and other pollutants by using alternative clean fuel technology such as electric, hydrogen fuel cells, and propane-powered equipment or compressed natural gas-powered equipment with oxidation catalysts instead of gasoline- or diesel-powered engines. • Ensure that all construction equipment is properly tuned and maintained and shut off when not in direct use; • Prohibit engine tampering to increase horsepower; • Locate engines, motors, and equipment as far as possible from residential areas and at least 300 feet (91 m) from sensitive receptors, such as schools, daycare			

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	centers, and hospitals (Note: the proposed pipeline routes would not pass within 300 feet [91 m] of any sensitive receptor locations); • Provide carpool shuttles and vans to transport construction workers to and from construction sites, thus eliminating some private vehicle trips; • Arrange for food catering trucks to visit each Project site twice a day; • Reduce construction-related trips of workers and equipment, including trucks; and • Require that on-road vehicles be less than 10 years old. Prior to finalization of the plan, the Applicant shall also consult with the VCAPCD and the SCAQMD to identify other potential control measures not specified above. The Applicant or its designated representative shall submit this plan and related construction contract specifications to the California States Land Commission (CSLC), USEPA, and, to the extent applicable under local rules and regulations, the VCAPCD and the SCAQMD, prior to construction activities. **MM AIR-1g. Construction Equipment Documentation.** The Applicant or its designated representative shall prepare and maintain documentation that demonstrates implementation of the Applicant's proposed emission reduction measures and required mitigation measures. The following documents and/or files shall be submitted to the CSLC, USEPA, and, to the extent applicable under local rules and regulations, the VCAPCD and the SCAQMD: • Inventory of all equipment and vessels used during each onshore and offshore construction activity. At a minimum, this inventory shall include an equipment description, equipment identification, identification of			

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	type of engine(s), and engine emission data; and • Documentation certifying that the actual emission rates for the engine(s) of each equipment and vessel used during construction comply with mitigation measures and applicant measures as required. This documentation shall include USEPA or CARB certification of engine emissions, source testing results for specific engines, or an equivalent means of certifying emission rates of NO_x, CO, ROC, and PM_{10} from this equipment.			

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
AIR-2: *Violations of Ambient Air Quality Standards Caused by Particulate Emissions from Onshore Construction Activities* Onshore Project construction activities would generate PM_{10} and $PM_{2.5}$ emissions that could cause or contribute to existing or projected violations of NAAQS and/or State Ambient Air Quality Standards (CEQA Class I; NEPA major adverse, short-term).	**AM AIR-2a. Fugitive Dust Controls.** The Applicant or its designated representative would provide for the following control measures: • Excavation and spoils would be watered down; • Spoil piles that remain more than a few weeks would be covered with tarps; • Water trucks would be used for dust suppression; and • Disturbed areas not covered with surface structures, such as buildings and pavements, would be stabilized following construction activities. This stabilization may involve planting these areas with suitable vegetation to minimize future on-site soil loss and off-site sedimentation. **MM AIR-2b. Construction Fugitive Dust Plan**. The Applicant or its designated representative shall be required to develop, and submit to the VCAPCD and the SCAQMD for approval, a Construction Fugitive Dust Control Plan prior to the commencement of construction activities. The plan shall be incorporated into all contracts and contract specifications for construction work. At a minimum, the control measures specified in the plan shall include Applicant measures and conform to all applicable requirements of SCAQMD Rule 403 (as listed for large construction operations) in both Ventura and Los Angeles counties. The plan shall outline the steps to be taken to minimize fugitive dust generated by construction activities by: • Describing each active operation(s) that may result in the generation of fugitive dust; • Identifying all sources of fugitive dust, e.g., earth moving, storage piles, vehicular traffic; and • Describing the control measures to be applied to each of	Onshore	USCG/CSLC	Pre-Construction, Construction

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	the sources of dust emissions identified above. The descriptions shall be sufficiently detailed to demonstrate that the best available control measure(s) required by the SCAQMD and the VCAPCD for linear projects will be used and/or installed during all periods of active operations. • Stipulating the use of the following control measures, in addition to or as listed in SCAQMD Rule 403, such as, but not limited to: – Use of street sweeping and trackout devices at all construction sites. – Frequent watering or stabilization of excavation, spoils, access roads, storage piles, and other sources of fugitive dust. – Installing temporary coverings on storage piles when not in use. – Pre-watering of soils prior to trenching. – Dedicating water truck or high-capacity hose to any soil screening operations. – Minimizing drop height of material through screening equipment. Due to potential exceedances of applicable air quality standards, this plan shall also identify specific methodologies for taking "real-time" measurements of PM_{10} and $PM_{2.5}$ ambient concentrations at locations along the boundary of the proposed construction areas. The plan shall include a description of "action levels" for these measurements and the corresponding steps to be taken, e.g., increase watering to reduce ambient particulate concentrations. The specified monitoring methodologies included in this plan must meet the approval of the VCAPCD and the SCAQMD. The Applicant or its designated representative shall submit this plan and related			

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	construction contract specifications to the CSLC, the USEPA and, to the extent applicable under local rules and regulations, the VCAPCD and the SCAQMD. The Applicant or its designated representative shall obtain prior approval from the SCAQMD or the VCAPCD prior to any deviations from fugitive dust control measures specified in the Construction Fugitive Dust Plan. A justification statement used to explain the technical or safety reason(s) that preclude the use of required fugitive dust control measure(s) shall be submitted to the appropriate agency for review. **MM AIR-1e. USEPA Tier 3 Nonroad Engine Standards** would apply to this impact. **MM AIR-1f. Construction Emissions Reduction Plan** would apply to this impact. **MM AIR-1g. Construction Equipment Documentation** would apply to this impact.			
AIR-3: *Violations of Ambient Air Quality Standards, Exposure of the Public to Substantial Pollutant Concentrations, and/or Creation of Objectionable Odors Caused by an Accidental LNG Spill or Pipeline Rupture* Although rare, an LNG spill from the FSRU or a pipeline rupture would result in a natural gas release and/or a fire that could cause temporary increases in ambient air concentrations of criteria pollutants in excess of air quality standards, expose sensitive receptors and the general public to substantial concentrations of toxic air contaminants, and/or create objectionable odors (CEQA Class I; NEPA moderate	**AM PS-3a. More Stringent Pipeline Design** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **AM PS-4a. Class 3 Pipeline Design Criteria** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **MM PS-3c. Areas Subject to Accelerated Corrosion, Cathodic Protection System** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **MM PS-4c. Install Additional Mainline Valves Equipped with Either Remote Valve Controls or Automatic Line Break Controls** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **MM PS-4d. Treat Shore Crossing as Pipeline HCA**	Onshore and Offshore	USCG/CSLC	Pre-Construction, Construction, Operations

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
adverse, short-term).	would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **MM PS-4e. Safety Marker Indicating the Presence of Buried Natural Gas Pipeline at Ormond Beach** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **MM PS-4f. Emergency Response** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **MM PS-5a. Treat Manufactured Home Residential Community as a High Consequence Area** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis").			
***AIR-4**: Emissions of Ozone Precursors from the FSRU* Emissions of NO_x and ROC generated from FSRU equipment could contribute to ambient ozone impacts in the areas located downwind of the Project (CEQA Class II; NEPA minor adverse, long-term).	**AM AIR-4a. Emissions Reduction Programs.** As part of air permit-to-construct application procedures, the Applicant has committed to the USEPA to achieve emissions reductions (in addition to reductions inherent to the Project) to an amount equal to the FSRU's annual NO_x emissions. The Applicant has executed contracts to retrofit two marine vessels (long haul tugs) by replacing the propulsion engines of each vessel with modern low emitting engines (Tier 2 compliant diesel-fired engines). At the request of the USEPA and the CARB, the Applicant conducted source testing to assist in determining the emission reductions expected as a result of the retrofits. The Applicant estimated that the repowering of two tugs could result in emission reductions of approximately 165.5 tons per year of NO_x. In a memorandum from the CARB to the CSLC dated February 9, 2007, the CARB outlined the apportionment of the estimated NOx emission reductions based on the anticipated tug operations within the following regions:	Offshore and Onshore	USCG/CSLC	Pre-Construction, Construction

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing

Local Air District	Emission Reductions (tons per year)
SCAQMD	47.4
VCAPCD	16.8
Santa Barbara County APCD	35.6
San Luis Obispo County APCD	15.2
Monterey Bay Unified APCD	25.4
Bay Area AQMD	25.1
TOTAL	***165.5***

The CARB reviewed the methodology used to calculate the estimated emission reductions and found it to be reasonable. However, the CARB indicated that "there is not yet a consensus on the estimated emission reductions from the mitigation proposal and that the USEPA's estimates are less than those presented here" (Fletcher 2007). The CARB memorandum is provided as Appendix G9.

The USEPA conducted its own review of the retrofit projects; based on the information submitted by the Applicant, the USEPA determined that the following emission reductions can be expected along the routes

Local Air District	Emission Reductions (tons per year)
SCAQMD	33.15
VCAPCD	11.47
Santa Barbara County APCD	25.11
San Luis Obispo County APCD	10.84
Monterey Bay Unified APCD	18.09
Bay Area AQMD	17.99
TOTAL	***116.65***

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	traveled by the tugs: Thus, the USEPA's estimate for NO_x reductions (116.65 tons per year) is less than the Applicant's estimate of NO_x reductions (165.5 tons per year) by a value of 48.85 tons per year. Further, the CARB staff question the appropriateness of counting the emission reductions in the Bay Area since these reductions would likely not benefit the regions where the Project is located. Excluding the Bay Area emissions would reduce the amount of emission reductions by 25.1 tons per year based on estimates from the Applicant (or 17.99 tons per year based on estimates from the USEPA).			
AIR-5: *Emissions of Ozone Precursors from Project Vessels Operating in California Coastal Waters* Emissions of NO_x and ROC generated from LNG carriers, tugboats, and the crew/supply boat operating in California Coastal Waters could contribute to ambient ozone impacts in the areas located downwind of the Project (CEQA Class I; NEPA major adverse, long-term).	**AM AIR-5a. Natural Gas on LNG Carriers.** The Applicant would use natural gas as the primary fuel in LNG carrier engines whenever these vessels are berthed at the FSRU and/or operating within California Coastal Waters. A small amount of ultra low sulfur diesel would be used simultaneously as a pilot fuel in LNG carrier engines resulting in a fuel mixture with a natural gas-to-diesel ratio of approximately 99 to 1. All LNG carriers that deliver LNG to the FSRU would be powered exclusively by Wartsila 50DF series dual-fuel electric engines or equivalent dual-fuel electric engines. **AM AIR-5b. Control Equipment on Support Vessels.** The Applicant would use ultra low sulfur diesel as the fuel in the engines on the tugboats and crew/supply boat. The diesel engines on these vessels would be fitted with pollution control equipment including SCR, oxidation catalysts, and particulate filters to reduce emissions. The Applicant assumed a NO_x control efficiency of 80 percent in developing its emission inventories. The Applicant also expects CO and ROC reductions of 70 percent and 40 percent, respectively. The use of this control equipment	Offshore and Onshore	USCG/CSLC	Pre-Construction, Construction, Operations

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	would result in emissions comparable to or less than emissions from natural gas-fueled engines. **MM AIR-5c. Documentation of Engine Specifications.** The Applicant shall prepare and maintain documentation that demonstrates implementation of the Applicant's emission reduction measures. The following documents and/or files shall be submitted to the USCG, CSLC, and CARB: • Final design documents for the Project crew/supply boat and tug engines, including engine specifications, air pollution control equipment specifications, and associated manufacturer/vendor emission data. • Documentation certifying that the actual emission rates for the Project crew/supply boat and tug engines are less than or equal to the "controlled" emission rates, in grams per kilowatt-hour, reported for these vessels and documented in Appendix G2. This documentation shall include a report summarizing emission testing of the newly constructed Project crew/supply boat and tug engines for NO_x, CO, ROC, and PM_{10}. • Contract documents between the Applicant or its designated representative and LNG carrier operators that specify that all LNG carriers are powered exclusively by Wartsila 50DF series dual-fuel electric engines or equivalent dual-fuel electric engines. Equivalent air emission rates will be defined in grams per kilowatt-hour. • Documentation of all LNG carriers that berth at the FSRU, which at a minimum, will include the vessel name, country of origin, engine power plant description, diesel specifications, and emission certifications.			

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EXHIBIT E

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
AIR-6: *Emissions of Ozone Precursors from Project Construction Activities in Federal Waters* Project construction activities in Federal waters would generate emissions of NO_x and ROCs that could contribute to ambient ozone impacts in the areas located downwind of the Project (CEQA Class III; NEPA minor adverse, short-term).	**MM AIR-1f. Construction Emissions Reduction Plan** would apply to this impact. **MM AIR-1g. Construction Equipment Documentation** would apply to this impact.	Offshore and Onshore	USCG/CSLC	Pre-Construction, Construction
AIR-7: *Temporary Ambient Air Quality Impacts Caused by Criteria Pollutant Emissions from Onshore and Offshore Construction Activities* Air pollutants emitted during onshore and offshore Project construction activities would cause temporary increases in ambient pollutant concentrations (CEQA Class III; NEPA minor adverse, short-term).	**MM AIR-1f. Construction Emissions Reduction Plan** would apply to this impact. **MM AIR-1g. Construction Equipment Documentation** would apply to this impact.	Offshore and Onshore	USCG/CSLC	Pre-Construction, Construction
AIR-8: *Ambient Air Quality Impacts Caused by Air Pollutant Emissions from the FSRU and Project Vessels* Air pollutants emitted from FSRU equipment and Project vessels associated with operations would cause increases in ambient pollutant concentrations (CEQA Class III; NEPA minor adverse, long-term).	None.	Offshore and Onshore	USCG/CSLC	N/A
AIR-9: *Temporary Ambient Air Quality Impacts Caused by Air Toxic Pollutant Emissions from Onshore and Offshore Construction Activities* Air toxic pollutants emitted during onshore and offshore Project construction activities	**MM AIR-1e. USEPA Tier 3 Nonroad Engine Standards** would apply to this impact. **MM AIR-1f. Construction Emissions Reduction Plan** would apply to this impact. **MM AIR-1g. Construction Equipment Documentation**	Offshore and Onshore		Construction

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
would cause temporary increases in ambient pollutant concentrations (*CEQA* Class II; NEPA minor or moderate adverse, short-term).	would apply to this impact.			
MARINE BIOLOGY (Section 4.7)				
BioMar-1: *Burial of Sessile Marine Biota* Construction activities associated with pipeline and mooring installation could temporarily disturb soft substrate sediments and could bury or crush sessile marine biota such as benthic invertebrates (CEQA Class III; NEPA minor adverse, short-term).	None.	Offshore	USCG/CSLC	N/A
BioMar-2: *Temporary Avoidance of the Area Due to Increased Turbidity from Construction Activities Offshore or Accidental HDB Release of Drilling Fluids* A release of drilling fluids and bentonite into the subtidal environment during HDB could temporarily increase turbidity. Increases in turbidity at the offshore exit point could cause fish to avoid this area and could cause adverse impacts on special status species and EFH (CEQA Class II; NEPA minor adverse, short-term).	**MM WAT-3a. Drilling Fluid Release Monitoring Plan** would apply to this impact (see Section 4.18, "Water Quality and Sediments," and Appendix D1).	Offshore and Onshore	USCG/CSLC	Pre-Construction, Construction
BioMar-3: *Temporary or Permanent Alteration or Disturbance of Marine Biota or Sensitive Habitats, including EFH.* Construction and/or operational activities could affect marine biota or alter EFH or sensitive habitats (beach spawning areas	**AM BioMar-3a. Construction/Operations Lighting Control.** A plan would be developed in consultation with a marine bird expert and submitted for approval by the USCG and the CSLC at least 60 days prior to construction. The plan would include the following lighting restrictions: • Limit lighting used during construction and operation	Offshore	USCG/CSLC	Pre-Construction, Construction, Operations

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
or hard bottom substrate), resulting in cessation or reduction of feeding or reproduction, area avoidance, or changes in migration patterns for both non-threatened and endangered and special status species (CEQA Class II; NEPA moderate or major adverse, short- or long-term).	activities to the number of lights and wattage necessary to perform such activities; • Extinguish all lights used for that activity, once an activity has been completed; • Shield lights so that the beam falls only on the workspace and so that no light beams are *directly* visible more than 3,281 feet (1000 m) distant; and • Limit lights shining into the water to the area immediately around the vessels, except that searchlights may be used when essential for safe navigation, personnel safety, or for other safety reasons. Lights required by the USCG or for safety purposes would be used in accordance with Federal regulations and would not be subject to the restrictions listed above. **AM NOI-4a. Construction Noise Reduction Measures** would apply to this impact (see Section 4.14, "Noise and Vibration"). **MM BioMar-3b. Monitoring.** If intertidal beach work occurs between February and September, the Applicant shall ensure that a qualified biologist will monitor the beach within 100 feet (30.5 m) of the route during the two weeks prior to installation. If a grunion spawning event occurs during the two weeks prior to construction activities, installation will be delayed until the grunion eggs have hatched (approximately two weeks). A qualified biologist shall determine the day in which construction can begin again after the spawning event. **MM BioMar-3c. Avoidance.** Although recent surveys of the Project site have not identified any hard bottom areas, the Applicant shall ensure that any unexpected hard bottom habitats encountered during construction will be avoided. **MM NOI-1a. Efficient Equipment Usage** would apply to			

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	this impact (see Section 4.14, "Noise and Vibration").			
BioMar-4: *Construction or Operation Vessels Act as an Attractive Nuisance or Disrupt Marine Mammal Behavior or Migrations* Construction or operational activities could alter sensitive habitats such that marine mammal reproduction could be reduced, prey species could be eliminated, or animals might avoid an area (CEQA Class III; NEPA moderate or major adverse, short- or long-term).	None.	Offshore	USCG/CSLC	N/A
BioMar-5: *Noise Disrupting Marine Mammal Behavior* Noise from construction and operation vessels or equipment could disrupt migrations; interfere with or mask communications, prey and predator detection, and/or navigation; cause adverse behavioral changes; or result in temporary or permanent hearing loss (CEQA Class I; NEPA major adverse, long-term).	**AM BioMar-9a. Avoid Offshore Construction during Gray Whale Migration Season** would apply to this impact. **AM BioMar-9b. Marine Mammal Monitoring** would apply to this impact. **MM BioMar-5a. Noise Reduction Design.** The Applicant shall work with marine architects, acoustic experts and mechanical engineers and the USCG, among others, to design the FSRU and its equipment to reduce, to the maximum extent feasible, the output of cumulative noise from the facility. **MM BioMar-5b. Acoustic Monitoring Plan.** The Applicant shall prepare an acoustic monitoring plan to obtain site-specific baseline data and empirical data prior to and during LNG operations. The tasks involved in the acoustic monitoring plan are described below. These tasks will be performed by independent, third-party monitors qualified for such tasks and approved in advance by the appropriate regulatory agencies, such as USFWS, NOAA (NMFS), and CDFG. • Obtain pre-construction, site-specific data on the presence, species composition, abundance, frequency,	Offshore	USCG/CSLC	Pre-Construction, Construction, Operations

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	and seasonality of marine mammals specific to the Project site (twice-monthly aerial line transect surveys for one to two years). • Obtain seasonal conductivity (density/salinity), temperature, and depth measurements at the Project site before construction begins. Concurrently, measure levels of natural ambient sound at the sampled depths in a variety of sea states, provided that sea conditions are not so severe that they compromise the ability to obtain good data (sound pressure level recordings). Also, measure sounds of various vessels as they pass the Project site in the nearby shipping lane (sound pressure level recordings four times a year for one to two years). • Take empirical measurements of operational sound at various depths, distances and directions from the Project site (sound pressure level recordings). Obtain seasonal conductivity (density/salinity), temperature, and depth measurements at all sampling stations. Take measurements during cold and warm water influxes. Measurements will be taken of the LNG carrier and tugs berthing and leaving FSRU; the LNG carrier attendant vessels; all operational modes of FSRU, support vessels, and helicopters during normal operations; and pipeline noise. • Document behaviors of marine mammals exposed to operational noise (passive tracking and observations four times a year for one to two years). Concurrently, measure sound levels from Project operations received by the marine mammals (sound pressure level recordings). • Evaluate acoustic monitoring results against NOAA Fisheries (NMFS)-accepted sound thresholds as results become available. In consultation with regulators, make			

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	recommendations as to whether noise levels can be reduced and whether continued or future monitoring is necessary. **MM BioMar-5c. Helicopter Altitude.** The Applicant shall ensure that helicopters maintain a flight altitude of at least 2,500 feet (762 m), except during takeoff and landing. **MM NOI-1a. Efficient Equipment Usage** would apply to this impact (see Section 4.14, "Noise and Vibration").			
BioMar-6: *Mortality and Morbidity of Marine Biota from Spills* Although rare, an accidental release of a significant amount of oil or fuel during construction or operation, or LNG spills or a natural gas leak from subsea pipelines, could cause morbidity or mortality of marine biota, including fish, invertebrates, seabirds, and special status species such as sea turtles, through direct contact or ingestion of the material (CEQA Class I; NEPA major adverse, long-term).	**AM PS-1a. Applicant Engineering and Project Execution Process** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **AM PS-1b. Class Certification and a Safety Management Certificate for the FSRU** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **AM PS-1c. Periodic Inspections and Surveys by Classification Societies** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **AM PS-1d. Designated Safety Zone and Area to be Avoided** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **AM MT-3a. Patrol Safety Zone** would apply to this impact (see Section 4.3, "Marine Traffic"). **MM PS-1e. Cargo Tank Fire Survivability** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **MM PS-1f. Structural Component Exposure to Temperature Extremes** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **MM PS-1g. Pre- and Post-Operational HAZOPs** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis").	Offshore	USCG/CSLC	Pre-Construction, Construction, Operations

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
BioMar-7: *Discharge of Bilge Water, Gray Water, and Deck Runoff* An accidental discharge of untreated bilge water, gray water, or deck runoff from the FSRU or from the LNG carriers could result in the release of contaminants into the marine environment. A release of contaminants could cause mortality or morbidity of fish and/or benthic communities, and would have the potential to adversely affect special status species (CEQA Class III; NEPA moderate or major adverse, short- or long-term).	None.	Offshore	USCG/CSLC	N/A
BioMar-8: *Release of LNG, Natural Gas, Fuel, or Oil Causes Injury or Mortality of Marine Mammals* A release of LNG, natural gas, fuel, or oil could cause injury or mortality of marine mammals through direct contact or ingestion of the material, and would have the potential to adversely affect special status species (CEQA Class I; NEPA major adverse, long-term).	**AM PS-1a. Applicant Engineering and Project Execution Process** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **AM PS-1b. Class Certification and a Safety Management Certificate for the FSRU** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **AM PS-1c. Periodic Inspections and Surveys by Classification Societies** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **AM PS-1d. Designated Safety Zone and Area to be Avoided** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **AM MT-3a. Patrol Safety Zone** would apply to this impact (see Section 4.3, "Marine Traffic"). **MM PS-1e. Cargo Tank Fire Survivability** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **MM PS-1f. Structural Component Exposure to Temperature Extremes** would apply to this impact (see	Offshore	USCG/CSLC	Pre-Construction, Construction, Operations

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	Section 4.2, "Public Safety: Hazards and Risk Analysis"). **MM PS-1g. Pre- and Post-Operational HAZOPs** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **MM MT-3f. Live Radar and Visual Watch** would apply to this impact (see Section 4.3, "Marine Traffic").			
BioMar-9: *Collision between Project Vessels and Marine Mammals or Sea Turtles* Construction and operational vessels could collide with marine mammals or sea turtles or other special status species resting on the ocean surface, resulting in injury or mortality (CEQA Class III; NEPA moderate or major adverse, short- or long-term).	**AM BioMar-9a. Avoid Offshore Construction During Gray Whale Migration Season.** The Applicant would conduct offshore construction activities outside the gray whale migration season (June 1 through November 30). **AM BioMar-9b. Marine Mammal Monitoring**. All construction vessels would carry two qualified marine monitors and all operational vessels would carry one qualified marine monitor to provide a 360-degree view and watch for and alert vessel crews of the presence of marine mammals and sea turtles during construction activities. Additionally, the following actions would be implemented, and the following information would be made available to all vessel operators associated with the Project and posted in the pilot house: • The monitors would receive training from a qualified independent marine wildlife mitigation firm approved in advance by NOAA Fisheries and USFWS, in consultation with the CDFG. The training would enable monitors to identify marine mammal and sea turtle species and to understand their behaviors, seasonal migrations, and the importance of avoiding them. • All monitors would be familiar with the mitigation measures described in the Marine Mammal Monitoring Protocol and in the Final EIS/EIR for the Project and would have a copy of these measures during monitoring. These measures spell out the specific responsibilities of the monitors and Project personnel.	Offshore	USCG/CSLC	Construction

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	• Monitors would have the authority to stop work until monitors determine there is no longer a threat and/or the animal(s) transits the area if a marine mammal or sea turtle approaches the 100-yard (91.4 m) safety zone or the monitors determine that the Project operations have the potential to threaten the health or safety of marine wildlife or "take" a protected species as defined by regulations implementing the ESA and MMPA. • While on watch, monitors would have no other duty than to observe marine mammals and sea turtles. Monitors would be on duty 24 hours a day unless the vessel is in harbor or anchorage. Watches would be divided according to the ships' schedules, but in no event would a monitor stand a total of more than 12 hours of watches during any 24-hour period. The Applicant may engage trained third-party observers, may utilize trained crew members, or may use a combination of both third-party and crew observers. During observations, monitors would follow the guidelines in MMS Notice to Lessees NTL No. 2004-G01 for visual observers regarding scheduled time on and off duty while engaged as a monitor, not to exceed more than four consecutive hours on watch as an observer. • Monitoring would be conducted during all construction activities and as each vessel travels to and from the construction site. Supply, support, and crew vessels traveling to and from the Project site during operation also would be monitored. The Applicant would meet the same requirements as other marine vessels during operations. • Each monitor would maintain watch for marine mammals and sea turtles at all times while each vessel is under way. If any whales are observed, the monitor			

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Impact	Mitigation Measure	Location	Responsible Agency	Timing
	would request the vessel operator to employ the following procedures: - Do not approach whales or any threatened or endangered wildlife closer than 1,000 feet (305 m). - Approach whales from the side or rear on a parallel course. - Do not cross directly in front of the whales. - Maintain the same speed as the whales. - Do not attempt to herd or drive any whales. - If a whale exhibits evasive or defensive behavior, stop the vessel until the whale has left the immediate area. - Do not come between or separate a mother and its calf. In addition, qualified independent monitors, approved in advance by NOAA Fisheries and the USFWS in consultation with the CDFG, would be aboard the pipelaying vessel while it is deployed at the Project site. The monitors would: - Establish and maintain communications with the vessel operator at all times. - Be positioned so that a 360-degree view is maintained. - Be on watch during all pipelaying operations, day or night. - Use night vision or low-light binoculars in reduced light. - If a collision appears likely, reduce the speed of the vessel as quickly and as much as possible and engage propulsion machinery only when necessary			

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	to maintain position. - If a collision is likely, take up observation position and require available crew aboard the ship to take up observation positions to help report sightings to the monitor so that appropriate actions can be taken to avoid collision. In the unlikely event that a whale is injured, the operator would immediately notify: - Stranding Coordinator, NOAA Fisheries, Long Beach (562-980-4017) - Enforcement Dispatch Desk, CDFG, Long Beach (562-590-5133) - Environmental Planning and Management, CSLC, Sacramento (916-574-1890) - Santa Barbara Marine Mammal Center (805-687-3255) A detailed written report would be prepared by the monitor and dispatched to NOAA Fisheries, USFWS, the CDFG, and the CSLC. A final report summarizing the monitoring activities for the Project would also be provided to the above-mentioned agencies within 60 days of the conclusion of offshore facilities construction. Monthly reports would be prepared by the monitor summarizing marine mammal sightings and any steps taken to avoid adverse impacts.			
BioMar-10: *Entanglement of Marine Mammals, Sea Turtles and Other Special Status Species.* Marine mammals or sea turtles or other special status species could become entangled in construction or operation equipment, causing injury or mortality.	**AM BioMar-9b. Marine Mammal Monitoring** would apply to this impact. **MM BioMar-10a. Deployment of Potentially Entangling Material.** The Applicant shall ensure that the vessel operator deploys any material that has the potential for entangling marine mammals or sea turtles only for as long as necessary to perform its task, and then immediately	Offshore	USCG/CSLC	Pre-Construction, Construction, Operations

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
(CEQA Class II; NEPA moderate or major adverse, short- or long-term)	removes such material from the Project site. Possible slack shall be taken out of any material that could cause entanglement unless such slack is necessary to allow for currents, tides, and other factors. In the unlikely event that an entanglement appears likely, the marine mammal monitor shall request the operator to remove all material that could cause entanglement, if possible, and to take up as much slack as possible in material that cannot be immediately removed. Temporary mooring buoys shall be positioned with heavy steel cables or chains to minimize potential entanglements. Mooring lines shall be used only when vessels are moored and shall not be left on mooring buoys when not in use. **MM BioMar-10b. Notification.** In the unlikely event that a marine mammal or sea turtle is entangled, the Applicant shall require the vessel operator to immediately notify the stranding coordinator at NOAA Fisheries in Long Beach (562-980-4017) and the Santa Barbara Marine Mammal Center (805-687-3255) so that a rescue effort may be initiated.			
BioMar-11: *Discharge of Ballast Water Potentially Containing Exotic Species* A release of ballast water containing exotic species could introduce exotic species that directly compete with native organisms, affecting the viability of native species, including special status species (CEQA Class III; NEPA moderate or major adverse, short- or long-term).	None.	Offshore	USCG/CSLC	N/A
BioMar-12: *Increase/Decrease in Fish Abundance or Commercially Important Benthic Species.* Commercially important fish species could	None.	Offshore	USCG/CSLC	N/A

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
potentially avoid the Project site due to increased human activity and Project-related noise. Additionally, fish and other benthic species could be attracted to the low relief habitat provided by the subsea pipeline, decreasing abundance in other heavily fished areas (CEQA Class III; NEPA moderate or major or adverse or beneficial, short- or long-term).				
TERRESTRIAL BIOLOGY (Section 4.8)				
TerrBio-1: *Temporary Increase in Sedimentation* Construction activities could cause a temporary increase in sedimentation and soil erosion and expose contaminated soils during trenching activities, which could cover or damage plants, including special status species. The HDB procedures to install the pipelines beneath Ormond Beach may present remote potential for drilling fluid seepage. These construction methods could cause habitat degradation for sensitive and special status plant species or wetlands (CEQA Class II; NEPA minor adverse, short-term).	**AM TerrBio-1a. Erosion Control.** To minimize sedimentation, the Applicant or its designated representative would implement the following measures during construction: • Clearing of vegetation would be confined to the minimal area needed to conduct the construction activities. • Any work near or adjacent to any stream, wetland, or waterway would be protected by installing erosion-control fencing or other devices such as hay bales, straw rolls, matting, or mulch. • Work near or in waters of the United States would be conducted in a manner that minimizes turbidity, erosion, and other water quality impacts regulated by resource agencies. • Any construction debris that may be stored near or adjacent to streams or other waterways would be contained to prevent any erosion into the adjacent streams or waterways. • Construction equipment would be stored and maintained at least 50 feet (15.2 m) from streams or other waterways. • At the completion of construction activities, disturbed	*Onshore*	USCG/CSLC	*Pre-Construction, Construction, Operations*

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	soils would be stabilized and erosion-control fencing would remain until restoration activities ensure that soil is properly stabilized. • BMPs would be incorporated into the construction activities. **MM TerrBio-1b. Spill Containment/Management.** The Applicant or its designated representative shall implement the following measures to control and manage spills: • When working near waterways, the contractor shall have an emergency spill containment kit to contain and remove spilled fuels and hydraulic fluids. • When feasible, equipment and vehicles shall be fueled and maintained in a designated Maintenance and Staging Area. Equipment refueling or storage of hazardous or petroleum materials shall not occur within 100 feet (30.5 m) of sensitive habitat, wetlands, beaches, streams, or other waterways. If a 100-foot (30.5-m) buffer is not feasible for a given refueling activity, secondary containment shall be employed during the fuel transfer, and the transfer shall be continuously monitored to prevent accidental spills. • If a designated area is not available, construction equipment shall be stored and maintained at least 100 feet (30.5 m) from any jurisdictional stream channel, or as far away as available space allows in the ROW corridor. If this is not feasible at a particular crossing location because of space limitations or equipment breakdown, the Applicant shall implement BMPs to ensure that equipment, fuel, and spoils do not enter the stream channel. Appropriate BMPs include safety fencing, secondary containment for fuel tanks and fuel transfers, drip pans, spill kits, and proper disposal of waste products.			

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	• All contaminated soils and materials shall be excavated and removed from the site and disposed of appropriately to prevent sensitive animal species from becoming exposed to or killed by the effects of fuel, oil, or other chemicals used during construction. **MM WAT-3a. Drilling Fluid Release Monitoring Plan** would apply here (see Section 4.18, "Water Quality and Sediments"). **MM WAT-4a. Strategic Location for Drilling Fluids and Cuttings Pit** would apply here (see Section 4.18, "Water Quality and Sediments").			
TerrBio-2: *Temporary or Permanent Impacts Regarding Construction, Operation, and Maintenance Effects on Rare and Special Status Plants* Upland vegetation removal during onshore pipeline construction, maintenance, and repair activities could result in the loss of special status plants (CEQA Class II; NEPA major or moderate adverse, short- or long-term).	**AM TerrBio-2a. Additional Pre-Construction Plant Surveys**. The Applicant or its designated representative would conduct additional pre-construction surveys to further define the location of special status plants identified during the spring and summer 2005 surveys. The surveys would be conducted according to survey protocols established by the USFWS or the CDFG. These surveys would occur prior to initiation of construction activities. The surveys would be conducted at the appropriate time of year in order to confirm the presence or absence of special status plants occurring within the Project area. Results of the additional surveys would supplement the existing data and would be used to map sensitive areas for avoidance during construction. Any future maintenance activities would require new surveys and consultation with the USFWS and/or the CDFG prior to ground disturbance. If listed plants were identified in the construction areas, the Applicant would comply with the terms and conditions in the Biological Opinion (BO) for the Project. Sensitive resources near construction areas would be identified and clearly marked for avoidance. Taking of Federal- or State-listed species would be avoided or would be consistent with	Onshore	USCG/CSLC	Pre-Construction, Construction

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	appropriate permits and the terms and conditions in the BO. Additional measures that would be undertaken include the following: • Delineation of habitat for special status species would be conducted by a qualified botanist. Flagging, mapping, and fencing would be used to protect any special status plants within 200 feet (61 m) of the ROW. • Any special status plants within the 80-foot (24.4 m) ROW, work areas, access roads, and staging areas would be flagged, mapped on construction plans, and fenced to protect the area during construction. • A biological monitor would supervise installation of construction fencing, and appropriate buffer distances would be determined. The monitor would have the authority to require installation of silt fencing in highly sensitive areas or under certain conditions where erosion could impact a special status plant or its habitat. • If sensitive resources cannot be avoided, no work would be authorized until the appropriate resource agencies (CDFG and USFWS) determine that the action would not result in significant biological impacts. **AM TerrBio-2b. Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP).** Additional surveys would be conducted within any areas potentially impacted by Project activities during construction or operation where special status plant species potentially occur. Surveys would be conducted in consultation and coordination with agencies and according to any existing species-specific protocols. Results of the surveys would be used to develop a BRMIMP. The Applicant's proposed mitigation measures to address construction and maintenance effects on special status plant species include			

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	implementation of a BRMIMP. It would identify: • All biological resources mitigation, monitoring, and compliance conditions specified in any permits acquired for the Project; • All sensitive biological resources to be impacted, avoided, or mitigated by Project construction, operation, and closure; • All required mitigation measures/avoidance strategies for each sensitive biological resource; • All locations, on a map of suitable scale, of laydown areas and areas requiring temporary protection and avoidance during construction; • All natural areas disturbed during Project construction activities in pre- and post-construction photographs; • Duration of biological monitoring and a description of monitoring methodologies and frequency; • Success criteria for proposed mitigation; and • Remedial measures to be implemented if success criteria are not met. The Applicant's measures for the BRMIMP would include the following: • Measures to avoid special status wildlife and plants and their habitats during pipeline construction, operations, and maintenance, including restrictions in sensitive coastal areas, mapping, and avoidance of sensitive resources; • Measures to protect nesting birds under the Migratory Bird Treaty Act, including avoiding construction activities during the breeding season. If construction cannot avoid the breeding season, pre-construction surveys for nests would occur per CDFG protocols; any nest found within the construction area would be subject to CDFG			

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	buffer and monitoring requirements and would require consultation with the CDFG; • Restoration of sensitive vegetation types (coastal and riparian) potentially impacted during pipeline installation or repair, in accordance with other relevant mitigation measures; • Inclusion of measures in an Operation and Maintenance Plan to avoid and minimize impacts on special status wildlife, plants, bird nesting areas, and sensitive or protected habitats such as riparian areas during routine operation or maintenance activities; • Creation of a map of the pipeline route depicting the location of all special status plants, wildlife, important nesting areas, and wetlands, to be used during necessary vehicular travel, for pedestrian use, or during equipment placement, to avoid these resources; • Prohibition of disturbance to and clearing of coastal, riparian, and wetland vegetation during inspections. Travel and work areas would be flagged and fenced before repair work to identify and avoid impacts on sensitive habitats as depicted on the pipeline map; and • Maintenance of records of mitigation implementation on file at the pipeline maintenance office. **AM TerrBio-2c. Employee Environmental Awareness Program (EEAP).** The Applicant or its designated representative would conduct an employee awareness program before groundbreaking to explain the applicable endangered species laws and any endangered species concerns to contractors working in the area. Through the EEAP, all of the Applicant's employees, designated representatives, and subcontractors would be informed of the sensitive biological resources potentially occurring in the Project area. The Applicant's EEAP would:			

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	• Discuss the locations and types of sensitive biological resources on the Project site and in adjacent areas; • Discuss the importance of removing trash from the work area and adhering to all other applicable BMPs; • Cite the laws, policies, or other reasons for protecting these resources; • Present the meaning of various temporary and permanent habitat protection measures; • Describe what to do if previously unidentified sensitive resources are encountered; • Identify whom to contact if there are further comments and questions regarding the material discussed in the program; • Discuss traffic management strategies to avoid mortality of sensitive small mammals, reptiles, and other less mobile species, which are designated as rare, threatened, endangered, or a species of concern, pursuant to the first bullet. Such strategies may include (1) restriction of all Project-related vehicle and equipment traffic to established roads or access routes; (2) enforcement of a 20-mile (32 km) per hour speed limit within the work areas, except on county roads and highways; and (3) identification of vehicle and equipment access routes and work area before pipeline construction activities begins; and • Discuss the importance of maintaining site safety to avoid mortality of small mammals, reptiles, and other less mobile species, which are designated as rare, threatened, endangered, or a species of concern, pursuant to the first bullet. Issues to discuss may include (1) prohibition of pets or firearms on the Project			

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Table 6.1-1 **Mitigation Monitoring Program**

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	site; (2) maintenance of designated protected areas; and (3) installation of exclusionary fencing in and flagging of adjacent habitats that potentially support listed species or sensitive habitat to delineate work area to prevent equipment from entering into adjacent habitat. Each participant in the on-site EEAP would sign a statement declaring that he or she understands and will abide by the guidelines set forth in the program materials. In addition, the Applicant would be responsible for ensuring that all Project personnel and subcontractors adhere to the guidelines and restrictions. Additional training would be conducted as needed—including morning "tailgate" sessions—to update crews as they advance into sensitive areas and to educate new personnel brought on the job during the construction period. Project personnel would receive a hardhat sticker or be issued a card verifying compliance with these measures. In addition, a record of all personnel trained during the Project would be maintained and made available for compliance verification. **AM TerrBio-2d. Biological Monitoring.** The Applicant or its designated representative would use a qualified biological monitor to conduct the EEAP program and on-site biological monitoring. According to the Applicant, the minimum qualifications of the biological monitor would be: • A bachelor's degree in biological sciences, zoology, botany, ecology, or a closely related field; • Three years of experience in field biology; • One year of field experience with resources found in or near the Project area; and • Ability to demonstrate the appropriate education and experience for the biological resource tasks that must be addressed during Project construction and operation.			

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EXHIBIT E

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	The biological monitor would supervise and verify the implementation of the EEAP, the Erosion Control Plan, and the BRMIMP. The biological monitor would be present for all water crossings and for work in areas where sensitive plants have been identified and would be responsible for pre-construction surveys, administering the EEAP for construction crews, staking sensitive resources, on-site monitoring, documentation of violations and compliance, coordination with contract compliance inspectors, and post-construction documentation. The biological monitor would be qualified to recognize potential construction effects on these resources. The biological monitor would ensure that State and/or Federal wetland protection guidelines are followed and that an adequate setback of at least 15 feet (4.6 m) (or other distance mandated by the CDFG or the USFWS) is observed at wetland and/or riparian (woody vegetation) edges. **AM TerrBio-2e. Confine Activity to Identified ROW.** The Applicant or its designated representative would limit all proposed roadway construction to the existing roadway surface wherever special status plants or their habitats occur adjacent to the roadway. In addition, the Applicant would confine construction equipment to the roadway surface and would restrict associated activities to the 80-foot (24.4 m) ROW in all areas that support sensitive resources near work areas, as identified on Project maps. In sensitive areas that would be avoided by directional drilling, drill rigs and equipment staging would remain outside sensitive habitats, with an adequate buffer, consistent with established resource agency guidelines to avoid potential adverse effects on the resource. Work area boundaries would be delineated with flagging or other marking to minimize surface disturbance associated with vehicle straying and to minimize the			

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	potential for inadvertent worker intrusion into sensitive areas. Special habitat features identified by the biological monitor would be avoided, and previously disturbed areas within the Project ROW would be used for stockpiling excavated materials, equipment storage, and vehicle parking. During EEAP training, construction personnel would be informed of the importance of remaining within the designated ROW. The Lead Resource Coordinator, with support from biological monitor(s), as necessary, would ensure that construction equipment and associated activities avoid any disturbance of sensitive resources outside the ROW. **MM TerrBio-2f. Riparian Avoidance and Restoration.** The Applicant or its designated representative shall avoid, minimize, and compensate for impacts on riparian habitat during construction due to trenching or open cut crossings of waters of the United States by: • Avoiding potential impacts on riparian forest by clearly identifying and marking important areas, boring under waters of the United States where feasible, and identifying any proposed riparian habitat removal (and subsequent restoration) locations; • Consulting with the CDFG for any unavoidable impacts on riparian vegetation, and fencing riparian vegetation adjacent to work areas to prevent impacts; • Preparing and implementing riparian restoration, including replanting and monitoring elements. Implementation of these measures shall be supervised and verified by an approved biological monitor; • Before construction, identifying methods to restore the beds and banks of waters of the United States to pre-construction conditions, including appropriate replacement ratios. Such methods shall be in			

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	accordance with issued permit conditions or, at a minimum, a 3:1 replacement ratio of habitat acreage and a 12:1 replacement ratio of trees (as recommended by CDFG) and shrubs present before construction; and • Identifying restoration methods, including native tree and shrub species matching pre-construction conditions, understory native seed mix composition and application methods, planting methodology, description of monitoring efforts to measure replacement success, success criteria, and contingency measures for off-site habitat creation in the event mitigation measures are unsuccessful or success criteria are not satisfied. **MM TerrBio-2g. Tree Avoidance and Replacement.** The Applicant or its designated representative shall, to the extent possible, avoid, minimize, and compensate for impacts on trees by implementing the following: • Pre-construction identification, fencing, and avoidance of trees to the maximum practicable extent during construction; • Replanting of tree rows impacted by construction activities on a 2:1 replacement ratio, as recommended by CDFG. Replacement trees would be 15-gallon trees approximately 8 to 10 feet in height. The type of tree planted would be determined in consultation with the CDFG and the landowner, and planting of native tree species such as native sycamore, oak or other large native tree species is recommended; • Consultations with local jurisdictions if unavoidable impacts on locally protected trees ("Protected Trees") are likely to occur. Pockets of coast live oaks potentially occur within the proposed Project ROW in Los Angeles County, and permits must be obtained if any of these trees would have to be removed for pipeline installation;			

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	• Replacement of oak trees as required under the City of Santa Clarita Oak Tree Ordinance; • Development and implementation of a Tree Replacement Plan for loss of and/or significant damage to trees; • Supervision and verification of the implementation of these measures by the biological monitor; and • Monitoring, nurturing and protection within the dripline of trees replaced for a minimum of five years.			
TerrBio-3: *Temporary or Permanent Changes to Wetlands or Waters of the United States during Construction* Construction (such as trenching) in wetlands or waters of the United States could remove vegetation, including special status species, disrupt the hydrology of the wetlands within and adjacent to the construction area, or alter the habitat for special status plant species (CEQA Class II; NEPA major or moderate adverse, short- or long-term).	**AM WAT-6b. Spill Response Plan** (see Section 4.18, "Water Quality and Sediments"). **MM TerrBio-3a. Avoid, Minimize, or Reduce Impacts on Wetlands.** Impacts on wetlands or waters of the United States shall be avoided, minimized, or reduced by at least the following mitigation measures: • Identifying and marking any wetland areas, including those identified to support special status species, to be avoided during construction and operation activities; • Limiting the width of the construction ROW through identified wetlands or waters; • Limiting the operation of construction equipment within the wetlands or waters to the greatest extent possible; and • Using prefabricated mats in saturated or standing water wetlands. **MM TerrBio-2f. Riparian Avoidance and Restoration** would apply here.	Onshore	USCG/CSLC	Pre-Construction, Construction
TerrBio-4 *Permanent Impact Caused by Noxious Weed Invasion* Construction-related disturbance could provide an opportunity and seedbed for	**AM TerrBio-4a. Weed Management.** The Applicant or its designated representative would implement the following measures to prevent the spread of invasive weeds: • A noxious weed survey would be performed to identify	Onshore	USCG/CSLC	Pre-Construction, Construction

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
the invasion of weeds, which could adversely affect special status plant species or habitats and upland vegetation (CEQA Class III; NEPA major or moderate adverse, short- or long-term).	known locations of noxious weeds or populations currently being managed by the county noxious weed boards. • Invasive exotic plants would be removed from the work area. • When equipment is mobilized from an area infested with exotic plant species, the tires and undercarriages of all vehicles and construction equipment would be sprayed or washed to prevent the spread of noxious weed species into an unaffected area. Other elements of the Applicant's Weed Management Program would include procedures to monitor and control the spread of weed populations along the pipeline. The biological monitor would implement the program by following procedures outlined in the Weed Management Program: • Clean all vehicles used in terrestrial construction before operating on and off maintained roads; • Obtain all fill material, soil amendments, and gravel required for construction/restoration activities from a "weed-free" source; • Clear existing vegetation from areas only for the width needed for active construction activities; • Salvage and replace the upper 12 inches (0.3 m) of topsoil (or less, depending on the existing depth of the topsoil) wherever the pipeline is trenched through open land (not including graded roads and road shoulders); and • Revegetate disturbed soils with an appropriate seed mix that does not contain introduced or noxious weeds			
TerrBio-5: *Direct Permanent Impact on Wildlife Mortality*	**AM TerrBio-2c. Employee Environmental Awareness Program (EEAP)** would apply here.	Onshore	USCG/CSLC	Pre-Construction, Construction

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Impact	Mitigation Measure	Location	Responsible Agency	Timing
Construction activities associated with pipeline installation, staging areas, HDD or HDB locations, and access roads could cause the mortality of small mammals, reptiles, and other less-mobile species. Direct mortality could also be associated with increased human activity, particularly involving wildlife habitat removal and animal/vehicle collisions (CEQA Class II; NEPA moderate or major adverse, long-term).	**AM TerrBio-2d. Biological Monitoring** would apply here. **MM TerrBio-5a. Pre-Construction Wildlife Surveys.** To minimize the potential for causing mortality of local wildlife, the Applicant or its designated representative shall engage a qualified wildlife biologist to conduct additional pre-construction surveys in advance of any vegetation clearing, or excavation or other activity that causes disturbance to surface soils. Surveys would be completed by a competent biologist, familiar with local birds, mammals, amphibians, and reptiles, with survey requirements including any relevant agency protocols, and survey seasons.			
CULTURAL RESOURCES (Section 4.9)				
CULT-1: *Marine Archaeological Sites and Artifacts* The Project could violate cultural resource standards or cause an adverse change in archaeologically significant resources in offshore Project areas (CEQA Class III; NEPA major adverse, long-term).	**AM CULT-1a. Marine Archaeological Surveys.** Additional marine archaeological surveys would be performed to confirm the location of and gather further information on the submerged objects determined to be subject to potential impact from the Project. Shipwrecks or other underwater cultural resources identified as culturally significant would be avoided. Pipelaying barges would use dynamic positioning except near shore, where normal anchoring could occur (as identified in the Applicant's Anchor Mitigation Plan for HDB Nearshore Pipeline Project Marine Operations).	Offshore	USCG/CSLC	Pre-Construction, Construction
CULT-2: *Native American Values* The Project could violate cultural resource standards by impacting resources that are of value to Native American culture and heritage, particularly the Ventura Chumash (CEQA Class III; NEPA major adverse, long-term).	**AM CULT-2a. Site Avoidance.** The Applicant would avoid identified sites and adhere to State of California burial remains legislation and the Native American Graves Protection and Repatriation Act as applicable. **AM CULT-2b. Native American Values.** The Applicant would incorporate the following measures to avoid impacts on Native American values: • Native American monitoring would be included in Project-related activities that result in disturbance of surface and subsurface components of archaeological	Onshore	USCG/CSLC	Pre-Construction, Construction

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Impact	Mitigation Measure	Location	Responsible Agency	Timing
	sites; • Artifacts recovered from archaeological sites would be curated at a qualified museum or historical facility that allows access to Native Americans; • Procedures specified in the State CEQA Guidelines 15064.5(e) and Health and Safety Code § 7050.5 and Public Resources Code § 5097.98 would be implemented if human remains are discovered in the Project area; and • Significant oak trees and other plants and animals of local Native American concern would be avoided to the extent possible, and impacts on native plants would be minimized by allowing collection of herbs before construction and by relocating and replanting grasses. If such resources are unavoidable during Project construction or maintenance, further investigations in the form of complete documentation would be implemented. All such investigations would include Native American participation where mandated by Federal, State, and local law. **AM CULT-1a. Marine Archeological Surveys** applies here. **AM CULT-3a. Archaeological Monitoring** applies here. **AM CULT-3b. Unanticipated Discovery Plan** applies here. **AM CULT-3c. Pre-Construction Pedestrian Survey** applies here (onshore only).			
CULT-3: *Terrestrial Historic or Archaeological Resources* The Project could violate cultural resource standards, cause an adverse change in the significance of a historic or archaeological resource, or disturb human	**AM CULT-3a. Archaeological Monitoring.** A qualified archaeologist would monitor all construction within 328 feet (100 m) of archaeological sites and areas with high potential for the occurrence of sites buried under alluvium, including the shoreline crossing. If sites are identified during the monitoring phase of construction, the	Onshore	USCG/CSLC	Pre-Construction, Construction

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
remains in onshore Project areas (CEQA Class III; NEPA major adverse, long-term).	archaeologist would be empowered to stop all construction activities in the vicinity of the find and evaluate the resource. Such evaluation would require a Phase 2 subsurface testing and evaluation program. If remains prove to be significant and site avoidance cannot be implemented through Project redesign, a Phase 3 data recovery program would be implemented to mitigate impacts. **AM CULT-3b. Unanticipated Discovery Plan.** To ensure compliance with mitigation measures, a cultural resources management plan has been developed pursuant to all relevant Federal, State, and local cultural resources guidelines and criteria, including NEPA § 101(b), and CEQA Guidelines §§ 15064.5(e) and (f). The plan includes an overview of the regulations that apply in the event of an unanticipated discovery and identifies specific steps to be undertaken for treatment or discovery of remains. The plan covers: • Authority to halt construction; • Procedures when skeletal remains are found; • Protection while awaiting recommendations from most likely descendants; • Treatment as recommended by most likely descendants; • Reporting; and • Curation of archaeological material not associated with human remains. **AM CULT-3c. Pre-Construction Pedestrian Survey.** The Applicant would employ a qualified archaeologist to conduct a pre-construction pedestrian survey over any segments of the route that have not already been surveyed. If unanticipated surface evidence of an archaeological site is observed, the Applicant would follow the Unanticipated			

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	Discovery Plan.			
ENERGY (Section 4.10)				
ENE-1: *Access to Oil and Gas Resources* The Project may temporarily restrict access to or availability of oil and gas resources (CEQA Class III; NEPA minor adverse, short-term).	None.	Onshore	USCG/CSLC	N/A
ENE-2: *Create Significant Effects on Local or Regional Energy Supplies* The Project would have a beneficial impact on local and regional energy supplies (CEQA Class IV; NEPA beneficial).	N/A - beneficial impact.	Onshore (Regional)	USCG/CSLC	N/A
GEOLOGY (Section 4.11)				
GEO-1: *Worsens Existing Unfavorable Geologic Conditions and/or Releases Toxic or Other Damaging Material into the Environment* Construction activities could temporarily worsen existing unfavorable geologic conditions (CEQA Class II; NEPA moderate or major adverse, long-term).	**AM GEO-1a. Drilling Location.** For HDB activities at the shore crossing, the Applicant or its designated representative would locate the onshore entry and offshore exit points of the drilling outside of the area affected by normal storms. In addition, the pipeline would be buried deep enough to prevent surfacing due to storm-induced erosion. **AM TerrBio-1a. Erosion Control** would apply to this impact (see Section 4.8, "Biological Resources – Terrestrial") **MM GEO-1b. Backfilling, Compaction, and Grading.** Following construction of the onshore pipelines, the Applicant or its designated representative shall properly backfill and compact the right-of-way as defined by standard construction practices, grade the trench to preexisting contours and revegetate/restore the landscape to preexisting conditions to prevent preferential flow paths, erosion, or subsidence.	Offshore and Onshore	USCG/CSLC	Pre-Construction, Construction, Post-Construction

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	MM WAT-3a. Drilling Fluid Release Monitoring Plan would apply to this impact (see Section 4.18, "Water Quality and Sediments").			
GEO-2: *Cause a Loss of a Unique Paleontological Resource* Construction activities could disturb or destroy paleontological resources; such impacts are typically permanent (CEQA Class II; NEPA moderate or major adverse, long-term).	**MM GEO-2a. Inspection.** The Applicant or its designated representative shall have a qualified paleontologist complete a paleontological inspection prior to excavating in the suspect areas between Center Road Pipeline MP 12.6 and MP 14.3 in Beardsley Wash, and Line 225 Pipeline Loop from Loop MP 0.0 to MP 3.5 and MP 6.7 and MP 7.7. Paleontological monitoring of excavations in these areas shall be undertaken by a qualified paleontologist based on the findings of the inspection. The paleontologist shall provide education and training for construction workers about potential paleontological resources that may be discovered and, subject to prior approval by the CSLC, he/she shall have the ability to stop construction if potentially significant resources are identified and threatened by the Project. All specimens collected from public land shall be deposited at a curating institute such as the University of California.	Onshore	USCG/CSLC	Pre-Construction, Construction
GEO-3: *Expose People or Structures to Adverse Effects Due to Direct Rupture along Fault Lines, Ground Shaking, or Seismic-related Ground Failure* Damage to pipelines or other facilities could occur due to direct rupture (ground offset) along fault lines (CEQA Class II; NEPA moderate or major adverse, short-term).	**AM GEO-3a. Avoidance.** The Applicant would avoid crossing known active fault zones, where possible. **AM GEO-3b. Pipeline Flexibility.** Except for the shore crossing, where the pipelines would be installed beneath Ormond Beach, the Applicant would install the offshore pipelines directly on the seabed surface to allow enhanced flexibility (compared with a buried pipeline) and to help them withstand movement caused by fault rupture. Under normal conditions (not due to mass movement) some sediment may cover the pipelines; however, minor sediment should not affect the flexibility of the pipelines. Pipeline routes would also be designed to cross potential faults at as much as a right angle as possible if determined by site-specific conditions to be the most appropriate	Onshore and Offshore	USCG/CSLC	Pre-Construction, Construction, Operations

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	design. Offset of pipelines crossing strike-slip or normal faults at right angles typically induces tension in the pipe, rather than compression. Pipelines can withstand significant offset when in tension. **MM GEO-3c. Geotechnical Studies.** The Applicant, as a condition of any lease, shall complete final site-specific geotechnical and seismic hazard studies, to be approved by the CSLC and USCG or MARAD, as appropriate, prior to final pipeline design and construction. The studies shall cover suspected active fault crossings to accurately define the fault plane location, orientation, and direction of anticipated offset, and shall include the magnitude of the anticipated offset at the fault locations; this information shall be used to refine fault crossing design parameters. The final site investigation report(s) shall contain, at a minimum, the following information: For Offshore Pipelines: • A wide-area swath bathymetry program to evaluate turbidity flow pathways from canyons that are outside the immediate Project area; • Additional near-bottom geophysical surveys (side-scan sonar and sub-bottom profiler data); • Shallow geotechnical borings at each anchor location and pipeline end member location; • Shallow geotechnical borings at selected locations along the route of the proposed pipelines to evaluate soil conditions, including fault zones; • Shallow geotechnical borings within canyon sidewalls adjacent to the route of the proposed pipelines to assess soil conditions relative to slope stability; and • Shallow geotechnical borings along the HDD path to			

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	evaluate soil conditions in the offshore area. For Onshore Pipelines: • Shallow geotechnical borings at selected locations along the onshore pipeline route to evaluate soil conditions, including near any fault zones; and • Shallow geotechnical borings at selected locations associated with identified landslide hazard areas adjacent to the proposed pipeline route to assess soil conditions relative to slope stability. **MM GEO-3d. Design and Operational Procedures.** The Applicant shall evaluate a larger trench, engineered backfill, thicker wall pipe, and telemetric control for final pipeline design. The Applicant shall use design guidelines in the publications *Draft Guideline for Assessing the Performance of Oil and Natural Gas Pipeline Systems in Natural Hazard and Human Threat Events,* and *Guidelines for the Seismic Design and Assessment of Natural Gas and Liquid Hydrocarbon Pipelines.* **MM PS-4c. Install Additional Mainline Valves Equipped with Either Remote Valve Controls or Automatic Line Break Controls** would apply to this impact.			
GEO-4: *Cause Severe Damage to Project Components as a Direct Consequence of a Geologic Event, Releasing Toxic or Other Damaging Materials into the Environment.* Ground shaking from earthquakes, which is of a transitory and sporadic nature, could damage Project components (CEQA Class II; NEPA moderate or major adverse, short-term).	**MM GEO-4a. Design for Ground Shaking.** The Applicant shall employ proper seismic design, including but not limited to the design guidelines in the publications *Guidelines for the Design of Buried Steel Pipe*, *Guidelines for the Seismic Design of Oil and Gas Pipeline Systems*, and the American Society of Mechanical Engineers' *Managing System Integrity of Gas Pipelines.*	Onshore and Offshore	USCG/CSLC	Pre-Construction, Construction
GEO-5: *Damage a Pipeline due to Landslides, Mudflow, Lateral Spreading,*	**AM GEO-5a. Avoid Areas of Mass Movement.** To the extent possible, the Applicant would avoid areas of soil	Offshore	USCG/CSLC	Pre-Construction

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
Subsidence, Liquefaction, or Collapse as a Result of Locating the Project on a Geologic Unit or Soil that is Unstable Mass movement, which is of a transitory and sporadic nature, could damage pipelines or structures (CEQA Class III; NEPA moderate or major adverse, short- or long-term).	susceptible to mass movement and areas of steeper slopes (for example, where the proposed Line 225 Pipeline Route crosses at the Santa Clara River and San Francisquito Creek, where mass movement may be more likely). The pipeline would be attached to existing bridges to avoid mass movement along the stream banks and would be designed with a thicker wall pipe to withstand potential pressures due to mass movement and to allow flexibility should movement occur. **MM GEO-3c. Geotechnical Studies** would apply to this impact. **MM GEO-3d. Design and Operational Procedures** would apply to this impact.			
GEO-6: *Damage to Pipelines from Tsunamis* Tsunamis, which are transitory and sporadic in nature, could damage nearshore pipelines or facilities due to the typical force and erosive nature of these storms (CEQA Class III; NEPA moderate or major adverse, short-term).	**AM GEO-6a. Pipeline Burial.** The pipeline at the shore crossing would be buried at least 50 feet (15.2 m) below the surface of the beach and deeply enough below sea level to minimize the potential of frac-outs. This will also avoid potential damage from tsunamis.	Offshore, Nearshore	USCG/CSLC	Pre-Construction, Construction
HAZARDOUS MATERIALS (Section 4.12)				
HAZ-1: *Release of Oil or Hazardous Materials and Contamination of Marine Environment due to Offshore Operations* Improper handling of hazardous materials or leaks in containers on the FSRU could result in a release to the marine environment or exposure of workers or the public (CEQA Class III; NEPA major or moderate adverse, short- or long-term).	None.	Offshore	USCG/CSLC	N/A

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
HAZ-2: *Release of Oil or Hazardous Materials Spills Could Result in Soil Contamination due to Pipeline Construction Activities* Activities associated with site preparation, construction, and drilling, as well as operations and maintenance activities, could result in an accidental spill of hazardous materials or oil and exposure of workers or the public (CEQA Class II; NEPA major or moderate adverse, short- or long-term).	**MM HAZ-2a. Maintain Equipment.** The Applicant, or its designated representative, shall maintain equipment in operating condition to reduce the likelihood of fuel or oil line breaks and leakage. Any vehicles with chronic or continuous leaks shall be removed from the construction site and repaired before being returned to operation. **MM HAZ-2b. Hazardous Material Contingency Plan.** The Applicant, or its designated representative, shall prepare a detailed hazardous material contingency plan per RCRA and the Hazards Waste Control Act that describes how the contaminated soil and/or groundwater is to be handled and disposed pursuant to law, as well as training for personnel. This plan must receive prior approval from the USEPA or the DTSC before construction begins. **MM WAT-3a. Drilling Fluid Release Monitoring Plan** applies here (see Section 4.18, "Water Quality and Sediments").	Onshore	USCG/CSLC	Pre-Construction, Construction
HAZ-3: *Release of Existing Contaminants from Sediments, Soils, or Groundwater* Construction activities could unearth existing contaminated sites onshore and offshore, causing potential health hazards to construction workers, the public, and marine and terrestrial ecology (CEQA Class II; NEPA major or moderate adverse, short- or long-term).	**MM HAZ-3a. Consult with DTSC Regarding Cleanup of Soil and Groundwater at Whittaker-Bermite Site (MP 0.2 to 1.25).** Soil contamination in OU 2 immediately adjacent to or within the proposed pipeline route is expected to be cleaned up by 2006 and certified as such by DTSC. The Applicant or its designated representative shall coordinate with DTSC to identify potential soil and/or groundwater contamination hazards present in the proposed pipeline ROW and to determine whether additional surveys or screening-level sampling are warranted in areas to be disturbed by pipeline construction prior to any construction. To confirm that the appropriate level of coordination occurs with the DTSC, the Applicant, or its designated representative, shall submit a letter detailing the results of consultation with the DTSC and any specific measures that are to be implemented during construction to the CSLC, with a copy to the DTSC, 60 days prior to initiating	Onshore, Offshore	USCG/CSLC	Pre-Construction, Construction, Post-Construction

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	construction. The CSLC would assist the Applicant or its designated representative with DTSC consultation, if requested by the Applicant or its designated representative. **MM HAZ-3b. Onshore Surveys.** In areas where the proposed pipeline alignments diverge from existing ROWs, the Applicant or its designated representative shall conduct additional surveys to identify potential areas of soil and/or groundwater contamination. If contaminated sites are identified, the Applicant or its designated representative shall implement its Hazardous Material Contingency Plan (see MM HAZ-2b) and implement best management practices.			
HAZ-4: *Potential Disturbance or Detonation of Unexploded Ordnance due to Onshore or Offshore Construction* Offshore pipeline installation and onshore pipeline construction activities could encounter UXO, causing an explosion that could result in serious injuries or fatalities to workers or the public, and—for offshore locations—serious injuries or fatalities to marine life from subsurface blast pressures (CEQA Class II; NEPA major or moderate adverse, short- or long-term).	**MM HAZ-4a. Offshore Surveys.** The Applicant shall conduct additional surveys at the offshore pipeline installation within and near the Point Mugu Sea Range to locate visible and shallowly buried UXO that might be disturbed by pipeline installation and avoid identified UXO or develop, in consultation with the U.S. Navy, procedures to eliminate such UXO. **MM HAZ-4b. Coordination with the California Department of Toxic Substances Control.** The Applicant, or its designated representative, shall coordinate with the DTSC and notify the City of Santa Clarita before conducting any surveys or construction activities at parts of the Line 225 Pipeline Loop route on or near the Whittaker-Bermite site to determine whether additional UXO surveys would be warranted and shall ensure that those surveys are conducted if deemed necessary. If UXO is present, the Applicant will recover and dispose it as required by DTSC prior to beginning construction. The Applicant, or its designated representative, shall submit a letter to the CSLC and the USCG with a copy to the DTSC documenting the outcome of coordination and the status of follow-up 60 days prior to beginning construction.	Onshore and Offshore	USCG/CSLC	Pre-Construction

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
LAND USE (Section 4.13)				
	AM LU-1. Construction of Center Road Pipeline in Future ROW Along McWane Boulevard if McWane Boulevard is Approved and Constructed Prior to the Construction of the Center Road Pipeline. The Draft Ormond Beach Specific Plan in the City of Oxnard identifies McWane Boulevard as a future east-west public street that may be located south of Hueneme Road. In the event that McWane Boulevard is approved and constructed prior to the construction of the Center Road Pipeline, the Applicant shall locate the Center Road Pipeline within the ROW for McWane Boulevard. The pipeline shall run north from the metering station at Ormond Beach, turn east along McWane Boulevard to Arnold Road, turn north along Arnold Road to Hueneme Road, and turn east along Hueneme Road to resume the proposed alignment of the Center Road Pipeline.	**Onshore**		Pre-Construction, Construction
LU-1: *Changes in Existing Land Use* Implementation of the Project would change an existing land use (CEQA Class III; NEPA moderate or major adverse, long-term)	**AM AGR-1a. Compensation for Temporary and Permanent Loss of Agricultural Land, Crop Loss, Future Loss of Production, and Other Negative Impacts** would apply here (see Section 4.5, "Agriculture and Soils").	Onshore	USCG/CSLC	Pre-Construction, Post-Construction,

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
LU-2: *Disruption to Adjacent Properties* Construction may cause temporary disturbances or nuisances to nearby residents and businesses or to special land uses (CEQA Class II; NEPA minor adverse, short-term).	**AM LU-2a. Minimize Disruption for Residences, Businesses, and Special Land Uses in or near the Construction Area.** The Applicant or its designated representative would minimize disruption in residential and business areas during construction by: • Restricting construction activities to 7 a.m. to 7 p.m. or per time restrictions specified in local road encroachment permits. • Installing temporary safety fencing to exclude pedestrians/ residents from the construction area. • Avoiding the removal of trees outside of the construction easement. • Working with the City of Santa Clarita to refine the segment of pipeline route in the Quigley Canyon area (MP 0.0 to 1.75) to minimize impacts on permitted/planned residential properties. • Placing metal plates over open trenches at the edge of the construction work area adjacent to residences and businesses and at intersections to allow access to adjacent land uses. • Minimizing the length of time that the trench is left open. • Planning construction staging activities around special cultural events, such as the Oxnard Strawberry Festival. **AM LU-2b. Reduce Disruption for Residences Within 25 Feet (7.6 m) of the Construction Work Area.** The Applicant or its designated representative would further reduce disruption in residential areas during construction by: • Leaving mature trees and landscaping within the edge of the construction work area unless necessary for safe operations of construction equipment. • Installing a safety fence at the edge of the construction	Onshore	USCG/CSLC	Pre-Construction, Construction

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Impact	Mitigation Measure	Location	Responsible Agency	Timing
	work area adjacent to the residence for a distance of 100 feet (30.5 m) on either side of the residence to ensure that construction equipment and materials, including spoil piles, remain within the construction work area. • Limiting the construction ROW to 50 feet (50.2 m) when constructing in (non-franchise [i.e., non-public road]) residential areas, where feasible. • Maintaining a minimum of 25 feet (7.6 m) between the residence and the construction work area, wherever possible. **AM AIR-2a. Fugitive Dust Controls** would be implemented (see Section 4.6, "Air Quality"). **MM LU-2c. Coordinate with Other Utilities.** Before construction, coordinate with other utility service providers to ensure conflicts with other maintenance or construction activities are minimized during construction. **MM NOI-6a. Post Signs** would apply here (see Section 4.14, "Noise and Vibration"). **MM NOI-6b. Equipment Location** would apply here (see Section 4.14, "Noise and Vibration"). **MM TRANS-1a. Traffic Control Plans** would apply here (see Section 4.17, "Transportation").			
NOISE (Section 4.14)				
Offshore				
NOI-1: *Noise Generated During the Installation of the FSRU and Offshore Pipelines* Noise generated by vessels or equipment during installation of the mooring system, FSRU, and offshore pipelines could result in temporary increases in noise levels in	**AM MT-1a. Safety Vessel Warnings** would apply to this impact (see Section 4.3, "Marine Traffic"). **MM NOI-1a. Efficient Equipment Usage.** The Applicant shall: • Operate construction equipment only on an as-needed basis during this period, and maintain it to the manufacturer's specifications. This will serve to reduce	Offshore	USCG/CSLC	Pre- and Post-Construction, Construction, Operations

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Impact	Mitigation Measure	Location	Responsible Agency	Timing
the area, which could impact sensitive noise receptors such as recreational boaters or fishers (CEQA Class II; NEPA minor adverse, short-term).	the number of noise producing events. • Ensure that equipment engine covers are in place and mufflers are in good working condition for the installation of the mooring system, FSRU, and offshore pipeline. • Require that prospective contractors for the offshore pipeline installation address noise reduction measures in their respective bid proposals, such as (1) the extent to which they will use engines with lower noise ratings, (2) phased construction activities to reduce simultaneous operations of engines, and (3) all other practices they would follow to reduce equipment noise emissions. **MM MT-1c. Notices to Mariners** would apply to this impact (see Section 4.3, "Marine Traffic").			
NOI-2: *Long-Term Noise Generated During FSRU Operations* Recreational boaters and fishers at certain distances from the FSRU could hear noise generated by FSRU operations over the long-term (CEQA Class I; NEPA moderate adverse, long-term).	**MM BioMar-5a. Noise Reduction Design.** The Applicant shall work with marine architects, acoustic experts and mechanical engineers and the USCG, among others, to design the FSRU and its equipment to reduce, to the maximum extent feasible, the output of cumulative noise from the facility.	Offshore	USCG/CSLC	N/A
NOI-3: *Temporary Noise Generated by Support Vessels During Offshore Operations* LNG carriers, crew boats and supply vessels, or helicopters could temporarily increase noise levels for sensitive receptors, such as recreational boaters and fishers during operations (CEQA Class I; NEPA moderate adverse, long-term).	**AM NOI-3a. Daytime Operations.** The Applicant would operate crew boats, supply vessels, and helicopters during daytime hours, except during emergencies. The operation of these vessels would be less disturbing during daytime hours when there is greater ambient background noise and people are not typically involved in activities that require lower noise levels.	Offshore	USCG/CSLC	Pre-Construction, Construction, Operations

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
NOI-4: *Temporary Noise Generated During Construction using Horizontal Directional Boring (HDB), Horizontal Directional Drilling (HDD), or Other Drilling Techniques* HDB at the shore crossing and HDD or other drilling techniques at onshore waterways and intersection crossings could temporarily increase noise levels for sensitive receptors. Noise levels could exceed local noise ordinances or permit conditions (CEQA Class I; NEPA moderate adverse, short-term).	**AM NOI-4a. Construction Noise Reduction Measures** • **Monitoring.** The work area would be monitored for noise and vibration levels prior to beginning construction work to establish the background and during construction to determine compliance with noise ordinances and vibration criteria. • **Enclose power unit.** The drilling rig power unit would be enclosed. • **Noise Barriers.** The drilling rig would be partially enclosed or noise barriers would be placed around it. • **Enclose mud pumps and engines.** The mud pumps and associated engines would be partially or totally enclosed. • **Enclose generator sets.** Generator sets would be totally enclosed or acoustically packaged generator sets would be used. • **Partially enclose mud mixing.** Mud mixing and cleaning equipment would be partially enclosed or noise barriers would be placed around this equipment. • **Provide engine compartment treatments.** Engine compartment treatments would be provided for mobile cranes and boom trucks. • **Modify backup alarms.** Lay out construction sites to minimize the need for backup alarms; use strobe lights in place of backup alarms at night; use flagmen to keep the area behind maneuvering vehicles clear; and use self-adjusting backup alarms that adjust the alarm loudness depending on ambient noise. • **Orient loading bins.** Loading bins would be oriented to minimize noise impacts on adjacent areas. • **Restrict use of mobile equipment.** Use of mobile equipment would be restricted during nighttime hours.	Offshore and Onshore	USCG/CSLC	Pre-Construction, Construction

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	• **Enclose light set engines.** Engines for the light sets would be totally enclosed. • **Temporary hay bales as noise barriers.** Hay bales would be placed on site as a temporary noise barrier. • **Place silencers on engines.** Silencers on engines would be placed on all equipment where possible. **MM NOI-4b. Use Noise Blankets.** During Project construction, noise blankets shall be used to fully enclose equipment associated with boring where residences occur within 2,000 feet (610 m) and work occurs after 6 p.m. **MM NOI-4c. Limit Heavy Equipment Activity near Residences.** Heavy equipment activity adjacent to residences shall be limited to the shortest possible period required to complete pipeline installation. **MM NOI-4d. Cover the Equipment Engine.** The equipment engine shall be covered and the Applicant shall ensure that mufflers are in good working condition. **MM NOI-4e. Establish Telephone Hotline.** A phone number shall be established and publicized for members of the public to call should they have a noise complaint. Upon receiving a complaint, noise monitors will measure the levels and ensure that all appropriate noise controls are being implemented. **MM NOI-4f. Establish Procedures.** The Applicant or its designated representative shall establish procedures to stop or curtail drilling/boring or add additional measures to respond to any noise complaints or exceedances of any ordinances. However, it may not be possible to cease drilling since HDB cannot be stopped once it has begun.			
NOI-5: *Temporary Vibration Generated During Horizontal Directional Boring*	**AM NOI-4a. Construction Noise Reduction Measures.** **MM NOI-5a. Restricted Work Hours.** The Applicant or its	Offshore and Onshore	USCG/CSLC	Pre-Construction, Construction

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
(HDB), Horizontal Directional Drilling (HDD), and Pipeline Construction Activities HDB, HDD, boring, trenching, and other construction activities could temporarily create vibration levels at sensitive receptors (CEQA Class I; NEPA moderate adverse, short-term).	designated representative shall ensure that work hours are restricted for pipeline construction activities, with the exception of HDB, involving motorized equipment from 7 a.m. to 7 p.m. Monday through Saturday. **MM NOI 4c. Limit Heavy Equipment Activity Near Residences.**			
NOI-6: *Noise Generated During Construction of the Onshore Pipeline* Site preparation, pipeline installation, and construction of aboveground facilities could temporarily increase noise levels for sensitive receptors, such as schools and residences. Noise levels may exceed county and/or city noise ordinances or permit conditions during the installation of the onshore pipeline and associated structures (CEQA Class I; NEPA moderate adverse, short-term).	**AM NOI-4a. Construction Noise Reduction Measures.** **MM NOI-6a. Post Signs.** The Applicant or its designated representative shall post signs along the construction right-of-way (ROW) with approximate schedule and contact information. **MM NOI-6b. Equipment Location.** The Applicant or its designated representative shall locate stationary equipment, such as compressors and welding machines, away from noise receptors to the extent practicable. **MM NOI-4c. Limit Heavy Equipment Activity Near Residences** would apply here. **MM NOI-4d. Cover the Equipment Engine** would apply here. **MM NOI-4e. Establish Telephone Hotline** would apply here. **MM NOI-4f. Establish Procedures** would apply here. **MM NOI-5a. Restricted Work Hours** would apply here.	Onshore	USCG/CSLC	Pre-Construction, Construction
NOI-7: *Noise Generated by Traveling to the Construction Site* Additional vehicular traffic carrying workers, equipment, and materials to the construction sites could temporarily increase noise levels for residences, schools, places of worship, or hospitals	None.	Onshore	USCG/CSLC	N/A

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
(CEQA Class III; NEPA moderate or major adverse, short-term).				
NOI-8: *Noise Generated During Onshore Pipeline and Associated Facilities Operations* Repair or maintenance operations of the onshore pipelines and associated aboveground facilities may temporarily exceed county and/or city noise ordinances or permit conditions (CEQA Class II; NEPA minor adverse, long-term).	**AM NOI-4a. Construction Noise Reduction Measures** would apply here. **MM NOI-4c Limit Heavy Equipment Activity Near Residences** would apply here. **MM NOI-4d. Cover the Equipment Engine** would apply here. **MM NOI-5a. Restricted Work Hours** would apply here. **MM NOI-4f Establish Procedures** would apply here. **MM NOI-6a. Post Signs** would apply here. **MM NOI-6b. Equipment Location** would apply here.	Onshore	USCG/CSLC	Pre-Construction, Construction
RECREATION (Section 4.15)				
REC-1: *Temporary Restrictions on Offshore Recreational Boating and Fishing during Construction and Temporary Reductions of Fish Catch* Construction activities would temporarily restrict recreational boating and recreational marine fishing (CEQA Class III; NEPA minor adverse, short-term).	None.	Offshore	USCG/CSLC	N/A
REC-2: *Restricted Recreational Fishing Due to Area to be Avoided* Operational activities could restrict offshore recreational activities because of the creation of a safety zone around the FSRU (CEQA Class III; NEPA minor adverse, long-term).	None.	Offshore	USCG/CSLC	N/A
REC-3: *Reduce the Quality of the Offshore Recreational Experience* During Project operations, the presence of	None.	Offshore	USCG/CSLC	N/A

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
the FSRU would alter the recreational experience of recreational boaters, including tourists and visitors on whale-watching trips and other visitors to the CINP (CEQA Class I; NEPA moderate adverse, long-term).				
REC-4: *Reduce the Recreational Experiences at or Restrict Access to Ormond Beach* Construction or maintenance activities at the shore crossing could temporarily impede recreational uses or degrade recreational experiences at Ormond Beach because of the noise, dust, and light generated during construction and repairs or because of an accidental release of drilling fluids or a gas leak (CEQA Class III; NEPA minor adverse, long-term).	None.	Onshore	USCG/CSLC	N/A
REC-5: *Reduce or Restrict Access to Parks or Reduce User Enjoyment* Construction activities could temporarily restrict access to parks due to increased traffic congestion or other nuisances in the general area of parks in the vicinity of pipeline construction (CEQA Class II; NEPA minor adverse, long-term).	**AM REC-5a. Contractor Yard Locations.** Contractor yards would be located at least 1 mile (1.6 km) away from park and recreational areas. **MM TRANS-1a. Traffic Control Plans** would apply to this impact (see Section 4.17, "Transportation").	Onshore	USCG/CSLC	Construction
REC-6: *Reduce or Restrict Access to Trails* Construction activities for the Line 225 Pipeline Loop would temporarily close the multi-use trails along the South Fork Santa Clara River (CEQA Class II; NEPA minor	**MM REC-6a. Trail Closure Signage and Information.** The Applicant or its designated representative shall post signs and disseminate information to the public about the multi-use trail along the South Fork Santa Clara River stating how long the trail will be closed, when it will be restored, and alternate routes.	Onshore	USCG/CSLC	Pre- and Post-Construction

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
adverse, short-term).	**MM REC-6b. Trail Restoration.** The Applicant or its designated representative shall restore the multi-use trail along the South Fork Santa Clara River to its previous condition before construction within 21 days after completion of the section of the pipeline along the trail.			
SOCIOECONOMICS (Section 4.16)				
SOCIO-1: *Decrease in Catch Revenues for Commercial Fisheries due to Exclusion from Fishing Areas* The long-term and temporary exclusion of commercial fishers from fishing grounds could decrease catch revenues for commercial fisheries (CEQA Class II; NEPA moderate adverse, long-term).	**AM SOCIO-1a. Compensation for Lost Gear.** As a member of the Oil Caucus of the Joint Oil/Fisheries Committee of South Central California, the Applicant would negotiate mitigation for impacts on fishers using guidance from existing Joint Oil/Fisheries Committee guidelines for lost or damaged gear. **AM MT-1a. Safety Vessel Warnings** would apply to this impact (see Section 4.3, "Marine Traffic"). **AM MT-1b. Automatic Identification System** would apply to this impact (see Section 4.3, "Marine Traffic"). **AM MT-2b. Established Routes to and from Port Hueneme** would apply to this impact (see Section 4.3, "Marine Traffic"). **AM MT-2c. Compliance with JOFLO Vessel Traffic Corridors** would apply to this impact (see Section 4.3, "Marine Traffic"). **MM SOCIO-1b. Arbitration.** If there is a complaint by a fisher related to impacts from the Project, the Applicant shall comply with a mutually agreed-upon settlement between itself and the injured party. If a settlement cannot be reached through voluntary negotiation that is acceptable to both parties, dispute resolution shall be conducted by a mutually agreed-upon arbitrator. The arbitrator shall be compensated by the Applicant. An arbitrator shall become involved if the voluntary negotiation is not concluded within three months.	Offshore	USCG/CSLC	Pre- and Post-Construction Operations

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
SOCIO-2: *Decreased Commercial Fisheries Revenues due to Loss of Fishing Gear* The loss of commercial fishing gear from pipelines and supply boat traffic could decrease commercial fisheries revenues (CEQA Class II; NEPA minor adverse, short-term).	**AM SOCIO-1a. Compensation for Lost Gear** would apply to this impact. **AM MT-2b. Established Routes to and from Port Hueneme** would apply to this impact (see Section 4.3, "Marine Traffic"). **AM MT-2c. Compliance with JOFLO Vessel Traffic Corridors** would apply to this impact (see Section 4.3, "Marine Traffic"). **MM SOCIO-1b. Arbitration** would apply to this impact. **MM MT-1c. Notices to Mariners** would apply to this impact (see Section 4.3, "Marine Traffic"). **MM MT-1d. Securite Broadcasts** would apply to this impact (see Section 4.3, "Marine Traffic"). **MM MT-1e. Safety Vessel** would apply to this impact (see Section 4.3, "Marine Traffic").	Offshore	USCG/CSLC	Pre- and Post-Construction, Operations
SOCIO-3: *Increase in Regional Fishing Pressure* The permanent exclusion of commercial fishing from fishing grounds could increase fishing pressure in other areas or reduce the catch, resulting in negative economic impacts (CEQA Class III; NEPA minor adverse, long-term).	None.	Offshore	USCG/CSLC	N/A
SOCIO-4: *Small Increased Demand for Public Services* The Project would cause a slight increased demand for public services during construction and operations (CEQA Class III; NEPA minor adverse, long-term).	None.	Onshore	USCG/CSLC	N/A

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
TRANSPORTATION (Section 4.17)				
TRANS-1: *Temporary Increase in Traffic* During construction, the addition of the construction-related workforce and material deliveries to and from staging areas could temporarily increase traffic during peak construction periods (CEQA Class II; NEPA moderate adverse, short-term).	**MM TRANS-1a. Traffic Control Plans.** Two traffic control plans shall be prepared by a registered professional engineer in accordance with the Work Area Protection and Traffic Control Manual (1999): one for the Center Road Pipeline route and one for Line 225 Pipeline Loop route. Because CalTrans has its own requirements, where work occurs within a CalTrans ROW, the traffic control plan shall be developed and implemented in accordance with the CalTrans Traffic Manual. The plans shall detail the location, schedule, signage, and safety procedures for lane and road closures based on final pipeline engineering design. The plans shall be submitted to and approved by CalTrans and applicable local agencies at least 60 days prior to construction and shall include the following requirements: • Maintain two-way traffic at all times, and use flaggers as necessary; • Keep signage up to date and in good condition at all times; • Provide safety measures to separate motorists from construction workers; • Ensure access for emergency vehicles at all times; • Ensure access to private residences at all times; • Open lanes as soon as possible to restore normal traffic patterns; • Provide temporary access to businesses along the pipeline route during construction; • Cross highways and railroads by conventional HDD to minimize disruption to traffic; • Notify the public during construction, using methods such as large electronic monitoring signs, notification to	Onshore	USCG/CSLC	Pre-Construction, Construction

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	impacted residents, appropriate detour signs, and notifications to schools and emergency providers; • Provide an information hotline to be manned during business hours; • Provide a designated traffic control coordinator to ensure compliance with the Traffic Control Plan; • Reopen bicycle lanes as soon as possible to minimize disruption to bicycle traffic; and • After construction, restore the roads to their pre-construction condition. For areas outside of the CalTrans ROW, the Applicant or its designated representative would obtain encroachment permits from the appropriate jurisdiction. **MM TRANS-1b. Notification, Schedule Shifts, Carpooling**. During construction, the Applicant or its designated representative shall implement best management practices approved by CalTrans and/or the affected local government, such as notification, schedule shifts, and carpooling to minimize increases in traffic. The Applicant shall incorporate the following measures to minimize the impact of the short-term increase in traffic from the construction workforce and truck deliveries: • Coordinate with local jurisdictions to notify residents and transit operators of alternate traffic routes; • Schedule shifts and material deliveries to avoid peak traffic congestion hours; and • Provide incentives to promote carpooling among the construction workforce.			
TRANS-2: *Temporary Traffic Lane Closures* The Project could restrict one or more lanes of major roads, disrupting local traffic	**MM TRANS-1a. Traffic Control Plans** would apply here.	Onshore	USCG/CSLC	Pre-Construction, Construction

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
flow during peak hours (CEQA Class II; NEPA moderate adverse, short-term).				
TRANS-3: *Temporarily Reduced On-Street Parking Access* Construction could temporarily restrict residential on-street parking access (CEQA Class III; NEPA minor adverse, short-term).	None.	Onshore	USCG/CSLC	N/A
TRANS-4. *Temporary Closure of Bike Routes* Construction could result in temporary closure and/or restricted access to bike paths crossed by the onshore pipelines, which could adversely affect the safety of bicyclists (CEQA Class II; NEPA moderate adverse, short-term).	**MM TRANS-4a. Bike Detour Lanes.** Where bike paths are closed, the Applicant or its designated representative shall provide an alternative bike route, provide signs and notice of the pending closure at least 30 days prior to commencement of work at the affected location, and ensure that the route remains posted until the access is restored to its pre-construction condition. **MM TRANS-4b. Repair Damage to Bike Paths.** The Applicant or its designated representative shall restore any bike paths damaged as a result of Project construction to their pre-construction condition within 21 days of completion of the bike route-based portion of each alignment. **MM TRANS-1a. Traffic Control Plans** would apply here.	Onshore	USCG/CSLC	Pre-Construction, Construction, Post-Construction
TRANS-5: *Damage to Roads During Construction* Roads crossed or paralleled by the onshore pipelines, as well as those used to access the Project, could be temporarily damaged by increased traffic and heavy equipment (CEQA Class II; NEPA minor or moderate adverse, short-term).	**MM TRANS-5a. Repair Damage to Roads.** The Applicant or its designated representative shall repair to pre-construction conditions any damage to roads that occurs as a result of the Project within 21 days of completion of the road-based portion of each alignment or in accordance with local road encroachment permit conditions determined prior to construction, whichever is less. In addition, where a roadway has been rehabilitated within the past five years, the Applicant or its designated representative shall provide a full width overlay after trenching is completed. The Applicant or its designated representative shall negotiate	Onshore	USCG/CSLC	Post-Construction

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	with the appropriate jurisdiction regarding videotaping of existing roadways prior to construction and mitigation fees to be deposited into a trust fund.			
WATER QUALITY AND SEDIMENTS (Section 4.18)				
WAT-1: *Temporary Degradation of Offshore Water Quality due to Accidental Discharges* Accidental discharges of petroleum, sewage, or other contaminants from vessels during offshore construction and installation activities could temporarily degrade offshore water quality (CEQA Class III; NEPA minor or moderate adverse, short-term).	None.	Offshore	USCG/CSLC	N/A
WAT-2: *Short-Term Increase in Turbidity or Accidental Unearthing of Contaminants during Offshore Construction* The installation of the FSRU and subsea pipelines could disturb seafloor sediments or release drill cuttings or fluids, causing a short-term increase in turbidity or accidental unearthing of contaminants (CEQA Class III; NEPA minor or moderate adverse, short-term).	None.	Offshore	USCG/CSLC	N/A
WAT-3: *Short-Term Degradation of Surface Water or Groundwater Quality due to Accidental Release of Drilling Fluids* Accidental releases of drilling fluids at the shore during construction could degrade surface water or groundwater quality for the short term (CEQA Class II; NEPA minor or moderate adverse, short-term).	**MM WAT-3a. Drilling Fluid Release Monitoring Plan.** The Applicant shall implement its Drilling Fluid Release Monitoring Plan to minimize the potential for releases of drilling fluids, to properly clean up drilling fluids in the event of a release, and notify appropriate agencies should a release occur. The plan (see Appendix D1) would incorporate best management practices to reduce the impacts from releases of drilling fluids, including the following:	Onshore	USCG/CSLC	Pre-Construction Construction Post-Construction

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	• Maintaining containment equipment for drilling fluids on site; • Adding a non-toxic color dye to the drilling fluids to easily and quickly detect release of drilling fluids; • Ensuring that a qualified environmental monitor or suitably trained water quality specialist is on site full time near sensitive habitat areas during HDB activities; • Stopping work immediately if there is any detection of bentonite seeps into surface water or sensitive habitats, for example, by a loss in pressure or visual observation of changes in turbidity or surface sheen; • Reporting all bentonite seeps into waters of the State or sensitive habitat immediately to the Project's resource coordinator, the CSLC, the Los Angeles RWQCB, and the appropriate resource agencies: National Oceanic and Atmospheric Administration Fisheries, U.S. Fish and Wildlife Service, the U.S Army Corps of Engineers, the California Department of Water Resources, the California Reclamation Board, the applicable city (Oxnard or Santa Clarita) and county (Ventura or Los Angeles); and • Cleaning up and properly disposing of any release of drilling fluids to the satisfaction of regulatory agencies.			
***WAT-4**: Short-Term Increase in Erosion due to Construction Activities* Boring and trenching at stream crossings, including release of hydrostatic test water, could cause short-term increases in erosion (CEQA Class II; NEPA minor adverse, short-term).	**AM TerrBio-1a. Erosion Control** would apply to this impact (see Section 4.8, "Biological Resources – Terrestrial"). **MM WAT-4a. Strategic Location for Drilling Fluids and Cuttings Pit.** The Applicant or its designated representative shall ensure a pit has been excavated at the exit hole to collect and contain the drilling fluids and cuttings. Engineering controls shall be installed to ensure that fluids remain contained in the pit, including: • Locating the entry pit and exit pit sufficiently far from a	Onshore	USCG/CSLC	Pre-Construction, Construction, Post-Construction

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	stream bank and at a sufficient elevation to avoid inundation by the stream and to minimize excessive migration of groundwater into the entry pit or exit pit; • Isolating the entry pit and exit pit with silt fencing to avoid sediment transport into the surface water body; • Isolating the spoils storage from the excavation of the entry pit using silt fencing to avoid sediment transport; • Undertaking and completing proper disposal of excess spoils; backfilling and restoring the original contour of the entry pit and exit pit; and revegetating the area upon completion of the bore; • Monitoring the drilling fluid, if a release of drilling fluids occurs, by a qualified environmental monitor or suitably trained water quality specialist to determine the appropriate cleanup response; and • Consulting with regulatory agencies to determine the next appropriate step to clean up the area. **MM WAT-4b. Transport Excess Trench Spoils Offsite.** Excess trench spoils that are not used to backfill trenches shall be transported and disposed of offsite at an approved facility. **MM WAT-4c. Monitor Stream Crossing Construction.** A qualified environmental monitor or suitably trained water quality specialist shall be present at each stream crossing construction site to ensure compliance with applicable permits and mitigation. **MM GEO-1b. Backfilling, Compacting and Grading** would apply here (see Section 4.11, "Geologic Resources and Hazards").			
WAT-5a: *Degradation of Water Quality due to Accidental Release of Untreated Gray Water, Deck Drainage, and other Discharges that do not Meet Water Quality*	None.	Offshore	USCG/CSLC	N/A

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
Standards The FSRU or other Project vessels could accidentally release small amounts of contaminants, including bilge water, detergents, or human waste, to marine waters in excess of water quality standards (CEQA Class III; NEPA moderate adverse, short-term).				
WAT-5b: *Degradation of Water Quality due to an Accidental Release of Diesel Fuel from the FSRU, Pipelaying Vessel, or Service Vessels.* An accidental release of diesel fuel to marine waters would violate Federal and State water quality standards or objectives (CEQA Class I; NEPA moderate adverse, short-term).	None.	Offshore	USCG/CSLC	N/A
WAT-6: *Temporary Degradation of Surface Water Quality During Maintenance Activities* Releases of petroleum or other contaminants during maintenance activities could temporarily degrade surface water quality (CEQA Class III; NEPA moderate adverse, short-term).	**AM WAT-6a. Best Management Practices at Creek Crossings.** Best management practices would be employed at all creek crossings for major maintenance activities that could result in spills that could enter surface water pathways. **AM WAT-6b. Spill Response Plan.** The Applicant or its designated representative would prepare a spill response plan to protect surface water at and near the surface water crossings. This plan would be incorporated into the SWPPP as a requirement of the construction storm water NPDES permit and the SPCC Plan. The plan would identify specific measures to prevent, contain, and clean up any spills that could enter surface water pathways.	Onshore	USCG/CSLC	Pre-Construction, Construction
WAT-7: *Degradation of Surface Water Quality due to Erosion Caused by Regular Maintenance Activities*	**AM WAT-6a. Best Management Practices at Creek Crossings** would apply to this impact.	Onshore	USCG/CSLC	Pre-Construction, Construction

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Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
Regular maintenance of the pipelines could cause erosion and sedimentation of creeks from the use of maintenance vehicles or equipment, leading to short-term violations of water quality standards (CEQA Class III; NEPA minor or moderate adverse, short-term).				
WAT-8: *Degradation of Water Quality due to Operational Thermal Discharges* During approximately eight days per year, non-contact seawater cooling water would be discharged to the ocean at temperatures above ambient and could exceed the guidelines in the California Thermal Plan (CEQA Class III; NEPA minor adverse, short-term).	None	Offshore		Operations
ENVIRONMENTAL JUSTICE (Section 4.19)				
EJ-1: *Disproportionate Impact on Minority and Low-Income Community of a Pipeline Accident near Center Road Pipeline MP 4.1.* There would be a long-term risk of a pipeline rupture that could cause a fire that would disproportionately affect minority or low-income communities near MP 4.1 (NEPA moderate adverse, long-term).	**AM PS-4a. Class 3 Pipeline Design Criteria** (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **MM PS-4b. Pipeline Integrity Management Program.** **MM PS-4c. Install Additional Mainline Valves Equipped with Either Remote Valve Controls or Automatic Line Break Controls.** **MM PS-5a. Treat Manufactured Home Residential Community as a High Consequence Area.**	Onshore	USCG/CSLC	Pre-Construction, Construction

Key: USCG = U.S. Coast Guard; CSLC = California State Lands Commission; USEPA = U.S. Environmental Protection Agency; PHMSA = U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration

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EXHIBIT F: CEQA FINDINGS

EXHIBIT F: CEQA FINDINGS

1.1 INTRODUCTION TO CEQA FINDINGS

This document constitutes the Findings of the California State Lands Commission (CSLC), made pursuant to the Guidelines for Implementation of the California Environmental Quality Act (CEQA) (California Code of Regulations, Title 14, section 15091) on the Cabrillo Port LNG Deepwater Port Project (the Project) proposed by BHP Billiton LNG International Inc. (BHPB, or the Applicant). A Joint Final Environmental Impact Statement/Environmental Impact Report (EIS/EIR), hereinafter referenced as EIR, has been prepared for the proposed Project. 1.2 PROJECT DESCRIPTION

On September 3, 2003, BHPB submitted a Deepwater Port Act (DWPA) application to the U.S. Coast Guard (USCG) and the U.S. Maritime Administration (MARAD) and an application for a right-of-way lease on State lands to the California State Lands Commission to own, construct, operate, and maintain the proposed Cabrillo Port LNG Deepwater Port. The proposed facilities include: a new offshore liquefied natural gas (LNG) floating storage and regasification unit (FSRU) located 12.01 nautical miles (NM) (13.83 miles or 22.25 kilometers [km]) off the coast of Ventura County and Los Angeles County, California, in Federal waters approximately 2,900 feet (884 meters [m]) deep; new offshore and onshore natural gas pipelines; and related facilities (the Project). The Applicant's projected in-service life for the FSRU is a maximum of 40 years.

Under normal operating conditions, the annual average throughput would be 800 MMcfd; however, the Applicant has calculated that maximum operating scenarios would allow deliveries of up to 1.2 billion cubic feet per day, or the gas equivalent of 1.5 billion cubic feet per day on an hourly basis for a maximum of six hours. These operating conditions would only be in effect if SoCalGas were to offer the Applicant the opportunity to provide additional gas in cases of supply interruption elsewhere in the SoCalGas system or extremely high power demand, for example, during hot summer days; the analysis is based on this throughput.

The proposed Project would have the following main components:

Offshore (FSRU)

- Installation and operation of the FSRU, which would be anchored and moored on the ocean floor in Federal waters for the life of the Project. The Applicant selected the proposed location for the FSRU by analyzing known marine hazards, existing pipelines, distances from shore, distances from existing fixed offshore facilities, sea floor slope and topography, and the existing onshore natural gas pipeline infrastructure. The proposed location is outside the traffic separation scheme, i.e., the designated marine traffic lanes for large commercial vessels. Operational activities include:
- Shipment within the Exclusive Economic Zone of LNG to the FSRU up to two times weekly in double hulled (double-sided and double-bottom) cryogenic tank ships (LNG carriers);

- Transfer of the LNG from the LNG carriers to the FSRU;
- Heating of the LNG under controlled conditions to return it to its gaseous form as pipeline-quality natural gas;
- Injection of odorant into the natural gas stream on the FSRU; and
- Transmission of the odorized natural gas to the offshore pipelines through the flexible risers located in the mooring turret at the FSRU's bow.

Shore Crossing and Offshore Pipelines

- Installation of two 24-inch (0.6 m) diameter pipelines from shore, using horizontal directional boring beneath the surface of the beach, to the FSRU site, and installation and operation of a new onshore metering station with backup odorant injection equipment. The pipelines transporting natural gas from the FSRU to shore would connect to the Southern California Gas Company (SoCalGas) transmission system at the onshore metering station.

Onshore

- Delivery of the natural gas through: (1) a new 36-inch (0.9 m) diameter pipeline constructed within the City of Oxnard and unincorporated areas of Ventura County; (2) a new 30-inch (0.76 m) diameter pipeline loop in the City of Santa Clarita in Los Angeles County; and (3) three expanded or modified existing onshore valve stations. The onshore pipelines and related facilities would be constructed, owned, and operated by SoCalGas, a natural gas utility regulated by the California Public Utilities Commission (CPUC).

Only LNG carrier vessels and the FSRU itself would handle LNG; both the offshore and onshore pipelines would carry only conventional natural gas. A safety zone from which the public would be excluded would extend 1,640-foot (500 m) radius safety zone around the FSRU. BHPB would also apply to the USCG for a 2NM-radius area to be avoided (ATBA).

The FSRU would obtain its electricity from on-board generators, not power cables to or from shore.

Incorporated within its Project description, BHPB proposes to implement numerous measures to reduce the severity of potential Project-related impacts. These measures are identified by the prefix "AM" to distinguish them from mitigation measures proposed by the lead agencies as further explained below, identified by the prefix "MM." As the FSRU and LNG carriers are designed to carry cryogenic gases, additional International Maritime Organization regulations and conventions would govern their construction. Some of the required major safety features would significantly reduce the likelihood of an accidental cargo release and would substantially mitigate any release, regardless of cause. These include requirements for:

- double hull construction,

- separation of cargo holds and piping systems,
- accessibility for inspection,
- leak detectors in hold spaces,
- tank requirements for cargo containment,
- structural analysis,
- secondary containment and thermal management,
- tank construction and testing requirements,
- construction and testing requirements for piping and pressure vessels,
- emergency shutdown valves and automatic shutdown systems,
- loading arm emergency release couplings,
- pressure venting systems,
- vacuum protection systems,
- fire protection systems, and
- cargo tank instrumentation.

Applicant measures are incorporated into and modify the Project. They represent commitments by the Applicant that go beyond the minimum required by law. The impact analyses in the Final EIR are based on the Project **as modified**. As previously stated, Applicant measures included in the Project description are identified by the prefix "AM," e.g., AM PS-1a. Mitigation measures that are specified by the lead agencies to reduce any potential significant environmental impacts remaining after taking into account the Project modifications are identified by the prefix "MM," e.g., MM PS-1e.

Applicant Proposed Mitigation Measures (AM) that are part of the proposed Project, as analyzed, and affect the determination of potentially significant impacts include:

AM PS-1a. Applicant Engineering and Project Execution Process.

AM PS-1b. Class Certification and a Safety Management Certificate for the FSRU.

AM PS-1c. Periodic Inspections and Surveys by Classification Societies.

AM PS-1d. Designated Safety Zone and Area to be Avoided.

AM MT-3a. Patrol Safety Zone.

AM MT-3d. Control Room Team Management Techniques.

AM MT-3e. Broadcast of Navigational Warnings.

AM PS-2a. AIS, Radar, and Marine VHF Radiotelephone.

AM MT-3b. LNG Carrier Monitoring by the FSRU.

AM MT-3c. One LNG Carrier in Approach Route.
AM PS-3a. More Stringent Pipeline Design.
AM PS-4a. Class 3 Pipeline Design Criteria.
AM MT-1a. Safety Vessel Warnings.
AM MT-1b. Automatic Identification System.
AM MT-2a. Provisions for Delays.
AM MT-2b. Established Routes to and from Port Hueneme.
AM MT-2c. Compliance with JOFLO Vessel Traffic Corridors.
AM AGR-1b. Coordinate Pipeline Installation with Farmers.
AM AGR-1c. Post-Construction Restoration Measures.
AM AGR-1c. Post-Construction Restoration Measures.
AM TerrBio-4a. Weed Management Plan.
AM AIR-1a. USEPA Nonroad Engine Standards.
AM AIR-1b. Offshore Construction Equipment Standards.
AM AIR-1c. Ultra Low Sulfur Diesel.
AM AIR-2a. Fugitive Dust Controls.
AM AIR-5a. Natural Gas on LNG Carriers.
AM AIR-5b. Control Equipment on Support Vessels.
AM BioMar-9a. Avoid Offshore Construction during Gray Whale Migration Season.
AM BioMar-9b. Marine Mammal Monitoring.
AM BioMar-3a. Construction/Operations Lighting Control.
AM NOI-4a. Construction Noise Reduction Measures.
AM TerrBio-1a. Erosion Control.
AM TerrBio-2a. Additional Pre-Construction Plant Surveys.
AM TerrBio-2b. Biological Resources Mitigation Implementation and Monitoring Plan.
AM TerrBio-2c. Employee Environmental Awareness Program (EEAP).
AM TerrBio-2d. Biological Monitoring.
AM TerrBio-2e. Confine Activity to Identified Right-of-Way (ROW).
AM WAT-6b. Spill Response Plan.
AM GEO-1a. Drilling Location.
AM GEO-3a. Avoidance.
AM GEO-3b. Pipeline Flexibility.

AM LU-2a. Minimize Disruption for Residences, Businesses, and Special Land Uses in or near the Construction Area.

AM LU-2b. Reduce Disruption for Residences Within 25 Feet (7.6 m) of the Construction Work Area.

AM NOI-3a. Daytime Operation.

AM REC-5a. Contractor Yard Locations.

1.2.1 Major Changes to the Project and Analyses Between Issuance of the October 2004 Draft EIS/EIR and the March 2006 Recirculated Draft EIR

In response to agency and public comments, the Applicant revised the Project in several ways that reduce environmental impacts. These include the following changes.

Project Description

- **New Offshore Pipeline Route.** The route of the offshore pipelines has been revised, following geotechnical analyses, to reduce the potential for turbidity flows to affect the pipelines.
- **Pipeline Installation at Shore Crossing.** The Applicant would use horizontal directional boring (HDB) instead of horizontal directional drilling (HDD) to install the Project pipelines beneath the shore. In HDD, excess drilling fluid and spoils are returned to the drill rig under high pressure, risking release into the surrounding environment. HDB uses a semi-closed loop system in which excess mud and cuttings are pumped back to the drill rig; lower pressures are used, and the possibility of drilling fluid release is minimized or eliminated. Vessels used during HDB operations would be anchored. Cofferdams would not be used offshore.
- **New Onshore Pipeline Route Segment Near Center Road Station, Ventura County.** The northern portion of the proposed Center Road Pipeline route (beginning at approximately milepost 12.5 and continuing to Center Road Station) would be relocated further to the southeast and predominantly through agricultural lands to bypass Mesa Union School on Mesa School Road. The original route it replaces (the proposed route in the October 2004 Draft EIS/EIR) is evaluated in the Final EIR as Center Road Pipeline Alternative 3.
- **Gas Odorant Injection.** To assist in leak detection by smell, the Applicant would inject an odorant into the natural gas stream at the FSRU. SoCalGas would operate a backup odorant injection system onshore.
- **Calculation of Safety Zone.** The USCG would measure the required 1,641-foot (500 m) safety zone from the circle defined by the rotation of the stern of the FSRU around the mooring point rather than from the mooring point, which enlarges the safety zone.
- **Pipeline Safety.** SoCalGas would install additional mainline valves equipped with either remote valve controls or automatic line break controls in the Center

Road Pipeline, which would limit the area affected by a potential pipeline accident.

Air Quality

- **Air Quality Assessment.** The USEPA has made a preliminary determination that the FSRU should be permitted in the same manner as sources on the Channel Islands. Accordingly, the Project would not require a Prevention of Significant Deterioration permit. In addition, air emissions from the generators aboard the FSRU were recalculated.

1.2.2 Additional Changes to the Project and Analyses Since Publication of the March 2006 Revised Draft EIR

In response to agency and public comments, the Applicant has revised the Project in several ways since the issuance of the March 2006 Revised Draft EIR as summarized below:

- **Reduction in the Number of LNG Carriers and Change in Crew Vessel Trips.** A maximum of 99 LNG carriers would deliver no more than 13.7 million m^3 of LNG annually. The size of the LNG carriers would range from 138,000 to 210,000 m^3. The number of dockings would range from 65 to 99 per year, depending on the size of the LNG carriers that are used. Previously the Applicant had proposed up to 130 LNG carrier dockings per year. Since a crew vessel would be present during the berthing and deberthing of every LNG carrier, crew vessels would travel twice from Port Hueneme to Cabrillo Port for each LNG carrier docking
- **Closed Tempered Loop Cooling System.** The previously proposed FSRU generator engine cooling system used seawater as the source of cooling water for the four generator engines. The Applicant now proposes using a closed tempered loop cooling system that circulates water from two of the eight SCVs through the engine room and back to the SCVs. The seawater cooling system would serve as a backup system during maintenance of the SCVs or when the inert gas generator is operating. The following Project changes would reduce emissions of air pollutants:
- **Use of Natural Gas to Power LNG Carriers in California Coastal Waters.** LNG carriers that would operate in California Coastal Waters, as designated by the California Air Resources Board, instead of only within 25 NM of the coastline, would be fueled with a 99 percent natural gas/1 percent diesel mixture.
- **Diesel-Fueled Support Vessels with Emission Controls.** Instead of fueling tugboats and the crew/supply vessel with LNG during Project operations, the Applicant would use diesel engines equipped with air pollution control technology that would reduce emissions of carbon monoxide, oxides of nitrogen, and reactive organic compounds below levels that would have resulted from the use of natural gas-fueled engines

- **Ultra-low NOx SCV Burners.** The Applicant would use burners in the SCVs that are certified for a maximum NO_x emission concentration (4-hour average) of 15 ppm at 3% oxygen.[1]
- **Use of Specific Engine Standards for Onshore Construction Equipment.** Engines in onshore construction equipment would comply with the USEPA's tiered nonroad emission standards. As a result of the emission reductions, MARAD and the USCG have determined that the General Conformity Rule would not apply.

The CSLC has reviewed the above modifications in light of the provisions of the State CEQA Guidelines concerning recirculation and has determined that these measures do not result in new significant impacts that were not previously discussed in the Final EIR, and, in fact, reduce the levels of potentially significant impacts identified in the March 2006 Revised Draft EIR and their inclusion does not meet the criteria listed specifically in section 15088.5(a()(1-4) of the State CEQA Guidelines; therefore, the CSLC believes recirculation is unwarranted.

The Applicant has committed to implement the following additional measure to reduce air emissions to counterbalance like emissions from offshore Project components, e.g., operations at the FSRU and operation of marine vessels (LNG carriers, tugs, and service vessels).:

- **Repowering of Existing Non-Project Vessels with Cleaner Burning Engines.** Two tugs that currently operate in the area and along the California coastline, but which are not related to Project operations, would be repowered with cleaner engines to achieve emissions reductions offshore.

1.3 ADMINISTRATIVE RECORD

For the purposes of CEQA and the Findings below, the administrative record for the Cabrillo Port Project consists of the following documents:

1. The October 2004 Draft EIS/EIR, including appendices, technical reports, documents cited in the Draft EIS/EIR, letters submitted on the Draft, and public hearing transcripts;
2. The March 2006 Revised Draft EIR, including all appendices, technical reports, documents cited in the Revised Draft EIS/EIR, letters submitted on the Revised Draft, and public hearing transcripts;
3. The March 2007 Final EIS/EIR, including all appendices, technical reports, comments, and responses to comments on both the October 2004 EIS/EIR and the March 2006 Revised Draft EIR, and documents cited in the Final EIS/EIR;

[1] On March 29, 2007, BHPB submitted a response to an information request from the USEPA that commits to the use of a new specification for the submerged combustion vaporizers burners that would reduce NOx and CO emissions.

4. All notices issued by the CSLC, USCG, and MARAD to comply with CEQA, NEPA, the Deepwater Port Act, or with any other law governing the processing and approval of the Project;
5. Relevant CSLC, USCG, and MARAD agency reports, studies, decisions, official opinions, modeling data, informal communications, and planning documents;
6. Other relevant State, Federal, and local agency reports, studies, decisions, official opinions, modeling data, informal communications, and planning documents;
7. Other environmental documentation prepared by the CSLC, USCG, MARAD, and other public agencies for other actions and programs relevant to the Project;
8. All documents submitted by members of the public and non-privileged documents submitted by public agencies in connection with the Project;
9. All relevant reports, documentary or other evidence submitted at workshops, public meetings and public hearings on the Project;
10. Minutes and transcripts of all public hearings held on the Project;
11. All non-privileged, application materials, relevant reports, memoranda, maps, letters and other planning documents prepared by the Applicant, CSLC staff, USCG staff and consultants, for the development of the Final EIS/EIR;
12. Scientific, technical and other professional judgment, published and unpublished articles, and other nonconfidential or security sensitive information relied upon by CSLC and USCG staff and participants in workshops and informal communications; and
13. Other written materials relevant to compliance with CEQA and NEPA or to decisions on the Project.

The location of the administrative record presently is the office of **Ecology & Environment Inc., 130 Battery Street, Suite 400, San Francisco, CA 94111** and the Sacramento office of the **California State Lands Commission, 100 Howe Avenue, Suite 100-South, Sacramento, CA 95825.**

1.4 FINDINGS ON SPECIFIC INCREMENTAL IMPACTS AND MITIGATION MEASURES

1.4.1 CEQA SIGNIFICANCE CRITERIA

CEQA requires the lead agency to identify each significant incremental effect on the environment resulting from the Project and appropriate mitigation if feasible. All significant adverse impacts of the proposed Project identified in the joint Final EIR are included in the Findings and organized according to the resource affected as they are listed in the EIS/EIR and numbered in accordance with the impact and mitigation numbers identified in the Mitigation Monitoring Program table (see Chapter 6 of the Final EIR). The CEQA Finding numbers are not numbered sequentially because the

Class III impacts were less than significant before mitigation. An explanation of the rationale for each finding accompanies each incremental impact.

Impacts are classified using the four categories identified in Table Exhibit X-1. Both the CSLC and USCG criteria apply to the class definitions.

Table Exhibit X-1 Categories of Impacts

Class Definition	CSLC Criteria	USCG Criteria
Class I	Significant adverse impact that remains significant after mitigation	Major, permanent, long-term, or short-term
Class II	Significant adverse impact that can be eliminated or reduced below an issue's significance criteria	Minor, long-term
Class III	Adverse impact that does not meet or exceed an issue's significance criteria	Minor, short-term, or temporary
Class IV	Beneficial impact	Positive, may be major or minor, short- or long-term or permanent

Class III and Class IV impacts do not require mitigation or findings, but Class IV impacts of the Project are mentioned in Exhibit G, the Statement of Overriding Considerations. In accordance with the State CEQA Guidelines § 15093, a Statement of Overriding Considerations addresses Class I impacts.

1.4.2 CEQA Findings Designations

The Findings are those allowed by Section 21081 of the California Public Resources Code. For each significant impact, i.e., Class I or II, a finding has been made as to one or more of the following Findings provided in section 15091 of the State CEQA Guidelines:

a) Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

b) Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.

c) Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the final EIR.

Whenever a Finding is made under section 15091©, the CSLC has determined that sufficient feasible mitigation is not available to reduce the impact to a level below an issue's significance criteria and, even after implementation of all such feasible mitigation measures, there will or could be an unavoidable significant adverse Class I impact due to the project.

Twenty Class I impacts requiring Finding (c) were identified in the Final EIR.

1.4.3 CEQA Findings for Environmental Impacts of the Project and Adopted Mitigation Measures

These findings are based on the information contained in the October 2004 Draft EIS/EIR, the March 2006 Revised Draft EIR, and the Final EIR for the Project, as well as information provided by the applicant and gathered through the public involvement process, all of which is contained in the Administrative Record indicated in Section 1.3.The mitigation measures are briefly described in these Findings; more detail on each of the mitigation measures is included in the text of the Final EIR.

CEQA Finding No. PS-1

Public Safety

Impact: **PS-1:** Potential Minor Release of LNG due to Operational Incident or Natural Phenomena at the FSRU or an LNG Carrier

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

b) Such changes or alterations are within the responsibility and jurisdiction of the USCG and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.

Facts Supporting the Finding(s)

Description of the Impact

An incident at the FSRU or LNG carrier due to human error, upsets, or equipment failures, or as a result of natural phenomena (severe wave conditions, high winds, etc.) could cause a release of LNG from the FSRU or an LNG carrier. As part of the independent risk assessment, a hazard identification study was conducted by the lead agencies and with the participation of Federal (including Sandia National Laboratory), State, and local government agencies to systematically identify potential accident hazards that could potentially impact the public and/or the environment. Based on this analysis and subsequent modeling, the IRA determined that operational incidents would not affect members of the public because the consequences of such incidents would not extend farther than the safety zone from which the public is excluded; intentional events are considered under Impact PS-2. The safety zone would extend a 1,640-foot (500 m) radius around the FSRU from which the public would be excluded.

The Deepwater Port Act specifies regulations that all deepwater ports must meet, and specific design criteria and specifications, final design requirements, and safety standards would govern the construction and operation of the FSRU. The U.S. Coast Guard has final approval of the design of the Cabrillo Port. A recognized third-party verification agent approved by the USCG, in consultation with the CSLC, would assess the proposed criteria and standards for design, construction, and operation. The FSRU and LNG carriers would meet the marine safety and security requirements identified in Appendix C3-2 of the Final EIS/EIR and would comply with any updated standards and conventions that are in place at the time of licensing.

Proposed Mitigation

MM PS-1e. Cargo tank fire survivability.

MM PS-1f. Structural Component Exposure to Temperature Extremes.

MM PS-1g. Pre- and Post-Operational HAZOPs (hazard and operability studies).

MM MT-3f. Live Radar and Visual Watch.

MM PS-1e would improve the ability of LNG storage tanks to withstand the effects of a fire and could also potentially limit the extent of damage caused by an incident. It is expected that additional advances in cargo tank insulation will be made in the near future, and this mitigation measure would help to ensure that the best available technology is used.

MM PS-1f would reduce the likelihood of a major structural failure by requiring consideration of potentially improbable but high consequence events during Project design. Safety engineering, HAZOPs and quantitative risk assessment (QRA) are widely used in processing industries to improve safety; these methodologies represent best management practices.

MM PS-1g would reduce the likelihood of a potential emergency incident at the FSRU and would improve the crew's response if such a situation were to occur. HAZOPs have been recognized to reduce risk by both industry and regulations such as the California and Federal Risk Management and Prevention Programs. Conducting a HAZOP prior to operation would help to refine operations practices and emergency response provisions and subsequent HAZOPS during operations would critically evaluate actual practices.

Finally, MM MT-3f would reduce the likelihood of a collision because the crew would have early warning of nearby vessels or aircraft and would assist in managing an incident should one occur. The provision for live radar and visual watch at the vessel control center of the FSRU is comparable to the established and proven in service, policies, and procedures of the Louisiana Offshore Oil Port (LOOP), the only operational oil deepwater port in the U.S. These measures would reduce the potential for incidents due to operational errors, upsets, or equipment failures or natural phenomena.

The impact would be adverse, but reduced to a level below its significance criteria, for all the reasons stated, with the implementation of the mitigation measures described above.

CEQA Finding No. PS-2

Public Safety

Impact: **PS-2:** Potential Release of LNG due to High-Energy Marine Collision or Intentional Attack

Class: I

Finding(s):

a) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

b) Such changes or alterations are within the responsibility and jurisdiction of the USCG and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.

c) Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or Project alternatives identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

A high-energy collision with the FSRU or an LNG carrier and another vessel or an intentional attack could cause a rupture of the Moss tank(s) holding LNG, leading to a release of an unignited but potentially flammable vapor cloud that could extend beyond the 1,640-foot (500 m) radius safety zone around the FSRU, or could impact members of the boating public in the identified potential impact area, and impact boats traveling in the Traffic Separation Scheme (TSS).

The IRA concluded that the FSRU design "demonstrates a very robust performance against marine collisions" and that, given the many safety features that have been incorporated in the design of the proposed Project, accidents at the FSRU would be rare and would not reach shore, even in the case of a worst credible release such as a deliberate attack. Only vessels with very specific geometry, strength, and speed would have the physical capacity to penetrate the hull's structural steel and breach the cargo containment. The likelihood of a marine collision is estimated to be 2.4 X 10-6 per year (once in 420,000 years), but the frequency of intentional events was not estimated due to the uncertainty. The IRA states that the frequency estimation for the accidental marine collision scenario is a conservative overestimate and that the scenario is improbable.

Figure ES-1 in the Final EIR depicts the consequence distances surrounding the FSRU location for worst credible events. The number of boaters and fishermen who could be

within the identified potential impact areas cannot be reliably estimated because no reliable records of recreational and fishing use exist for the area. Although recreational boaters and fishers would be prohibited from entering the safety zone, they would not be prohibited from the ATBA, which would extend 2 NM from the FSRU, and it is not possible to estimate the deterrent effect of such designation. Other variables include the day of the week, time, season of the year, and weather conditions during the incident. In addition, to avoid underestimating the hazard distance, the analysis assumed the release of full tank volumes even thought the events may not lead to the full release of all the LNG from each tank, which would result in a smaller area being affected.

Proposed Mitigation

MM PS-1e. Cargo Tank Fire Survivability.

MM PS-1f. Structural Component Exposure to Temperature Extremes.

MM PS-1g. Pre- and Post-Operational HAZOPs.

MM MT-3f. Live Radar and Visual Watch.

MM MT-3g. Information for Navigational Charts.

MM PS-1e would improve the ability of LNG storage tank to withstand the effects of a fire and could also potentially limit the extent of damage caused by an incident. It is expected that additional advances in cargo tank insulation will be made in the near future, and this mitigation measure would ensure that the best available technology is used.

MM PS-1f would reduce the likelihood of a major structural failure by requiring consideration of potentially improbable but high consequence events during Project design. Safety engineering, HAZOPs and QRA are widely used in processing industries to improve safety; these methodologies represent best management practices.

MM PS-1g would reduce the likelihood of a potential emergency incident at the FSRU and would improve the crew's response if such a situation were to occur. HAZOPs have been recognized to reduce risk by both industry and regulations such as the California and Federal Risk Management and Prevention Programs. Conducting a HAZOP prior to operation would help to refine operations practices and emergency response provisions and subsequent HAZOPS during operations would critically evaluate actual practices.

MM MT-3f describes how equipment in the control room would be operated. The provision for live radar and visual watch at the vessel control center of the FSRU is comparable to the established and proven in service, policies, and procedures of the Louisiana Offshore Oil Port (LOOP), the only operational oil deepwater port in the U.S. As a result, approaching vessels would be able to take measures to avoid the FSRU.

MM MT-3g would ensure that navigational charts would be promptly changed and published expeditiously to coincide with mooring of the FSRU; typically changes are not

initiated until a facility is in place. Once published, the safety zone and the ATBA delineations on navigational charts would assist all mariners transiting the Project area to plan accordingly to avoid the safety zone and the ATBA. The safety zone would be patrolled by tugs and/or a service vessel at all times to prevent incursions by unauthorized non-Project vessels.

The likelihood of potential impacts from high energy marine collisions or intentional attacks would be reduced, as described, with implementation of the mitigation measures described above; however, hazard and risk evaluations for these types of incidents indicated that the potential consequences could extend beyond the 1,640-foot (500 m) safety zone around the FSRU. The impacts would thus still be potentially significant, i.e., could result in serious injury or fatality to members of the public should an incident occur; therefore, this impact remains potentially significant after application of all feasible mitigation.

CEQA Finding No. PS-3

Public Safety

Impact: **PS-3:** Potential Release of Odorized Natural Gas due to Damage to Subsea Pipelines

Class: I

Finding(s): a) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

c) Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or Project alternatives identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

Fishing gear could become hung up on the pipeline and potentially damage one or both of the subsea pipelines. Similar damage may occur due to a seismic event or subsea landslide.

The frequencies of significant events per pipeline mile have been very conservatively estimated, based on reportable accidents that include the Gulf of Mexico, for offshore pipelines at four in one hundred thousand that a pipeline incident would result in a serious public injury, and about one in one hundred thousand that a pipeline incident would result in a public fatality.. Although members of the public such as fishers and recreational boaters could potentially be affected if the released natural gas formed a flammable cloud once it breached the ocean surface, recorded incidents where this occurred were in shallow water (less than 10 to 20 feet). The offshore pipelines for the proposed Project would be deeply buried to about 4,000 feet offshore, and trawling is prohibited in California waters (within 3 NM of shore), thus reducing the potential that people would be exposed to this hazard. The monitoring systems at the FSRU would detect leaks in the offshore pipelines and would shut them down in the event of a release, which would limit the potential for an accident involving a flammable vapor cloud.

The number of people who could be affected by an accident cannot be accurately estimated because no reliable information exists on the number of people frequenting the areas near the route of the offshore pipelines; however, boats would offer some protection to their occupants in the unlikely event of a fire caused by a release from an offshore pipeline.

Proposed Mitigation

MM PS-3b. Emergency Communication/ Warnings.

MM PS-3c. Areas Subject to Accelerated Corrosion, Cathodic Protection System.

MM MT-1d. Securite Broadcasts.

MM MT-3g. Information for Navigational Charts.

MM PS-3b would provide for notification of vessels in the area of a release of natural gas so that they could avoid the area. This would reduce the likelihood of potential impacts on vessels in the area of the offshore pipelines and could increase the timeliness and/or effectiveness of emergency response systems, such as fire fighting, in addition to those in place at the FSRU.

MM PS-3c would increase the overall integrity of the offshore pipelines, thereby reducing the potential for accidents. The purpose of Federal Office of Pipeline Safety pipeline safety advisories is to communicate issues based on experience in order to improve safety.

MM MT-1d would serve as a reminder to those familiar with the Notice to Mariners/posted signs and notify others of required actions.

MM MT-3g would ensure that navigational charts would be promptly changed and published expeditiously to coincide with mooring of the FSRU; typically changes are not initiated until a facility is in place. Once published, the safety zone and the ATBA delineations on navigational charts would assist all mariners transiting the Project area to plan accordingly to avoid the safety zone and the ATBA and to identify the location of the route of the offshore pipelines. The safety zone would be patrolled by tugs and/or a service vessel at all times to prevent incursions by unauthorized non-Project vessels.

The mitigation measures discussed above would reduce, for the reasons stated, both the likelihood and consequences of a release from should such an incident occur; however, the impacts would still be significant, i.e., could result in serious injury or fatality to members of the public. Therefore, this impact would remain potentially significant after application of all feasible mitigation.

CEQA Finding No. PS-4

Public Safety

Impact: **PS-4:** Potential Release of Odorized Natural Gas due to Accidental Damage to Onshore Pipelines

Class: I

Finding(s): a) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

c) Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or Project alternatives identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

The potential exists for accidental or intentional damage to the onshore pipelines or valves carrying odorized natural gas. Damage, fires, and explosions may occur due to human error, equipment failure, natural phenomena (earthquake, landslide, etc.). This would result in the release of an odorized natural gas cloud at concentrations that could be in the flammable range. The proposed pipelines would exceed regulatory standards and would be subject to design review, construction and operational safety inspections and enforcement by the CPUC and ongoing safety oversight subsequent to construction through its comprehensive pipeline safety inspections. SoCalGas has franchise agreements with Ventura County and the cities of Oxnard and Santa Clarita that grant it the right to lay and use natural gas pipelines in public streets and other rights of way.

The annual frequencies of significant events per pipeline mile have been very conservatively estimated for onshore pipelines at about four in one hundred thousand that a pipeline incident would result in a serious public injury and about one in one hundred thousand that a pipeline incident would result in a public fatality. These frequencies would be expected to be lower for the proposed Project pipelines, however, because they would be new pipelines built to current standards. The number of people who could be affected by an accident cannot be reliably estimated because it would depend on the nature and severity of the incident and the number of people in proximity at the time of the incident. However, a review of incident reports filed by SoCalGas between January 1994 and May 2006 indicates no fatalities.

Proposed Mitigation

MM PS-4b. Pipeline Integrity Management Program.

MM PS-4c. Install Additional Mainline Valves Equipped with Either Remote Valve Controls or Automatic Line Break Controls.

MM PS-4d. Treat Shore Crossing as Pipeline HCA.

MM PS-4e. Safety Marker Indicating the Presence of Buried Natural Gas Pipeline at Ormond Beach.

MM PS-4f. Emergency Response.

MM PS-3c. Areas Subject to Accelerated Corrosion, Cathodic Protection System.

MM PS-4b would increase public awareness by requiring implementation of the Pipeline Integrity Management Program prior to pipeline operations instead of afterwards.

MM PS-4c would limit the area affected by a potential pipeline accident by allowing SoCalGas to automatically control the influx of gas into sections of the pipeline system. A team of engineers from the CSLC and CPUC evaluated project-specific pipeline valve spacing and design and determined that they were appropriate to limit the potential release duration and the quantity of natural gas that might be released from a ruptured pipeline segment by reducing the distance between the mainline valves.

MM PS-4d would provide for implementation of the pipeline integrity management program at beach recreation areas where people could be located in the vicinity of the pipelines.

MM PS-4e would improve the safety of the system by enabling members of the public to report gas leaks.

MM PS-4f would improve the timeliness and effectiveness of emergency response measures and facilitate evacuation of beach users in the unlikely event of a potential pipeline accident.

Finally, MM PS-3c would increase the overall integrity of the pipelines, thereby reducing the potential for accidents.

With the implementation of the measures and for the reasons described above, both the likelihood and the severity of an accident would be reduced. Should such an incident occur, however, the impacts would still be significant, i.e., could cause serious injury or fatality to members of the public. Therefore, this impact would remain potentially significant after application of all feasible mitigation.

CEQA Finding No. PS-5

Public Safety

Impact: **PS-5:** Increased Potential for Injury, Fatality, and Property Damage Due to Fire or Explosion in Areas with Less Robust Housing Construction and Outdoor Activity.

Class: I

Finding(s): a) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

c) Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or Project alternatives identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

In the event of an accident, there is a greater likelihood of injury, fatality, and property damage near Center Road Pipeline MP 4.1. The pipeline right-of-way (ROW) is approximately 565 feet from the closest structure in the area and Highway 1 forms a physical barrier between the pipeline ROW and the area of less robust housing.

Proposed Mitigation

Mitigation measures include the following:

MM PS-5a, Treat Manufactured Home Residential Community as a High Consequence Area (HCA).

MM PS-5a would implement additional pipeline safety measures, above the level of standards (based on population densities) applicable under law, rule and regulation, for areas along the pipeline route with a predominance of semi-permanent housing. The measure would also increase public awareness by requiring implementation of the Pipeline Integrity Management Program, which requires continuing public education and a public awareness program.

Potential impacts from a natural gas release in areas with less robust housing construction and outdoor activities would be reduced, considering the distance of the closest structure from the pipeline ROW and the presence of the highway between the ROW and the nearest structure, with the implementation of the additional measures described above; however, the impacts would still be potentially significant should an

incident occur. Therefore this impact would remain potentially significant after application of all feasible mitigation.

CEQA Finding No. MT-1

Marine Traffic

Impact: **MT-1:** Temporary Increase in Maritime Traffic during FSRU Mooring, Offshore Pipeline Construction, and Shore Crossing Resulting in Increased Safety Risks

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

The FSRU would be towed to the proposed Port location from the shipyard where it would be fabricated. Installation of the mooring system, PLEM, and PLET would begin before the FSRU would arrive. Six vessels would be used to install the PLET and PLEM and moor the FSRU over a period of 20 days, working 24 hours per day. This operation would take place over 2 NM (2.3 miles or 3.8 km) from the boundary of the southbound TSS. Offshore pipelaying would occur over a 35-day period, 24 hours per day. Four vessels would be used over the entire 35-day period. Two additional vessels would be used for a 10-day and an 8-hour period, respectively. The subsea pipelines would cross the Santa Barbara TSS (see Impact PS-1 for an explanation of the TSS).

The Applicant would shut down parts of the vessel traffic lanes during construction; therefore, transiting vessels would have to either exit the portion of the lane being used by the construction vessels (to the northeast or southwest depending on their direction of travel) and/or slow down for safe passage so as not to endanger the construction crews due to their wakes. One half of one traffic lane would be shut down as the pipelay barge approaches and crosses the TSS. The only time when more than half of a traffic lane may be closed would be when the pipeline is being laid through the lane; with a construction rate of 1.87 NM (2.15 miles or 3.46 km) per day, this would occur for less than half a day. This would not stop vessel traffic because vessel traffic could be diverted temporarily outside of the traffic lane. Once pipelaying has been completed across the TSS, it would continue until reaching the HDB exit point.

As a result, marine activities associated with site preparation, transportation, and installation of the mooring system, FSRU, and subsea pipelines could temporarily increase maritime traffic congestion and increase the risk of vessel collision.

Proposed Mitigation

MM MT-1c. Notices to Mariners.

MM MT-1d. Securite Broadcasts.

MM MT-1e. Safety Vessel.

MM MT-1f. Guard Boats.

MM MT-1g. Construction Schedule Signs.

The Applicant would be required under maritime law to issue a Notice to Mariners for the period of construction. Because there are no specific requirements for the contents of a Notice to Mariners, MM MT-1c requires that the Notice to Mariners give mariners advance notice of construction areas, TSS lane closures, etc., allowing pre-planning of routes to minimize delays or inconveniences associated with diverting around the construction. Construction schedule signs posted onshore would serve to notify recreational vessel operators who do not normally check Notices to Mariners.

Securite broadcasts required by MT-1d would serve as a reminder to those familiar with the Notice to Mariners/posted signs, and as an initial notification of construction activities/required actions to everyone else.

The safety vessel required by MM MT-1e would serve as one possible platform for originating Securite broadcasts, but more importantly, as an active means of contacting vessels directly by name, course/speed, etc.

Under MM MT-1f, the guard boats would perform the same role closer to shore for the small craft and specifically trawlers that might require more than a radio call to make them aware of construction activities and required actions.

Implementation of the mitigation measures described above would, for the reasons stated, decrease marine traffic congestion, thereby reducing the risk of vessel collision to a level below its significance criteria.

CEQA Finding No. MT-2

Marine Traffic

Impact: **MT-2:** Long-Term Increase in Maritime Traffic during Offshore Operations

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

LNG carriers would travel across the Pacific and would approach the FSRU along one of two routes. Both routes avoid the vessel traffic service (VTS) and the TSS (see Impact PS-1 for an explanation of the TSS). A maximum of 99 LNG carrier arrivals would occur annually at Cabrillo Port. The Applicant's support vessels would have a maximum of 500 annual transits traveling to and from Port Hueneme.

Project support vessels transiting between the FSRU and Port Hueneme would be required to use the appropriate designated traffic lane wherever possible for most of any transit, and would enter and depart such traffic lanes in accordance with the International Regulations for Avoiding Collisions at Sea (the nautical "rules of the road") and any applicable local requirements. Vessel traffic from Port Hueneme and the Port of Long Beach/Los Angeles is projected to increase over the next 40 years. Much of this vessel traffic will travel through the Santa Barbara Channel TSS. The Project would contribute at most one vessel roundtrip per day in increased vessel traffic in the TSS. No LNG carrier would enter the Santa Barbara Channel TSS.

As a result of the presence of the Project, LNG carriers, tugs, and attending vessels transiting to and from the FSRU, could increase maritime traffic congestion during Project operations.

Proposed Mitigation

MM MT-2d. Incorporation of Procedures for Delays.

MM MT-2e. Evaluation of Routes to and from Port Hueneme.

Although the Applicant has specified provisions for delays, such provisions would only become formalized for the Project if they are included in the facility operations manual. Once included in the facility operations manual as required by MM MT-2d, procedures for delays for all vessels calling on the FSRU would be established and would ensure that all the Project LNG carriers would operate in a consistent manner.

The provision to evaluate vessel routes to and from the Port of Hueneme would allow both parties to make potential adjustments to the routes based on operational data to ensure the safest routes would regularly be used.

As a result of the implementation of the above mitigation measures, the impact would , for the reasons stated, be reduced a level below its significance criteria.

CEQA Finding No. MT-3

Marine Traffic

Impact: **MT-3:** Long-Term Increase in Safety Hazards due to the Presence of the FSRU and LNG Carriers

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

The FSRU mooring location would be situated approximately 2 NM (2.3 miles or 3.7 km) from the Southbound Coastwise Traffic Lane of the Santa Barbara Channel Traffic Separation Scheme, which has relatively high levels of maritime traffic (see Impact PS-1 for an explanation of the TSS).The presence of the FSRU and approaching/departing LNG carriers could cause other vessels to make course and speed adjustments because large vessels typically try to avoid approach within 2 NM (2.3 miles or 3.7 km) of each other in the open ocean.

The presence of the Project would increase the number of vessels in the area and therefore could increase the risk of collisions. Ships could collide with the FSRU or Project-support vessels could collide with other vessels. An analysis of marine traffic risks showed that the greatest potential for vessel collision would occur between merchant vessels and a Project LNG carrier; a small craft has the greatest potential to collide with the FSRU. Project and non-Project vessels would have to comply with all USCG navigational safety regulations.

The world's LNG fleet has operated for many years under the regulation of the USCG and other international regulatory bodies. Since 1944, only five LNG carrier accidents have occurred when LNG ships were at sea. The rest occurred when ships were in port and during loading and offloading operations. None of these accidents resulted in injuries, fatalities, or a release of LNG, and only one was the result of a collision with another vessel.

Proposed Mitigation

MM MT-3f. Live Radar and Visual Watch.

MM MT-3g. Information for Navigational Charts.

Under the Deepwater Port Act, the FSRU is required to have a control center, but the Deepwater Port Act does not specify how it would be operated.

MM MT-3f prescribes how equipment in the control room would be operated. Live radar and visual watchstanders would provide an extra level of security to ensure that vessels approaching the FSRU would be monitored and tracked and to inform them of the FSRU's location, intentions, and the nature of safety and/or security zones in effect. The provision for live radar and visual watch at the vessel control center of the FSRU is comparable to the established and proven in service, policies, and procedures of the Louisiana Offshore Oil Port (LOOP), the only operational oil deepwater port in the U.S. As a result, approaching vessels would be able to take measures to avoid the FSRU.

MM MT-3g would ensure that navigational charts would be promptly changed and published expeditiously to coincide with mooring of the FSRU; typically changes are not initiated until a facility is in place. Interim corrections could be made by mariners in response to the areas/zones being published in Notices to Mariners. Once published on navigational charts, the safety zone and the ATBA delineations would assist all mariners transiting the Project area to plan accordingly to avoid the safety zone and the ATBA. Interim corrections could be made by mariners in response to the areas/zones being published in Notices to Mariners.

The implementation of the measures described above would, for the reasons stated, reduce the effects of the proposed Project on long-term marine traffic to a level below the significance criteria.

CEQA Finding No. MT-4

Marine Traffic

Impact: **MT-4:** FSRU or LNG Carrier Accident Impact on Marine Traffic

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

An incident at the FSRU or on an LNG carrier could adversely affect marine traffic. The vessel collision analysis showed that the probabilities of vessel collisions are small; however, marine traffic could be adversely affected if an incident were to occur. Since LNG carriers would approach no closer to the mainland and traffic lanes than the vicinity of the FSRU, and the FSRU LNG capacity greatly exceeds that of LNG carriers, it was assumed that the potential consequences modeled for the FSRU represented the worst credible scenarios for an LNG incident. Potential threats would be generated to vessels in the area, including ships in the TSS, by the potential drifting of an unignited methane cloud. With a wind speed of 2 m per second (4.5 mph or 7.2 km per hour), an unignited cloud would take approximately 89 minutes to reach the TSS; however, faster wind speeds would reduce this time. (See Impact PS-1 for an explanation of the TSS).

Commercial vessels over 65 feet (20 m) using the TSS are required to monitor Channel 16 and use AIS and the Global Marine Distress Safety System (GMDSS) (if equipped per IMO and U.S. regulations); therefore, they would be alerted as soon as a notice would be sent. Upon receipt of the notice, commercial vessels ideally would take evasive actions by either changing course or increasing their speed or both to avoid or evacuate the affected area. Commercial fishing vessels over 300 domestic gross registered tons are required to have an AIS and GMDSS and therefore would also receive the notification.

Recreational vessels would be alerted if they are adhering to maritime communication regulations; however, some vessels may not know to take measures to avoid entering a potentially hazardous area.

If an incident were to occur, the USCG would take immediate action. The Captain of the Port (COTP) of LA/LB would immediately issue an Urgent Marine Information Broadcast to warn vessels to avoid the area. In addition, USCG would deploy vessels to conduct search and rescue.

Proposed Mitigation

MM PS-3b. Emergency Communication/ Warnings.

MM MT-3f. Live Radar and Visual Watch.

As required by MM PS-3b, the Applicant would use all available communication devices on the FSRU, LNG carrier, and/or Project support vessels to immediately notify vessels in any offshore area, including hailing and Pan Pan broadcasts, if an incident were to occur. This would allow vessels in the area to take evasive maneuvers to avoid or minimize potential harm. Finally, MM MT-3f would reduce the likelihood of a collision because the crew would have early warning of nearby vessels or aircraft and would assist in managing an incident should one occur. The provision for live radar and visual watch at the vessel control center of the FSRU is comparable to the established and proven in service, policies, and procedures of the Louisiana Offshore Oil Port (LOOP), the only operational oil deepwater port in the U.S. .

With the implementation of the mitigation measures described above, which would reduce the potential for incidents due to operational errors, upsets, or equipment failures or natural phenomena, the impact on marine traffic would, for the reasons stated, be reduced to a level that is below the marine traffic significance criteria.

CEQA Finding No. MT-5

Marine Traffic

Impact: **MT-5:** Temporary Interference with Operations in the Point Mugu Sea Range or the SOCAL Range Complex during Offshore Construction

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

Marine activities associated with site preparation, transportation, and installation of the mooring system, FSRU, or subsea pipelines could temporarily burden maritime traffic tracking systems or make clearing of some warning areas impossible; thus, temporary disruption of operations in the Point Mugu Sea Range or the SOCAL Range Complex could occur.

The subsea pipelines (from approximately milepost [MP] 3 to MP 16.8) would be installed across the Point Mugu Sea Range. The U.S. Navy has indicated that the support and construction vessels used during the installation of the subsea pipelines would not have a significant impact on operations, if that work is coordinated well in advance with the Navy. However, precautions would be necessary to ensure that impacts do not become significant. No construction activities would occur within the SOCAL Range Complex, with the exception of transport of the FSRU from its overseas location.

Proposed Mitigation

MM MT-5a. Avoid Point Mugu Sea Range.

MM MT-5b. Daily Safety Briefs.

MM MT-5c. Daily Coordination with the U.S. Navy.

MM MT-5d. Monitor U.S. Navy Securite Broadcasts.

As required by MM MT-5a, potential impacts on the Point Mugu Sea Range would be reduced if offshore pipeline construction is coordinated with the US Navy and only vessels directly related to construction enter the Range.

Under MM MT-5b, all crews on Project construction vessels would be briefed daily, which would remind construction workers to avoid the Range.

Under MM MT-5c, in addition, the Applicant would be required to coordinate with the Navy daily to ensure that construction activities, once authorized by the Navy, would not conflict with Navy activities.

Under MM 5d, the Applicant would have to monitor Navy broadcasts to proactively avoid interference with Navy activities.

The implementation, at the request of the U.S. Navy, of the mitigation measures described above would, for the reasons stated, avoid and ultimately reduce interference with U.S. Navy activities to a level below its significance criteria.

CEQA Finding No. MT-6

Marine Traffic

Impact: **MT-6:** Long-Term Interference with Operations in the Point Mugu Sea Range and the SOCAL Range Complex

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

Marine activities associated with Project operations could burden maritime traffic tracking systems or could make clearing of some warning areas impossible and disrupt operations in the Point Mugu Sea Range or the SOCAL Range Complex.

LNG carriers would transit through a small portion of the Point Mugu Sea Range. Although infrequent, Navy operations could preclude use of either or both LNG carrier routes for periods up to several hours. Project support vessels used during operations may cross the Point Mugu Sea Range. LNG carriers would transit within the SOCAL Range Complex, but not through the FLETA HOT, SHOBA, SWTR, or SOAR active ranges.

The U.S. Navy has indicated in 2004 and 2006 that Project operations would not pose a problem as long as U.S. Navy Securite broadcasts are heeded, LNG carrier schedules are provided, and the U.S. Navy is notified in advance of an LNG carrier's approach,

Proposed Mitigation

MM MT-6a. Follow U.S. Navy Securite Broadcasts.

MM MT-6b. LNG Carrier Schedules.

MM MT-6c. Coordinate with the U.S. Navy.

MM MT-6a would prevent transiting LNG carriers from entering any areas in which the Navy was conducting exercises because they would heed Navy Securite broadcasts.

MM MT-6b would require the LNG carrier schedule to be provided to the Navy and then require notificationof the Navy when LNG carriers are approaching the FSRU.

MM MT-6c would ensure that both the Navy and the LNG carrier captains would avoid any potential interference with Navy activities by the use of any LNG carrier route.

With the implementation, at the request of the U.S. Navy, of the mitigation measures described above, this impact would, for the reasons stated, be reduced to a level below its significant criteria.

CEQA Finding No. MT-7

Marine Traffic

Impact: **MT-7:** Long-Term Interference with Operations at Port Hueneme

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

Activities associated with Project operations could increase traffic at Port Hueneme; thus, disruption of operations at Port Hueneme could occur. Port Hueneme has limited berth space and is in the process of changing its mission to focus on cargo rather than support for offshore oil and gas facilities. The harbor provides berth space on a first-come, first-served basis. The Applicant has stated that the crew/supply boat would be berthed at Port Hueneme and would take two trips to each LNG carrier that is docked at the FSRU during cargo unloading. In addition, one tugboat would make weekly trips to its berth at Port Hueneme to pick up supplies. The Applicant's use of the Port would increase vessel traffic in and out of the Port from 1,750 to 2,250 vessel round trips annually, representing a 28 percent increase in vessel traffic. This increase could be significant if Project vessels were to loiter within the Port waiting for berth space to become available; however, this impact could be mitigated through coordination between the Applicant and the Port of Hueneme.

Port Hueneme requires that local licensed pilots guide all vessels that are more than 2 300 gross registered tons. The tug boats would exceed 300 gross registered tons. Therefore, every week a local pilot would need to pilot the tugboat in and out of the Port. Port Hueneme currently has two pilots; therefore, the Project's use of pilots may impede other traffic in and out of the Port. In addition, every time a 300-gross-registered-ton vessel would enter the Port, all activity in the main channel of the Port entrance would cease. Although it would only take the tugboat less than 10 minutes to transit the channel, this could cause minor delays to commercial fishing and potentially other operations.

Proposed Mitigation

MM MT-7a. Project Pilots.

MM MT-7b. U.S. Navy Exemption.

MM MT-7c. Scheduling of Tug trips to the Port of Hueneme.

As required by MM MT-7a, having the masters of Project tugs obtain Port of Hueneme-endorsed masters would eliminate the need for the use of Port of Hueneme's limited number of existing pilots. As a result, Port of Hueneme pilots could continue to pilot other vessels as they currently do, and vessel transits into and out of the Port would continue as they currently do so that other commercial uses are not impaired.

Under MT-7b, a Navy exemption to the requirement to cease operations when Project tugs enter and leave the Port of Hueneme would eliminate potential adverse impacts on commercial fishing operations.

Under MT-7c, if the exemption were not granted, the 48-hour notification of tugboat arrivals would reduce or eliminate any adverse impacts on commercial fishing operations at Port Hueneme. In addition, the advanced coordination with Port of Hueneme could reduce potential congestion within the Port caused by Project vessels waiting for berth space.

With the implementation of the mitigation measures desrcribed above, the impact would, for the reasons stated, be reduced to a level below its significance criteria.

CEQA Finding No. AES-3

Aesthetics

Impact: **AES-3:** Alter Views for Recreational Boaters

Class: I

Finding(s): c) Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or Project alternatives identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

The FSRU would change the visual character of the ocean view for recreational boaters. The change in character of the seascape could represent an adverse impact. Judging the intensity of the impact with respect to recreational boaters is subjective. Some boaters would not find the FSRU to be a significant adverse aesthetic impact because they are accustomed to the large ships traveling nearby in the shipping lanes. However, because recreational boaters would have the opportunity to view the FSRU much closer than observers on land, their views could be substantially degraded. Therefore, the Project would result in a significant long-term aesthetic impact for recreational boaters.

Proposed Mitigation

No feasible mitigation is available to reduce this impact to below its significance criteria; therefore, this impact would remain significant .

CEQA Finding No. AGR-1

Agriculture and Soils

Impact: **AGR-1:** Temporary Loss of Agricultural Land

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

Construction activities could temporarily cause a loss of agricultural land, crops, or crop production; however, the potential financial effect on farmers would be limited because they would be compensated for both temporary and permanent losses of agricultural land, crops, production and other negative effects, and the affected land would be restored to its original condition following construction. No trees can grow within 15 feet of the pipelines due to maintenance and safety requirements.

Proposed Mitigation

MM AGR-1d. Minimize Orchard Tree Removal.

MM AGR-1d would minimize orchard tree removal and require that small orchard trees be replanted to replace any trees removed in the area between the temporary construction easement and the permanent pipeline ROW.

This measure would, for the reasons stated, reduce impacts on agricultural land to a level belowits significance criteria.

CEQA Finding No. AGR-2

Agriculture and Soils

Impact: **AGR-2:** Permanent Conversion of Agricultural Land to Non-Agricultural Use

Class: I

Finding(s): c) Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or Project alternatives identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

Operational activities could cause a loss of agricultural land, crops, or crop production. Construction of permanent facilities could cause a permanent loss of agricultural land, crops, or crop production. Agricultural land that is preserved under the Williamson Act could be permanently converted from agricultural land to non-agricultural land. Prime farmland or farmland of Statewide Importance could be converted to non-agricultural uses.

The NRCS has evaluated the proposed routes and determined that there would be no significant impact on agricultural lands under its jurisdiction; however, under the California Environmental Quality Act (CEQA) guidelines, any conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance soils to non-agricultural may represent a significant impact. The conversion of 0.1 acre of land at the Center Road Valve Station is a significant impact that cannot be mitigated. This impact would be a Class I impact.

Proposed Mitigation

No mitigation is available for the conversion of prime farmland to uses other than farming because such farmland, once lost, is irreplaceable; therefore, the impact remains significant.

CEQA Finding No. AGR-3

Agriculture and Soils

Impact: **AGR-3:** Topsoil Loss, Mixing, and/or Compaction

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

Construction activities could result in topsoil and subsoil mixing, soil compaction, and/or introduction of weed/invasive species, thereby reducing agricultural productivity. Where construction occurs in agricultural areas, the concentrated movement of construction equipment could result in mixing topsoil with the relatively infertile subsoil, thereby diluting the productivity of the soil. The use of heavy equipment could also result in rutting, which could lead to mixing of topsoil and subsoil, especially in excessively wet conditions. Inadequate compaction of the trench backfill could result in soil subsidence over the pipeline and thereby alter drainage patterns, while severe over compaction could impede vegetation growth because of restricted movement of air and water into the soil. Approximately 90.8 acres (36.7 ha) of agricultural soils would be disturbed by the construction of the Center Road Pipeline, based on an average 80-foot (24.4 m) ROW for most of the route and a 100-foot ROW (30.5-meter) for the last portion of the pipeline route. Approximately 30.1 acres (12.2 ha) of agricultural soil would be disturbed (based on an average 80-foot [24.4 m] ROW) along the proposed Line 225 Pipeline Loop; however, loss of soil productivity is less of a concern for this route because it would traverse urban, residential, commercial, and industrial lands, and none of the undeveloped areas are agricultural

Proposed Mitigation

MM AGR-3a. Topsoil salvage and replacement.

MM AGR-3b. Landowner Compensation for Soil Productivity Losses.

MM AGR-3a would ensure that the top soil disturbed by the Project would be segregated and be replaced as topsoil to retain its continued agricultural productivity.

If soil productivity losses still were to occur in spite of preventive measures, implementation of MM AGR-3b would ensure that farmers would be adequately compensated for their losses due to loss of soil productivity.

Implementation of the mitigation measures described above would, for the reasons stated, reduce this potential impact to a level below its significance criteria.

CEQA Finding No. AGR-4

Agriculture and Soils

Impact: **AGR-4:** Dust Deposition

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

Dust generated during construction could be deposited on adjacent agricultural lands with planted crops, temporarily reducing productivity by reducing a plant's ability to photosynthesize.

Proposed Mitigation

MM AIR-2b. Construction Fugitive Dust Plan.

MM AGR-4a. Dust Suppression Water Quality.

MM AIR-2b would minimize the generation of fugitive dust; therefore, the potential adverse effects of the presence of fugitive dust on agricultural fields would be potentially avoided or minimized.

Implementation of MM AGR-4a would ensure that water applied in the implementation of the Construction Fugitive Dust Plan to reduce the generation of fugitive dust is potable water that would not adversely affect agricultural production.

With the minimization of fugitive dust generation without adversely affecting water quality, the potential effects of dust deposition impacts would, for the reasons stated, be reduced to a level below its significance criteria.

CEQA Finding No. AGR-5

Agriculture and Soils

Impact: **AGR-5:** Loss of Tree Rows

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

Loss of tree rows could reduce agricultural productivity. Tree rows provide a windbreak for agricultural fields, decreasing stresses on individual plants and thus allowing them to grow with fewer disturbances. Along the Center Road Pipeline route, approximately 8,372 linear feet of tree rows would potentially be disturbed. There are no known tree rows along the Line 225 Pipeline Loop.

Proposed Mitigation

MM TerrBio-2g. Tree Avoidance and Replacement

Implementation of MM TerrBio-2g would require the Applicant to replace tree rows at ratio of 1:1. Replacement trees would be 15-gallon trees approximately 8 to 10 feet in height. The type of tree planted would be approved by the CDFG and/or the landowner.

Therefore, the potential impact of the removal of tree rows would be limited to the period of construction and would be reduced to a level below its significance criteria in the long-term as the planting of larger replacement trees would reduce the time to return to baseline conditions.

CEQA Finding No. AGR-6

Agriculture and Soils

Impact: **AGR-6:** Impacts from a Leak or Fire Associated with the Natural Gas Transmission Line

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

If the natural gas transmission line leaked and/or was ignited, the resulting fire could cause the loss of crops or the contamination of the soil in the vicinity of the leak or fire. A leak or rupture in any natural gas transmission line would require immediate response by fire and police departments and SoCalGas. This could disrupt nearby agricultural activities by preventing access to the fields for a number of hours. Plants in the immediate vicinity of the pipe rupture would be lost and other localized crop losses could occur. Although not acutely toxic, soot from the burning of any material in the vicinity of the fire could contaminate nearby crops and would likely require destruction of soot-contaminated plants and/or fruit.

Proposed Mitigation

MM AGR-6a. Restoration After a Natural Gas Transmission Line Accident.

MM PS-3c. Areas Subject to Accelerated Corrosion, Cathodic Protection System.

MM PS-4b. Pipeline Integrity Management Program.

MM PS-4c. Install Additional Mainline Valves Equipped with Either Remote Valve Controls or Automatic Line Break Controls.

Implementation of MM AGR-6a would ensure that the area would be restored to its original baseline condition should a leak or fire cause damage or contamination.

MM PS-3c would increase the overall integrity of the onshore pipelines, thereby reducing the potential for accidents. The purpose of Federal Office of Pipeline Safety pipeline safety advisories is to communicate issues based on experience in order to improve safety.

MM PS-4b would increase public awareness by requiring implementation of the Pipeline Integrity Management Program prior to pipeline operations instead of afterwards.

MM PS-4c would limit the affected area from a potential pipeline accident by allowing SoCalGas to automatically control the influx of gas into sections of the pipeline system. A team of engineers from the CSLC and CPUC evaluated project-specific pipeline valve spacing and design and determined that they were appropriate to limit the potential release duration and the quantity of natural gas that might be released from a ruptured pipeline segment by reducing the distance between the mainline valves.

Impacts of this type would be temporary and the effects could be mitigated over the long-term, for the reasons stated, to a level below its significance criteria.

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CALENDAR PAGE

000609
MINUTE PAGE

CEQA Finding No. AIR-1

Air Quality

Impact: **AIR-1:** Net Emission Increases of Criteria Pollutants from Construction Activities in Designated Nonattainment Areas

Class: I

Finding(s): a) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

c) Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or Project alternatives identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

The dispersion modeling analysis indicates the maximum ambient CO and NO_2 impacts caused by emissions from onshore construction activities would be less than applicable National Ambient Air Quality Standards and State Air Quality Standards. However, Project construction activities in Ventura and Los Angeles Counties would generate emissions that exceed quantitative thresholds for ozone precursors, NOx and ROC, and CO.

Proposed Mitigation

MM AIR-1d. Gasoline-Fueled Equipment.

MM AIR-1e. USEPA Tier 3 Nonroad Engine Standards.

MM AIR-1f. Construction Emissions Reduction Plan.

MM AIR-1g. Construction Equipment Documentation.

MM AIR-1d would require the exclusive use of gasoline fueled equipment that meets specific exhaust emissions standards. This mitigation measure would reduce CO and NO_x emissions by precluding the use of gasoline-fueled construction equipment that does not meet these standards. Air quality analysis predicts that the reduced construction emissions due to this mitigation measure, in combination with other mitigation measures, would not cause CO or NO_2 ambient air quality standards to be exceeded.

MM Air-1e would require that all diesel equipment with a rating between 100 and 750 horsepower be equipped with engines that comply with USEPA Tier 3 nonroad engine standards. This mitigation measure would reduce air pollutant emissions by precluding

the use of applicable construction equipment that does not meet these standards. Air quality analyses predict that the reduced construction emissions due to this mitigation measure, in combination with other mitigation measures, would not cause exceedences of CO or NO_2 ambient air quality standards.

MM AIR-1f specifies the preparation of a plan to catalog the emissions reductions elements, including Applicant measures and mitigation measures that the Applicant must incorporate into construction contracts. The plan would also include additional specific measures that represent best management practices for construction activities, which are expected to result in reductions in air pollutant emissions.

MM AIR-1g requires the Applicant to provide appropriate documentation to confirm the implementation of Applicant emission reduction measures and mitigation measures. This mitigation does not provide for additional emission reductions, but provides for a mechanism for confirming the emission reductions quantified under Applicant measures and other mitigation measures are achieved.

Since Project-related mitigation would not reduce the daily level of NO_x, ROCs, and CO emissions from construction activities to less than the applicable Ventura County Air Pollution Control District and South Coast Air Quality Management District significance thresholds, this impact would remain Class I.

CEQA Finding No. AIR-2

Air Quality

Impact: **AIR-2:** Violations of Ambient Air Quality Standards Caused by Particulate Emissions from Onshore Construction Activities

Class: I

Finding(s): a) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

c) Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or Project alternatives identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

Onshore Project construction activities would generate PM_{10} and $PM_{2.5}$ emissions that could cause or contribute to existing or projected violations of National Ambient Air Quality Standards and/or State Ambient Air Quality Standards.

Implementation of the Construction Emissions Reduction Plan and other mitigation measures would lead to the use of equipment engines and control equipment that would emit less diesel particulate matter (PM_{10} and $PM_{2.5}$).

Measures required under the Construction Fugitive Dust Plan would serve to limit, to the extent feasible, the generation of fugitive dust caused by construction activities. Emission reductions for fugitive PM_{10} and $PM_{2.5}$ associated with this mitigation measure have already been incorporated into current emission estimates.

In addition to emission reduction measures, the Applicant would be required to monitor ambient concentrations of PM_{10} and $PM_{2.5}$ during construction activities and take appropriate actions to avoid violations of ambient air quality standards.

Proposed Mitigation

MM AIR-2b. Construction Fugitive Dust Plan.

MM AIR-1e. USEPA Tier 3 Nonroad Engine Standards.

MM AIR-1f. Construction Emissions Reduction Plan.

MM AIR-1g. Construction Equipment Documentation.

MM AIR-2b specifies the preparation of a plan to elaborate the fugitive dust control measures that the Applicant must incorporate into construction contracts. The plan would include Applicant proposed measures as well as specific measures required by local rules and regulations that represent best management practices for construction activities. The emission reductions from fugitive control measures are expected reduce PM_{10} and $PM_{2.5}$ emissions. In addition to emission reduction measures, the Applicant would be required to monitor ambient concentrations of PM_{10} and $PM_{2.5}$ during construction activities and take appropriate actions to avoid violations of ambient air quality standards. However, air quality analysis predicts that emissions from construction activities would have the potential to contribute to exceedences of PM_{10} and $PM_{2.5}$ ambient air quality standards.

MM Air-1e would require that all diesel equipment with a rating between 100 and 750 horsepower be equipped with engines that comply with USEPA Tier 3 nonroad engine standards. This mitigation measure would reduce air pollutant emissions by precluding the use of applicable construction equipment that does not meet these standards. However, air quality analysis predicts that emissions from construction activities would have the potential to contribute to exceedences of PM_{10} and $PM_{2.5}$ ambient air quality standards.

MM AIR-1f specifies the preparation of a plan to catalog the emissions reductions elements, including Applicant measures and mitigation measures that the Applicant must incorporate into construction contracts. The plan would also include additional specific measures that represent best management practices for construction activities that are expected to result in reductions in air pollutant emissions. However, air quality analysis predicts that emissions from construction activities would have the potential to contribute to exceedences of PM_{10} and $PM_{2.5}$ ambient air quality standards.

MM AIR-1g requires the Applicant to provide appropriate documentation to confirm the implementation of Applicant emission reduction measures and mitigation measures. This mitigation does not provide for additional emission reductions, but provides for a mechanism for confirming the emission reductions quantified under Applicant measures and other mitigation measures.

Despite these mitigation measures, the potential for onshore construction activities (primarily in the form of fugitive dust emissions) to cause an exceedance of applicable ambient air quality standards would exist; therefore, the potential impact remains Class I.

CEQA Finding No. AIR-3

Air Quality

Impact: **AIR-3:** Violations of Ambient Air Quality Standards, Exposure of the Public to Substantial Pollutant Concentrations, and/or Creation of Objectionable Odors Caused by an Accidental LNG Spill or Pipeline Rupture

Class: I

Finding(s): a) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

c) Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or Project alternatives identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

An LNG spill from the FSRU or a pipeline rupture would result in a natural gas release and/or a fire that could cause temporary increases in ambient air concentrations of criteria pollutants in excess of air quality standards, expose sensitive receptors and the general public to substantial concentrations of toxic air contaminants, and/or create objectionable odors.

Proposed Mitigation

MM PS-3c. Areas Subject to Accelerated Corrosion, Cathodic Protection System.

MM PS-4c. Install Additional Mainline Valves Equipped with Either Remote Valve Controls or Automatic Line Break Controls.

MM PS-4d. Treat Shore Crossing as Pipeline HCA.

MM PS-4e. Safety Marker Indicating the Presence of Buried Natural Gas Pipeline at Ormond Beach.

MM PS-4f. Emergency Response.

MM PS-5a. Treat Manufactured Home Residential Community as a High Consequence Area.

MM PS-3c would increase the overall integrity of the offshore and onshore pipelines, thereby reducing the potential for accidents. The purpose of Federal Office of Pipeline Safety pipeline safety advisories is to communicate issues based on experience in order to improve safety.

MM PS-4c would limit the affected area from a potential pipeline accident by allowing SoCalGas to automatically control the influx of gas into sections of the pipeline system. A team of engineers from the CSLC and CPUC evaluated project-specific pipeline valve spacing and design and determined that they were appropriate to limit the potential release duration and the quantity of natural gas that might be released from a ruptured pipeline segment by reducing the distance between the mainline valves.

MM PS-4d would provide for implementation of the pipeline integrity management program at beach recreation areas where people could be located in the vicinity of the pipelines. MM PS-4e would improve the safety of the system by enabling members of the public to report gas leaks. MM PS-4f would improve the timeliness and effectiveness of emergency response measures and facilitate evacuation of beach users in the unlikely event of a potential pipeline accident.

MM PS-5a would implement additional pipeline safety measures above the level of standards (based on population densities) applicable under law, rule and regulation, for areas along the pipeline route with a predominance of semi-permanent housing. The measure would also increase public awareness by requiring implementation of the Pipeline Integrity Management Program, which requires continuing public education and a public awareness program.

However, this impact would exceed air quality significance criteria after application of all feasible mitigation measures and would, therefore, remain Class I.

CEQA Finding No. AIR-4

Air Quality

Impact: **AIR-4:** Emissions of Ozone Precursors from the FSRU

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

Emissions of NO_x and ROC generated from FSRU equipment and the LNG carrier during offloading of LNG could contribute to ambient ozone impacts in the areas downwind of the Project.

Proposed Mitigation

MM AIR-4b. Ultra-low NOx SCV Burners.

MM Air-4b. requires the Applicant to use burners in the SCVs that are certified for a maximum NO_x emission concentration (4-hour average) of 15 ppm at 3% oxygen. Conventional SCV burners emit 40 ppm NO_x. Use of the 15 ppm burners will reduce emissions attributable to the SCV to 34.6 tons per year. This would result in a reduction of annual NO_x emissions from the FSRU (including emissions attributable to powering of the LNG transfer pumps) to 61.3 tons per year.

Based on the USEPA's and the CARB's estimates, the proposed Emissions Reduction Program would provide for NO_x emission reductions greater than the estimated annual NO_x emissions from FSRU equipment (66.1 tons per year) and the LNG carrier during offloading of LNG (9.4 tons per year). These NO_x emission reductions would likely be as effective in mitigating ambient ozone concentrations in onshore air basins as would corresponding NO_x emission reductions occurring at the FSRU and offloading LNG carriers. Thus, AM AIR-4a would reduce emissions of ozone precursors from the FSRU to below the significance criteria.

Since the publication of the FinalEIR, the Applicant has provided additional information to the USEPA documenting that no further emission control technology can be implemented to further reduce emissions through the application of selective catalytic reduction technology to the submerged combustion vaporizers (SCVs) on the FSRU. However, through a redesign of the SCV technology, the Applicant has identified a modification to the SCV burners and committed to implement new MM AIR-4b, which would further reduce emissions of NO_x (as well as other air pollutants) by specifying more stringent performance standards for the SCVs. This reduction in NO_x emissions

from the FSRU would reduce the amount of emissions reductions required to mitigate Impact AIR-4 and increase the emissions reductions available to mitigate Impact AIR-5.

The mitigation measure described above would, for the reasons stated, reduce the impact to a level less than significant.

The CSLC has reviewed the addition of MM AIR-4b in light of the provisions of the State CEQA Guidelines concerning recirculation and has determined that the redesign of the SCV technology does not involve any new adverse environmental effects that were not previously discussed in the Final EIR, and, in fact, reduce the levels of potentially significant impacts identified in the Final EIR. The criteria listed specifically in section 15088.5(a()(1-4) of the State CEQA Guidelines are not met; therefore, the CSLC believes recirculation is unwarranted.

CEQA Finding No. AIR-5

Air Quality

Impact: **AIR-5:** Emissions of Ozone Precursors from Project Vessels Operating in California Coastal Waters.

Class: I

Finding(s): a) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

c) Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or Project alternatives identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

Emissions of ozone precursors, NO_x and ROC, generated from LNG carriers, tugboats, and the crew/supply boat operating in California Coastal Waters could contribute to ambient ozone impacts in areas located downwind of the Project (see Figure 1). The definition of California Coastal Waters was developed by the California Air Resources Board (CARB) to define the area where meteorological conditions could cause air pollutant emissions from offshore sources (i.e., vessels, platforms) to migrate to onshore areas. The boundary of California Coastal Waters is defined by a series of coordinates located in the Pacific Ocean (17 Cal. Code Regs., § 70500). Depending on the location, California Coastal Waters can extend between approximately 25 to 100 miles off shore from the California coastline. The point where LNG carriers would cross the boundary of California Coastal Waters is approximately 90 miles (80 nautical miles) offshore of the coastline of Ventura County and Los Angeles County.

LNG carriers would burn natural gas in California Waters. Excluding the emissions generated for the operation of LNG transfer pumps during offloading of the LNG carrier, annual ozone precursor emissions from project vessels within California Coastal Waters would be 84.7 tons of NO_x per year and 28.3 tons of ROC per year. Of these totals, emissions of NO_x and ROC in Ventura County waters, defined as 3 nautical miles off the Ventura County coastline, would be 0.28 and 0.12 tons per year, respectively, and would be caused solely by service vessels and tugs. LNG carriers would operate on the high seas and in Federal waters and would come no closer than 12.01 nautical miles from shore, the location of the FSRU.

LNG Carrier Approach Routes and Specified Turning Points
CABRILLO PORT LNG DEEPWATER PORT
Figure 1
LNG Carrier Approach Routes and the California Coastal Waters

Ozone precursors emitted within California Coastal Waters are likely to be transported towards the California coastline and contribute to ambient ground-level ozone impacts on shore within Ventura County and Los Angeles County. The State Lands Commission has determined that this impact is significant as the Project results in a cumulatively considerable net increase of ozone precursor emissions in an area that is upwind of the ozone nonattainment areas of Ventura County and Los Angeles County.

Proposed Mitigation

MM AIR-5c. Documentation of Engine Specifications.

MM AIR-5c. requires the Applicant to prepare and maintain specified documentation that demonstrates implementation of its emission reduction measures (AM AIR-5a. and 5b.).

The Applicant has incorporated changes into the Project that would lessen Project NO_x and ROC emissions from marine vessels through the use of natural gas in the engines of LNG carriers instead of the more typical diesel or heavy fuel oil (AM AIR-5a) and the use of air pollution control equipment on the diesel-fueled tugboats and crew/supply boat (AM AIR-5b). For AM AIR-5a, natural gas in the LNG carriers would be used at all times while the LNG carriers are operating within California Coastal Waters (i.e., within approximately 90 miles offshore). CARB has determined that air emissions beyond the boundary of California Coastal Waters are not likely to migrate to the California coast or Ventura County waters.

This Project represents the first time that LNG carriers serving a port within the United States would operate beyond Federal waters using less-polluting natural gas as a fuel source, rather than diesel or heavy fuel oil. With respect to AM AIR-5b, the air pollution control equipment for the diesel-fueled tugboats and crew/supply boat represents state-of-the-art control technology for marine diesel-fueled vessels.

In addition, the Applicant would retrofit engines on two marine vessels (long haul tugs) to reduce NO_x emissions. The CARB estimates that these engine retrofits would generate NO_x emission reductions of 140.4 tons per year that would benefit the regional area of the Project (excepting the Bay Area). The USEPA estimates that the retrofitting of these vessels would result in NO_x emission reductions of 98.7 tons per year (excepting the Bay Area).

Since the publication of the Final EIS/EIR, the Applicant has identified a modification to the SCV technology used on the FSRU that would further reduce emissions of air pollutants, including, NO_x and ROC. This modification is discussed further under CEQA Finding AIR-4 and the associated changes to emissions are reflected in the following discussion.

As part of air permit-to-construct application procedures, the Applicant committed to the USEPA to achieve emissions reductions to an amount equal to annual NO_x emissions from FSRU equipment and LNG carrier engines used to power LNG transfer pumps (61.3 tons per year). Thus, total NO_x emission reductions designated as beneficial to

areas downwind of the Project area would exceed NO_x emissions from the FSRU/LNG pumping by a value of 79.1 tons per year according to the estimates outlined by the CARB or by 37.4 tons per year according to the estimates from the USEPA. These additional NO_x emission reductions are less than the total NO_x emissions estimated for Project vessels operating in California Coastal Waters by about 4.7 tons per year according to the CARB's estimates, or by 47.3 tons per year according to the USEPA's estimates.

The State Lands Commission further finds that the Applicant has provided an unprecedented amount of emissions reductions to counterbalance emissions from LNG carriers operating from the boundary of Federal waters to the boundary of California Coastal Waters. While there would be a net increase in emissions of ozone precursors caused specifically by LNG carriers, no further technologies or engineering methods, considered as feasible mitigation measures, are available to further reduce carrier emissions.

The Project would, however, create a net increase in NO_x emissions from marine vessel traffic regardless of whether the CARB or USEPA's estimates of NOx emissions reductions are considered. The Project would also create a net increase in ROC emissions from marine vessel traffic. These net increases in offshore ozone precursor emissions have the possibility of contributing to ambient ozone impacts on shore within Ventura County and Los Angeles County, both of which are designated as nonattainment areas for ozone. The Applicant proposed no further measures to mitigate ozone precursor emissions from Project marine vessels operating in Federal waters/California Coastal Waters beyond those discussed above, but will continue to consult with the CARB and the USEPA.

The State Lands Commission finds that the emissions of ozone precursors from project marine vessels represent a significant and unavoidable impact (Class I). The impact remains significant even after the Applicant has incorporated into the Project the use of state-of-the-art technology to control emissions from the tugboats and crew/supply boats that would operate within Ventura County waters [3 nautical miles from the coastline] and in Federal waters. No further feasible technologies or engineering methods are available to further reduce emissions from these particular vessels. Moreover, the NO_x emission reductions associated with the engine retrofit projects proposed by the Applicant would be greater than the NO_x emissions from tugboats and crew/supply boats operating within Ventura County waters and in Federal waters.

CEQA Finding No. AIR-9

Air Quality

Impact: **AIR-9:** Temporary Increases in Ambient Concentrations of Air Toxic Pollutants Due to Emissions from Construction Activities

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

Project onshore construction activities in Ventura and Los Angeles Counties would generate emissions of air toxic contaminants. The mitigation measures for Impact AIR-5 would reduce air toxic contaminant emissions, and the dispersion modeling analysis indicates the maximum ambient impacts caused by emissions from onshore construction activities would be less than health risk guideline levels.

Due to the distance to potential receptors, offshore construction activities would not be expected to result in adverse impacts to sensitive receptors.

Proposed Mitigation

MM AIR-1e. USEPA Tier 3 Nonroad Engine Standards.

MM AIR-1f. Construction Emissions Reduction Plan.

MM AIR-1g. Construction Equipment Documentation.

MM Air-1e would require that all diesel equipment with a rating between 100 and 750 horsepower be equipped with engines that comply with USEPA Tier 3 nonroad engine standards. This mitigation measure would reduce air pollutant emissions by precluding the use of applicable construction equipment that does not meet these standards. Air quality analyses predict that the reduced construction emissions due to this mitigation measure would reduce impacts from air toxic contaminant emissions to less than health risk guideline levels.

MM AIR-1f specifies the preparation of a plan to catalog the emissions reductions elements, including Applicant measures and mitigation measures that the Applicant must incorporate into construction contracts. The plan would also include additional specific measures that represent best management practices for construction activities, which are expected to result in reductions in air pollutant emissions.

MM AIR-1g requires the Applicant to provide appropriate documentation to confirm the implementation of Applicant emission reduction measures and mitigation measures. This mitigation does not provide for additional emission reductions, but provides for a mechanism for confirming the emission reductions quantified under Applicant measures and other mitigation measures.

Implementation of the mitigation measures described above would, for the reasons stated, reduce the impacts to less than health risk guideline levels, and the impact would be reduced to a level below its significance criteria.

CEQA Finding No. BioMar-2

Marine Biology

Impact: **BioMar-2:** Temporary Avoidance of the Area Due to Increased Turbidity from Construction Activities Offshore or Accidental HDB Release of Drilling Fluids

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

A release of drilling fluids and bentonite into the subtidal environment during HDB operations could temporarily increase turbidity. Increases in turbidity at the offshore exit point could cause fish to avoid this area. Overall impacts on fish and benthic communities would be negligible, however, considering the limited area impacted by a release event or by construction activities.

Proposed Mitigation

MM WAT-3a. Drilling Fluid Release Monitoring Plan.

MM WAT-3a would require a plan of specified content to minimize the potential for releases of drilling fluids and require drilling fluids to be properly cleaned up and appropriate agencies notified should a release occur. The plan would incorporate best management practices that have been proven in other projects to reduce the impacts from releases of drilling fluids.

With the implementation of the proposed mitigation measure, the impact on marine species would, for the reasons stated, be reduced to a level below its significance criteria.

CEQA Finding No. BioMar-3

Marine Biology

Impact: **BioMar-3:** Temporary or Permanent Alteration or Disturbance of Marine Biota Behavior or Sensitive Habitats

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

Construction and/or operational activities could alter EFH or sensitive habitats (beach spawning areas or hard bottom substrate,) resulting in cessation or reduction of feeding or reproduction, area avoidance, or changes in migration patterns. The Applicant would avoid critical spawning habitat for special status species (grunion) and sensitive habitats (hard bottom areas) on which many sensitive species rely for survival. The Applicant would use lighting sparingly and in limited areas and intensities and would also use lighting controls such as shielding devices. The Applicant would also use noise reduction measures including muffling during construction.

Proposed Mitigation

MM BioMar-3b. Monitoring.

MM BioMar-3c. Avoidance.

MM NOI-1A. Efficient Equipment Usage.

MM BioMar-3b would prevent interference with spawning by avoiding construction during spawning events by requiring monitoring of Ormond Beach during grunion spawning periods and requiring that a qualified biologist determine when construction will begin.

MM BioMar-3c would reduce impacts on sensitive species by requiring that hard bottom habitat be avoided.

Under MM NOI-1a, operation of equipment on an as-needed basis would result in fewer pieces of equipment operating simultaneously. The operation of less equipment at any given time would reduce the overall noise level. By using equipment engine covers and mufflers in good working condition, a reduction of up to 20 dBA could be achieved for individual pieces of equipment.

The implementation of the mitigation measures described above would, for the reasons stated, reduce impacts to a level below its significance criteria.

CEQA Finding No. BioMar-5

Marine Biology

Impact: **BioMar-5:** Noise Disrupting Marine Mammal Behavior

Class: I

Finding(s): a) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

c) Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or Project alternatives identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

Noise from construction and operation vessels or equipment could disrupt migrations; interfere with or mask communications, prey and predator detection, and/or navigation; cause adverse behavioral changes; or result in temporary or permanent hearing loss. Project designs and manufacturers' noise source levels data for the proposed machinery elements were used to calculate estimated radiated noise potentially introduced to the marine environment by the Project. Project noise levels and reduction levels were estimated using data from the literature and based on basic physics, acoustic theory, and empirical formulations. Avoiding the gray whale migration season would reduce the numbers of certain marine mammals exposed to noise during construction. No impulse sounds are anticipated during normal construction and operational activities; therefore, death of deep-diving cetaceans due to impulse noise is unlikely.

For both marine mammals protected under the Endangered Species Act and marine mammals protected under the Marine Mammals Protection Act., significant noise levels are defined by NMFS as follows:

- Level A take threshold for continuous noise = 180 dB re 1 µPa --- rms
- Level B take threshold for continuous noise = 120 dB re 1 µPa --- rms.

The Applicant reports worst case construction noise levels for both the offshore marine pipeline spreads and installation of the FSRU mooring and riser systems would be 180 dB re 1 µPa --- rms. The worst case scenarios in both construction areas (all equipment continuously running at the same time and place) is unlikely. In addition, the application of mitigation measures to reduce noise generated would be expected to bring construction noise to below the Level A harassment threshold. However, the Applicant

has estimated that the zone of noise influence representing the Level B harassment threshold would have a radius of 10 km from the source.

Six out of the seven operating scenarios proposed by the Applicant have noise source levels that exceed 180 dB re 1 µPa --- rms by 1.6 to 12.6 dB. One operating scenario which can be used approximately 90 percent of the time uses vibration isolators to bring the noise source level slightly below the Level A harassment threshold, but it would still be well above the Level B harassment threshold.

Proposed Mitigation

MM BioMar-5a. Noise Reduction Design.

MM BioMar-5b. Acoustic Monitoring Plan.

MM BioMar-5c. Helicopter Altitude.

MM NOI-1a. Efficient Equipment Usage

MM BioMar-5a would reduce noise from the operation of the FSRU by incorporating noise reduction strategies in the design to reduce noise output to the maximum extent possible. Proposed noise reduction designs would reduce the radius distance from the Project activities noise that could be heard by marine mammals and would reduce the intensity of Project related noise, thus these measures would reduce the number of individuals potentially affected by such noises.

MM BioMar-5b would allow for adaptive management during project operations. To ensure that the proposed noise reduction techniques are effective, the Acoustic Monitoring Plan will require that site-specific baseline and empirical data be obtained, behaviors of marine mammals exposed to construction and operational noise be tracked and documented, and acoustic monitoring results be compared to NOAA Fisheries (NMFS) accepted thresholds to determine whether noise levels can be reduced and whether continued or future monitoring is necessary.

Under MM NOI-1a, operation of equipment on an as-needed basis would result in fewer pieces of equipment operating simultaneously. The operation of less equipment at any given time would reduce the overall noise level and thus potentially reduce the number of marine mammals that could be exposed to noise. Additionally, efficient use of equipment during construction and operations would reduce the duration of time and intensity of certain noises which may be introduced into the marine environment. By using equipment engine covers and mufflers in good working condition, a reduction of up to 20 dBA could be achieved for individual pieces of equipment.

MM BioMar-5c would require maintenance of a minimum helicopter altitude (except during take-off and landing) to reduce noise that may disrupt marine mammals due to the infrequent use of helicopters.

Implementation of the mitigation measures described above would, for the reasons stated, reduce the intensity and duration of anthropogenic noise introduced to the

marine environment and would thus reduce impacts on marine mammals, but it is unclear whether impacts would be reduced to a level below its significance criteria; therefore this impact is considered potentially significant after application of all feasible mitigation.

CEQA Finding No. BioMar-6

Marine Biology

Impact: **BioMar-6:** Mortality and Morbidity of Marine Biota from Spills

Class: I

Finding(s): a) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

c) Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or Project alternatives identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

Although rare, an accidental release of a significant amount of oil or fuel during construction or operation, or LNG spills or a natural gas leak from subsea pipelines, could cause morbidity or mortality of marine biota, including fish, invertebrates, seabirds, and sea turtles, through direct contact or ingestion of the material. In the event of an oil or fuel spill, contingency plans would be implemented and the released material would be recovered to the extent possible. A large accidental release of LNG into the marine environment could have a potentially significant impact on marine organisms, including hypothermia, frostbite, or death, but would dissipate rapidly unless ignited; a fire could injure seabirds of other species that would come into contact with flames or smoke.

Although information about the effects of methane and mercaptan on marine organisms is limited, a leak of natural gas (with the odorant mercaptan added) from the subsea pipelines could potentially impact marine organisms depending on the location and volume of the release, as well as exposure time and environmental conditions. If accidentally released from the pipeline, the gases would be quickly dispersed in the water column due to the oceanic conditions (currents and upwelling) and would not remain either in the water column or the sediments long enough to cause asphyxiation to marine organisms.

Proposed Mitigation

MM PS-1e. Cargo Tank Fire Survivability.

MM PS-1f. Structural Component Exposure to Temperature Extremes.

MM PS-1g. Pre- and Post-Operational HAZOPs.

MM PS-1e would improve the ability of LNG storage tanks to withstand the effects of a fire and could also potentially limit the extent of damage caused by an incident. It is expected that additional advances in cargo tank insulation will be made in the near future, and this mitigation measure would help to ensure that the best available technology is used.

MM PS-1f would reduce the likelihood of a major structural failure by requiring consideration of potentially improbable but high consequence events during Project design. Safety engineering, HAZOPs, and quantitative risk assessment (QRA) are widely used in processing industries to improve safety; these methodologies represent best management practices.

MM PS-1g would reduce the likelihood of a potential emergency incident at the FSRU and would improve the crew's response if such a situation were to occur. HAZOPs have been recognized to reduce risk by both industry and regulations such as the California and Federal Risk Management and Prevention Programs. Conducting a HAZOP prior to operation would help to refine operations practices and emergency response provisions and subsequent HAZOPS during operations would critically evaluate actual practices.

The proposed design/engineering measures are directed at reducing the potential for such a spill to occur; and limiting the duration and area of exposure if such a spill does occur, thus reducing the potential for impacts to marine organisms. However, even with the implementation of the measures above, impacts on marine biota from a large accidental release of LNG or fuel would remain potentially significant after application of all feasible mitigation.

CEQA Finding No. BioMar-8

Marine Biology

Impact: **BioMar-8:** Release of LNG, Natural Gas, Fuel, or Oil Causes Injury or Mortality of Marine Mammals

Class: I

Finding(s): a) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

c) Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or Project alternatives identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

A release of LNG, natural gas, fuel, or oil could cause injury or mortality of marine mammals through direct contact or ingestion of the material. Small LNG spills would rapidly dissipate but marine mammals in the area of a large LNG spill or resulting fire would likely suffer mortality. Although cleanup operations would reduce impacts of a diesel or other fuel spill, marine mammals could suffer adverse effects. Any impacts on marine mammals during a spill event or clean-up would be documented and reported in accordance with regulatory requirements.

Proposed Mitigation

MM PS-1e. Cargo Tank Fire Survivability.

MM PS-1f. Structural Component Exposure to Temperature Extremes.

MM PS-1g. Pre- and Post-Operational HAZOPs.

MM MT-3f. Live Radar and Visual Watch.

MM PS-1e would improve the ability of LNG storage tanks to withstand the effects of a fire and could also potentially limit the extent of damage caused by an incident. It is expected that additional advances in cargo tank insulation will be made in the near future, and this mitigation measure would help to ensure that the best available technology is used.

MM PS-1f would reduce the likelihood of a major structural failure by requiring consideration of potentially improbable but high consequence events during Project design. Safety engineering, HAZOPs, and quantitative risk assessment (QRA) are

widely used in processing industries to improve safety; these methodologies represent best management practices.

MM PS-1g would reduce the likelihood of a potential emergency incident at the FSRU and would improve the crew's response if such a situation were to occur. HAZOPs have been recognized to reduce risk by both industry and regulations such as the California and Federal Risk Management and Prevention Programs. Conducting a HAZOP prior to operation would help to refine operations practices and emergency response provisions and subsequent HAZOPS during operations would critically evaluate actual practices.

Finally, MM MT-3f would reduce the likelihood of a collision because the crew would have early warning of nearby vessels or aircraft and would assist in managing an incident should one occur. The provision for live radar and visual watch at the vessel control center of the FSRU is comparable to the established and proven in service, policies, and procedures of the Louisiana Offshore Oil Port (LOOP), the only operational oil deepwater port in the U.S. These measures would reduce the potential for incidents due to operational errors, upsets, or equipment failures or natural phenomena.

No measures directed specifically at marine mammals are available to mitigate the effects of a large LNG spill event. The proposed design/engineering measures are directed at reducing the potential for such a spill to occur; limiting the duration and area of exposure would reduce the potential for impacts to marine mammals. However, even with the implementation of the measures above, impacts on marine mammals from a large accidental release of LNG or fuel would remain potentially significant after application of all feasible mitigation.

CEQA Finding No. BioMar-10

Marine Biology

Impact: **BioMar-10:** Entanglement of Marine Mammals and Turtles

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

Marine mammals or sea turtles could become entangled in construction or operation equipment, causing injury or mortality.

Proposed Mitigation

MM BioMar-10a. Deployment of Potentially Entangling Material, and

MM BioMar-10b. Notification.

Under MM BIOMAR-10a, monitors would observe the deployment of materials that have the potential to entangle marine mammals and would ensure that the potentially entangling material is deployed only for the amount of time needed. If an entanglement appears likely, operators would remove as much potentially entangling material as possible and make sure that slack is taken out of remaining material.

Under MM BioMar-10b, in the unlikely event that a marine mammal or sea turtle is entangled, it would be reported immediately to the stranding coordinator at NOAA Fisheries in Long Beach and Santa Barbara so that a rescue effort can be initiated.

Implementation of the mitigation measures discussed above would reduce impacts on marine mammals to a level below the significance criteria by reducing the amount of potentially entangling material in the water column, by providing monitors to observe activities, and by implementing a notification system that would immediately lead to rescue efforts, thus reducing the possibility of a marine mammal or sea turtle becoming entangled and increasing probability of a successful rescue if entanglement occurs.

CEQA Finding No. TerrBio-1

Terrestrial Biology

Impact: **TerrBio-1:** Temporary Increase in Sedimentation

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

Construction activities could cause increased sedimentation and soil erosion, and expose contaminated soils during trenching activities.

Proposed Mitigation

MM TerrBio-1b. Spill Containment/Management.

MM WAT-3a. Drilling Fluid Release Monitoring Plan.

MM WAT-4a. Strategic Location for Drilling Fluids and Cuttings Pit.

Under MM TerrBio-1b, the Applicant or its designated representative would be required to prevent and respond to spills and prevent contamination of soils and water. These measures are best management practices and are recognized measures to prevent spills and clean them up if they should occur.

MM WAT-3a would require a plan to minimize the potential for releases of drilling fluids and require drilling fluids to be properly cleaned up and appropriate agencies notified should a release occur. The plan would incorporate best management practices that have been proven in other projects to reduce the impacts from releases of drilling fluids.

MM WAT-4a would ensure that drilling fluids and cuttings would be collected in a pit located sufficiently far from stream banks, stream overflow areas, and groundwater such that drilling fluids and cutting remain in the pit. In addition, the pit would be protected with silt fencing, recontoured and revegetated at the completion of drilling spoils disposal. The pit would be monitored in the event of a drilling fluid release to ensure that effective cleanup measures would be taken.

Mitigation measures avoid or reduce the potential for soil and hazardous materials to enter wetlands, surface water features, and sensitive habitat by requiring construction barriers such as erosion control devices and buffer set-backs from sensitive habitat.

Impacts on water quality from sedimentation would have adverse impacts on special status plants or wetlands; however, with implementation of the mitigation measures described above, impacts would, for the reasons stated, be reduced to a level below its significance criteria.

CEQA Finding No. TerrBio-2

Terrestrial Biology

Impact: **TerrBio-2:** Temporary or Permanent Impacts Regarding Construction, Operation, and Maintenance Effects on Rare and Special Status Plants

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

Upland vegetation removal during onshore pipeline construction, maintenance, and repair activities could result in the loss of special status plants.

Proposed Mitigation

MM TerrBio-2f Riparian Avoidance and Restoration.

MM TerrBio-2g Tree Avoidance and Replacement.

MM TerrBio-2f requires that the Applicant or its designated representative avoid, minimize, and compensate for impacts on riparian habitat during construction. Preplanning of restoration, monitoring, and replacement of habitat and trees would effectively reduce impacts on riparian habitat.

MM TerrBio-2g requires that the Applicant or its designated representative, to the extent possible, avoid, minimize, and compensate for impacts on trees. Implementation of MM TerrBio-2g would require the Applicant to replace tree rows at ratio of 1:1. Replacement trees would be 15-gallon trees approximately 8 to 10 feet in height. The type of tree planted would be approved by the CDFG and/or the landowner. Therefore, the potential impact of the removal of tree rows would occur primarily during the period of construction and would be reduced to below its significance criteria in the long-term.

Impacts on rare and special status plants would be reduced by the application of the mitigation measures described above to a level below its significance criteria by avoiding or reducing impacts on special status plants, sensitive and high-value wildlife habitats, and trees protected by local ordinance or policies and subsequently through restoration activities.

CEQA Finding No. TerrBio-3

Terrestrial Biology

Impact: **TerrBio-3:** Temporary or Permanent Changes to Wetlands or Waters of the U.S. during Construction

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

Construction (such as trenching) in wetlands or waters of the U.S. could remove vegetation, disrupt the hydrology of the wetlands within and adjacent to the construction area, or alter the habitat for special status plant species.

Proposed Mitigation

MM TerrBio-3a. Avoid, Minimize, or Reduce Impacts on Wetlands.

MM TerrBio-2f. Riparian Avoidance and Restoration.

MM TerrBio-3a requires that wetland areas be identified and marked, including those containing special status species; that construction ROWs through wetlands and waters be limited; that operation of construction equipment within wetlands and waters be limited; and that prefabricated mats be used in saturated areas and areas with standing water. Taking these precautions when working in or near waters of the United States are well established practices that have been demonstrated to successfully reduce impacts.

MM TerrBio-2f requires that the Applicant or its designated representative avoid, minimize, and compensate for impacts on riparian habitat during construction. Preplanning of restoration, monitoring, and replacement of habitat and trees would effectively reduce impacts on riparian habitat.

Implementation of these mitigation measures would result in reduced impacts overall by avoiding impacts on special status species and by limiting the area in which construction would occur. In addition, special precautions would be taken when operating within wetlands and waters of the United States that would avoid or reduce impacts on wetlands and waters of the United States.

With the implementation of mitigation measures described above, the impact would, for the reasons stated, be reduced to a level below its significance criteria.

CEQA Finding No. TERRBIO-5

Terrestrial Biology

Impact: **TerrBio-5:** Direct Permanent Impact on Wildlife Mortality

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

Construction activities associated with pipeline installation, staging areas, HDD or HDB locations, and access roads could cause the mortality of small mammals, reptiles, and other less-mobile species.

Proposed Mitigation

MM TerrBio-5a, Pre-Construction Wildlife Surveys.

MM TerrBio-5a requires that, to minimize the potential for causing mortality of local wildlife, the Applicant engage a qualified wildlife biologist to conduct additional pre-construction surveys in advance of any vegetation clearing, or excavation or other activity that causes disturbance to surface soils. Surveys would be completed by a competent biologist, familiar with local birds, mammals, amphibians, and reptiles, with survey requirements including any relevant agency protocols, and survey seasons. By identifying whether sensitive species are present, prescribed measures can be implemented as needed to reduce potential impacts.

It should be noted that for purposes of the impact analyses and resultant mitigation in the Final EIR, all relevant species are presumed to exist in the vicinity of the proposed Project.

With the implementation of this measure, the impact would, for the reasons stated, be reduced to a level below its significance criteria.

CEQA Finding No. GEO-1

Geology

Impact: **GEO-1:** Worsens Existing Unfavorable Geologic Conditions and/or Releases Toxic or Other Damaging Material into the Environment

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

Construction activities could temporarily worsen existing unfavorable geologic conditions. Trenching and boring activities could increase erosion, differential compaction, or scour, resulting in hazardous conditions for the pipelines. The trenching or boring could also provide preferential flow paths for fluids in the subsurface. During installation, transitory and sporadic erosion and scour such as during a rainstorm could occur that could expose the onshore pipelines. During construction frac-outs (loss of drilling fluid) may occur.

Proposed Mitigation

MM GEO-1b. Backfilling, Compaction, and Grading.

MM WAT-3a. Drilling Fluid Release Monitoring Plan.

MM GEO-1b would limit the construction effects on unfavorable geologic conditions through adequate planning and design such as proper backfilling and compaction and other standard construction practices, and geologic conditions would be restored to their preexisting conditions.

MM WAT-3a would require a plan to minimize the potential for releases of drilling fluids and require drilling fluids to be properly cleaned up and appropriate agencies notified should a release occur. The plan would incorporate best management practices that have been proven in other projects to reduce the impacts from releases of drilling fluids.

With the implementation of the mitigation measures described above,the impact would be reduced, for the reasons stated, to a level below its significance criteria.

CEQA Finding No. GEO-2

Geology

Impact: **GEO-2:** Cause a Loss of a Unique Paleontological Resource

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

Construction activities could disturb or destroy paleontological resources; such impacts are typically permanent. Several areas along the Center Road Pipeline and Line 225 Pipeline Loop are tentatively classified as having a high sensitivity for containing significant paleontological resources.

Proposed Mitigation

The following Agency Recommended Mitigation Measure (MM) has been identified to reduce this impact:

MM GEO-2a. Inspection.

MM GEO-2a would minimize potential impacts on significant paleontological resources through identification and protection of such resources. The paleontologist supervising the excavation will have the ability to stop construction if potentially significant resources are identified and threatened by the Project. The paleontological monitoring of excavations that would be conducted by a qualified paleontologist is consistent with standard construction practices used for similar projects to protect such resources.

With the implementation of the mitigation measure described above the impact would, for the reasons stated, be reduced to a level below its significance criteria.

CEQA Finding No. GEO-3

Geology

Impact: **GEO-3:** Expose People or Structures to Adverse Effects Due to Direct Rupture along Fault Lines, Ground Shaking, or Seismic-related Ground Failure

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

Damage to pipelines or other facilities could occur due to direct rupture (ground offset) along fault lines. The offshore gas pipelines could be adversely affected by seismic activity but would be designed to accommodate, based on the then most current information, anticipated maximum lateral/vertical motion from earthquakes (permanent deformation of seafloor) during the final design stage. If seafloor motion were to exceed allowable stresses in the pipelines, pipelines could rupture and cause a leak. The loss of pressure should induce the safe shut-down of the system and natural gas would rise to the surface. Onshore pipelines would be similarly designed to accommodate anticipated displacement by earthquakes and a loss in pressure would activate their shut-down system. The CSLC requires the incorporation of current seismological engineering guidelines and other recognized industry guidelines for seismic-resistant design at all fault crossings that are subject to State jurisdiction.

Proposed Mitigation

MM GEO-3c. Geotechnical Studies.

MM GEO-3d. Design and Operational Procedures.

MM PS-4c. Install Additional Mainline Valves Equipped with Either Remote Valve Controls or Automatic Line Break Controls.

MM GEO-3c would ensure that the pipeline is adequately planned by requiring approved final site-specific geotechnical and seismic hazard studies be conducted prior to final pipeline design and construction. Such studies covering suspected active fault crossings to accurately define the fault plane location, orientation, and direction of anticipated offset, and which include the magnitude of the anticipated offset at the fault locations have been successfully used in similar construction projects to refine fault crossing design parameters.

MM GEO-3d would ensure that the pipeline is adequately planned and designed by requiring evaluation of a larger trench, engineered backfill, thicker wall pipe, and telemetric control for final pipeline design. These measures reduce the likelihood that the pipeline would rupture.

MM PS-4c would limit the affected area from a potential pipeline accident by allowing SoCalGas to automatically control the influx of gas into sections of the pipeline system. A team of engineers from the CSLC and CPUC evaluated project-specific pipeline valve spacing and design and determined that they were appropriate to limit the potential release duration and the quantity of natural gas that might be released from a ruptured pipeline segment by reducing the distance between the mainline valves.

With the implementation of the mitigation measures described above, the impact would be reduced, for the reasons stated, to a level below its significance criteria.

CEQA Finding No. GEO-4

Geology

Impact: **GEO-4:** Cause Severe Damage to Project Components as a Direct Consequence of a Geologic Event, Releasing Toxic or Other Damaging Materials into the Environment

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the Project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

Ground shaking from earthquakes, which is of a transitory and sporadic nature, could damage Project components. The aboveground structures, such as the offshore part of the pipelines or the onshore processing facilities, would be subject to strong ground shaking, and strong earthquake-induced ground shaking could result in significant damage to aboveground structures and lead to failure of open trenches during construction. Ground shaking generally impacts buried modern welded pipelines only when the shaking induces mass movement such as liquefaction, differential settlement, or landslides. Pipe damage also may result from transient ground deformation caused by the peak ground velocity of the seismic wave.

Proposed Mitigation

MM GEO-4a. Design for Ground Shaking.

MM GEO-4a would allow pipelines and other structures to withstand intense ground shaking without collapsing or rupturing by requiring employment of proper seismic design. The design guidelines that would be followed are widely used and accepted in the industry.

With the implementation of the mitigation measure described above, the impact would, for the reasons stated, be reduced to a level below its significance criteria.

CEQA Finding No. HAZ-2

Hazardous Materials

Impact: **HAZ-2:** Release of Oil or Hazardous Materials Spills Could Result in Soil Contamination due to Pipeline Construction Activities

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

Activities associated with site preparation, construction, and drilling, as well as operations and maintenance activities, could result in an accidental spill of hazardous materials or oil and exposure of workers or the public. Operation of horizontal directional drilling (HDD) or horizontal directional bore (HDB) equipment could result in the accidental release of bentonite drilling fluid, a non-hazardous drilling fluid. Construction activities could also result in spills from accidents or improper handling or disposal of fuels or hazardous materials. Vehicle accidents could result in fuel spills from rupturing of fuel tanks, and hazardous materials spills could occur if hazardous material containers were compromised. A spill could expose workers and the public to levels of hazardous materials in excess of applicable regulations. Improper handling or containment of hazardous materials stored on site also may result in spills to which the public or workers could be exposed.

The Applicant, or its designated representative, would maintain hazardous materials at the staging areas in proper storage containers and with sufficient secondary containment in accordance with best management practices, in addition to compliance with Federal and State regulations. Hazardous materials stored temporarily in staging areas would be stored on pallets within fenced and secured areas and protected from exposure to weather.

Proposed Mitigation

MM HAZ-2a. Maintain Equipment.

MM HAZ-2b. Hazardous Material Contingency Plan.

MM WAT-3a. Drilling Fluid Release Monitoring Plan.

MM HAZ-2a requires the maintenance of equipment in operating condition to reduce the likelihood of fuel or oil line breaks and leakage.

MM HAZ-2b requires the preparation and prior approval of a Hazardous Material Contingency Plan and training workers in the implementation of the plan would ensure that contaminated soil and groundwater would be properly managed and would reduce the likelihood of spills of hazardous materials.

MM WAT-3a would require a plan to minimize the potential for releases of drilling fluids and require drilling fluids to be properly cleaned up and appropriate agencies notified should a release occur. The plan would incorporate best management practices that have been proven in other projects to reduce the impacts from releases of drilling fluids.

With the implementation of the measures described above, this impact would, for the reasons stated, be reduced to a level below its significance criteria.

CEQA Finding No. HAZ-3

Hazardous Materials

Impact: **HAZ-3:** Release of Existing Contaminants from Sediments, Soils, or Groundwater

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

Construction activities could unearth existing contaminated sites onshore and offshore, causing potential health hazards to construction workers, the public, and marine and terrestrial ecology.

The offshore route would not pass through any known hazardous material sites; therefore, encountering offshore contamination during construction would be unlikely.

There are potential hazardous material or hazardous waste sites within 0.5 mile (0.8 km) of the proposed Center Road Pipeline and Line 225 Pipeline Loop routes, and onshore oil seeps have been identified in the general area near the Line 225 Pipeline Loop. In addition, the alignment of the Line 225 Pipeline Loop from approximately MP 0.35 to MP 1.0 would follow the southern edge of Operable Unit (OU) 1 south of the Whittaker-Bermite cleanup site and OU 2 from about MP 1.0 to MP 1.35.

Construction crews could potentially encounter contaminated soil or water during trenching and drilling operations. In addition, an unknown or unrecorded disposal site may be encountered. If potential contamination is uncovered, members of the public could be exposed through direct contact or inhalation of contaminated materials. Adverse health effects, however, are unlikely to occur from a short-term exposure to contaminated soils or waters.

Proposed Mitigation

MM HAZ-3a. Consult with the Department of Toxic Substances Control (DTSC) Regarding Cleanup of Soil and Groundwater at Whittaker-Bermite Site (MP 0.2 to 1.25).

MM HAZ-3b. Onshore Surveys.

MM HAZ-3a Consultation regarding the progress of cleanup at the Whittaker-Bermite site would help to avoid encountering contaminated soil and groundwater during

construction and would identify how to handle any newly discovered contaminated soils to minimize exposure of workers and the public to these contaminants. .

MM HAZ-3b. Although much of the onshore pipeline routes pass through existing ROWs that have been previously cleared for the presence of hazardous materials, conducting surveys for areas where the new onshore pipeline routes diverge from existing ROWs would help to identify contaminated soils so that they can be properly managed during construction.

With the implementation of the measures described above, this impact would, for the reasons stated, be either avoided or reduced to a level below its significance criteria.

CEQA Finding No. HAZ-4

Hazardous Materials

Impact: **HAZ-4:** Potential Disturbance or Detonation of Unexploded Ordnance due to Onshore or Offshore Construction

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

Offshore pipeline installation and onshore pipeline construction activities could encounter UXO, causing an explosion that could result in serious injuries or fatalities to workers or the public, and—for offshore locations—serious injuries or fatalities to marine life from subsurface blast pressures.

Approximately 12.2 NM (14 miles or 22.6 km) of the subsea pipeline, i.e., from MP 3 to MP 17, would lie within the Point Mugu Sea Range. Although the proposed pipeline route is not an area where missiles are not ordinarily targeted, UXO, drones, or other debris from missile testing may be located near or within the proposed subsea pipeline corridor. Onshore, the part of the proposed Line 225 Pipeline Loop route from about MP 0.2 to about MP 1.25 runs along the southern boundary of the Whittaker-Bermite cleanup site, where UXO has been identified as a site-wide concern. However, the existing Line 225 pipeline ROW was cleared of UXO during its construction in the late 1950s and early 1960s and has been patrolled and maintained on a routine basis for the past five decades. Because of its location within an existing ROW, the Line 225 Loop pipeline would not likely encounter UXO.

Proposed Mitigation

MM HAZ-4a. Offshore Surveys.

MM HAZ-4b. Coordination with the California Department of Toxic Substances Control.

MM HAZ-4a Conducting offshore surveys for UXO within the Point Mugu Sea Range would minimize the chance of encountering UXO.

MM HAZ-4b. Coordinating with the DTSC regarding the Whittaker-Bermite site would minimize the chances of encountering UXO during the construction of the Line 225 Pipeline Loop.

With the implementation of the mitigation measure described above, this impact would, for the reasons stated, be reduced to a level below its significance criteria.

CEQA Finding No. LU-2

Land Use

Impact: **LU-2:** Disruption to Adjacent Properties

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

Construction may cause temporary disturbances or nuisances to nearby residents and businesses or to special land uses. Construction nuisances include noise, light, dust, and traffic delays. Construction in business or residential areas would mainly occur in existing road ROWs. Although installation of the onshore pipelines could cause some inconvenience to some businesses and residences along the route, the contractor would provide temporary access at all times during construction.

Proposed Mitigation

MM LU-2c. Coordinate with Other Utilities.

MM NOI-6a. Post Signs.

MM NOI-6b. Equipment Location.

MM TRANS-1a. Traffic Control Plans.

MM LU-2c would reduce or eliminate temporary nuisances by requiring coordination with other utility service providers to ensure that conflicting maintenance or construction activities are minimized during construction.

MM NOI-6a would require signs with information on the construction schedule and contacts so that nearby receptors could take the construction noise into account in planning their activities and would have contact provided to which concerns could be expressed.

MM NOI-6b would require stationary equipment, such as compressors and welding machines to be located in areas of the construction site away from the residences. This would allow for more noise attenuation over distance, thereby reduce the noise level at the residences.

MM TRANS-1a would require preparation and approval of traffic control plans that detail the location, schedule, signage, and safety procedures for lane and road closures based on final pipeline engineering design. This would ensure continued flow of non-

Project related traffic around the area under construction and would avoid disrupting both access by emergency and other vehicles and would ease congestion by, for example, maintaining two-way traffic, ensuring continued flow of traffic around the area under construction, and allowing continued access to residences, businesses, etc.

With implementation of the mitigation measures described above, this impact would, for the reasons stated, be reduced to a level below its significance criteria.

CEQA Finding No. NOI-1

Noise

Impact: **NOI-1:** Noise Generated During the Installation of the Floating Storage and Regasification Unit (FSRU) and Offshore Pipelines

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

Noise generated by vessels or equipment during installation of the mooring system, FSRU, and offshore pipelines could result in temporary increases in noise levels in the area, which could impact sensitive noise receptors such as recreational boaters or fishers.

Installation of the FSRU and tie-in to the mooring point would be anticipated to require approximately 24 days total, using 12-hour workdays. Installation of the offshore pipelines is anticipated to require approximately 35 days. Similar vessels and equipment would be used for the construction of the offshore pipelines. The size and horsepower of the equipment that would be used for installation of the FSRU and the subsea pipeline would vary, ranging from 1,500-hp crew boats that would transport workers to 25,000-hp dynamically positioned vessels that would be used to position the pipes directly onto the seafloor.

Noise generated by construction vessels would add to ambient noise in the vicinity of the Project caused by existing vessel traffic. Project construction noise has been designated a Class II impact because of the potential for the project to increase noise by greater than 10 dBA over ambient background noise levels, but only for a temporary and limited period of time.

Project construction noise would be locally concentrated for brief durations of time as construction activities progress seaward along the route of the pipelines. Although no one lives in the area, commercial, fishing, and recreational vessels transit the area regularly. The crews of these vessels could encounter the construction vessels or be passed by a supply vessel and be temporarily impacted by noise from Project-related vessels. Recreational boaters and commercial fishing boats could avoid the project area during construction and thereby limit their exposure to project-related noise; however, should they transit the project area, they would temporarily be exposed to greater noise levels.

Proposed Mitigation

MM NOI-1a, Efficient Equipment Usage,

MM MT-1c. Notices to Mariners

MM NOI-1a would require the operation of equipment on an as-needed basis which would result in fewer pieces of equipment operating simultaneously. The operation of less equipment at any given time would reduce the overall noise level. By using equipment engine covers and mufflers in good working condition, a reduction of up to 20 dBA could be achieved for individual pieces of equipment.

MM MT-1c would notify boaters in advance and warn them of construction so that they could avoid transiting near the construction area, which would further reduce potential noise impacts on non-Project-related marine traffic. With the implementation of the mitigation measures described above, this short-term noise impact would, for the reasons stated, be reduced to a level below its significance criteria.

CEQA Finding No. NOI-2

Noise

Impact: **NOI-2:** Long-Term Noise Generated During FSRU Operations

Class: I

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

c) Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

The FSRU would use power-generating equipment, pumps, compressors, and other rotating equipment that create noise. Noise levels are typically 50 to 55 dBA in the vicinity of the proposed FSRU. Given this background and the predicted noise from the operation of the FSRU of less than 50 dBA at 3.1 miles (5 km), the operating noise would not normally be distinguishable 3.1 miles (5 km) or more from the unit. However, at a lesser distance from the FSRU, the operating noise may become noticeable and at less than 0.6 mile (1 km) noise level could interfere with normal conversation. Recreational boaters and fishers would be prohibited from the safety zone, but noise impacts during Project operations would occur at levels that exceed the significance criteria outside of the safety zone but within the ATBA.

Proposed Mitigation

MM BioMar-5a, Noise Reduction Design.

The Applicant shall work with marine architects, acoustic experts and mechanical engineers and the USCG, among others, to design the FSRU and its equipment to reduce, to the maximum extent feasible, the output of cumulative noise from the facility. This measure would ensure the use of best practices during design of the facility.

Implementation of this mitigation measure potentially would reduce the intensity and duration of noise generated by the FSRU. This impact would remain potentially significant and unmitigatable, but of short duration and transient in nature because boaters are presumed to be transiting the area.

CEQA Finding No. NOI-3

Noise

Impact: **NOI-3:** Temporary Noise Generated by Support Vessels During Offshore Operations

Class: I

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

c) Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

LNG carriers, crew boats and supply vessels, or helicopters could temporarily increase noise levels for sensitive receptors, such as recreational boaters and fishers. Vessels associated with offshore operations can be expected to be heard at a noise level of 90 dBA at 50 feet (15.2 m) away.

Helicopters may be used to access the FSRU; however, the number of trips is not known. Typically, noise from a passing helicopter ranges from 68 to 78 dBA at approximately 1,300 feet (396 m) and is only detectable for 30 seconds.

Project noise could be more than 10 dBA above ambient background noise levels. However, recreational boaters and fishers could easily avoid coming into close proximity to crew boats or supply vessels, and all boaters would be transient.

Proposed Mitigation

No additional mitigation is available to completely reduce this impact.

The frequency of noise-producing events would be limited to daytime hours, but marine traffic transiting near vessels or helicopter traffic associated with the Project would still be subject to a short-term significant impact from the vessel/helicopter noise; therefore, this impact would remain potentially significant after application of all feasible mitigation.

CEQA Finding No. NOI-4

Noise

Impact: **NOI-4:** Temporary Noise Generated During Construction using Horizontal Directional Boring (HDB), Horizontal Directional Drilling (HDD), or Other Drilling Techniques

Class: I

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

c) Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

HDB at the shore crossing and HDD or other drilling techniques at onshore waterways and intersection crossings could temporarily increase noise levels for sensitive receptors. Noise levels could exceed local noise ordinances or permit conditions.

HDB operations would generate relatively high noise levels and would occur 24 hours per day for 108 days for construction at the shore crossing (54 days for each HDB). The proposed shore crossing is located next to the Reliant Energy Ormond Beach Generating Station. The closest residence is approximately 1.1 miles (1.8 km) from the HDB entry point and would be in Ventura County; therefore, Ventura County noise ordinances would apply. The anticipated noise level at this residence would be 60 dBA, which exceeds the Ventura County noise ordinances for all periods of the day; therefore, the noise generated during the HDB installation would represent a short-term significant impact.

Proposed Mitigation

MM NOI-4b, Use Noise Blankets.

MM NOI-4c, Limit Heavy Equipment Activity near Residences.

MM NOI-4d, Cover the Equipment Engine.

MM NOI-4e, Establish Telephone Hotline.

MM NOI-4f, Establish Procedures.

MM NOI-4b would require the use of noise blankets to fully enclose equipment associated with boring where residences occur within 2,000 feet (610 m) and work occurs after 6 p.m. This would reduce noise during nighttime hours and would attenuate the noise to reduce noise at residences and other sensitive receptors.

MM NOI-4c would limit the activity of heavy equipment and would reduce the exposure to vibration for those who might be the most sensitive.

MM NOI-4d would require covering the equipment engine that mufflers are in good working condition. These measures have been used successfully on other projects to reduce engine noise.

Under NOI-4e, in the event that a noise complaint is received from a resident, the noise monitor would evaluate the noise levels and investigate additional mitigation measures that can be employed to reduce the noise level.

MM NOI-4f would establish procedures to stop or curtail drilling/boring or add additional measures to respond to any noise complaints or should any ordinances be exceeded. This would reduce noise disturbance at nearby residences or businesses.

Implementation of the mitigation measures described above would reduce the noise levels to the residence in Ventura County from approximately 60 dBA to 40 dBA; therefore at the HDB location, mitigation would, for the reasons stated, reduce the impact to a level below its significance criteria.

However, residents and businesses closer than 0.5 miles (0.8 km) to boring at stream crossings and street intersections would still be subject to a short-term significant temporary impact from the construction noise that is likely to exceed local noise ordinances.

CEQA Finding No. NOI-5

Noise

Impact: **NOI-5:** Temporary Vibration Generated During Horizontal Directional Boring (HDB), Horizontal Directional Drilling (HDD), and Pipeline Construction Activities

Class: I

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

c) Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

HDB, HDD, boring, trenching, and other construction activities could temporarily create vibration levels at sensitive receptors.

Along the proposed Center Road pipeline route, there are 9 residential receptors within 120 feet (37 m) of the potential HDD or boring activity and 15 for the Line 225 Pipeline Loop, which may be subject to vibration impacts. The construction of the pipeline would cause temporary vibration in the immediate vicinity of the construction sites. On-site construction vibration would occur mainly from heavy-duty construction equipment, e.g., trucks, backhoes, excavators, loaders, cranes, and drill rigs. Noise and vibration from on-site construction activities may be intermittent or continuous with a short duration. Mobile equipment, e.g., backhoes, excavators, loaders, and cranes, may operate near a vibration-sensitive receptor along the pipeline route at various times during the construction period. Pipeline construction activities along the proposed Center Road pipeline route would be conducted within 120 feet (37 m) of a residential receptor at three locations and for the Line 225 Pipeline Loop at 52 locations.

Proposed Mitigation

MM NOI-5a, Restricted Work Hours.

MM NOI 4c, Limit Heavy Equipment Activity Near Residences.

MM NOI-5a would restrict construction hours to 7 a.m. to 7 p.m. Monday through Saturday, with the exception of HDB, would reduce the impact of vibration during evening hours and Sundays when most people are engaged in activities that require lower vibration levels.

MM NOI-4c would limit the activity of heavy equipment and would reduce the exposure to vibration for those who might be the most sensitive.

Implementation of the mitigation measures described above would, for the reasons stated, reduce HDD or boring-generated vibration impacts, but not to a level below the significance criteria.

CEQA Finding No. NOI-6

Noise

Impact: **NOI-6:** Noise Generated During Construction of the Onshore Pipeline

Class: I

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

c) Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

Site preparation, pipeline installation, and construction of aboveground facilities could temporarily increase noise levels for sensitive receptors, such as schools and residences. Noise levels may exceed county and/or city noise ordinances or permit conditions during the installation of the onshore pipeline and associated structures.

Construction of the onshore pipelines would cause temporary increases in ambient noise levels in the immediate vicinity of the construction sites. On-site construction noise would occur mainly from heavy-duty construction equipment, e.g., trucks, backhoes, excavators, loaders, cranes, and drill rigs. The worst-case noise level for the construction of the onshore pipeline, excluding HDD, would be 98 dBA at 50 feet (15 m). Construction of the onshore pipelines lines would generate noise levels that would have significant impacts.

Proposed Mitigation

MM NOI-6a. Post Signs.

MM NOI-6b. Equipment Location.

MM NOI-4c. Limit Heavy Equipment Activity Near Residences.

MM NOI-4d. Cover The Equipment Engine.

MM NOI-4e. Establish Telephone Hotline.

MM NOI-4f. Establish Procedures.

MM NOI-5a. Restricted Work Hours.

MM NOI-6a would require signs with information on the construction schedule and contacts so that nearby receptors could take the construction noise into account in planning their activities and would have contact to which concerns could be expressed.

MM NOI-6b would require stationary equipment, such as compressors and welding machines to be located in areas of the construction site away from the residences. This would allow for more noise attenuation over distance, thereby reduce the noise level at the residences.

MM NOI-4c would limit the activity of heavy equipment and would reduce the exposure to vibration for those who might be the most sensitive.

MM NOI-4d would require covering the equipment engine that mufflers are in good working condition. These measures have been used successfully on other projects to reduce engine noise.

Under NOI-4e, in the event that a noise complaint is received from a resident, the noise monitor would evaluate the noise levels and investigate additional mitigation measures that can be employed to reduce the noise level.

MM NOI-4f would establish procedures to stop or curtail drilling/boring or add additional measures to respond to any noise complaints or should any ordinances be exceeded. This would reduce noise disturbance at nearby residences or businesses.

MM NOI-5a would restrict construction hours to 7 a.m. to 7 p.m. Monday through Saturday, with the exception of HDB, which would reduce the impact of vibration during evening hours and Sundays when most people are engaged in activities that require lower vibration levels.

Although temporary, noise impacts during construction of the onshore pipeline would potentially exceed noise levels specified in local noise ordinances and would therefore, after the application ao all feasible mitigation, exceed significance criteria.

CEQA Finding No. NOI-8

Noise

Impact: **NOI-8:** Noise Generated During Onshore and Associated Facilities Operations

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

Operations of the aboveground facilities may exceed county and/or city noise ordinances or permit conditions for the long-term. There are no known noises that would be generated by operation of the metering station or associated valve facilities. However, noise may be generated during repair or maintenance of the pipeline. These noises would be similar to those generated during construction, but would be temporary and of shorter term.

Proposed Mitigation

MM NOI-4c. Limit Heavy Equipment Near Residences.

MM NOI-4d. Cover the Equipment Engine.

MM NOI-5a. Restricted Work Hours.

MM NOI-4f. Establish Procedures.

MM NOI-6a. Post Signs.

MM NOI-6b. Equipment Location.

MM NOI-4c would limit the activity of heavy equipment and would reduce the exposure to vibration for those who might be the most sensitive.

MM NOI-4d would require covering the equipment engine that mufflers are in good working condition. These measures have been used successfully on other projects to reduce engine noise.

MM NOI-5a would restrict construction hours to 7 a.m. to 7 p.m. Monday through Saturday, with the exception of HDB, would reduce the impact of vibration during evening hours and Sundays when most people are engaged in activities that require lower vibration levels.

MM NOI-4f would establish procedures to stop or curtail drilling/boring or add additional measures to respond to any noise complaints or should any ordinances be exceeded. This would reduce noise disturbance at nearby residences or businesses.

MM NOI-6a would require signs with information on the construction. With the schedule posted along the ROW, individuals living near the Project area could plan noise sensitive activities around the construction schedule.

MM NOI-6b would require stationary equipment, such as compressors and welding machines to be located in areas of the construction site away from the residences. This would allow for more noise attenuation over distance, thereby reduce the noise level at the residences.

With the implementation of the mitigation measures described above, noise impacts during operation of the onshore pipeline and associated aboveground facilities would, for the reasons stated, be reduced to a level below its significance criteria.

In addition, reduction of work hours and the use of heavy equipment during construction near residences and providing procedures for receiving and addressing noise related complaints would reduce onshore operational noise impacts to a level below its significance criteria.

CEQA Finding No. REC-3

Recreation

Impact: **REC-3:** Reduce the Quality of the Offshore Recreational Experience

Class: I

Finding(s): c) Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

During Project operations, the presence of the FSRU would alter the recreational experience of recreational boaters, including visitors on whale-watching trips and other visitors to the Channel Islands National Park (CINP).

Proposed Mitigation

None.

As discussed under impacts to "Aesthetics" the permanent change in character of the seascape from installation and operation of the FSRU could represent a significant impact. Judging the intensity of the impact with respect to recreational boaters is subjective. Some boaters would not find the FSRU to be a significant adverse impact on their recreational experience because they are accustomed to the large ships traveling nearby in the shipping lanes. However, because some recreational boaters would respond to the change in character of the seascape as a significant adverse impact, this document concludes that these boaters would experience a long-term and permanent change in the character of the offshore recreational resource.

Therefore, the Project would result in a significant impact on offshore recreation for which no feasible mitigation exists.

CEQA Finding No. REC-5

Recreation

Impact: **REC-5:** Reduce or Restrict Access to Parks or Reduce User Enjoyment

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

Construction activities could temporarily restrict access to parks due to increased traffic congestion or other nuisances in the general area of parks in the vicinity of pipeline construction.

Proposed Mitigation

MM TRANS-1a. Traffic Control Plans.

MM TRANS-1a would require preparation and approval of traffic control plans that detail the location, schedule, signage, and safety procedures for lane and road closures based on final pipeline engineering design. This would ensure continued flow of non-Project related traffic around the area under construction and would avoid disrupting both access by emergency and other vehicles.

The implementation of the above measure would, for the reasons stated, ensure that impacts on traffic due to congestion during construction would not significantly reduce or restrict access to parks.

CEQA Finding No. REC-6

Recreation

Impact: **REC-6:** Reduce or Restrict Access to Trails

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

Construction activities for the Line 225 Pipeline Loop would temporarily close the multi-use trails along the South Fork Santa Clara River.

Proposed Mitigation

MM REC-6a. Trail Closure Signage and Information.

MM REC-6b. Trail Restoration.

MM REC-6a would require posting signs and disseminating information about the temporary closure of the multi-use trail along the South Fork Santa Clara River which would allow recreationists to make alternative plans during the construction period.

MM REC-6b would require restoration of the trail within 21 days after completion of construction so that recreational uses could be resumed.

With implementation of the above mitigation measures, disruption of the multi-use trail would be minimized, the trail would be restored in a timely manner, and the impact would be reduced to a level below its significance criteria.

CEQA Finding No. TRANS-1

Transportation

Impact: **TRANS-1:** Temporary Increase in Traffic

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

During construction, the addition of the construction-related workforce and material deliveries to and from staging areas could temporarily increase traffic during peak construction periods.

Proposed Mitigation

MM TRANS-1a. Traffic Control Plans.

MM TRANS-1b. Notification, Schedule Shifts.

MM TRANS-1a would require preparation and approval of traffic control plans that detail the location, schedule, signage, and safety procedures for lane and road closures based on final pipeline engineering design. This would ensure continued flow of non-Project related traffic around the area under construction and would avoid disrupting both access by emergency and other vehicles and would ease congestion by, for example, maintaining two-way traffic, ensuring continued flow of traffic around the area under construction, and allowing continued access to residences, businesses, etc.

MM TRANS-1b would require implementation of shall implement best management practices approved by CalTrans and/or the affected local government, such as notification, schedule shifts, and carpooling to reduce the number of construction related trips and minimize increases in traffic.

With implementation of the mitigation measures described above, the impact would, for the reasons stated, be reduced to a level below its significance criteria.

CEQA Finding No. TRANS-2

Transportation

Impact: **TRANS-2:** Temporary Traffic Lane Closures

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

The Project could restrict one or more lanes of major roads, disrupting local traffic flow during peak hours.

Proposed Mitigation

MM TRANS-1a. Traffic Control Plans.

MM TRANS-1a would require preparation and approval of traffic control plans that detail the location, schedule, signage, and safety procedures for lane and road closures based on final pipeline engineering design. This would ensure continued flow of non-Project related traffic around the area under construction and would avoid disrupting both access by emergency and other vehicles and would ease congestion by, for example, maintaining two-way traffic, ensuring continued flow of traffic around the area under construction, and allowing continued access to residences, businesses, etc.

With the implementation of this mitigation measure described above, the impact would, for the reasons stated, be reduced to a level below its significance criteria.

CEQA Finding No. TRANS-4

Transportation

Impact: **TRANS-4:** Temporary Closure of Bike Routes

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

Construction could result in temporary closure and/or restricted access to bike paths crossed by the onshore pipelines, which could adversely affect the safety of bicyclists.

Proposed Mitigation

MM TRANS-4a. Bike Detour Lanes.

MM TRANS-4b. Repair Damage to Bike Paths.

MM TRANS-1a. Traffic Control Plans.

MM TRANS-4a would require appropriate restoration, signage, and timely dissemination of information about the trail closures, which would lessen impacts on bicyclists and would enable ongoing use of a bike path during construction.

MM TRANS-4b would require prompt repair of bike paths, which would allow bikers to resume using them soon after construction ceases.

MM TRANS-1a would require preparation and approval of traffic control plans that detail the location, schedule, signage, and safety procedures for lane and road closures based on final pipeline engineering design. This would ensure continued flow of non-Project related traffic around the area under construction and would avoid disrupting both access by emergency and other vehicles and would ease congestion by, for example, maintaining two-way traffic, ensuring continued flow of traffic around the area under construction, and allowing continued access to residences, and businesses.

.With the implementation of the mitigation measures described above, the impact would, for the reasons stated, be reduced to a level below its significance criteria.

CEQA Finding No. TRANS-5

Transportation

Impact: **TRANS-5:** Damage to Roads During Construction

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

Roads crossed or paralleled by the onshore pipelines, as well as those used to access the Project, could be temporarily damaged by increased traffic and heavy equipment.

Proposed Mitigation

MM TRANS-5a. Repair Damage to Roads.

MMTRANS-5a stipulates that any damage to roads would be repaired as soon as feasible following construction within the roadways and in no case would the road be in disrepair for more than 21 days.

Therefore, the effects would be temporary and of a relatively short duration and implementation of the mitigation measure described above, would, for the reasons stated, reduce the impact to a level below its significance criteria.

CEQA Finding No. WAT-3

Water Quality and Sediments

Impact: **WAT-3:** Short-Term Degradation of Surface Water or Groundwater Quality due to Accidental Release of Drilling Fluids

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

The Project would include shore crossing via HDB. The HDB boring process uses drilling fluid to run the bore motor in the bore head to cut through the earth material, to seal off fractures in the formation, and to lubricate the bore pipe during installation. The drilling fluid is pumped down the inside of the bore pipe and exits through the bore head. Under normal operations, drilling fluids would remain in the HDB boreholes. Drilling fluids from drilling equipment include oils, hydraulic fluid, and drilling fluids (bentonite slurry). If cracks or fissures in the subsurface are encountered during drilling, drilling fluids can travel along them to the groundwater and enter adjacent surface water bodies. Releases of drilling fluids or inadvertent return of drilling fluids such as bentonite could temporarily reduce water quality where released.

Proposed Mitigation

MM WAT-3a. Drilling Fluid Release Monitoring Plan.

MM WAT-3a would require a plan to minimize the potential for releases of drilling fluids and require drilling fluids to be properly cleaned up and appropriate agencies notified should a release occur. The plan would incorporate best management practices that have been proven in other projects to reduce the impacts from releases of drilling fluids.

With the implementation of the mitigation measure described above, this impact would, for the reasons stated, be reduced to a level below its significance criteria.

CEQA Finding No. WAT-4

Water Quality and Sediments

Impact: **WAT-4:** Short-Term Increase in Erosion due to Construction Activities

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

During construction, the movement of equipment and materials could destabilize the soil surface and increase erosion potential from water and wind along the route and in the staging areas. Construction activities and loss of vegetation could cause accelerated erosion on steep slopes and in erosion-susceptible soils. Also, construction activities could cause erosion before vegetation is re-established. Any of these scenarios could lead to potential sedimentation of nearby creeks and drainages.

The proposed pipelines would cross several streams. During construction, slick bore, case bore, and trenching activities and the excavation of drilling pits could lead to sedimentation of stream channels where water is flowing. This could increase turbidity in those streams to levels above water quality standards. Trenching would likely cause the greatest increase in turbidity.

Proposed Mitigation

MM WAT-4a. Strategic Location for Drilling Fluids and Cuttings Pit.

MM WAT-4b. Transport Excess Trench Spoils Offsite.

MM WAT-4c. Monitor Stream Crossing Construction.

MM GEO-1b. Backfilling, Compacting and Grading.

MM WAT-4a would ensure that drill cuttings and fluids would be contained in pit so that they do not enter water bodies.

MM WAT-4b would ensure that excess trench spoils are disposed of properly.

MM WAT-4c would ensure that the Applicant or its designated representative is adhering to all legal requirements and mitigation measures.

MM GEO-1b would decrease the potential that storm events could cause erosion where the pipelines were installed.

With the implementation of the mitigation measures described above that are designed to alleviate soil erosion during and after construction, the potential erosion impacts associated with the Project would, for the reasons stated, be reduced to a level below its significance criteria.

CEQA Finding No. WAT-5b

Water Quality and Sediments

Impact: **WAT-5b:** Degradation of Water Quality due to an Accidental Release of Diesel Fuel from the FSRU, Pipelaying Vessel, or Service Vessels.

Class: I

Finding(s): c) Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the final EIR.

Facts Supporting the Finding(s)

Description of the Impact

The FSRU would store up to 264,000 gallons (1,000 m3) of diesel fuel in USDOT-approved containers within secondary containment. A worst case scenario at the FSRU involves the accidental release of the entire contents of the diesel fuel storage tank to the ocean over a one-hour period under adverse weather conditions with no cleanup response. Under this scenario, the trajectory analyses show that oil could reach the coastline on the mainland from Carpinteria south to Point Fermin near San Pedro after approximately 72 hours, and under Santa Ana wind conditions, the shorelines of Anacapa, Santa Cruz, and Santa Rosa Islands. The Applicant's spill analysis concludes that if the appropriate and effective use of oil spill response equipment, as outlined in the USCG-approved Facility Response Plan, is implemented, it is unlikely that oil would reach the shore.

If there were an accidental release of diesel fuel, it would be more likely to occur during the replenishment of the FSRU's diesel supply when supply vessels transfer approximately 350-gallon (1.3 m3) capacity containers to the FSRU. If a container's integrity were damaged during the transfer and a portion or all of its total volume were released, the volume of such release would be relatively small, and its release would activate the Facility Oil Pollution Contingency Plan.

The worst case scenario during construction involves a vessel carrying 1,500 m^3 (396,258 gallons) of fuel losing 25 percent (375 m3 or 99,065 gallons) of its fuel. The trajectory analyses for the 72-hour spill scenario estimates four cases with variable currents and wind directions, in which there is no oil spill response (containment or skimming). The trajectory analyses show potential for oiling coastline on the mainland from approximately Isla Vista and Santa Barbara south to Point Fermin near Los Angeles Harbor. A case with a westerly current presents potential for oiling the shorelines of Anacapa and Santa Cruz Islands. A case with reinforcing wind and currents to the west also presents the potential for oiling the shorelines of Santa Rosa and San Miguel Islands. Due to the lack of southerly flowing offshore currents, the spill analysis shows no trajectories that could transport oil to Santa Catalina or Santa

Barbara Islands. When oil spill response with available oil skimming capacity is considered, the extent of shoreline that could be oiled is significantly reduced

Proposed Mitigation

None.

An accidental release of diesel fuel to marine waters of any size would violate Federal and State water quality standards or objectives. Even with the implementation of the Facility Oil Pollution Contingency Plan for the FSRU or the Vessel Oil Pollution Contingency Plan for the pipelaying vessel, impacts on water quality from an accidental release of diesel fuel would remain potentially significant after the application, within such plans, of all feasible mitigation.

1.4.4 MITIGATION MEASURES NOT ADOPTED/REJECTED

Most of the mitigation measures recommended by the public were incorporated into the Final EIR; however, the following mitigation measures recommended in comments on the EIR were not incorporated either: (1) because they are inappropriate, or (2) rejected as infeasible due to specific economic, technological, legal or other considerations.

A mitigation measure may be rejected as infeasible if it is "(in) capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social and technological factors" Public Resources Code Section 21061.1. Legal or other factors, such as providing employment opportunities, may also be considered in making a finding of infeasibility. See Public Resources Codes Section 21081; see also State CEQA Guidelines Section 15091 (a) (3).

4.2 Public Safety

Mitigation Measure A

Extend the exclusion zone or the area to be avoided (ATBA) to encompass the maximum hazard zone.

The sizes of the safety zone (the correct terminology for exclusion zone) and the ATBA are governed by Federal and international law and are independent of any analysis of hazards.

The Applicant applied to the USCG for the establishment of a safety zone around the FSRU and has requested that an ATBA be established in addition to the safety zone. The FSRU would be able to rotate 360 degrees around the mooring turret. The safety zone would extend 500 m from the circle formed by the FSRU's stern, the outer edge of the facility, rotating around the mooring turret. The safety zone could not unilaterally be made any larger because its size is governed by international law. According to the United Nations Convention on the Law of the Sea and the Continental Shelf Act of 1964 (No. 28 of 3 November 1964, as amended by the Continental Shelf Act Amendment Act, No. 17 of 14 November 1977), a safety zone can only extend to 0.27 NM (0.3 mile or 0.5 km) as "measured from each point of the outer edge of the installation or device, around any such installations or devices in, on, or above the continental shelf." It would be difficult if not impossible to change the Convention within a reasonable period of time.

The ATBA, a larger circle that would surround the safety zone, would likely extend to 2 NM (2.3 miles or 3.7 km) from the stern of the FSRU; however, the actual size of the ATBA would be established through the advice and consent of the Office of Vessel Traffic Management of the USCG. By law, the ATBA could not extend into the coastwise traffic lanes. Figure 4.3-4 of the Final EIR illustrates the potential safety zone and area to be avoided. The ATBA is considered by the USCG to be a recommendatory routing measure. A vessel transiting the ATBA would be requested to restrict its speed to no more than 10 knots (19 km/hour) and to check in and out with the

Cabrillo Port vessel operations manager. The USCG would submit a written request to the IMO to establish the ATBA, and the IMO would present the request to its Maritime Navigation Safety Committee. If approved, the ATBA would be implemented within one year from the time of submittal and would appear thereafter on maritime charts published by IMO member nations, including those charts published by NOAA.

The suggested mitigation measure was not adopted because it is not feasible under existing law, and changing the law to enable the implementation of the mitigation measure could not be accomplished within a reasonable time period.

Mitigation Measure B

Move the FSRU further offshore so that it is at least 7.3 miles, the maximum credible extent of a potential natural gas vapor cloud developing as a consequence of a release of LNG from the FSRU, from the edge of the shipping lanes.

With respect to relocating the FSRU as mitigation, insufficient technical information is available to: (1) establish that such relocation is feasible within the meaning of section 15364 of the State CEQA Guidelines; or (2) determine pursuant to the requirements of section 15126.4(a) (1)(D) of the State CEQA Guidelines, whether such mitigation "...would cause one or more significant effects in addition to those that would be caused by the project as proposed..."

Moving the FSRU could result in greater potential conflicts with the Point Mugu Sea Range or closer proximity to the Channel Islands. In addition, geotechnical/seismic hazard reports and preliminary geotechnical studies comparable to those conducted for the proposed FSRU and routes of the offshore pipelines would be needed to evaluate geotechnical and seismic hazards. For example, Alternative Offshore Pipeline Route 1 was eliminated from further consideration because seismic design analysis and review indicated that there was greater potential for turbidity flows along this pipeline route. As another example, information regarding potential historic resources such as shipwrecks or the presence of hard bottom habitat that would be revealed by geophysical surveys is not available. The offshore pipelines would also be longer, which could potentially result in greater environmental impacts, and would result in considerable additional expense.

As discussed in Section 4.2.7.6 of the Final EIR, a vapor cloud fire could occur if released LNG were to evaporate and disperse downwind before encountering an ignition source. Unlike a pool fire, the entire cloud does not ignite at once and may burn back to the source of the release. The Independent Risk Assessment (IRA) determined that the greatest distance from the FSRU within which public impacts would occur is 6.3 NM (7.3 miles or 11.7 km), which would result from the intentional breach of two Moss tanks. This hazard distance encompasses the TSS shipping lanes, but extends no closer than 5.71 NM from the nearest mainland landfall.

Detailed technical, engineering, and environmental information does not exist to evaluate potentially significant effects of relocating the FSRU, and subsequently determine whether the measure is feasible and whether it would cause one or more significant effects in addition to those caused by the proposed Project. Therefore, the mitigation is not adopted.

4.3 Marine Traffic

Use U.S. crews on all LNG carriers calling at the FSRU for safety and security reasons.

Under the Deepwater Port Act, the Maritime Administration (MARAD) and the USCG are responsible for ensuring that LNG imported through Deepwater Port Act-licensed facilities into the U.S. are accommodated safely and securely as part of the ongoing balance of national security and energy security interests with environmental and safety concerns. In addition to other training requirements, all marine personnel must have IMO11 mandated Standards of Training, Certification and Watchkeeping (STCW) training and certification as applicable to LNG carriers in international trade. Training requirements apply equally to U.S. and foreign-flagged vessels and crews.

On July 12, 2006, the Coast Guard and Maritime Transportation Act of 2006 (H.R. 889) was passed into law. The Act states that the plan submitted with the deepwater port application must include the nation of registry for, and the nationality or citizenship of officers and crew serving on board LNG carrier vessels that are reasonably anticipated to be servicing the DWP.

While MARAD encourages the use of U.S. crews for LNG vessels calling at U.S. deepwater ports, it cannot at present legally require this. Therefore, because it is not legally enforceable, this mitigation is not adopted.

Section 4.6 Air Resources

Mitigation Measure A

Reduce emissions of diesel particulate matter by using alternative clean fuel technology such as electric or compressed natural gas-powered construction equipment with oxidation catalysts instead of gasoline- or diesel-powered engines. Alternatively, reduce particulate matter emissions by using construction equipment fitted with diesel particulate filters.

This mitigation is not included in Section 4.6 of the Final EIR because the Applicant would use onshore construction equipment compliant with USEPA Tier 2, 3, or 4 nonroad engine standards. Further, MM AIR-1e would require that all onshore construction equipment with a rating between 100 and 750 hp utilize engines compliant with USEPA Tier 3 nonroad engine standards. USEPA's Tier 2, 3, and 4 nonroad engine standards include more stringent emission standards for particulate matter from diesel engines. Therefore, the measure is not adopted because it duplicates already recommended mitigation.

Mitigation Measure B

Require that the natural gas imported by the proposed Project complies with the South Coast Air Quality Management District's 1360 Wobbe Index.

As indicated in Section 4.6.2 of the Final EIR, the natural gas imported by the proposed Project would need to meet the requirements of Rule 30 and General Order 58-A of the California Public Utilities Commission (CPUC). Rule 30, as described, has specific requirements, including a heating value range. The quality of natural gas distributed in Southern California from the Project would be subject to a tariff agreement negotiated between the Applicant and the Southern California Gas Company (SoCalGas). Tariff agreements, and the pipeline-quality gas specifications contained within, must be approved by the CPUC to ensure public health and safety for end-users and protection of the environment (particularly air quality).

Several factors relating to the natural gas to be delivered by the Applicant are not known at this time: (1) the precise heat content of the natural gas to be imported, other than it will meet the then existing standards, as described above, for such imports; (2) the sector of SoCalGas's market to which the gas will be diverted, e.g., there is no known, dedicated end user or designated sector for the supply (although BHPB states that 18 entities representing a range of natural purchasers have executed letters of interest regarding the possible purchase of natural gas from the Project) (3) the character of the natural gas with which the gas received from the Applicant may be blended within the SoCalGas distribution system and the resultant heat content of such blend; and (4) whether the gas will be consumed within the South Coast Air Basin. While the potential exists for changes in NOx emissions due to the burning of natural gas with higher heating values than that acceptable to the South Coast Air Quality Management District, i.e., 1,360 on the Wobbe Index, it would be speculative, based on the above factors, to determine that such would be the case and to subsequently attempt to quantify any related changes in emission levels within the South Coast Air Basin.

In addition, an analysis of the impacts of the CPUC rulemaking is beyond the scope of the requirements of the CEQA and information adequate to further evaluate this proposed mitigation measure is not available.

Therefore, this mitigation is not adopted.

4.8 Terrestrial biological resources

Prohibit salvage of soil in weedy areas and limit salvage to areas where there is a natural seed bank.

AM TerrBio-4a provides for weed management and includes salvage and replacement of topsoil wherever the pipeline is trenched through open land. Any changes in the weed management program would be made in consultation with Federal, State and local agencies. As discussed in Section 4.13.3 of the Final EIR, approximately 90

percent of the lands adjoining the proposed Center Road Pipeline route are in agricultural use; in residential and business areas, the ROW would be located in existing streets or other ROW in accordance with the franchise agreement.

The suggested mitigation measure is duplicative of already recommended mitigation. In addition, insufficient information is available to determine whether the mitigation measure would cause one or more significant effects in addition to those that would be caused by the Project as proposed. Limiting areas of salvage to areas where there is a natural seed bank could result in the removal of topsoil that would in turn create other potentially significant impacts such as reduction of soil productivity or soil erosion.

Therefore, the mitigation is not adopted.

1.5 FINDINGS FOR ALTERNATIVES

The detailed evaluation of a potential alternative to the proposed Project by the USCG, MARAD, and CSLC is based on reasonableness. According to the Deepwater Port Act, the California Environmental Quality Act (CEQA), and the State CEQA Guidelines (California Code of Regulations, Title 14, 15000 et seq.) and its implementation regulations, governmental decision-makers must consider reasonable alternatives when a proposed action could result in significant environmental effects. An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would:

- Satisfy most of a project's basic objectives, including its purpose and need;
- Avoid or substantially lessen one or more of a project's significant effects; and
- Be feasible.

"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 (California Public Resources Code § 21061.1).

Seven alternatives were considered reasonable and evaluated in the EIS/EIR:

- Santa Barbara Channel/Mandalay/Gonzales Road Deepwater Port Alternative;
- Center Road Pipeline Alternative 1;
- Center Road Pipeline Alternative 2;
- Center Road Pipeline Alternative 3;
- Line 225 Pipeline Loop Alternative;
- Point Mugu/Casper Road Pipeline Alternative; and
- Arnold Road Shore Crossing/Arnold Road Pipeline Alternative.

Three alternative sources of energy to take the place of natural gas were considered but not evaluated as reasonable alternatives to the proposed Project:

- Energy Conservation Alternative;
- Renewable Energy Sources Alternative; and
- **RETROFITTING EXISTING POWER PLANTS ALTERNATIVE.**

An additional means to transport additional natural gas to California was examined, but not evaluated as a reasonable alternative to the proposed Project.

- New or Expanded Pipeline Systems.

Eighteen terminal alternative locations were considered but not evaluated as reasonable alternatives. Offshore regions considered were: Washington/Northern Oregon, Southern Oregon/Northern California, San Francisco Bay to Point Conception,

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and Los Angeles to the Mexican border. Specific offshore locations considered included: Northern Baja Mexico, Gaviota Pass, Camp Pendleton, Deer Canyon, Anacapa Island, Chinese Harbor, Smugglers Cove, San Pedro Point, West side of the Channel Islands. Onshore locations included: Horno Canyon at Camp Pendleton, Rattlesnake Canyon, Little Cojo at Point Conception, Deer Canyon, and the Channel Islands.

Four alternative deepwater port concepts were considered but not evaluated as reasonable alternatives to the proposed Project:

- Single-point mooring direct regasification floating facility;
- Multiple-point mooring direct regasification floating facility;
- Fixed platform; and
- Fixed platform with a gravity-based structure.

The following discussion presents the findings for alternatives both eliminated from analysis and alternatives evaluated in the Final EIR.

1.5.1 FINDINGS ON ALTERNATIVES ELIMINATED FROM DETAILED ANALYSIS IN THE FINAL EIR

The following findings describe the potential alternatives that were determined not to be reasonable alternatives according to the criteria listed in Section 1.5. Accordingly, these alternatives were not evaluated in detail in the Final EIR.

FINDING FOR ENERGY CONSERVATION ALTERNATIVE

Description: This alternative considered increasing energy conservation and efficiency measures as a means of meeting the California's natural gas and energy needs.

Finding(s): The use of energy conservation and efficiency or a combination thereof, to meet California's energy needs is considered inadequate, speculative and an infeasible alternative to meet California's increasing demands for replace the energy in the short- and mid-term. In addition, energy conservation and efficiency would not accomplish most of the Project objectives, which include supplying energy in the form of natural gas and diversifying the State's supply of natural gas.

Facts Supporting the Finding(s)

Energy conservation measures were considered but not evaluated as a reasonable alternative because they are ongoing activities that would occur regardless of whether or not the proposed Project proceeds. In addition, energy conservation measures are already factored into California's energy supply and demand analyses, which conclude that additional supplies of natural gas are necessary, after full consideration of the

projected contributions of energy conservation, to meet California's projected energy demands. Denial of the Project would not reduce the amount of natural gas required to meet projected State needs.

The State of California is actively working to decrease its per capita use of electricity through increased energy conservation and efficiency measures. Energy conservation measures include actions such as improving new and remodeled building efficiency, improving air conditioner efficiency and appliances, and creating customer incentives to reduce energy demand. According to the State of California's Energy Action Plan II: Implementation Roadmap for Energy Policies, cost effective energy efficiency is the State of California's first choice for meeting California's energy needs because it represents the least costly, most reliable, and most environmentally sensitive resource, and minimizes California's contribution to climate change. California's energy efficiency programs are the most successful in the nation and the State wants to continue to build upon them.

In addition, the CPUC has established an ongoing rulemaking, R.01-08-028, Order Instituting Rulemaking to Examine the Commission's Future Energy Efficiency Policies, Administration and Programs. CPUC Decision D.04-09-060, Interim Opinion: Energy Savings Goals for Program Year 2006 and Beyond defines and establishes an energy efficiency program with policies and goals for electricity and natural gas savings with planned updates of these goals every three years. It also translates the Energy Action Plan's mandates into explicit, numerical electricity and natural gas savings goals for California's four largest investor-owned utilities.

Statewide investor-owned utilities (IOUs) programs, such as Single and Multi-Family Energy Efficiency Rebates, Residential Appliance Recycling, CA Energy Star New Homes, and Savings by Design, are responsible for most of the energy savings and peak impacts from conservation and efficiency. CPUC policy requires the major California IOUs to implement all cost-effective energy efficiency. Future cost-effective energy efficiency is first assumed to be implemented before the IOUs complete demand calculations and determine what generation resources are needed to meet additional demand. According to the CEC, although increases in conservation, efficiency, and use of renewable energy sources are expected to moderate future demand, the policies and mandates in place do not suggest that incorporating conservation, energy efficiency, and the use of renewable energy resources will meet all future IOU portfolio needs.

The Energy Action Plan II, prepared by the California Energy Commission (CEC) and the California Public Utilities Commission (CPUC), expressly acknowledges, in full consideration of energy conservation data and programs, the need to ensure a reliable supply of reasonably priced natural gas. Even taking into account increased conservation measures, natural gas demand is expected to increase by about 0.7 percent annually, from 2006 to 2016, according to the CEC's 2005 Integrated Energy Policy Report Committee Final Report. The CEC's energy demand forecasting models quantify and incorporate conservation and energy efficiency contributions, including the mandatory building and appliance standard upgrades and demand reductions from customer response to energy price increases. Conservation and energy efficiency that

is reasonably expected to occur is incorporated into the CEC models, as statutorily required. Therefore, additional natural gas would be needed in California despite energy conservation and efficiency measures.

Although some energy conservation measures can be implemented in the short- and mid-term, many measures to improve energy conservation address long-term energy policy and usage considerations. For example, a measure such as changing the energy efficiency requirements for a building requires a considerable amount of time to implement. Older buildings will be grandfathered; therefore, they will not implement the new building codes. It will take time for new building stock to be built to the new standards to replace older buildings. Similarly, once energy efficiency standards are adopted for appliances, a phase-in period is required as the new appliances are purchased and the old, less energy-efficient appliances continue to be used until the end of their economic lives. These types of energy efficiency improvement strategies and policies are necessarily long-term. Even assuming increased conservation would occur, additional natural gas supplies would be required according to the CEC and the CPUC projections.

The CSLC does not have authority to initiate or implement additional broad-based, long-term energy conservation policy measures beyond those previously described. It also does not have control over whether such measures will be proposed, approved, and implemented, or the time frame over which these actions might occur. Nonetheless, the agency's actions could impact the State's energy supply mix. Any decision by the government to increase subsidies or otherwise promote additional conservation would be independent of actions taken on this DWP application by the CSLC.

Energy conservation is, therefore, not a reasonable alternative to the Project and is not evaluated as such in the Final EIR. Energy conservation is discussed, however, as part of the baseline energy conditions for the proposed Project in Section 4.10.1, "Energy and Minerals – Environmental Setting." Section 4.10.1.3 of the Final EIR contains an additional discussion of the California Energy Action Plan.

FINDING FOR RENEWABLE ENERGY SOURCES ALTERNATIVE

Description: This alternative considered the increased availability and use of renewable energy sources such solar, wind, geothermal, and hydropower as a means of replacing California's need for natural gas.

Finding(s): The use of renewables to meet California's energy needs is considered inadequate, speculative, and an infeasible alternative to meet California's increasing energy demands in the short- and mid-term. These options are not considered to be potentially feasible alternatives to the proposed Project. In addition, renewable energy sources would not accomplish most of the Project objectives, which include supplying energy in the form of natural gas and diversifying the State's supply of natural gas.

Facts Supporting the Finding(s)

Similar to energy conservation, renewable energy is not evaluated as a reasonable alternative to the proposed Project because such sources are already factored into California's energy supply and demand analyses, which conclude that additional supplies of natural gas are necessary, after full consideration of the projected contributions of renewable sources, to meet California's projected energy demands. Renewable sources include solar, wind, geothermal, hydropower, and others. Any decision by the government to increase subsidies or otherwise promote renewables would be independent of actions taken on this DWP application.

The State of California already has legislated aggressive programs to increase the quantity of electricity generated from renewable energy sources to 20 percent, from the current 11 percent, by 2017. Senate Bill 107, passed in 2006 and it addresses public interest energy research, demonstration, and development program for renewable energy and requires retail electricity sellers to meet the 20 percent renewables requirement by 2010 instead of 2017. In the recently published Energy Action Plan II, the State's objective is to accelerate its goal of generating 20 percent of its electricity from renewables from 2017 to 2010 and to generate 33 percent of the State's electricity with renewables by 2020.

A component of State policy is to diversify the electricity system with renewables, partly in response to growing natural gas dependence. The CEC has recommended that California diversify its natural gas supply because the State relies on out-of-state sources for 87 percent of its natural gas supplies, and neighboring states are increasing their demand for supplies. However, administrative procedures have hindered the State's goals to meet its renewable energy goals. Lawrence Berkeley National Laboratory notes that one of the reasons renewables have come on line more slowly than expected in California is that California's Renewables Portfolio Standard Program, established by Senate Bill 1078 in 2002, is unique in its design and complexity as compared to similar programs across the country. Further, a study commissioned by the CEC indicates that some signed renewable energy contracts nationwide do not result in operating facilities. The rate of contract failure is conservatively between 20 and 30 percent. Contract failure is a significant factor in renewable procurement strategies and may contribute to missing State renewable targets.

California's natural gas demand growth is expected to be slower than the rest of the nation's due to the State's energy efficiency programs and the use of renewable energy for electricity generation. Nevertheless, total natural gas demand in California is projected to increase by 0.7 percent per year from 2006 to 2016. The CEC's energy forecasting model assumes that California's large IOUs and suppliers from other Western states will meet their Renewable Portable Standards obligations. Renewable energy is also factored into future capacity expansion calculations throughout the Western U.S., which forecast how much natural gas-fired generation, and therefore natural gas supply, will be needed for Western power plants, annually. The minimum Renewable Portfolio Standard is an annual procurement target for each of California's major IOUs that increases by at least 1 percent each year until it reaches a statutory

maximum of 20 percent (with a three-year flexible compliance rule for meeting this target). Thus, the CEC's projections of future energy demand incorporate the growing use of renewable sources and still conclude that the need for natural gas will increase.

California's major investor owned utilities have signed contracts for 1,700 to 3,000 megawatts of renewable capacity since 2002, and PG&E made its fourth solicitation on June 29, 2006, asking suppliers to provide bids for renewable energy. California's use of renewable energy has increased by 1 percent of the State's total electricity use in the last four years despite statewide support for enhanced use of renewable energy.

Southern California Edison (SCE) is the major power producer in the Southern California region. SCE procures more than 13 million megawatt-hours of renewable energy per year. Its renewable portfolio can deliver more than 2,700 megawatts (MW) of electricity, including 1,021 MW from wind, 892 MW from geothermal, 354 MW from solar, 221 MW from biomass, and 128 MW from SCE-owned small hydroelectric. In November 2006, SCE signed and will submit to the CPUC seven new long-term contracts with renewable energy power generators for up to 324 MW of clean power.

Seven wind projects are planned and proposed in Southern California. The projected energy from the planned and proposed wind projects is 673 MW. The power would be generated for seven utilities in the Southern California area. The new and existing wind projects are spread throughout California.

In addition to wind energy projects, solar energy projects are planned or in place. In August 2005, SCE announced that it would develop, in conjunction with Stirling Energy, a 4,500-acre (1,820 hectare) solar facility near Victorville, California that would initially produce 500 MW. Approvals are still necessary before construction is to begin, but it is anticipated that 40 dishes that would generate 1 MW will be in place by the end of 2006. The operators plan to generate 50 MW by 2008 and 500 MW by 2011. In September 2005, Stirling Energy Systems announced that it would provide San Diego Gas and Electric with between 300 and 900 MW of solar power from a solar facility that would be located in the Imperial Valley. The contract is subject to CPUC approval.

The projects listed above demonstrate that renewable energy sources are being developed independently of the proposed Project. The CEC's projections of future natural gas supply needs for the State include the assumption that renewable energy projects will be implemented, yet still conclude that additional natural gas supplies are necessary.

The CPUC recently reaffirmed that both the State's Integrated Energy Policy Report and Energy Action Plan recognize the need for additional natural gas supplies from LNG terminals on the West Coast:

> "However, even with strong demand reduction efforts and our goal of 20% renewables for electric generation by 2010, demand for natural gas in California is expected to roughly remain the same, rather than decrease, over the next 10 years. This is because, a substantial portion of the other 80% of electric generation (not met by renewable energy sources) will need natural gas as its

fuel source, and natural gas will still be needed for the growing number of residential and business customers of the natural gas utilities."

The CSLC does not have authority to initiate or implement additional new broad-based policies to promote the expanded use of renewable energy resources beyond what is already anticipated under the State's existing aggressive program. Nonetheless, the agency's actions with respect to the proposed Project could impact the State's energy supply mix and might indirectly affect energy costs. Based on all information presently available, it does not appear that Project approval would modify the role of renewable sources in the State's energy supply mix; however, denial of the proposed Project would not reduce the amount of natural gas required to meet the State's projected needs.

Therefore, renewable energy is not evaluated as an alternative to the proposed Project in the EIS/EIR because such measures would not eliminate the need for both short- and mid-term supplies of additional natural gas, which is the Project's proposed purpose pursuant to the provisions of the Deepwater Port Act. In addition, increased use of energy from renewable sources would occur with or without the proposed Project and use of additional renewable sources beyond the State's existing mandates is not within the control of the lead agencies.

FINDING FOR RETROFITTING EXISTING POWER PLANTS ALTERNATIVE

Description: This alternative considered the retrofitting existing power plants through the installation of more efficient natural gas-fired turbines at existing natural gas-fired electricity generation plants as a means to meet California's natural gas and energy needs.

Finding(s): Retrofitting existing power plants would not accomplish most of the Project objectives, which include supplying energy in the form of natural gas and diversifying the State's supply of natural gas. Further, the State's determination of the need for additional natural gas supplies takes into account the re-powering of existing power plants and still concludes that new gas supplies are needed.

Facts Supporting the Finding(s)

The installation of more efficient natural gas-fired turbines at existing natural gas-fired electricity generation plants ("turbine re-powering") was considered but not evaluated as a reasonable alternative for further analysis in the Final EIR for several reasons: (1) the CEC has determined that the State's natural gas supply must be increased whether or not turbine re-powering occurs; and (2) the proposed turbine re-powering would occur at locations and power plants over which the CSLC has no jurisdiction and that the Applicant for the proposed Cabrillo Port Project does not own, control, or have the experience or expertise to operate.

The re-powering of natural gas-fired power plants is being driven by economic and environmental factors not directly related to natural gas supply, i.e., primarily the inefficiency of operating these older power plants and the cost of complying with air

quality regulations. The turbine re-powering alternative is moving forward and would not be affected by a decision on the proposed Project.

The main agency with jurisdiction over the operation of existing natural gas power plants in California is the CEC, which has recently approved or is considering approval of several turbine re-powering projects. The State of California's 2005 Energy Action Plan II indicates that despite energy-efficient renewable resources, other energy sources, and investments in conventional power plants such as augmenting existing facilities and replacing aging infrastructure, there is no indication that the need to increase California's short-term natural gas supplies can be averted through turbine re-powering. The State's determination of the need for additional natural gas supplies takes into account the re-powering of existing power plants and still concludes that new gas supplies are needed. In sum, there is no indication that proposed turbine re-powering would avert the need to increase California's short-term and mid-term natural gas supplies.

FINDING(S) FOR NEW OR EXPANDED PIPELINE SYSTEMS ALTERNATIVE

Description: This alternative considered the building of new pipelines or the expanding existing natural gas pipeline system to supply natural gas from domestic sources as a means to meet California's natural gas and energy needs.

Finding(s): Expanding pipeline systems would not accomplish a key Project objective, which is to diversify the State's supply of natural gas. Further, construction of new or expanded pipeline systems would have environmental consequences along whatever corridors were proposed.

Facts Supporting the Finding(s)

California receives approximately 87 percent of its natural gas supply from other states and western Canada via gas transmission pipelines. Since 2000, California has imported approximately 5.5 billion cubic feet (156 million cubic meters [m^3]) per day of natural gas. During the same time, U.S. production of gas has flattened. In-state supplies are limited, and the supplies are allocated. Of the 989 million cubic feet (MMcf) (28 million m^3) per day produced in California in 1999, only 48 percent was delivered by natural gas utilities. The remainder was either consumed at or near the point of production or delivered for use by a nonutility pipeline network. In addition, within California an expansion of the existing intrastate network is unlikely because supplies in these fields are diminishing. Expansion of the interstate pipeline network, such as the conversion, by El Paso Natural Gas Company, of approximately 304 miles (489.2 kilometers [km]) of an existing oil pipeline (All American Pipeline) to natural gas service could temporarily increase the delivered volumes of gas to or from the State, but it would not increase the diversity of the natural gas supply.

Construction of a new gas pipeline would most likely involve disruptive activities through the desert. The Kern River 2003 Expansion Project EIS/EIR states that construction

would cause long-term consequences for vegetation and wildlife habitat, which would be removed during construction, as well as potential impacts on threatened and endangered species endemic to the desert, such as the desert tortoise. Although construction of a new pipeline would increase supply and potentially add to the supply from the Rocky Mountains, depending on the source of the natural gas, it would shift the potential environmental impacts from one project to another.

Expanded pipeline systems would not meet the Project objective of increasing the diversity of natural gas supplies to California. In addition, construction of new or expanded pipeline systems would have environmental consequences along whatever corridors were proposed. Therefore, new or expanded pipeline systems were not considered as reasonable alternative sources to natural gas to be supplied by the proposed Project.

FINDING(S) FOR NORTHERN BAJA MEXICO LNG TERMINALS AND ASSOCIATED PROPOSED INFRASTRUCTURE ALTERNATIVE

Description: This alternative considered the use of new sources of natural gas from new and proposed Northern Baja Mexico LNG Terminals as potential sources to meet California's natural gas needs.

Finding(s): This alternative was eliminated because it would neither accomplish most of the purposes and objectives of the proposed Project to provide a secure supply of natural gas to either the Southern California or U.S. market nor result in reduced environmental effects relative to the potential effects identified for the proposed Project, but would merely transfer such impacts to another sovereign nation. In addition, the permitting, environmental review, and any ultimate approval of an LNG storage and regasification facility in Baja would be outside the jurisdiction of the CSLC.

Facts Supporting the Finding(s)

The use of Northern Baja Mexico LNG Terminals as a potential reasonable alternative to the proposed Project was eliminated from further analysis in the Final EIR because, in part, it is presently uncertain whether such projects could meet the Project objective of supplying 800 MMcf (22.7 million m^3) of natural gas per day from the Pacific Rim directly into the existing Southern California natural gas distribution infrastructure. LNG terminals in Northern Baja would also supply the growing demand for natural gas in Northern Baja. Neither the State of California nor the Federal government has jurisdiction over LNG terminals in another sovereign nation or over contracts governing the distribution of natural gas imported through such terminals.

Three LNG terminals are proposed for Baja California: Shell/Sempra's Energia Costa Azul located 14 miles (22.5 km) north of Ensenada; Chevron's Terminal GNL Mar

Adentro de Baja California near the Coronado Islands and offshore of Tijuana; and the Moss Maritime LNG Project offshore of Rosarito Beach.

As of February 2006, court challenges to the Energia Costa Azul LNG terminal had been resolved. This project has received all of its permits and has begun construction. Commercial operations are expected to begin in early 2008. This project would include a land-based receiving facility and related port infrastructure. Onshore, the project would cover 400 acres (162 hectares [ha]) of land and would have two full containment tanks, open-rack seawater vaporizers, and a 42-mile (68 km) 36- to 42-inch (0.9 to 1.1 m) diameter spur pipeline connecting the terminal to the Bajanorte pipeline. As proposed, the facility would have a capacity of 1,000 MMcf (28 million m^3) per day; however, there is sufficient space on site to expand the operations to include two additional storage tanks to increase the capacity to an average of 2,000 MMcf (57 million m^3) per day, with a peak of 2,600 MMcf (74 million m^3) per day.

Once operations begin, Sempra/Shell anticipates 500 MMcf (14 million m^3) per day to serve the needs of Mexico and the remainder would serve the southwestern U.S. This amount is equivalent to half the LNG that would be received at the terminal. The CPUC authorized Sempra Energy and Royal Dutch/Shell Group to create a border point where natural gas converted from LNG could move from Mexican to U.S. pipelines. This action opens up the possibility of importation of natural gas from Mexico to Southern California and other southwestern U.S markets.

Sempra stated that it intends to expand the Costa Azul terminal to double its base and peak load capacity. In 2006, Sempra solicited and received commercial interest in additional LNG processing capacity at its facility and announced that it will begin working with shippers to develop terminal agreements. Pending regulatory approval, the expansion could become operational as early as 2010, although SEMPRA has advised the CEC that no decision on whether to proceed with the expansion will be made for two years. However, to export gas to California from a Baja terminal, new pipelines would have to be built or expanded.

As an example, the CSLC and the Federal Energy Regulatory Commission (FERC) are currently preparing a Joint EIS/EIR for the North Baja Expansion Project (FERC Docket No. PF05-14-000, SCH# 2006081127), which proposes "...an interconnect with the existing Southern California Gas Company (SoCalGas) system in Blythe, California, for delivery into California and other southwestern U.S. markets." The purpose of this project is to transport natural gas from the LNG terminal projects in Baja California to California and Arizona. Once all the phases are completed, the total northbound capacity of the North Baja system would be 2,753 million standard cubic feet per day. The components of this project within the United States (California and Arizona) would have adverse environmental effects, which have been analyzed in the Joint EIS/EIR released on September 22, 2006, for a 90-day public review period that ended on December 28, 2006.

Of the lead agencies for the proposed Project, only the CSLC has jurisdiction over the proposed North Baja Expansion Project, both as to the right-of-way for the new pipeline

and the recommended mitigation measures within the Joint EIS/EIR. Finally, this infrastructure associated with the Shell/Sempra Energia Costa Azul facility, currently under construction, was not analyzed further in this document because a project-specific Draft Joint EIS/EIR, as described above, has been prepared. The North Baja Expansion Project is also discussed under Section 3.3.7.3, "Alternative California Onshore Locations" in the Final EIR.

In January 2005, Chevron of Mexico received a Mexican federal permit to construct its proposed Adentro de Baja California project that would be located 8 miles (13 km) off the coast of Tijuana. It would be a gravity-based structure that would be fixed in a depth of water of 65 feet (20 meters [m]). The terminal would be a fixed 980-foot (300 m) long concrete island with two regasification plants, storage tanks, a heliport, and a dock for LNG carriers. At this offshore terminal, the LNG would be regasified using seawater, and a new underwater pipeline would connect with Baja California's existing gas pipeline system. The terminal would have the capacity to produce an average of 700 MMcf (20 million m^3) per day with a peak capacity of 1,400 MMcf (40 million m^3) per day and would serve U.S. West Coast and Mexican markets. Engineering design has begun on this facility, but final investment decision about this facility has not been made.

In April 2005, Moss Maritime and its partner, Terminals y Almacenes Maritimos de Mexico (TAMMSA), received permits from the Mexican environmental agency to proceed with an offshore LNG terminal. However, other federal and local permits are still needed before they can begin operations in 2008. Moss Maritime/TAMMSA is proposing to install an FSRU approximately 5 miles (8 km) off the coast of Rosarito Beach in Baja California. The FSRU would have storage facilities, and a pipeline would connect the FSRU to shore. The production capacity would average 297 MMcf (8.4 million m^3) per day, and the FSRU would be a converted LNG carrier with a storage capacity of 4.4 MMcf (125,000 m^3).

The CEC estimates that demand for natural gas in Baja California will grow by 7.6 percent per year. If one or more of these proposed LNG terminals were brought on-line, the gas demand in Baja California, a region with 2.5 million people, would absorb some of the imported supplies.

Because a Baja terminal would be located onshore or in Mexico's territorial waters, the CSLC would not have jurisdiction to license facilities. Also, natural gas would not be transported from the outer continental shelf to the U.S., so MARAD would not have jurisdiction. Therefore, the U.S. would not have control over the design, approval, or monitoring of such facilities.

While potential impacts of a Baja California LNG offshore terminal would not occur in California, such a terminal would not necessarily result in fewer potential environmental effects than the proposed Project because many of the offshore effects would be equivalent to those that would occur in California waters. However, the onshore effects could be greater than those of the proposed Project because any onshore LNG terminal would have a large onshore footprint.

This alternative was eliminated because it would neither accomplish most of the purposes and objectives of the proposed Project to provide a secure supply of natural gas to either the Southern California or U.S. market nor result in reduced environmental effects relative to the potential effects identified for the proposed Project, but would merely transfer such impacts to another sovereign nation. In addition, the permitting, environmental review, and any ultimate approval of an LNG storage and regasification facility in Baja, would be outside the jurisdiction of the CSLC.

Specifically, the selection of an alternative project location in Mexico, should this be proposed, would be legally infeasible because no agency in the U.S. would have authority over any project in Mexico. Additionally, in May 2005, seven U.S. and Mexican environmental groups filed a challenge to Chevron of Mexico's Adentro De Baja California facility under the North American Free Trade Agreement. In light of all of these issues, it was determined that a Northern Baja site was not a reasonable alternative as defined under the CEQA and that further analysis was therefore inappropriate and unwarranted.

FINDINGS FOR REGIONAL OFFSHORE ALTERNATIVES

Description: Other offshore regions were evaluated as possible locations for offshore LNG facilities.

Finding(s): Several potential alternative sites for offshore terminals along the West Coast of the United States were eliminated from evaluation because they failed to satisfy most of a project's basic objectives, did not avoid or substantially lessen one or more of the Project's significant effects, or were not feasible.

Facts Supporting the Finding(s)

Other potential alternative locations for an offshore LNG terminal along the West Coast, without specifying exact locations within those regions, were identified by the Applicant and during scoping and the public comment period on the October 2004 Draft EIS/EIR.

Washington/Northern Oregon Region

Four onshore LNG terminals are currently proposed in the U.S. Pacific Northwest region, including the Port Westward LNG facility on the Columbia River about 7 miles (11.3 km) from Clatskanie, Oregon; the Warrenton LNG Project in Tansy Point, Oregon; the Northern Star LNG terminal in Bradwood, Oregon; and the Skipanon LNG facility in Warrenton, Oregon. There are no known proposals for offshore terminals at these locations.

An area near the mouth of the Columbia River, along the Washington-Oregon border, was considered for the location of an offshore terminal; however, it was eliminated because development of a terminal at this location would require a substantial upgrade of existing pipeline infrastructure, with the potential attendant environmental impacts, in

order to reach Southern California. Moreover, if LNG shipments were to originate in Australia, South America, or Southeast Asia, the shipping distance would be greater than that for a location in California and would add to the cost of the gas supply. This terminal location was eliminated from further evaluation as a reasonable alternative due to inadequate site suitability, safety (offshore wind and wave conditions), and other environmental concerns.

Southern Oregon/Northern California

Currently, the Jordan Cove Energy Project, an onshore LNG terminal proposed on the North Spit of Coos Bay, Oregon, is the only LNG project proposed for this region for which an application has been filed with the Federal Regulatory Energy Commission. The proposed facility would have an onshore receiving terminal which would have an average natural gas delivery capacity of 200 MMcf (5.7 million m^3) per day. FERC is currently reviewing the application. Excelerate Energy has stated its intent to develop the Pacific Gateway LNG facility offshore of Northern California; however, neither a license application has been filed nor the location identified. The projected baseload for this facility would be 0.6 billion cubic feet per day, with a peak load 1 billion cubic feet per day.

The Eureka area was examined as a potential location for an offshore LNG terminal because it is the only location in the Northern California/Southern Oregon region with access to PG&E's main gas transmission systems. However, costs of improving existing access to these gas transmission systems would be very expensive. This alternative would also be located far from Southern California and would require significant new pipeline construction, thereby incurring high pipeline tariffs and not reducing the potential impacts relative to those impacts identified for the proposed Project. Additionally, there could be safety issues because the wave and wind conditions outside the harbor can be severe.

In its 1978 Offshore LNG Terminal Study, the California Coastal Commission (CCC) eliminated areas between Point Conception and the Oregon border because of the areas' adverse weather conditions. This alternative was reconsidered to determine whether conditions had changed. However, wind, waves, and fog in those locations could make marine operations hazardous and less reliable. This alternative is not reasonable and was eliminated from further evaluation because of inadequate site suitability, safety (offshore wind and wave conditions), environmental concerns, and because it fails to meet most of the objectives of the proposed Project.

San Francisco Bay to Point Conception

Currently, no known LNG projects are planned or proposed in the area from the San Francisco Bay to Point Conception. Potential alternatives considered in Northern and Central California included sites within San Francisco Bay and Monterey Bay. Even though the CCC eliminated areas between Point Conception and the Oregon border in its 1978 Offshore LNG Terminal Study because of the adverse weather conditions,

locations in this region were reconsidered to ascertain whether conditions have subsequently changed.

An alternative location in and around the San Francisco Bay was eliminated from further evaluation because of the lack of suitable sites within the bay and because the waters outside the bay from Bodega Bay to Monterey are classified in one of three national marine sanctuaries – Cordell Bank, Gulf of Farallones, and Monterey Bay National Marine Sanctuaries. There are no available sites in remote areas within the Bay where a terminal could be located, and a previously proposed onshore terminal at Mare Island was dropped due to public concern regarding the safety of the facility in a densely populated area. Congested waterways and navigation areas may present a hazard for LNG carriers. In addition, the presence of LNG carriers could disrupt commercial and recreational vessels in this intensively used bay. Therefore, this potential alternative was eliminated because it is infeasible and increases, rather than avoids, potential significant environmental impacts.

Siting a terminal anywhere offshore of Monterey Bay would mean that the terminal and/or the offshore pipeline would have to cross through the Monterey Bay National Marine Sanctuary. Altering the seabed of the Sanctuary by placing a structure in it is prohibited in the Sanctuary.

The existing pipeline infrastructure in this region would also require significant upgrade or construction of a new large-diameter pipeline to deliver Project gas to the PG&E main gas transmission systems. In addition, a lack of protected areas for LNG carriers would limit operating periods because of the severity of winter storms.

The wind-wave conditions of the coast between Point Conception and Monterey Bay would significantly affect transfer operations between LNG carriers and a floating facility and would increase the potential risk of spills. Without significant hull strengthening, the increased swell dynamics in the area north of Point Conception would weaken a floating or fixed structure and would potentially compromise its structural integrity. This alternative also would be located far from Southern California and would require new pipeline construction, thereby incurring high pipeline tariffs and not reducing impacts relative to those effects identified for the proposed Project. Finally, this location was eliminated because of the wind-wave conditions that would not be favorable for an LNG facility and because it would conflict with the intended use of the marine sanctuaries. Sites north of Point Conception would not meet most of the objectives of the proposed Project, are prohibited within the Monterey Bay National Marine Sanctuary, and would require extensive onshore pipeline facilities; therefore, this location was not evaluated further.

Los Angeles to the Mexican Border

Locations for an offshore terminal were considered from Los Angeles to the Mexican border. A component of the CCC's screening guidelines for selection of potential offshore LNG terminals was the proximity to population centers. Areas offshore of Los Angeles and Long Beach were not considered because of the population density of the

nearby population centers and the existing and projected significant volume of vessel traffic in the area. San Diego Harbor is unsuitable for an LNG terminal because it would likely interfere with the operations of the U.S. Navy's Pacific Fleet, which is based in the harbor. Significant recreational boating in San Diego Harbor would also pose a difficult security and safety issue for the terminal and for LNG carriers. A number of chemical and conventional weapon disposal sites constrain suitable locations outside San Diego Harbor as well.

For the terminal facility and pipeline to avoid these sites, the terminal would have to be sited near the major north-south shipping lanes, which is incompatible with necessary safety buffers. As stated above, the CCC eliminated areas offshore of San Diego in its 1978 Offshore LNG Terminal Study. Therefore, because a reasonable site could not be identified, this location was eliminated from further consideration. However, Woodside Natural Gas Inc. submitted an application for a floating LNG terminal 22 miles (35 km) off the coast of Los Angeles.

FINDINGS FOR ALTERNATIVE CALIFORNIA ONSHORE AND OFFSHORE LOCATIONS

Description: Other California onshore and offshore locations for the LNG terminal were evaluated.

Finding(s): Potential alternative locations for onshore and offshore LNG terminals in California were eliminated from evaluation because they failed to satisfy most of the Project's basic objectives, did not avoid or substantially lessen one or more of a project's significant effects, or were not feasible.

Facts Supporting the Finding(s)

In 1978, under the mandate of the California LNG Terminal Siting Act, the CCC studied, based on sites nominated by the public and the CCC, 82 onshore and numerous offshore potential LNG terminal locations as a neutral, environmentally protective agency using specific siting criteria. These two studies represent the most comprehensive review of potential LNG terminal locations in California to date. The studies also included a public consultation process for both onshore and offshore studies, with more than 700 interested persons participating.

The LNG Terminal Siting Act specified an onshore siting criterion that the population density could be no more than 10 people per square mile (2.6 square kilometers [km^2]) within 1 mile (1.6 km) of the terminal and no more than 60 people per square mile (2.6 km^2) within 4 miles (6.4 km). Other considerations included wind, wave, and fog conditions, proximity to urban areas, earthquake faults, soil conditions, and rugged land. According to the CEC's 2003 Liquefied Natural Gas in California: History, Risks, and Siting, Staff White Paper, the siting criteria used by the CCC and CPUC in the 1970s are still applicable.

California Onshore Alternatives

The CCC concluded that any onshore LNG terminal would have serious effects on coastal resources and that all proposed sites would lead to major adverse effects on natural marine and wildlife resources, public recreation areas, and other resources protected by the California Coastal Act of 1976. The marine environment would be disturbed by construction activities, including trenching, blasting, and pile driving. Regular LNG tanker maneuvering, fuel oil deliveries, and tug and line boat activity would continuously bring noise and activity in areas used by seabirds and mammals, including the California gray whale. Because all of the onshore locations are relatively remote and undisturbed, an onshore LNG terminal would also alter the character of the area and disturb valuable wildlife populations.

The CCC found that four onshore sites met most of the siting criteria for an onshore LNG terminal location and were feasible when adverse wind and wave conditions, earthquake faults, soil conditions, and other factors were considered. These four sites, in the order ranked by the CCC, were Horno Canyon in Camp Pendleton (San Diego County), Rattlesnake Canyon (San Luis Obispo County), Little Cojo near Point Conception (Santa Barbara County), and Deer Canyon (Ventura County). After the ranking was completed, an earthquake fault was found near the Little Cojo site. Since there was a pending application for this location, it required further evaluation. Contingent upon demonstration of earthquake safety, the CPUC conditionally approved Point Conception (Little Cojo) because of its remote location; however, the proponents cancelled the project when they determined that the then price of natural gas made LNG uncompetitive.

The current owners of the land at the Point Conception location approved in 1978—the Bixby Ranch, the Hollister Ranch, and the Archer Trust—objected to the use of their land for industrial development and are considering putting a conservation easement on the property. Consequently, this site is not considered a viable alternative location for an onshore terminal due to seismic conditions and land use conflicts.

Aside from those sites evaluated by the CCC, the Final EIR also considered siting of the LNG terminal on one of the Channel Islands and concluded that it was not a feasible option due to potential land use conflicts. The islands north of the proposed facility location are under the jurisdiction of the National Park Service (NPS). Santa Barbara Island, which is located south of the proposed Cabrillo Port location, is also part of CINP. NPS provisions for the CINP are intended to conserve the sensitive marine organisms and other resources that occur in near shore waters of the CINP. Enforced restrictions include limits on marine vessel traffic and public use, special area closures, and designations for specific uses or activities. The presence of an LNG terminal would conflict with the intended purpose of the CINP and therefore is not a reasonable or feasible alternative.

San Nicolas Island, another Channel Island, is owned by the U.S. Navy. Part of its intended use is ordnance and missile testing; therefore, the presence of an LNG terminal would conflict this use and is not a reasonable or feasible alternative. No

onshore Channel Island location represents a feasible alternative; thus, siting an LNG facility onshore of one of the Channel Islands was eliminated from further consideration in this document.

Compared to the site proposed by the Applicant, onshore LNG terminals, although potentially feasible, would neither avoid nor lessen one or more of the potentially significant effects on the environment identified for the proposed Project. For example, marine traffic would increase, which is counter to the purpose of the Deepwater Port Act. In addition, under the Deepwater Port Act, MARAD may only consider a DWP beyond 3 nautical miles (NM) (3.45 miles or 5.56 km) from shore.

The FERC and the Port of Long Beach have published a Draft EIS/EIR (FERC Docket # CP04-58-000, et al., SCH# 2003091130) for an onshore LNG terminal at the Port of Long Beach, proposed by Sound Energy Solutions (SES). On January 22, 2007, the Long Beach Board of Harbor Commissioners disapproved the proposed project. However, due to the late timing and uncertainty of the proposed action, information on the Port of Long Beach project is provided in the Cabrillo Port Final EIR. The onshore LNG terminal could be authorized whether or not Cabrillo Port were licensed, and both projects could be licensed simultaneously. Hence, an onshore LNG terminal at the Port of Long Beach is an independent project, and, as such, may not represent a replacement of the proposed Project. Furthermore, it is difficult to compare the environmental impacts of the SES LNG terminal and the proposed Project because each analysis is based on different project-specific significance criteria by which impacts were evaluated and the nature and extent of the risk analyses for the Cabrillo Port and the Port of Long Beach differ. Last, as indicated above, the SES LNG terminal has been disapproved by the Long Beach Board of Harbor Commissioners, which renders the project too speculative to be feasible.

California Offshore Alternatives

In 1978, the CCC conducted an offshore terminal study that was similar to the one conducted for onshore LNG terminal siting. The CCC study evaluated potential locations based on the following factors: (1) ownership, use, and character of the area around each site zone; (2) site availability; (3) recreational resources; (4) marine and terrestrial biology; (5) geologic and engineering considerations affecting terminal feasibility; (6) choice of design types; (7) pipeline routing feasibility and impacts; (8) maritime conditions; and (9) construction costs. Site selection criteria included the need for the site to be in water depths less than 750 feet (229 m) due to subsea pipeline installation constraints; have a gently sloping bottom topography; and have a hospitable wind, wave, and swell environment. The depth limitation is no longer applicable because advances in technology enable pipelines to be laid in much deeper waters.

Areas offshore of Central and Northern California between Point Conception and the Oregon border were eliminated from further consideration because of adverse weather conditions and the presence of military operations, ship traffic, and marine and coastal resources. No population density criteria were applied to the siting of an offshore facility; however, locations within 4 miles (6.4 km) of a permanent population of 1,800

persons were eliminated. Thus, offshore areas within 4 miles (6.4 km) of Los Angeles, Long Beach, and San Diego were eliminated.

The study evaluated seven zones and then 16 sites between Point Conception and the Mexican border. Eventually, seven sites were selected as potential terminal locations: Ventura Flats, offshore of Deer Canyon, offshore of Camp Pendleton, offshore of Chinese Harbor, offshore of Smuggler's Cove, offshore of San Pedro Point, and Bechers Bay. Ventura Flats was selected as the optimal location.

Nine offshore sites were evaluated as potential alternatives to the proposed Project: the seven sites identified in the 1978 CCC Offshore LNG Terminal Study and two sites identified during public scoping—Anacapa and the west side of the Channel Islands.

The following analysis uses the 1978 criteria and updates the information as appropriate. All of the sites, except Ventura Flats, were eliminated from further consideration for the reasons detailed below. The Ventura Flats location is part of the Santa Barbara Channel/Mandalay Shore Crossing/Gonzales Road Pipeline Alternative.

Gaviota Pass

Gaviota Pass, near the coastline approximately 15 miles (24 km) east of Point Conception, was considered as an alternative offshore location. Gaviota Pass is very close to two onshore sites, Little Cojo and Las Varas, which were evaluated in the CCC's 1978 Final Report Evaluating and Ranking LNG Terminal Sites. The Las Varas site was rejected because of the presence of a seismic fault, and a similar fault was found at Little Cojo. The CCC did not consider offshore locations in the Santa Barbara County area because "any offshore LNG terminal near the mainland in western Santa Barbara Channel would conflict with the valuable marine and recreational resources present there." Gaviota Pass was not retained for evaluation as an alternative offshore location because of the potential seismic activity in the area and the potential conflicts with marine and recreational resources present in that part of the Santa Barbara Channel.

Offshore of Camp Pendleton

The 1978 CCC offshore report identified a site offshore of Camp Pendleton, approximately 1.5 to 3 miles (2.4 to 4.8 km) offshore of a long stretch of San Diego County coastline. The CCC concluded that either a floating or fixed facility would be feasible because the location met the geotechnical, population density, and marine resources criteria. However, the CCC recognized that there were potential seismic problems, recreational conflicts, safety issues, and aesthetic concerns. Currently, as described below, despite the advances in technology, the potential negative aspects of the site have increased since the 1978 CCC report.

For example, the site offshore of Camp Pendleton would be highly visible to a large number of people traveling on Interstate 5. Its presence would also degrade the recreational experience of beach visitors at San Onofre State Park and would restrict access for local boaters and sport fishers because there would be an exclusion zone

around the facility and any approaching LNG tanker. Additionally, the population of the areas surrounding Camp Pendleton has increased since the original recommendation in 1978: San Clemente has grown by almost 23,000 people since 1980 and Oceanside has grown by almost 33,000 people since 1990. In addition, there is a fault 4 miles (6.4 km) offshore.

The U.S. Marine Corps also uses the waters off Camp Pendleton for amphibious warfare-training exercise. In June 2004, the Navy's Advanced Amphibious Assault Vessel (AAAV) ocean training area was extended seaward from 3 NM (3.5 miles or 5.6 km) up to approximately 25 NM (29 miles or 46 km) from Camp Pendleton beaches to conduct AAAV over-the-horizon training exercises. This use of the ocean offshore of Camp Pendleton by the Department of Defense could be precluded by the safety zone that would surround the LNG terminal and might also be affected when LNG carriers transit to and from the facility. Therefore, an LNG terminal anywhere within the AAAV ocean training area could disrupt naval exercises, training, and traffic.

Further, due to the proposed distance offshore, LNG carriers would have to cross the shipping lanes to reach the LNG terminal; therefore, commercial vessel traffic could be disrupted. Recreational vessel traffic would need to avoid the safety zone. Since the location would be relatively close to shore, it is assumed that the volume of the recreational vessel traffic would be significant; therefore, impacts on recreational vessel traffic would be adverse.

This alternative was eliminated from further analysis because of its inability to avoid potential significant environmental impacts, specifically because it is close to shore. In addition, this alternative would involve potentially significant impacts on recreation, visual resources, public health and safety, as well as potential land use conflicts. There would be potentially significant impacts on the Navy's ability to train at Camp Pendleton if an LNG terminal were located within its AAAV ocean training area. Finally, the proposed facility would not have been subject to the provisions of the Deepwater Port Act.

Offshore of Deer Canyon

Although a floating terminal approximately 1 mile (1.6 km) offshore of Deer Canyon would be technically feasible, some of the factors that were considered favorable in the 1978 CCC offshore study are no longer favorable. For example, the Santa Monica Mountains were not designated as a national recreation area until later in 1978. Moreover, even at the time the study was published, the CCC recognized that there would be significant visual effects on nearby recreation areas, including Leo Carrillo and Point Mugu State Parks and the Santa Monica Mountains.

Given that this location would only be 1 mile (1.6 km) offshore, the facility would be visible from State Route 1 and would pose a potential threat to public safety if an accident were to occur. LNG carriers would also have to cross the vessel traffic separation scheme and therefore disrupt coastal recreational and commercial vessel traffic. In addition, the CCC report cited potential conflicts with the Pacific Missile

Range Test Center activities and a State oil lease. Currently, there are no known conflicts with the Pacific Missile Range or with a State lease; however, this alternative would have significant aesthetic and recreation impacts.

This potential alternative was eliminated from further consideration because it would result in potentially significant effects on aesthetics, public safety, marine traffic, and recreation. Potential sites further than 1 mile (1.6 km) offshore of Deer Canyon but landward of the vessel traffic separation scheme would have similar adverse effects. Moving further from shore would decrease the aesthetic, marine traffic, and recreational impacts but would increase the potential interference with commercial vessel traffic.

Offshore of Chinese Harbor, Smugglers Cove, San Pedro Point, and Bechers Bay

The Chinese Harbor, Smugglers Cove, and San Pedro Point locations are offshore of Santa Cruz Island, and the Bechers Bay location is offshore of Santa Rosa Island. All of these sites are considered unacceptable because of their location within the Channel Islands National Park (CINP) and National Marine Sanctuary, established in 1980, and the biological significance of the surrounding resources. NPS provisions for CINP are intended to conserve the sensitive marine organisms and other resources that occur in nearshore waters of the CINP. Enforced restrictions include limits on marine vessel traffic and public use, special area closures, and designations for specific uses or activities. Approval of an LNG facility in these locations is highly unlikely because it would conflict with the national park's or sanctuary's intended land use. Therefore, these potential alternatives were eliminated from further consideration.

Anacapa

The Anacapa alternative location was proposed by the Applicant and is approximately 14 NM (16 miles or 26 km) offshore of Point Mugu and approximately 9.5 NM (11 miles or 17.6 km) from Anacapa Island, which is part of the CINMS. Like the other locations located within the CINMS, approval of an LNG facility is unlikely because it would conflict with the sanctuary's intended land use. Therefore, this potential alternative was eliminated from further consideration because it is not feasible.

West Side of the Channel Islands

During the public scoping period, a commenter suggested the west side of the Channel Islands as an alternative location for the DWP. This alternative was considered but not retained for full analysis because it is infeasible primarily because it would be located within the CINMS. In addition, water depths on the west side of the Channel Islands are greater than those of the proposed Project mooring location, slopes are steep (which would make it difficult to delineate a submarine pipeline route from this location to the shore), and wind/wave conditions can be severe. Also, depending on the location, operations of an FSRU on the west of the Channel Islands, where the Navy conducts exercises, could interfere with Naval activities. This area is also along whale migration routes. Therefore, this potential alternative was eliminated from further consideration because it is not feasible.

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FINDINGS FOR ALTERNATIVE DEEPWATER PORT CONCEPTS

Description: Alternative deepwater port concepts include different types of fixed and floating LNG regasification facilities that have either been proposed in concept or evaluated in other locations. There were considered as alternatives to the proposed concept.

Finding(s): Alternative deepwater concepts were determined either not to be feasible at the location proposed for the deepwater port, would have potentially greater environmental impacts, or would not fulfill the project's objectives.

Deepwater port concept alternatives fall into two categories: fixed or floating facilities. The following sections evaluate different deepwater concepts for fixed and floating facilities. Two possible platform-based LNG terminal alternatives are the use of an existing oil platform or construction of a new platform. Another fixed alternative is a gravity-based structure. Alternatives for floating facilities are single and multi-point mooring systems. Descriptions of these alternatives and the reasons for their elimination from further analysis of potential environmental impacts are provided below.

Fixed Offshore Liquefied Natural Gas Terminal

Existing Platform-Based Terminal Alternative

Currently, there are 27 oil and gas production platforms operating in Federal or State waters in the Santa Barbara Channel, Santa Maria Basin, and offshore of Los Angeles/Long Beach. Most are more than 20 years old. Offshore oil platforms can be used only for the intended use for which they were permitted. Altering or converting the function of an offshore oil platform for either exclusive use as an offshore LNG terminal or dual use as an offshore LNG terminal and oil and gas production facility requires a new Development and Production Plan for that platform, approved by the U.S. Department of the Interior, Minerals Management Service.

These platforms were not built either to berth LNG carriers or to support ancillary equipment. A comprehensive structural analysis would be needed to determine if a platform is sufficiently structurally sound to extend its lifespan and to support a DWP for LNG. Adding berthing capability to an existing platform would create a larger object in the viewshed and would extend the life of an existing offshore visual effect that is currently scheduled for removal at the conclusion of all oil and gas operations.

An LNG terminal at an offshore oil platform may not have the capacity to provide a continuous and reliable supply of natural gas at reasonable rates, which is one of the purposes of the Cabrillo Port DWP. The existing platform-based terminal was eliminated as an alternative to the proposed Project because it would not provide sufficient storage capacity "to enable a continuous, reliable supply to local energy markets." Also, due to its lack of storage at the terminal, the regasification process, which is generally slower than carrier unloading, could not proceed independently of unloading, and the delivery vessel(s) would need to remain moored longer at the

terminal. In addition, sufficient information is not available to analyze the potential environmental impacts to a level sufficient to determine whether a platform-based LNG terminal alternative "...would avoid or substantially lessen any of the significant effects" of the proposed Project (State CEQA Guidelines § 15126.6).

New Fixed Platform-Based Terminal Alternative

A platform-based terminal could be designed to receive and regasify LNG and send the natural gas to shore via a pipeline; however, it would be technically infeasible to consider placing a platform at the same location as that of the proposed Project because, to date, fixed platforms have not been installed at the ocean depth of the proposed DWP location (approximately 2,900 feet [884 m]). To date, fixed platforms have been installed to water depths of 1,353 feet (412 m). Compliant (flexible) pile and compliant or guyed platforms have been installed in water depths to 1,753 feet (534 m). Only floating facilities have been installed to greater depths.

A new platform would have not only visual effects for those who live in and use the viewshed, but also greater potential environmental effects than conversion of an existing platform, since the impacts associated with installation of existing platforms have already occurred.

A fixed platform-based LNG terminal may also have to be constructed closer to shore than the proposed Project location due to considerations of water depths in the area. If one were installed closer to shore within feasible water depths, the platform could create an additional navigational hazard in the Santa Barbara Channel, and the necessary safety zone would affect maritime commercial and recreational activities because it would be in a high vessel-traffic area. Given that a new platform would be fixed to the seafloor, the potential adverse effects of local seismic activity to the structure would be greater than the effects to a floating facility.

The new platform-based terminal alternative was eliminated as an alternative to the proposed Project because unless storage capacity is provided it would not provide a continuous and reliable supply of natural gas to local energy markets, and the potential environmental and safety effects could be greater than those of the proposed Project. In addition, sufficient information is not available to fully analyze the potential environmental impacts to a level sufficient to determine whether this LNG facility configuration "would avoid or substantially lessen any of the significant effects" of the proposed Project (State CEQA Guidelines § 15126.6).

Gravity-Based Structure

A gravity-based structure is one that remains secured to the seafloor, primarily by gravity. A gravity-based structure can be constructed onshore (usually from concrete), floated to a site, and installed to provide an offshore enclosure and foundation for LNG tanks and a stable deck for regasification equipment. Factors influencing this concept include constructability, weather, safety, shipping, environmental setting, geology of the seabed (including water depth), and regulatory permitting.

Gravity-based structures are not suited to the water depth at the proposed DWP (approximately 2,900 feet [884 m]), and therefore would have to be located closer to shore. The deepest concrete deep water structure is the Troll A platform in the North Sea, which is installed in 1,148 feet (350 m) of water. It is not an LNG facility. In general, gravity-based structures are more economical in waters deeper than 100 feet (30.5 m).

This potential alternative terminal technology was eliminated from further consideration because of the technical infeasibility of installing it at the location of the proposed Project or any other location with similar attributes, e.g., distance from shore, and because a location closer to shore would pose greater visual effects and potential marine traffic issues than the proposed Project.

Floating Offshore Liquefied Natural Gas Terminal

Single-Point Mooring Direct Regasification

The single-point mooring direct regasification concept was considered, but eliminated as an alternative because it does not serve the purpose and need of the proposed Project.

The basis of this system is a single submerged turret loading buoy moored to the seabed that remains submerged 82 to 131 feet (25 to 40 m) below the water surface. When an LNG carrier with the proper fittings approaches the buoy location, the LNG carrier retrieves the buoy into a mating cone in the bottom of the vessel. Currently, these systems operate in 279 to 1,148 feet (85 to 350 m) water depth with significant wave heights of 53.8 feet (16.4 m), but ocean basin tests have verified these systems could operate in water depths ranging from 131 to 2,958 feet (40 to 900 m). Operational oil submerged turret systems have eight to 12 mooring legs and are anchored by piles, suction, or drag anchors. Cabrillo Port would be moored with nine drag anchors; therefore, the seabed footprint of a single-point mooring system could be slightly smaller or larger than that of Cabrillo Port.

With a submerged turret loading technology, specially designed LNG carriers with onboard regasification equipment are required. After mooring, the LNG carrier would regasify the LNG onboard and send the natural gas through the mooring point via a flexible riser to a subsea pipeline. Regasification of the entire LNG cargo of approximately 3 billion cubic feet (85 million m^3) of natural gas would take six to seven days.

One example of this DWP concept would use a flow-through, single-point mooring such as that installed for the Excelerate's Gulf Gateway Energy Bridge™ DWP (formerly El Paso Energy Bridge Gulf of Mexico), a system specifically designed for intermittent service. For this DWP, a "shell and tube" regasification technology was used, in which multiple smaller-diameter tubes are housed in a larger tube that acts as a shell. LNG is transported through the smaller tubes and water flows through the larger tube, allowing heat transfer between the two fluids separated by the tube wall.

For the shell and tube technology, either a once-through heating water (open loop) vaporization technology or a steam-heated (closed loop) system is used. Excelerate's Gulf Gateway Energy Bridge™ can operate using either technology. The negative environmental consequences of the open loop system include substantial seawater intake and discharge. An open loop system would require a daily intake of 76.1 million gallons (288,000 m^3) per day of seawater to provide a supply of 500 MMcf (14.2 million m^3) per day. Seawater that has passed through the open loop shell-and- tube system would be discharged at a temperature 13.5°F (10.3°C) lower than the temperature at which it entered the system. The intake of seawater could cause the impingement and entrainment of fish eggs or larvae. The discharge of relatively cooler water could have an adverse effect on marine biota in the immediate vicinity of the discharge.

In contrast, in the closed loop system the propulsion boilers would heat water that would circulate through the shell-and-tube vaporizer to heat the LNG. After heating the LNG in the shell-and-tube vaporizer, the water would circulate through the steam heater to rewarm the water and then recirculate through the shell-and-tube vaporizer. The closed loop system does not use seawater and therefore does not have the impacts on water quality or marine biological resources that an open loop system has. However, because the closed loop system on Excelerate's Gulf Gateway Energy Bridge™ project has to use two boilers and a diesel generator for the regasification of LNG, in contrast to the one boiler needed to operate during the open loop system, additional air emissions are generated. Air emissions at Gulf Gateway Energy Bridge™ would be higher than at Cabrillo Port. Excelerate's Northeast Gateway Energy Bridge™ proposed project in Boston (a dual-point mooring system discussed below under "Multiple-Point Mooring Direct Regasification") would have lower emissions because the U.S. Environmental Protection Agency (USEPA) required different emissions controls. Each would operate in different USEPA regions and under facility-specific operating permits.

An objective of the proposed Project is to develop a DWP that would provide sufficient natural gas storage capacity to enable a continuous, reliable supply to local energy markets. The single-point mooring system alternative cannot fulfill this objective. In general, a single-point mooring concept is designed only to meet intermittent market demand; it only can provide natural gas when an LNG carrier with regasification technology is berthed. According to the environmental assessment of the license application for Excelerate's Gulf Gateway Energy Bridge™ DWP, a single LNG carrier can transport a maximum of 36.4 million gallons (138,000 m^3) of LNG and has a goal of six to seven days to unload and regasify. If weather prevents an LNG regasification carrier from berthing, no natural gas could be supplied. The Excelerate system is designed and tested to withstand weather events in the North Sea; however, its operations are governed by a USCG approved operations manual. This type of system also does not provide storage for LNG or natural gas. The proposed Cabrillo Port FSRU has a storage capacity of 72 million gallons (273,500 m^3) and can discharge under anticipated weather events.

The relatively large number of traditional LNG carriers that could call at the FSRU (220 with an additional 137 on order) would add to the Project's reliability, in contrast to the

few specifically designed LNG carriers (three are currently operational, two are on order) equipped to regasify on board.

The single-point mooring DWP concept cannot meet the objective of a continuous supply of natural gas; therefore, this type of project would not be a feasible alternative to the proposed Project.

Multiple-Point Mooring Direct Regasification

The multiple-point mooring system would be the same as the single-point mooring system except that a multiple-point mooring system would have multiple separate buoys. The purpose of this system would be to provide continuous service at the same capacity as the FSRU. In order to have comparable capacity as the FSRU, a two-buoy system would be needed, based on the current size of LNG regasification carriers of 36.4 million gallons (138,000 m^3). The next generation of LNG regasification carriers is projected to carry 39.9 million gallons (151,000 m^3).

An example of a multiple-point mooring DWP design is the Northeast Gateway Energy Bridge™ Port, for which the USCG, MARAD and the Massachusetts Executive Office of Environmental Affairs (MEOEA) have published a Final EIS/EIR in 2006. This design consists of two sets of natural gas receiving and regasifying facilities. Each facility consists of the following fixed components: a subsea Submerged Turret Loading™ buoy, a flexible riser, eight suction pile anchors, a pipeline end manifold (PLEM), and a subsea flowline that would facilitate the mooring and connection of a fleet of purpose-built Energy Bridge™ Regasification Vessels (EBRVs) that call at the Northeast Gateway Port. EBRVs are standard LNG tankers that have been specially built to contain equipment for LNG regasification and delivery of natural gas. This subsea system would be similar to the system proposed for Cabrillo Port; however, the subsea footprint would be two times the size and therefore potentially greater impacts on the subsea environment.

The Northeast Gateway Energy Bridge™ Port design allows for current and future capacity EBRVs, from 36.5 to 66.0 million gallons (138,000 to 250,000 m^3). An EPRV would dock at the Northeast Gateway Energy Bridge™ Port at one of the two Submerged Turret Loading™ buoys which that serve as the anchor system for the EBRV, allowing it to weathervane (swivel or rotate) about the axis of the buoy while moored in response to wind, waves, and currents. Regasification would occur via closed-loop shell and tube recirculating heat exchangers heated by steam from boil-off gas/vaporized LNG-fired boilers. The Northeast Gateway Energy Bridge™ Port, if licensed, would use only a freshwater-based closed-loop mode. Regasification of LNG from an EBRV is expected to take eight days. To reach the 800 MMcf (22.7 million m^3) per day baseload proposed, the Northeast Gateway Energy Bridge™ Port would need to continuously operate at least one EBRV, thus necessitating the arrival of an EBRV approximately every seven to eight days. There would be an estimated 10 percent overlap in EBRVs at the Northeast Gateway Energy Bridge™ Port; as one EBRV is completing regasification, another would be mooring at the second buoy and starting regasification.

For Cabrillo Port, the FSRU would always be present and one to two LNG carriers would dock weekly. LNG unloading would require 16 to 21 hours, depending on the size of the carrier, and then the LNG carrier would leave. Regasification would use submerged combustion vaporizers and engine cooling would be accomplished through a closed loop tempered water system. Docking of an LNG carrier at the FSRU would require the assistance of tugboats. A vessel would patrol the area around the FSRU at all times.

A 0.27 NM (0.3 mile or 0.5 km) radius safety zone would likely be required for each mooring turret in a multiple-point mooring system and the Cabrillo Port FSRU. Once established, safety zones are enforceable, such that unauthorized vessels would not be allowed to enter. A mandatory no anchoring area would be established around each buoy to protect the port's mooring components and any vessel engaged in underwater activities (trawling, research) that could become entangled in the mooring gear. An ATBA would probably be established around each turret of a multiple-point mooring system or around the entire mooring system.

The Applicant has requested an ATBA be established around Cabrillo Port. Vessels could enter the ATBA, but the recommended maximum speed would be 10 knots (11.5 mph or 18.5 kph). The size of the ATBA would be determined at the time of licensing, but an ATBA for a DWP could range from a radius of 0.54 to 1.6 NM (0.6 to 1.8 miles or 1 to 3 km). Excelerate's Gulf Gateway Energy Bridge™ project has a 0.27 NM (0.3 mile or 0.5 km) safety zone, a 0.8 NM (0.9 mile or 1.5 km) no-anchoring zone, and a 1.1 NM (1.3 miles or 2 km) ATBA. Excelerate's Northeast Gateway Energy Bridge™ would have a 0.27 NM (0.3 mile or 0.5 km) safety zone around each buoy regardless of whether an LNG carrier were docked. The ATBA would have a radius of 1.4 NM (1.6 miles or 2.6 km). The no anchoring area would have a radius of 0.6 NM (0.7 miles or 1.0 km) around each buoy. Cabrillo Port would have only one safety zone/ATBA; therefore, it would likely have a smaller total area set aside for safety zones than a dual-point mooring system. Therefore, the dual-point mooring system could have greater impacts on recreational and commercial vessels in the area and potentially greater impacts on marine traffic.

Although the dual-point mooring system would have the capability of providing a continuous supply of natural gas, it could have the same type of environmental issues as the single-point mooring regasification system. That is, if the open loop system were used, it could adversely impact fish eggs, larvae, and other marine biota due to the discharge of relatively cooler water. If the closed loop system were used, impacts on marine biota would be minimized. For an eight-day period each year, some seawater intake would be required for main condenser cooling and other cooling systems, ballast water, and maintenance of emergency water deluge and fire-main system. An average of 4.97 million gallons per day of seawater would be required at the Northeast Gateway Energy Bridge™ Port during this eight-day-per-year period, for a total intake of 39.78 million gallons per year.

The total discharge during each eight-day period would be 3.08 million gallons per day. Of this, approximately 2.0 million gallons per day would be used in the heat recovery

and exchange mode. The remaining seawater intake volume would be used for ballasting and all other ship operations. Marine fishery loss due to entrainment was estimated at approximately 48,774 age-1 equivalents (equivalent to approximately 2,330 pounds). Based on equivalent yield (in pounds), lobster, pollock, and yellowtail flounder make up the majority of the predicted annual loss. This is slightly more than the 4.17 million gallons per day (based upon a weighted average of normal and peak seawater intake) proposed by Cabrillo Port. Although the marine life impact from the Northeast Gateway Energy Bridge™ Port and Cabrillo Port project cannot be directly compared, it can be assumed that the impacts would be generally equivalent.

Depending on whether an open loop or closed loop regasification system were used, either impacts on marine biota or air emissions could be greater than Cabrillo Port's impacts; the seabed footprint would be approximately two times that of Cabrillo Port; and the area with access restrictions and/or recommended speed limits would be twice Cabrillo Port's area. In addition, since the existing projects using this type of technology have very different impacts, it would be speculative to evaluate the exact configuration of this type of LNG facility offshore of California. Therefore, a dual-point mooring was eliminated from further consideration because it would be speculative to estimate the full spectrum of environmental impacts of such a project offshore of California.

Woodside Natural Gas, Inc. submitted an application for a floating LNG terminal (The OceanWay project) that proposes to install a two-buoy delivery system 22 miles (35 km) off the coast of Los Angeles. However, the nature and extent of impacts associated with the Woodside Natural Gas Project cannot be predicted with any certainty at this time because the necessary environmental analyses have not yet begun. Further, due to the uncertainty of the length of time required to complete the environmental analyses for projects for which the application process has either just begun or for which no application yet exists, and the limited information available, the CSLC does not regard such project as a reasonable alternative to the proposed Project.

1.5.2 FINDINGS ON POTENTIAL ALTERNATIVES ANALYZED IN THE FINALEIR

The following findings describe the potential alternatives that were determined to be reasonable alternatives meriting detailed study in the EIS/EIR, and the basis for the CSLC rejecting these alternatives.

FINDING FOR SANTA BARBARA CHANNEL/MANDALAY/GONZALES ROAD DEEPWATER PORT ALTERNATIVE

Description: The proposed mooring point location is approximately 7.4 NM (8.5 miles or 13.7 km) offshore of Rincon Beach and approximately midway between two existing oil production platforms in the Santa Barbara Channel, Platforms Grace and Habitat. The alternative mooring location would be approximately at latitude 34°14.410'N, longitude 119°30.916'W and would meet safety criteria because it would be more than 2.6 NM (3 miles or 4.8 km) from shipping lanes and existing facilities. It would be approximately 5.8 NM (6.7 miles

or 10.7 km) landward from the coastal shipping lanes and more than 4.32 NM (5 miles or 8 km) from the nearest offshore production platform.

Pipeline routes connecting an FSRU at this location to the existing SoCalGas facilities at Ormond Beach would be difficult to locate since they would have to either cross or go around Hueneme Canyon. Given the depth and geologic instability in the vicinity of this canyon, the only viable route is south of the canyon. This route would require the pipeline to be located in or near coastal shipping lanes. Therefore, these routes connecting to Ormond Beach were not considered.

The most viable pipeline alternative for the Santa Barbara Channel mooring location would be to route the pipeline from the mooring location to the Reliant Energy Mandalay Generating Station shore crossing, north of Port Hueneme, where natural gas facilities already exist. These facilities would require upgrades to accommodate the transfer of the volume of gas being transported onshore. The Mandalay Generating Station is located near Oxnard Shores in Oxnard, and the pipeline would traverse parts of Oxnard. The Reliant Energy Mandalay Generating Station shore crossing is located between McGrath State Beach and Mandalay Beach Park.

The offshore pipeline would start at the mooring point in water approximately 265 feet (80.8 m) deep and travel southeast approximately 5.92 NM (6.8 miles or 11 km) southeast to Platform Gilda. The natural gas pipeline would then continue easterly approximately 8.5 NM (9.8 miles or 15.8 km) to the shoreline. This route would generally follow an existing utility ROW before it diverges in State waters and heads to the Mandalay Generating Station.

Similar to the proposed Project, it is assumed that the alternative shoreline crossing would be accomplished with HDB. The HDB exit points would be in a water depth of 43 feet (13 m), approximately 1.0 NM (1.2 miles or 1.9 km) from the shoreline. The HDB entrance point would be at an unspecified location at the Reliant Energy Mandalay Generating Station shore crossing. The length of the bore would be approximately 1.25 NM (1.4 miles or 2.3 km).

From the Reliant Energy Mandalay Generating Station shore crossing, the pipeline would be installed primarily in existing road ROWs. The pipeline would travel north along Harbor Boulevard and turn east at West Gonzales Road. The pipeline would follow West Gonzales Road to East Gonzales Road until Rose Road, where it would meet Center Road Pipeline Alternative 1 at milepost

(MP) 8.0 and would follow that route to the Center Road Valve Station.

Like the proposed Project, a pipeline would have to be constructed in Santa Clarita along the Line 225 Pipeline Loop. The route through Santa Clarita for this alternative would be the same as the proposed Line 225 Pipeline Loop route.

Finding(s): This alternative could meet short- and mid-term natural gas demand. The proposed mooring point location is approximately the same as that of the Ventura Flats alternative site examined in the 1978 CCC study of potential offshore LNG terminal sites and technologies. The proposed Project shore crossing at the Reliant Ormond Beach Generating Station is preferable to the Reliant Mandalay Generating Station Shore Crossing because there are many more sensitive species that could be adversely impacted within or adjacent to the latter shore crossing ROW than the former. The Center Road Pipeline is preferable to the Gonzales Road Pipeline because during its construction it would affect fewer people and less traffic would be disrupted on significant thoroughfares.

Facts Supporting the Finding(s)

Located 6.9 NM (7.9 miles or 12.8 km) offshore of Pitas Point in the eastern Santa Barbara Channel, this site was determined by the CCC to be one of the most appropriate sites in California for a floating facility or a gravity-based structure based on the selection criteria described in Section 3.3.7, “Specific California Locations.” The CCC determined that this location would be the "most appropriate siting area off the shoreline of California ... [and][o]nly the floating type of offshore LNG terminal could be placed with confidence in this area because it is not dependent on favorable seismic and soil conditions of the sea bottom." The CCC report also notes that "[b]ecause of the site's distance from shore, a floating LNG terminal on the southeast Ventura Flats would have minimal adverse impacts on sensitive marine resources and public recreation along the coast. It would be visible on clear days from about 25 miles (40 km) of coastline, but it would look like a large tanker and would be beyond the ten offshore oil production platforms in the area. Another advantage is that there would be a comparatively short underwater gas pipeline to the Oxnard area that would not cross major earthquake faults."

While the proposed Project could be built at either location, the proposed Project location is environmentally preferable to the Santa Barbara Channel alternative. For example, the proposed Project FSRU location is farther from land than the Santa Barbara Channel alternative. As a result, this location would have less of a visual impact; fewer potential conflicts with recreational fishers, boaters, marine mammals; and less of an impact on commercial fishing and marine traffic. Although the alternative also poses a greater potential for conflict with the operations of the Navy Sea Range

Point Mugu, these impacts can be mitigated by coordination and communication with the Navy.

Therefore, the CSLC rejects this alternative because, on balance, it would not avoid or substantially lessen many of the impacts of the proposed Project, and as to onshore related issues such as public safety, it would have greater impacts than the proposed Project.

FINDING FOR CENTER ROAD PIPELINE ALTERNATIVE 1

Description: The Center Road Pipeline Alternative 1 was the proposed route in the original application. This alternative would follow existing utility ROWs and/or public roads as follows:

- Begin at the new metering station adjacent to the Reliant Energy Ormond Beach Generating Station shore crossing and then run northeast and north along the SoCalGas and Southern California Edison ROW and northeast on Pleasant Valley Road and then north on Rice Avenue;
- From Rice Avenue, proceed west on Gonzales Road, northeast on Rose Avenue, and under U.S. 101; and
- From the highway, proceed northeast on Rose Avenue, southeast and northeast on Los Angeles Avenue, north on La Vista Avenue, and west on Center Road to the Center Road Valve Station.

Finding(s): The CSLC rejects this alternative because the proposed Project pipeline route is environmentally preferable to Center Road Pipeline Alternative 1 because it would result in fewer impacts to residences and businesses, and the impacts to agriculture and terrestrial biological resources can be mitigated. This alternative was retained for evaluation because it was the route proposed in the original application. The proposed Project pipeline route is preferable because it would result in fewer impacts to residences and businesses, and the impacts to agriculture and terrestrial biological resources can be mitigated.

Facts Supporting the Finding(s)

The Applicant originally proposed Center Road Alternative 1 as the Project. However, during public scoping, many concerns were expressed regarding this route, and the Applicant developed a new Center Road proposed route. In response to comments on the October 2004 Draft EIS/EIR, another proposed Center Road route was developed that avoids passing by Mesa Union School. Center Road Alternative 3 is the former proposed Center Road route described in the October 2004 Draft EIS/EIR. All the other Center Road alternative routes pass adjacent to the Mesa Union School. Although any

of the four pipeline alternatives could be built, the proposed Project would avoid many of the construction related disturbances that affect the public because it would be constructed in existing roadways and other ROWs primarily through agricultural areas and it would avoid Mesa Union School.

Center Road Alternative 1 is longer and would affect more High Consequence Areas than the proposed route. Since Center Road Alternative traverses more developed and urban areas than the proposed Project, it would have more adverse effects to businesses and residences along the pipeline route during construction due to increased traffic, noise, and vibrations; however there would be fewer impacts to agricultural lands, wetlands, and terrestrial biota. Similar to Center Road Alternative 1, the Gonzales Road Alternative traverses urban and residential areas and has similar effects.

FINDING FOR CENTER ROAD CENTER ROAD PIPELINE ALTERNATIVE 2

Description: Alternative 2 would follow existing utility ROWs, public roads, and/or newly acquired easements as described below. This alternative would avoid existing areas of dense residential housing.

- Begin at the new metering station adjacent to the Reliant Energy Ormond Beach Generating Station shore crossing and then run northeast and north along the SoCalGas and SCE ROW, east on Hueneme Road, north on Naumann Road, west on Etting Road, north on Hailes Road to Pleasant Valley Road, and north along Wolff Road;
- At the intersection of Wolff and Sturgis Roads, continue north through agricultural fields, cross U.S. 101, and proceed northeast through agricultural fields to Central Avenue;
- At Central Avenue, head northwest, and in alignment with Beardsley Road, head northeast for approximately 0.25 mile (0.4 km), then northwest along a flood control channel (the Santa Clara Diversion) to Santa Clara Avenue; and
- Follow Santa Clara Avenue northeast and then continue northeast at Los Angeles Avenue, north at La Vista Avenue, and west at Center Road, to terminate at the Center Road Valve Station.

Finding(s): The CSLC rejects this alternative because it would be similar to the pipeline route for the proposed Project, but would not have environmental advantages. This alternative was retained for further evaluation because it avoids most of the population centers in Oxnard and Ventura County and traverses mostly agricultural areas. There are relatively small differences between this pipeline

and the proposed route so either pipeline could be environmentally acceptable.

Facts Supporting the Finding(s)

In response to comments on the October 2004 Draft EIS/EIR, a new proposed Center Road route was developed that avoids passing by Mesa Union School. Center Road Alternative 2 passes adjacent to the Mesa Union School.

Center Road Alternative 2 poses fewer impacts on businesses; however, this is a minor difference. It crosses several more acres of jurisdictional water bodies. It also follows Pleasant Valley Road for a greater distance, which could have greater traffic impacts. Overall, these are relatively small differences, and either pipeline could be environmentally acceptable.

FINDING FOR CENTER ROAD CENTER ROAD PIPELINE ALTERNATIVE 3

Description: Alternative 3 is the former proposed Center Road route described in the October 2004 Draft EIS/EIR. Like the other alternative routes, Alternative 3 would follow existing utility ROWs, public roads, and/or newly acquired easements as described below. This alternative would avoid existing areas of dense residential housing.

- Begin at the new metering station adjacent to the Reliant Energy Ormond Beach Generating Station shore crossing and then run northeast and north along the SoCalGas and SCE ROW, east on Hueneme Road, north on Naumann Road, west on Etting Road, north on Hailes Road to Pleasant Valley Road;
- At Pleasant Valley Road, head southwest for approximately 1,000 feet (305 m) and then turn north through agricultural fields, cross State Route 34 (5th Street), continue north along Del Norte Boulevard, and cross Sturgis Road to U.S. 101;
- At U.S. 101, travel east along the frontage road, then turn north and cross U.S. 101, then it would proceed northeast to Central Avenue, turn southeast along Central Avenue, northeast along Beardsley Road for approximately 0.25 mile (0.4 km), and northwest along a flood control channel (the Santa Clara Diversion) to Santa Clara Avenue; and
- Follow Santa Clara Avenue northeast, then continue northeast at Los Angeles Avenue, north at La Vista Avenue, west at Center Road, and terminate at the Center Road Valve Station.

Finding(s): The CSLC rejects this alternative because the proposed Project route is preferable in that it avoids passing adjacent to the Mesa Union School; however, Center Road Alternative 3 crosses fewer water features than the proposed Project. This alternative was retained for further evaluation because it avoids most of the population centers in Oxnard and Ventura County; it traverses mostly agricultural areas; and it was one of the formerly proposed routes.

Facts Supporting the Finding(s)

Center Road Alternative 3 is the former proposed Center Road route described in the October 2004 Draft EIS/EIR. Center Road Alternative 3 follows the same route as the proposed Center Road Alternative until the corner of Los Angeles and Santa Clara Avenues where this alternative continues up Santa Clara Avenue and turns on La Vista.

FINDING FOR LINE 225 PIPELINE LOOP ALTERNATIVE

Description: The proposed Line 225 Pipeline Loop Alternative 1 would follow the same route as the proposed route from Quigley Valve Station to MP 4.75, where it would continue northwest on State Route 126 (Magic Mountain Parkway). This alternative would veer northwest around MP 5.5, following the SoCalGas ROW and terminating at Honor Rancho Valve Station #9A. It would cross the Santa Clara River at approximately MP 5.7 using an existing pipe bridge.

Finding(s): The CSLC rejects this alternative because it would have greater potential impacts to terrestrial biota than the proposed Project. It was retained for further evaluation because the route would be shorter, would traverse open land, and would provide an alternative stream crossing location.

Facts Supporting the Finding(s)

The Line 225 Pipeline Loop Alternative follows the same route as the proposed Line 225 Pipeline Loop from MP 0.0 to MP 4.8 and MP 6.8 to MP 7.71 of the proposed route. Line 225 Pipeline Loop is preferred because the alternative would disturb a greater area of jurisdictional water bodies and therefore would have greater potential impacts to terrestrial biota.

FINDING FOR POINT MUGU/CASPER ROAD PIPELINE ALTERNATIVE

Description: The Point Mugu Shore Crossing/Casper Road Pipeline Alternative would cross the Naval Base Ventura County (NBVC) Point Mugu to unincorporated lands in Ventura County. The Navy has not endorsed the Project or guaranteed the final routing of this alternative across Navy property. The HDB exit points would be at latitude 34°6.659'N, longitude 119°9.7612'W. These HDB exit

points are in different locations than the ones proposed in the October 2004 EIS/EIR and are closer to the shore crossing.

This alternative would also include two 24-inch (0.6 m) pipelines that would extend from the offshore HDB exit points approximately 0.8 mile (1.3 km) to the HDB entry points on NBVC Point Mugu. HDB also would be used to install pipelines to a proposed new metering station located approximately 0.8 mile (1.3 km) at the southern end of Casper Road. The two 24-inch (0.6 m) diameter natural gas pipelines would terminate at the metering station. Approximately 1.5 miles (2.4 km) of additional pipeline would be installed from the new metering station to MP 2.4 of the proposed Center Road Pipeline along Hueneme Road. The total pipeline length would be approximately 3.7 miles (6 km). The HDB entry point would be in an area of the NBVC Point Mugu that was previously disturbed. Most construction and maintenance activities would occur on a remote portion of NBVC Point Mugu instead of a public beach.

Finding(s): The CSLC rejects this alternative because the proposed Project pipeline route is environmentally preferable. The Point Mugu site offers the benefit of controlled access during the HDB operations and no beach users would be affected. However, construction would need to be scheduled to avoid sensitive species that use the beach, which would be avoided at the Reliant Ormond Beach facility because the land is already disturbed.

FACTS SUPPORTING THE FINDING(S)

The Point Mugu Alternatives would be constructed on undeveloped, moderately developed, and agricultural lands. As a result, the Point Mugu shore crossings would have greater potential impacts to sensitive terrestrial biota than at the proposed Project shore crossing location. Construction at the proposed Project or the Point Mugu shore crossing location would not limit access or parking at Ormond Beach.

The Point Mugu odorant station and metering station be located outside the Point Mugu facility, which makes it slightly less preferable. The Point Mugu odorant and metering stations would not be guarded. While the risks of an accident involving a release of either the odorant or unodorized natural gas is very small, the secure and secluded nature of the Reliant Ormond Beach station makes it preferable to the Arnold Road or Point Mugu locations. The metering station for the Point Mugu Alternative would be built on agricultural lands and therefore would result in the permanent conversion of agricultural land to non-agricultural uses.

Due to their distances from residences and other features, the noise and vibration generated by the Arnold Road and Point Mugu alternatives would have fewer adverse effects that the proposed Project.

FINDING FOR ARNOLD ROAD SHORE CROSSING/ARNOLD ROAD PIPELINE ALTERNATIVE

Description: The Arnold Road Shore Crossing/Arnold Road Pipeline Alternative would also include two 24-inch pipelines and would begin approximately at the HDB exit points and end at a connection at approximately MP 1.9 of the proposed Center Road Pipeline route at Hueneme Road and Arnold Road. The HDB exit points would be at approximately the same location as the HDB exit points from the Point Mugu Shore Crossing, at latitude 34°6.6779'N, longitude 119°9.967'W.

This alternative would extend from the offshore HDB exit points approximately 1.06 miles (1.7 km) to the HDB entry points located approximately 1,000 feet (305 m) inland from the shoreline, near the end of Arnold Road, on lands in unincorporated Ventura County. From the HDB entry points, HDB also would be used to install the pipeline to the surface facility located approximately 0.6 mile (1.0 km) inland along Arnold Road on previously developed lands. The two 24-inch (0.6 m) diameter natural gas pipelines would terminate at the metering station.

Approximately 1.9 miles (3.1 km) of additional pipeline would be installed, using trenching, from the new metering station to MP 1.9 of the proposed Center Road Pipeline along Hueneme Road. Therefore, the total pipeline ROW length would be approximately 3.2 miles (5.1 km).

Finding(s): The CSLC rejects this alternative because the proposed Project pipeline route is environmentally preferable.

Facts Supporting the Finding(s)

The Arnold Road Alternative would be constructed on undeveloped, moderately developed, and agricultural lands. As a result, the Arnold Road crossings would have greater potential impacts to sensitive terrestrial biota than at the proposed Project shore crossing location. Construction at the Arnold Road Alternative would temporarily limit access to Ormond Beach and parking for recreational beach users, while construction at the proposed Project or the Point Mugu shore crossing location would not limit access or parking at Ormond Beach.

Although the Arnold Road metering station and odorant facility would be fenced, it would not be guarded as it would in its proposed location within the Reliant generating plant site. The Arnold Road odorant and metering stations would not be guarded. While the risks of an accident involving a release of either the odorant or unodorized

natural gas is very small, the secure and secluded nature of the Reliant station makes it preferable to the Arnold Road or Point Mugu locations. The metering station for the Arnold Road Alternatives would be built on agricultural lands and therefore would result in the permanent conversion of agricultural land to non-agricultural uses.

Due to their distances from residences and other features, the noise and vibration generated by the Arnold Road and Point Mugu alternatives would have fewer adverse effects that the proposed Project.

Although the Casper Road and Arnold Road Pipelines that would connect the respective shore crossings with the Center Road Pipeline would both be shorter than the proposed Project, the difference in length is insignificant when the fact that the pipelines would be installed in existing road rights-of-way is considered.

For these reasons, the proposed Project is environmentally preferable.

1.6 FINDINGS FOR GROWTH-INDUCING IMPACTS OF THE PROPOSED PROJECT

Per the CEQA (section 15126.2(d)), the Final EIR discusses ways in which the proposed Project could foster economic or population growth or induce additional housing, either directly or indirectly, in the surrounding area.

Most projects could induce growth in areas they are located. The following summarizes the analysis in the Final EIR:

ECONOMIC/POPULATION GROWTH EFFECTS

The Project will not foster economic or population growth. The Project area is currently served by numerous natural gas suppliers and economic activity is already in place. The demand for energy, as projected by the CEC, is due to existing customer demand and projected regional development. The Project, along with other energy projects, would increase the supply of natural gas to the region to meet this projected need for additional natural gas, but the Project in and of itself would not have induced the projected growth in demand for natural gas. Although the availability of a new or alternate source of natural gas could contribute to stimulating economic or population growth in the area, the natural gas supplied by Cabrillo Port would not be the sole supply of natural gas to the area. Therefore, the additional gas supplied by the proposed Project would not have intrinsic growth-inducing impacts.

EMPLOYMENT EFFECTS

The Project will provide new employment; however, the limited increase in employment is not expected to stimulate the construction of new housing that would result in physical impacts. Construction of the proposed Project would provide temporary employment for up to 200 workers for approximately 35 days for the offshore pipelines. Construction of the offshore pipelines would require up to 200 to 240 workers for approximately nine months.

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CALENDAR PAGE

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MINUTE PAGE

The FSRU would have an operations crew of about 30 persons that would be rotated from Port Hueneme every seven days. No new employees would be required to operate the onshore pipelines.

EFFECTS ON ACCESS TO UNDEVELOPED OR UNDERDEVELOPED AREAS

The Project will not provide access to undeveloped or underdeveloped areas. The Project would not involve the construction of new roads. The Project would use existing rights-of-way and roads.

PUBLIC SERVICE EFFECTS

The proposed Project would not supply natural gas to any area that is previously unserved. The primary result of the Project would be to meet increased energy demand from existing customers.

TAX IMPLICATIONS FOR EXISTING COMMUNITIES

The Project will not tax existing community services. The number of non-local workers would be small relative to current population in the Project area. Given that the additional local work force would be at most 60 workers on alternating weekly work schedules, there would not be the need for new housing or services. Local communities have sufficient infrastructure to meet the needs of non-local workers.

DEVELOPMENT EFFECTS

The Project will not cause development elsewhere, however, the purpose of the proposed Project is to meet anticipated baseload energy demand from existing customers as well as new and expanding businesses within the context of the Southern California economy.

1.7 FINDINGS FOR CUMULATIVE IMPACTS

The State CEQA Guidelines at section 15130 require an analysis of a project's contribution to significant cumulative impacts. Cumulative refers to "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (State CEQA Guidelines, section 15355).

Projects identified in the Final EIR that are considered, in conjunction with the incremental impacts of the proposed Project to add to cumulative impacts include:

- **OTHER OFFSHORE PROJECTS**
  - Channel Islands National Marine Sanctuary Boundary Expansion
  - Point Mugu Sea Range Operations
  - SOCAL Range Complex
  - Port of Los Angeles/Long Beach Expansions

- **OTHER ONSHORE PROJECTS**
  - Ventura County
  - City of Oxnard
    - California State Coastal Conservancy Ormond Beach Wetland Restoration Project
    - Salination Management Project
    - Ground Water Recharge Enhancement and Treatment Program
  - Santa Clarita and Santa Clara River
    - Riverpark Development: Construction of Residential Units
    - Natural River Management Plan
    - Other Projects along the Santa Clara River

1.6.1 Resource-Specific Cumulative Impacts and Significance Levels

The following subsections describe the cumulative effects, and their potential significance, that the proposed Project would have, in combination with the other projects (noted above in Sections 1.6.1, "Other Offshore Projects" and 1.6.2, "Other Onshore Projects" in the Final EIR), on public safety, marine traffic, aesthetics, agriculture, air quality, marine and terrestrial biological resources, cultural resources, energy resources, geologic hazards, hazardous materials use, land use, noise, recreation, transportation, and water quality and sediments. For those areas in which the proposed Project is described to have an incremental effect that is Class 1, the incremental effect is deemed to be cumulatively considerable, even with imposition of described mitigation measures. For those areas in which the proposed Project is described to have an incremental effect that is Class 2, the incremental effect of the proposed Project is rendered less than cumulatively considerable through the imposition of the described mitigation measures.

PUBLIC SAFETY

Several of the potential cumulative impacts that might affect the safety of the public are addressed elsewhere in this section. For example, if Clearwater Port and OceanWay were licensed and constructed concurrently with the proposed Project, marine traffic would increase, which could lead to a temporary increase in marine accidents that could result in public injuries or fatalities. These potential effects on public safety are included in the discussion of potential cumulative impacts for marine traffic. Similarly, the potential for increased numbers of vehicle accidents is addressed in the transportation discussion.

If Cabrillo Port and one or both Clearwater Port and OceanWay projects were built, there could be a simultaneous accident or release related to such pipelines. Since the offshore pipelines for the Cabrillo Port Santa Barbara Channel Alternative and the

Clearwater Port project would be in the same pipeline right-of-way, accidents associated with one pipeline could potentially affect the other pipeline.

The potential magnitude of that increase has not been quantified, but mitigation measures noted in Section 4.2, "Public Safety: Hazards and Risk Analysis," and Section 4.3, "Marine Traffic," would be expected to keep the estimated annual frequency of such an accident occurring to levels similar to those of the projects individually.

The likelihood of an accident occurring at a single deepwater port is low. The increase in the probability of such an accident due to the cumulative impacts of the presence of three deepwater ports (Cabrillo Port, Clearwater Port, and OceanWay) would not measurably increase the potential risks to members of the boating public.

The potential for cumulative impacts from simultaneous incidents involving more than one deepwater port—at either the Cabrillo Port proposed location or the Santa Barbara Channel Alternative plus either Clearwater Port or the OceanWay project—would be limited to intentional acts. Mitigating actions by port authorities, the U.S. Coast Guard (USCG), local emergency response agencies, and additional forces or actions that might be deployed using military resources would be expected to limit the potential impacts from such an attack. Incident command strategies for handling multiple incidents would be expected to allocate response resources to first address any situation posing an imminent hazard to public safety or the environment.

This might result in allocating more resources to handle emergency conditions closer to shore than the Cabrillo Port FSRU. The incident commander would know that the worst credible case impacts from the release and ignition of LNG on board the FSRU would not extend as close to shore as a potential incident at Clearwater Port. However, the operation of a second or third deepwater port does not create cumulatively greater impacts on public safety compared to the operation of just a single deepwater port in this area but does represent an incremental risk. Although the probability of an offshore incident associated with the proposed Project is very low, such an incident could result in serious injury or fatality to members of the general public. The impacts would still be potentially significant, should an incident occur; therefore, this impact remains significant after mitigation.

Onshore, the pipelines from the Cabrillo Port and Clearwater Port would be in separate pipeline corridors, except potentially within approximately 2 miles (3.2 km) of the Center Road Valve Station. However, the route of the Clearwater Port project onshore pipeline corridor is preliminary and could change during its environmental review. The onshore pipeline route for the OceanWay project would be more than 43 miles (69.5 km) from the proposed Center Road Pipeline route. If the Clearwater Port project onshore pipelines were routed in the same corridor as the Center Road Pipeline route, the potential cumulative impacts would be limited to the potential consequences from: (1) intentional damage to one or more natural gas pipelines located close to one another, and (2) initiation of more than one event at different locations along the pipelines. These cumulative impacts would be similar for all Center Road pipeline alternatives,

except the Gonzales Road Pipeline Alternative. The Gonzales Road Pipeline Alternative and the Clearwater Port onshore pipelines could be within the same corridor for much of their routes.

The impacts on public safety from the rupture of a natural gas pipeline depend on the specific characteristics of the pipeline, e.g., pipe diameter and pipeline pressure. Should more than one pipeline in a particular area be affected, the effects would potentially overlap, but would not likely combine to produce a greater effect. Emergency planning and preparedness efforts involving the Applicant, SoCalGas, and local response agencies would reduce the potential consequences from such an event. The probability of an offshore or onshore pipeline incident associated with the proposed Project is very low. Should such an incident occur, however, the impacts would still be significant, i.e., could cause serious injury or fatality to members of the public. Therefore, this impact would remain significant after mitigation (**Class I**).

MARINE TRAFFIC

The Project would increase maritime traffic in the area. Flight and marine operations at the Point Mugu Sea Range are ongoing, but not continuous (see Section 4.3.1.1). However, Project operations could be adjusted to suit naval operations. Construction of the proposed Project would have to be coordinated daily with the Navy (MM MT-5c) and would be further mitigated by avoiding the Point Mugu Sea Range as much as possible (MM MT-5a), monitoring Navy Securite broadcasts (MM MT-5d) and daily safety briefings (MM MT-5b); therefore, these impacts from Navy operations in conjunction with the construction of the proposed Project would increase traffic temporarily but would be mitigated below the level of significance (**CEQA Class II**). These potential cumulative effects would be slightly less during construction if the Cabrillo Port Santa Barbara Channel Alternative were to be implemented because no portion of the offshore pipeline route would cross the Point Mugu Sea Range. Since neither the OceanWay or Clearwater Port projects' potential pipeline routes would cross the Point Mugu Sea Range, they would not contribute to direct impacts on the Sea Range during construction; however, vessel traffic could temporarily increase.

During operations of the proposed Project, Navy operations at the SOCAL Range Complex or Point Mugu Sea Range could increase maritime traffic locally or along the LNG carrier routes or it could cause vessel traffic to temporarily cease along the LNG carrier routes. To mitigate the potential cumulative effects of increased vessel traffic, the Applicant would coordinate with the Navy (MM MT-6c), supply the Navy with the LNG carrier schedule (MM MT-6b), and follow Navy Securite broadcasts (MM MT-6a) (**CEQA Class II**). If the Clearwater Port, OceanWay, and SES Port of Long Beach projects were to be licensed and constructed, LNG carrier traffic would increase through the SOCAL Range Complex or the Point Mugu Sea Range. This increase would coincide with an anticipated increase in vessel traffic to the Ports of Long Beach/Los Angeles, described below.

Since no security zones would be required for LNG carriers traveling outside of Federal waters, Navy vessels would not have to take any extraordinary measures when

encountering the LNG carriers on the Point Mugu Sea Range. As described in Section 4.3.1.1, the Navy conducts over 17,000 activities on the Point Mugu Sea Range annually. LNG carriers bound for each of the proposed LNG facilities would have to transit portions of the Point Mugu Sea Range or the SOCAL complex. To ensure that Navy operations would not be disrupted by the presence of LNG carriers transiting to or from any of the facilities, each Applicant would have to closely coordinate its LNG carrier schedules with the Navy. All of the proposed LNG facilities are proposed to be located outside of the Point Mugu Sea Range and the SOCAL Complex; therefore, operations at the facilities themselves should not interfere with normal Navy operations.

The planned expansion of the Port of Long Beach would mean that vessel traffic could increase in the Santa Barbara Channel TSS and along trans-Pacific routes. The cumulative effect of the expansion and the proposed Project on vessel traffic in the area would be a net increase in vessel traffic; however, the Project's contribution would not be significant. LNG carriers bound for the FSRU would not enter the Santa Barbara TSS and Project support vessels would only travel in the Santa Barbara TSS for a short distance while transiting to and from Port Hueneme several times a week. The cumulative impacts of the implementation of the Cabrillo Port Santa Barbara Channel Alternative would be greater and potentially significant because LNG carriers bound for this location would have to cross the Santa Barbara TSS. In addition, these LNG carriers would possibly be surrounded by a security zone within 12 NM (13.8 miles or 22.2 km) of shore.

All current activities associated with oil and gas leases are included in the marine traffic discussion in Section 4.3, "Marine Traffic." Since most activities associated with oil and gas leases are currently suspended due to pending litigation, it would be speculative to assess their potential cumulative impact on maritime traffic during operations.

If the Clearwater Port and OceanWay were licensed, vessel traffic in the area would increase substantially, but temporarily, during the construction phase and would increase on a regular basis during operations involving the transit of LNG carriers and supply vessels, with impacts comparable to the proposed Project. If the proposed Project and either the Clearwater Port or the OceanWay project were to be constructed simultaneously, short-term increases in marine traffic in the region would result. The distance between the proposed Project, OceanWay, and Clearwater Port would be 14.66 NM (16.9 mi., 27.2 km) and 28.9 NM (33.3 miles or 53.5 km), respectively. The distance between the shore crossing for the proposed offshore pipeline routes and the Clearwater Port pipelines would be approximately 7 miles (11.3 km) and to OceanWay's shore crossing would be approximately 43 miles (69.5 km); therefore, increased vessel traffic would be in discrete areas.

The Port of Hueneme would experience increased vessel traffic since both Clearwater Port and the proposed Project or the Cabrillo Port Santa Barbara Channel Alternative would use it. The OceanWay project is not likely to use Port Hueneme. If the proposed Project were to be constructed at either offshore location, it would have significant adverse long-term impacts that would be mitigated through MT-7a, MT-7b, and MT-7c.

The Clearwater Port project is likely to have similar impacts and would have to implement similar mitigation measures to reduce potential cumulative impacts.

In contrast to the proposed Project, construction of Clearwater Port would not involve installation of a pipeline across the vessel traffic separation scheme. Since vessel traffic would increase if the two projects were constructed simultaneously, potential cumulative impacts would be significant (**CEQA Class II**); however, implementation of the construction-related mitigation measures (MT-1a through -1g) would reduce the potential cumulative impacts to a level below the impact's significance criteria.

If the Cabrillo Port Santa Barbara Channel Alternative and the Clearwater Port project were constructed simultaneously, vessel traffic in the vicinity of Platform Grace would temporarily increase substantially. Since the pipelines from both projects would likely be installed in the same existing pipeline right-of-way, the risk of vessel collisions would increase due to the proximity of the projects. Close coordination would be required if this alternative and the Clearwater Port were to be constructed simultaneously. Implementation of the construction-related mitigation measures (MT-1a through -1g) would reduce the potential cumulative impacts, but the impacts would be moderate adverse and temporary (**CEQA Class II**).

If the three offshore LNG projects (Cabrillo Port, Clearwater Port, and OceanWay) were to operate simultaneously, LNG carrier traffic in the area would increase. The LNG carrier routes for the OceanWay and Clearwater Port projects are preliminary and could change during the environmental review process. The OceanWay project would receive LNG from Australia; therefore, the routes would likely be trans-Pacific and would not approach closer to shore than the facility (22 miles offshore Los Angeles). Since Clearwater Port could be receiving LNG from Alaska, Southeast Asia, or the Middle East, the exact route that the LNG carriers would take to approach the Port is unknown. Any LNG carrier approaching it would either have to travel in the Santa Barbara TSS or cross it. Given the location of Clearwater Port (10.9 NM [12.6 miles or 20.3 km] offshore), a security zone could possibly surround any LNG carrier approaching this facility once it were within 12 NM (13.8 miles or 22.2 km) of shore; this could cause a temporary disruption in vessel traffic in the TSS. LNG carriers destined for Cabrillo Port or OceanWay would not enter the TSS or have security zones surrounding them because these carriers would not enter Federal waters.

If an LNG terminal were built at the Port of Long Beach, LNG carriers could use vessel approach routes similar to those for the proposed Project to enter the vessel traffic separation scheme. Assuming that the LNG carriers to the Port of Long Beach would either have a trans-Pacific or south to north route, Project LNG carriers may have overlapping routes in the southern Channel Islands. LNG carriers destined to Clearwater Port also could use this route. Due to the possibility that security zones could surround each LNG carrier in Federal waters, vessel traffic could be disrupted regularly with the approach of multiple LNG carriers to the vessel traffic separation scheme. Cumulative impacts would be significant but mitigable (**CEQA Class II**) with coordination of LNG carrier approaches with the Captain of the Port of Los Angeles/Long Beach.

AESTHETICS

Offshore

The presence of vessels and platforms in the Pacific Ocean off the coast of California is not new; the presence of LNG carriers, however, would be new but would be similar to other large ships that currently traverse the area (see Section 4.4, "Aesthetics"). Large numbers of ocean vessels, naval ships, and recreational ships traveling to and from the ports of Long Beach, Los Angeles, San Diego, Hueneme, and San Francisco travel along the coast during the day and night. From the nearest point on the coast, Platform Grace is about 10.9 NM [12.6 miles or 20.3 km] offshore and 28.9 NM (33.3 miles or 53.5 km) from the proposed FSRU and would not contribute to cumulative aesthetic impacts. However, if Clearwater Port were approved, Platform Grace would continue to be used, and auxiliary docking structures would be added to the platform. In addition, one or more LNG carriers would regularly be docked at the facility. Therefore, the presence of Platform Grace would continue to have a long-term aesthetic impact in the region as a whole. The OceanWay project would be approximately 22 miles offshore and 14.66 NM (16.9 miles or 27.2 km) from the FSRU; therefore, it would also have a long-term aesthetic impact on the region because a vessel would be present the majority of the time.

No known offshore projects would be constructed simultaneously with the installation of the Cabrillo Port FSRU and the offshore pipelines. AM BioMar-3a would reduce the potential effects of lighting associated with construction and installation of the FSRU to a level that is less than the significance criteria. Therefore, the cumulative effect of temporary lighting associated with offshore construction would be a **CEQA Class II** impact. Once installed, the FSRU would be lit at night, as would large vessels transiting the Santa Barbara TSS. Onshore residents are accustomed to the presence of vessels at night in the TSS. The cumulative impact of the presence of the FSRU and vessels transiting the TSS would be mitigated by AM BioMar-3a and the transitory nature of the transiting vessels (**CEQA Class II**).

The long-term presence of the Cabrillo Port FSRU is identified as a CEQA Class I impact for aesthetics associated with the visual expectations of some recreational boaters such as whale watchers who travel near it (see Section 4.4, "Aesthetics"). No mitigation measures would reduce this impact to a level that is less than the significance criteria. The presence of the FSRU in conjunction with permanent changes to Platform Grace from Clearwater Port project (28.9 NM [33.3 miles or 53.5 km] from the Cabrillo Port Project) and the OceanWay project (14.66 NM [16.9 miles or 27.2 km] from the Cabrillo Port Project) is considered a significant regional cumulative aesthetic impact for which no mitigation exists (**CEQA Class I**). Implementation of the Cabrillo Port Santa Barbara Channel Alternative would have similar cumulative aesthetics impacts, but it could be considered incrementally greater than the proposed Project because it would be located only 5.01 NM (5.77 miles or 9.28 km) from the proposed Clearwater Port project.

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Agriculture and Soil

According to the California Department of Conservation, the results of farmland mapping in Ventura County from 2000 to 2002 resulted in the reclassification of 2,011 acres (814 ha) of agricultural land, mostly for urban uses. Urban acreage increased by 2,557 acres (1,035 ha). Data from 1990 to 2002 indicate a net increase of more than 11,800 urban acres (4,775 ha) and a decline of almost 8,700 farmland acres (3,521 ha). City reports show that an additional 7,500 acres (3,035 ha) is committed to future non-agricultural use (California Department of Conservation 2004).

The Clearwater Port would have effects similar to those of the proposed Cabrillo Port Project. Assuming that similar construction techniques are used as are proposed for the Cabrillo Port Project, the Clearwater Port onshore pipeline would likely be installed in some agricultural lands, but these areas would only be disturbed temporarily. It is uncertain whether there would be any permanent conversion of agricultural lands for permanent facilities; however, any conversion of agricultural land for the Clearwater Port project is likely to be similar to the proposed Project. The proposed Project in Ventura County would permanently convert less than 1 acre of Prime Farmland soils from agricultural to non-agricultural uses. Many of the proposed and pending development projects in Oxnard and Ventura County, such as the Ormond Beach Specific Plan, also could convert agricultural land to non-agricultural uses. Conversion of soils classified as either Prime Farmland or Soils of Statewide Importance is considered a significant impact; therefore, the combined impacts of the Project with the potential of conversion of these types of soils with the Clearwater Port project and other development projects in Oxnard and Ventura County would have a significant cumulative impact on agricultural soils (**CEQA Class I**).

The cumulative impacts of the Center Road Pipeline Alternatives 1, 2, and 3 and the Santa Barbara Channel/Mandalay Shore Crossing/Gonzales Road Pipeline Alternative would have similar impacts as those of the proposed Project; however, the cumulative impacts of the implementation of either the Point Mugu Shore Crossing/Casper Road Pipeline and the Arnold Road Shore Crossing/Arnold Road Pipeline would have slightly greater impacts on agriculture because a larger acreage of agricultural land would be converted to non-agricultural use. All of these alternatives would have **CEQA Class I** impacts due to the conversion of the agricultural land to non-agricultural use. Similar to the proposed Line 225 Pipeline Loop, the Line 225 Pipeline Loop Alternative would not have adverse impacts on agricultural lands and would not contribute to cumulative effects.

AIR QUALITY

Clearwater Port LNG Importation Facility and OceanWay LNG Importation Facility

If either the Clearwater Port project or the OceanWay project were approved, the facilities would emit air pollutants during construction and normal operation. Since the quantity and locations of these emissions have not been quantified, it is not possible to fully characterize associated air quality impacts. Potentially significant cumulative

regional air quality impacts due to the Clearwater Port and the Cabrillo Port Project at either the proposed location or the Santa Barbara Channel/Mandalay Shore Crossing/Gonzales Road Pipeline Alternative could be expected. Cumulative impacts from the proposed Project and the Clearwater Port or the OceanWay project could have significant adverse effects on air quality in Ventura and Los Angeles counties unless sufficient emission reductions were identified. However, the exact nature of these cumulative impacts is difficult to determine because an air quality analysis comparable to that done for the proposed Project has not yet been performed for the Clearwater Port project or the OceanWay project.

The proposed Project, if constructed at either the proposed or alternative offshore location, would cause significant adverse effects during construction in Ventura County (**CEQA Class I**). If the Clearwater Port project were constructed simultaneously, it is likely to contribute further to the degradation of air quality in Ventura County. Simultaneous construction during the OceanWay project is not likely to contribute adversely to air quality in Ventura County because it would cross Los Angeles County waters at a sufficient distance that the contribution is likely to be negligible.

Onshore Residential and Commercial Development

Residential and commercial development is planned for Oxnard and Santa Clarita. If these developments were to occur concurrently with the proposed Project, local air quality could be temporarily diminished. However, the air quality analyses conducted for the Project indicate that significant air quality impacts would occur only in close proximity to construction activities. Therefore, the cumulative impacts of the Cabrillo Port Project or any of the onshore alternatives with concurrent residential and commercial development immediately adjacent to pipeline construction potentially would have significant adverse air quality impacts (**CEQA Class I**).

Greenhouse Gas Emissions

The Cabrillo Port Project or any of the onshore or offshore alternatives would generate emissions of greenhouse gases that contribute to global warming. The majority of emissions of greenhouse gases would be carbon dioxide (CO_2). Project operations would cause annual CO_2 emissions of 0.33 million tons per year (MMtons/yr). Start-up and construction activities would result in one-time CO_2 emissions of 0.010 MMtons and 0.017 MMtons, respectively. These emissions represent less than 0.08 percent of the 431 MMtons of CO_2-equivalent greenhouse gas emissions produced in California in 2004 (CEC 2006). The greenhouse gas emissions from the Project would be insignificant alone, but could exacerbate, in combination with existing or other proposed projects, global warming effects.

BIOLOGICAL RESOURCES – MARINE

Marine Mammals

Potential cumulative impacts from the proposed Cabrillo Port Project in conjunction with other offshore projects include the effects of additional vessel or aircraft noise on marine

mammals. Ships traveling throughout the area may produce sufficient underwater noise to cause changes in certain whale behavior. According to Carretta et al. (2002), increasing levels of man-made noise in the world's oceans has been suggested to be a habitat concern for whales and particularly for baleen whales, which may communicate using low-frequency sound. Such sounds may not only affect communications but also may cause whales to divert from normal migration paths or to stop feeding or reproductive activities. The sounds may also reduce the abilities of marine mammals and sea turtles to detect prey or predators and, in the case of odontocetes, the ability to navigate.

Cabrillo Port would be 3.54 NM (4.1 miles or 6.6 km) from the southern boundary of the Point Mugu Sea Range and therefore activities that occur at the Port could contribute to cumulative effects within the Sea Range because the FSRU's zone of noise influence (the distance from the FSRU that noise generated at FSRU would attenuate to background) would extend more than 3.54 NM (4.1 miles or 6.6 km) under some operation conditions (see Section 4.14, "Noise and Vibration"). Naval vessels at the Point Mugu Sea Range or commercial vessels transiting the area may temporarily disrupt whale migrations or feeding. Other activities at the Point Mugu Sea Range are described above and were considered in the U.S. Navy's EIS for the Point Mugu Sea Range (U.S. Navy 2002). Studies associated with these projects indicate that these activities would not have noise impacts on marine mammals. The proposed Project would increase noise temporarily in the immediate Project site during construction activities. The incremental contribution of the proposed Project would not increase the cumulative effects of noise on marine mammals. Implementation of AM BioMar-9a and AM BioMar-9b, which would ensure that offshore construction activities would occur outside the gray whale migration season and that all construction and operational vessels would carry two qualified marine mammal monitors, would further ensure that the Project's contribution to the cumulative effects would be reduced below the significance criteria for marine mammal impacts (**CEQA Class II).**

If the proposed Clearwater Port were licensed and constructed, vessel traffic and noise associated with vessel traffic and operations of the facility would increase; however, the potential contribution of the proposed Cabrillo Port Project would be reduced to below its significance criteria through the use of marine mammal monitors (**CEQA Class II**). Since Clearwater Port would be constructed at Platform Grace, the area already has vessel traffic servicing the platform and noise from operations on the platform. The exact change in vessel traffic and noise is not known at this time. However, the greatest effects of increased noise would be during marine mammal migration. Construction activities would represent a significant increase in noise over a short period of time. To avoid the potential adverse effects on marine mammals, the proposed Cabrillo Port Project would not be constructed during the gray whale migration season. Any increase in vessel traffic increases the potential risk of vessel/marine mammal collision. Through implementation of marine mammal monitoring during construction and operations, the risk of potential collisions would be reduced to a level less than its significance criteria. It is also presumed that Clearwater Port would be required to implement similar measures.

Because the Santa Barbara Channel/Mandalay Shore Crossing/Gonzales Road Pipeline Alternative would be located in the Santa Barbara Channel, impacts on marine mammals would be greater than with the proposed Cabrillo Port Project. Section 4.7.5.1 describes the marine mammals that feed, migrate through, and inhabit this area. Due to the greater concentration of marine mammals in this area, the potential for impacts on marine mammals during construction and operation activities would be greater than the proposed Project location and would be adverse. The impacts could be reduced through the implementation of MM BioMar-3b, MM BioMar-3c, MM NOI-1a, MM BioMar-5a, MM BioMar-5b, and MM BioMar-5c, but the impact would be **CEQA Class I**. This alternative would have a greater potential contribution to cumulative impacts on marine resource than the proposed Project location. Since the Clearwater Port project would have the same offshore pipeline corridor as the Cabrillo Port Santa Barbara Channel Alternative, simultaneous construction of these two projects could result in temporary adverse cumulative effects on marine resources in this area.

The impacts from offshore pipeline components of the Point Mugu and Arnold Road shore crossing alternative would be similar to the proposed offshore pipeline route; therefore, the contribution to cumulative impacts on marine mammals would be the same as for the proposed offshore pipeline route.

Benthic Habitats and Communities

The impacts from offshore pipeline components of the Point Mugu and Arnold Road shore crossing alternative would be similar to the proposed route of the offshore pipelines; therefore, the contribution to cumulative impacts on benthic habitats would be the same as for the proposed offshore pipeline route. If the Cabrillo Port Santa Barbara Channel Alternative and the Clearwater Port project were to be constructed simultaneously, then the impacts to the benthic habitat would be greater and concentrated along the same pipeline corridor. This impact would be potentially adverse but temporary (**CEQA Class II**)

Marine Birds

A number of seabird species are known to be attracted to bright lights at night. Such animals sometimes collide with lighted objects, causing them to become stunned, injured, or killed. When they are stunned or injured, they generally fall back into the water, where they fall prey to other seabirds such as gulls and other predators. Xantus's murrelet (*Synthiloboramphus hypoleucus*), a threatened species under the California ESA and a Federal candidate, may be subject to offshore lighting impacts. However, studies indicate very low mean densities of Xantus's murrelet (between 0.04 and 0.1 birds/km^2) offshore in the California Cooperative Oceanic Fisheries Investigations sampling around the Channel Islands. Night-foraging storm petrels and alcids may also be subject to offshore lighting impacts, including the ashy storm petrel (*Oceanodroma melania*) and the rhinoceros auklet (*Cerorhinca monocerata*), which are California species of special concern. Studies show that rhinoceros auklets are found offshore between 0.02 and 0.14 bird/km^2.

Seabirds are highly mobile and would be expected to temporarily leave any area where construction activities are occurring. Generally, they are expected to return to the area immediately after construction activities have ceased. Because of its remote location, the lighting from the FSRU may be seen from shore or from the Channel Islands only on clear nights. The required beacon light would be less visible than the lighting on offshore platforms, including Platform Grace (Clearwater Port), in the Cabrillo Port Santa Barbara Channel. In addition, commercial vessels transiting the Project area at night are also lit. The cumulative impact on marine birds is expected from the proposed Project would be minimal when considered together with the known effects of other projects in the area (**CEQA Class II**).

BIOLOGICAL RESOURCES – TERRESTRIAL

Coastal Zone and Oxnard Plain

The location of the Clearwater Port pipeline shore crossing is preliminary and may change during environmental review; however, the onshore component (staging and drilling equipment) is anticipated to be at the Reliant Energy Mandalay Generating Station. Either horizontal directional drilling (HDD) or HDB would be used to minimize potential adverse effects. Drilling equipment would likely be staged at the Reliant Energy Mandalay Beach Generating Station to avoid disturbance to dunes along the shoreline on Mandalay Beach. The onshore pipeline of the Clearwater Port project would cross the Coastal Zone and Oxnard Plain. From Mandalay Beach, the pipeline to the Center Road Valve Station is anticipated to follow existing ROWs. Potential impacts during pipeline installation or HDD/HDB activities could be an increase in sedimentation and erosion, disturbance of special status bird nesting or other sensitive habitat, direct impact on a special status species potentially occurring within the Clearwater Port project footprint, and temporary or permanent changes to wetlands.

For the Cabrillo Port Project, the Applicant would implement a Drilling Fluid Release Monitoring Plan to reduce impacts on biological resources. Impacts on wildlife would be temporary and mitigated to levels below the impact's significant criteria (**CEQA Class II**) through surveys and monitoring measures. Since the shore crossing for the Clearwater Port project is about 7 miles (11.3 km) from the Project's Ormond Beach shore crossing and the effects of the HDD/HDB activities would be temporary, and because both projects would need to adhere to permitting requirements, there would be no anticipated geographically overlapping effects on biological resources on the respective beaches or species that frequent both beaches. It is assumed that Clearwater Port's impacts and mitigation measures would be similar to those for the Cabrillo Port Project. Cabrillo Port's incremental contribution to cumulative impacts on beach habitat and species that use that habitat would be considered negligible. Both shore crossings for the Clearwater Port project and the Cabrillo Port Santa Barbara Alternative would be at the Reliant Energy Mandalay Beach Generating Station; therefore, simultaneous construction of these projects would result in greater potential cumulative impacts.

In general, pipeline installation on the Oxnard Plain for both projects would be through developed or agricultural areas. However, the route of the proposed Clearwater Port

onshore pipeline is preliminary and could change during the environmental review process. The pipelines could converge near or at the Central Valve Station. The onshore pipeline associated with Clearwater Port could transit tree rows, wetlands, or near special status species. Both the Cabrillo Port and Clearwater Port onshore pipelines would require permits to cross any stream or wetlands; such permits would stipulate necessary mitigation. Any cumulative effects on terrestrial biological resources in the Oxnard Plain would be reduced below the level of the significance criteria through implementation of mitigation measures such as tree avoidance and replacement (MM TerrBio-2g); riparian avoidance and restoration (MM TerrBio-2f); avoidance and reduction of impacts on wetlands (MM TerrBio-3a); and pre-construction surveys of special status plants (AM TerrBio-2a).

Most of the proposed residential, commercial, and industrial projects in Oxnard are in previously developed areas or agricultural land and are therefore not anticipated to adversely affect terrestrial biological resources as long as best management practices (BMPs) are employed. No potential cumulative effects on terrestrial biological resources would result from these known developments in conjunction with the proposed Project. The one exception is the Ormond Beach Specific Plan, which involves the development of a 920-acre community that extends from Edison Drive on the west to Olds and Arnold Road on the east, West Pleasant Valley Drive on the north and the Pacific Ocean to the south. A plan and an EIR are being developed for this project; therefore, it is not possible to speculate about its potential impacts at this time.

Parts of Ormond Beach are designated critical habitat for western snowy plover, but potential impacts on plover critical habitat would be avoided by the use of HDB. At Ormond Beach, the Coastal Conservancy has acquired land and plans to acquire additional property for a wetland restoration project. The feasibility study for this project is under way. The Coastal Conservancy Wetland Restoration Project, if implemented, would have a net positive effect on the biological resources at Ormond Beach in that wetlands and habitat would be restored, so that area would be more attractive to wildlife resources. To ensure that the proposed Project does not adversely affect the Coastal Conservancy Project, HDB would be used to install pipelines underneath Ormond Beach without disturbing the beach surface. In addition, all construction activities would occur on the Reliant Energy Ormond Beach Generating Station property. Since the proposed Project would not have adverse effects on the Ormond Beach wetlands and the Coastal Conservancy's Wetland Restoration Project would be beneficial to Ormond Beach wetlands, the cumulative effects of both projects would be a net benefit to wetlands on Ormond Beach, if all Project mitigation measures were implemented.

In general, the Gonzales Road Pipeline Alternative has impacts similar to the proposed Center Road Pipeline, with the following exceptions. This alternative would be likely to adversely affect Ventura marsh milk-vetch, a Federal and State endangered species. Therefore, this alternative's cumulative impact on Ventura marsh milk-vetch would be potentially major and would be considered larger than the proposed action's contribution to cumulative impacts. This alternative would cross fewer wetland features than the proposed Project pipeline route, suggesting that the use of this alternative would contribute fewer cumulative impacts on wetlands. The impacts from the Clearwater Port

project onshore pipeline routes could be similar to the Gonzales Road Pipeline Alternative because the shore crossings would likely be in similar locations and would both be on the west side of Oxnard; however, the exact location of the Clearwater Port onshore pipeline route is not known.

Center Road Pipeline Alternatives 1, 2, and 3 have impacts similar to the proposed Center Road Pipeline, with the following exception. Center Road Pipeline Alternatives 1 and 2 cross slightly fewer wetland features; therefore, they would have a smaller contribution than the proposed route to cumulative impacts on wetlands.

The Point Mugu Shore Crossing/Casper Road Pipeline route and the Arnold Road Shore Crossing/Arnold Road Pipeline alternative have impacts similar to the proposed Center Road Pipeline, with the following exception. In contrast to the proposed shore crossing in which all the HDB drilling equipment would be staged at the Ormond Beach Reliant Energy Generating Station, the HDB drilling equipment would be staged in areas immediately adjacent to suitable habitat for the saltmarsh bird's beak, a Federal and State endangered plant. These alternatives would likely to adversely affect saltmarsh bird's beak; therefore, these alternative's contribution to cumulative impacts on saltmarsh bird's beak would be greater than that of the proposed Center Road Pipeline.

Santa Clara Valley

Potentially significant cumulative impacts associated with residential and commercial development in the City of Santa Clarita would include a loss of riparian habitat; disturbance to species using the area; disturbance of approximately 1.3 miles (2.1 km) of designated and proposed critical habitat for the California Coastal Gnatcatcher; and effects on habitat for the unarmored three-spine stickleback, least Bell's vireo, arroyo toad, and western spadefoot toad. Known future development projects along the Santa Clara River and San Francisquito Creek would include mitigation measures to avoid or reduce impacts, but the residential and commercial projects would still result in a net loss of biological resources and habitat that could support sensitive species. The construction and installation of the proposed Project pipeline could add to the loss of habitat along the Santa Clara River and San Francisquito Creek.

Mitigation measures have been developed to reduce or minimize the loss of riparian habitat, including tree avoidance and replacement (MM TerrBio-2g), and riparian avoidance and restoration (MM TerrBio-2f). Other measures would ensure that construction avoids, minimizes, or reduces wetland impacts (MM TerrBio-3a) and avoids impacts on special status plants through pre-construction surveys (AM TerrBio-2a), a biological resources mitigation and monitoring plan (AM TerrBio-2b), an employee environmental education (AM TerrBio-2c), biological monitoring (AM TerrBio-2d), and confining activities to identified ROWs (AM TerrBio-2e). Lastly, construction activities could impact sensitive animal species. The previously cited employee environmental awareness and biological monitoring programs, along with pre-construction surveys (MM TerrBio-5a), would protect wildlife during construction.

Construction activities would contribute a relatively small and temporary cumulative impact.

If the Line 225 Loop Pipeline Alternative were implemented, impacts on special status species and wetlands would be similar to the proposed Line 225 Loop Pipeline route, suggesting that the use of this alternative would have a contribution to cumulative impacts on terrestrial biological resources similar to the proposed route.

It is not known what the contribution of the Clearwater Port project would be in Santa Clarita, but based on the Bisi testimony it is assumed that similar construction may be required in this system. (See Section 3.3.12.2 for a discussion of necessary expansions to the SoCalGas receiving facilities in Santa Clarita Valley.) The application for the Clearwater Port project that has been filed under the DWPA is currently under review by the agencies and has not been deemed complete, has not been confirmed by the agencies, and does not provide sufficient detail to allow evaluation of terrestrial biological resources in Santa Clarita. Therefore the lead agencies have determined that information from the application should not be relied upon or cited in the cumulative analysis of the Cabrillo Port Final EIS/EIR. However, to provide information for disclosure and comparison of this project under the CEQA, the cumulative analysis uses information on the Clearwater Port project that is available on the Clearwater Port public website, the California Energy Commission website, and other sources available to the general public.

GEOLOGIC RESOURCES

The Project is expected to temporarily increase sedimentation and erosion. After being disturbed, sediments would be deposited at or near their original location. Since these effects would be highly localized and limited primarily to the construction period, cumulative impacts on geologic resources would only occur if other projects were constructed at the same time and in the same location as the proposed Project facilities. If other terrestrial development/construction projects occur at the same time or near the same area, increased sedimentation could result. This cumulative impact would be minimized, however, by ensuring that the pipeline location and burial depth minimizes areas of sediment transport (AM GEO-6a). Consequently, potential cumulative impacts on geologic resources would be reduced to a level below the significance criteria (**CEQA Class II**).

No known project would occur simultaneously at the proposed Project or alternative shore crossing locations. However, the shore crossings for the Clearwater Port project and the Cabrillo Port Santa Barbara Channel Alternative would both occur at the Mandalay Beach Generating Station. The potential of worsening existing unfavorable geologic conditions and the potential effects due to the Project or its alternatives would be mitigated through the implementation of AM GEO-1a (drilling location), MM GEO-1b (backfilling, compaction, and grading), MM WAT-3a (drilling fluid release plan) and AM TerrBio-1a (erosion control) (**CEQA Class II**). It is assumed that Clearwater Port would implement similar mitigation measures to minimize any potential effects to geological resources. The cumulative effects of onshore and offshore alternatives would be similar

to the proposed Project, and the same mitigation measures would apply. However, the offshore pipeline component of the Cabrillo Port Santa Barbara Channel/Mandalay Shore Crossing/Gonzales Road Pipeline Alternative would be located in the same pipeline corridor as the proposed Clearwater Port project offshore pipelines; therefore, construction of both simultaneously could contribute to adverse cumulative effects due to increased sedimentation in the same area.

The cumulative effects of major geologic events would be locational and event-specific. An earthquake, mass movement of soil, tsunami, or other geologic events could damage the FSRU, the offshore pipelines, or the onshore pipelines and facilities. The Applicant has sought to avoid active earthquake faults and other areas where geological events could occur and has incorporated engineering design features to limit the potential damage to the facilities (AM GEO-3b, and AM GEO-6a). Mitigation measures MM GEO-3c and MM GEO-3d would further reduce the potential for adverse effects.

Construction of the proposed Cabrillo Port Project or any of its alternatives could add to loss of fossil resources as a result of surface-disturbing activities associated with existing and reasonably foreseeable projects. However, if significant paleontological resources were identified at any time, construction would be diverted to avoid affecting these resources (**CEQA Class II**). Implementation of MM GEO-2a, inspection prior to excavation in areas with potential for paleontological resources, would minimize the potential impact to a level less than the significance criteria and therefore would not contribute to cumulative geological resources impacts. The type of construction necessary to install the Clearwater Port onshore pipeline could also add to loss of fossil resources in the region, as would most residential, commercial, and industrial projects where a foundation is dug or a subterranean parking structure is installed. It is assumed that most permitted construction activities would be required to implement similar mitigation measures as those proposed for the Cabrillo Port Project to ensure that potential impacts to fossil resources are reduced.

HAZARDOUS MATERIALS

During construction, the proposed Project or any of the alternatives could add to cumulative impacts in the region through potential releases of small quantities of fuels or hazardous materials, or through the potential unearthing contaminated sites in the offshore area. The area of the proposed Cabrillo Port or the Santa Barbara Channel/Mandalay Shore Crossing/Gonzales Road Pipeline Alternative is used by military, commercial, fishing, and recreational vessels, all of which can potentially release hazardous materials or small quantities of petroleum products. The proposed expansions at the Port of Los Angeles/Long Beach and the development of the Clearwater Port or the OceanWay project could increase maritime traffic in the region and thereby increase the potential for additional pollution. It is not possible to quantify the amount of increased pollution that would occur, but the contribution of either the proposed Cabrillo Port or the Santa Barbara Channel/Mandalay Shore Crossing/Gonzales Road Pipeline Alternative to the cumulative effect of hazardous materials impacts offshore would be small, given that laws and regulations concerning hazardous materials would be adhered to and that measures MM HAZ-2a, MM HAZ-2b,

and MM WAT-3a would minimize the potential of a release during construction and operations.

The net increase in vessel traffic would result in a greater potential for a spill, thus increasing potential cumulative hazardous materials impacts of the Project at either the proposed Cabrillo Port location or the Santa Barbara Channel/Mandalay Shore Crossing/Gonzales Road Pipeline Alternative location and other projects. If the Cabrillo Port Santa Barbara Channel/Mandalay Shore Crossing/Gonzales Road Pipeline Alternative and the Clearwater Port project were both licensed and built, the density of vessel traffic in the Santa Barbara Channel and near the platforms would increase and thus would contribute to potentially greater cumulative hazardous materials impacts. The contribution from the proposed Cabrillo Port or the Cabrillo Port Santa Barbara Channel/Mandalay Shore Crossing/Gonzales Road Pipeline Alternative, with the exception of potential spills of diesel fuel, would be mitigated to less than the significance criteria and all other releases would be regulated under international, Federal, and State laws and regulations.

Construction activities from any of the proposed onshore projects could unearth contaminated soils; however, it would be speculative to assume that the proposed Project or its onshore alternatives and another onshore project would simultaneously uncover contaminated soils. Because the Clearwater Port onshore pipeline route is very preliminary, it is neither necessary nor possible with any degree of certainty to determine whether it would cross any areas of contaminated soils. The Whittaker-Bermite facility is a contaminated facility immediately adjacent to Line 225 Loop and Line 225 Loop Alternative; however, according to the California Department of Toxic Substances, no contamination is present along that border of the facility. Implementation of MM HAZ-3a and MM HAZ-3b would reduce the contribution of the Project or its alternatives to cumulative effects to less than the significance criteria for hazardous materials.

No known offshore projects would be constructed concurrently with the proposed Project; therefore, only the proposed Project would contribute to potential disturbance of any offshore contaminated sediment or exposure of unexploded ordnance on Point Mugu Sea Range. However, no known contaminated sediments occur within 1 NM of the offshore pipeline route for the proposed Cabrillo Port Project or the Santa Barbara Channel Alternative, and the Project would implement MM HAZ-4a and MM HAZ-4b to reduce the potential contribution of the Project to cumulative effects to negligible.

LAND USE

Onshore

The onshore proposed pipeline route and alternatives would be installed primarily through existing easements or in existing ROWs, and therefore little conversion of existing land uses would be required. The one exception is the expansion of the Center Road Valve Station, where approximately 0.1 acre (0.04 ha) of an existing orchard would be acquired and used in the expansion (**CEQA Class II**) for the proposed Project

and all the Center Road Pipeline route alternatives and the Gonzales Road Pipeline Alternative. Although the onshore pipeline for the Clearwater Port project is preliminary, it also would likely be installed in existing easements or ROWs would require the conversion of a similar amount of land. The Arnold Road and Point Mugu Shore Crossings would result in the conversion of 0.9 acres (0.4 ha). While other projects in the proposed Project area may contribute to the loss or conversion of agricultural lands, with mitigation (AM AGR-1a), the incremental, cumulative contribution of the proposed Project to changes in land use or that of its onshore alternatives would reduce this impact to below its significance criteria. No agricultural lands would be converted to non-agricultural uses with the installation of Line 225 Loop or its alternative. Therefore, the resulting cumulative impact on land use for the Cabrillo Port Project and its alternatives is considered negligible.

A Notice of Preparation for an EIR for the Ormond Beach Specific Plan was issued in 2005. To date, the development of the Plan and EIR are underway, but neither has been published. The installation of the proposed pipeline route, any Center Road Pipeline route alternatives, or the shore crossing alternatives could affect where a school could be sited within the development. However, the specific impact could not be determined until the local school districts conducted a pipeline risk analysis. Construction-related impacts such as noise, dust, and parking and access are addressed under those respective sections.

NOISE

Offshore

The Project would add to cumulative noise impacts in the area (see Section 4.20.3.7 for a discussion of cumulative impacts from noise on marine mammals). Aerial and marine operations at the Point Mugu Sea Range are ongoing and could intermittently increase noise in the vicinity of the proposed Project. Construction noise from the installation of the FSRU at either the Cabrillo Port proposed location or the Santa Barbara Channel Alternative would be temporary, but the FSRU's operational noise at either the proposed Cabrillo Port location or the Santa Barbara Channel Alternative location would be continuous. Cumulative noises effects could occur when offshore pipeline construction is occurring in and near the vicinity of the Sea Range; however, implementation of MM NOI-1a (efficient equipment usage), AM MT-1a (safety vessel warnings), and MM MT-1c (notices to mariners) would mitigate the noise levels and exposure to boaters to below the impact's level of significance (**CEQA Class II**) for boaters. Operational noise from the FSRU at either the proposed or alternative location would exceed significance levels into the ATBA (**CEQA Class I**), however not beyond this area, and would diminish further with greater distance. Since the Point Mugu Sea Range is 3.54 NM (4.1 miles or 6.6 km) from the FSRU at the proposed location and further from the Cabrillo Port Santa Barbara Channel Alternative location, cumulative effects of operational noise and marine operations on the Sea Range are unlikely. Aerial operations on the Sea Range could have cumulative noise effects for boaters transiting the ATBA (**CEQA Class I**), but the cumulative effect would be less than significant given the transitory nature of aerial operations.

The existing operation of the 43 oil and gas platforms is taken into account in the existing noise baseline conditions. No additional oil and gas platforms are planned in the Santa Barbara Channel. Development of the non-producing oil and gas leases is uncertain due to ongoing litigation and there is a moratorium on new offshore leasing. Current and new activities on these leases would increase noise, but the noise generated from Cabrillo Port would be sufficiently distant from these activities such that no cumulative noise effects are anticipated. If the Clearwater Port project is licensed, noise would increase in areas with common vessel traffic, including parts of the vessel traffic lanes and vessels exiting and entering Port Hueneme. No vessel traffic would be anticipated from the OceanWay project to the Port of Hueneme.

Noise increase would be substantial, but temporary if the offshore LNG projects were constructed concurrently, but the contribution of the Project would be mitigated through the use of MM NOI-1a, AM MT-1a, and MM MT-1c. If the projects were to operate simultaneously, noise would increase at each respective location and would contribute to cumulative noise impacts at these locations; however, the OceanWay and Clearwater Port would be located 14.66 NM (16.9 mi., 27.2 km) and 28.9 NM (33.3 miles or 53.5 km, respectively, from Cabrillo Port. Therefore, assuming that the proposed OceanWay and Clearwater Port would generate a similar amount of noise as Cabrillo Port, operational noises from the projects would not have geographically overlapping effects. LNG carrier traffic would increase, but carriers would have to adhere to USCG and International Maritime regulations and would keep their distance from other large vessels; therefore, there is unlikely to be a cumulative effect on noise.

The Cabrillo Port Santa Barbara Channel FSRU Alternative would be 5.01 NM (5.77 mi., 9.28 km) away from Platform Grace, the proposed location for the Clearwater Port project. Vessel traffic is greater in this area; therefore, if these projects were constructed simultaneously, more boaters could hear noise generated during construction and operation. Like the proposed Project, construction noise would be temporary and recreational boaters could avoid the construction zone. All mitigation measures applicable to offshore operations (see Section 4.14.5.2) would be applicable to this alternative; however, like the proposed Project, noise generated on the FSRU during operations would have a significant impact on recreational boaters within 0.6 mile (1 km), which could not be mitigated. Therefore, the use of this alternative would result in a similar contribution to cumulative impacts from noise as compared with the proposed action. Assuming that both the Cabrillo Port Santa Barbara Channel FSRU Alternative and the Clearwater Port projects would generate similar levels of operational noise, given the distance between the two locations, it is unlikely that the areas of significant noise impacts generated by would overlap.

Expansion of the Port of Los Angeles/Long Beach would likely result in an increase in vessel traffic in the Santa Barbara Channel. With the increase in vessel traffic, there would be a concurrent increase in vessel noise. The cumulative noise effects of this increase in vessel traffic and the presence of the Project at proposed Project location would be in the ATBA, the location where boaters could transit between the FSRU and the Santa Barbara Channel TSS. There would be locations in the ATBA where noise levels exceed significance levels from FSRU operations. If a boater were transiting the

ATBA when a vessel was transiting the Santa Barbara Channel TSS in the vicinity of the FSRU, the boater would experience significant cumulative noise effects (**CEQA Class I**). These effects would be transitory because both the vessel and the boater would be in transit. Project support vessels would transit a portion of the Santa Barbara Channel TSS traveling to and from Port Hueneme. These vessels would cause temporary but significant noise impacts (**CEQA Class I**). There could be cumulative noise impacts from the increased vessel traffic in the Santa Barbara Channel TSS if vessels travel in close proximity to one another; however, this is unlikely because vessels must maintain a safe distance from one another.

Like the proposed Project location, the noise generated by an FSRU located at the Cabrillo Port Santa Barbara Channel Alternative would result in noise above the significance criteria for boaters transiting the ATBA (**CEQA Class I**). Since this area experiences greater boating traffic than the proposed Project location, the cumulative noise impacts at this location would likely be greater than at the proposed Project location.

Onshore

The proposed Project would contribute incrementally to cumulative impacts from noise impacts in the area if road, residential housing, or commercial development construction projects were to occur concurrently in the vicinity of the pipeline construction for the proposed Project or alternative onshore pipeline routes. Despite the implementation of mitigation measures MM NOI-4b, MM NOI-4c, MM NOI-4d, MM NOI-4e, MM NOI-4f, MM NOI-5a, MM NOI-6a and MM NOI-6b, temporary construction noise would result in a **CEQA Class I** impact because noise impacts would remain significant, but temporary.

The proposed Project pipeline routes and the alternative pipeline routes would all generate vibration during pipeline installation that would result in **CEQA Class I** impacts because the impacts could not be completely mitigable. Vibration generated at the proposed shore crossing and at the alternative shore crossing would not exceed the significance criteria. Therefore, construction of any other onshore project within the immediate vicinity of any of the pipeline routes would contribute further to a **CEQA Class I** vibration impact.

Comparable levels of noise and vibration are anticipated from the installation of the onshore Clearwater Port Pipeline route. The proposed Cabrillo Port Pipeline route and its Center Road alternatives would be of sufficient distance from the preliminary Clearwater Port onshore pipeline route that even if both projects were constructed simultaneously, they would not have overlapping noise or vibration impacts, except near the Center Road Valve Station where they might converge. In addition, the Cabrillo Port Gonzales Road onshore pipeline alternative could be sufficiently close to the preliminary Clearwater Port onshore pipeline route that there could be overlapping noise and vibration impacts.

The proposed Project shore crossing would result in **CEQA Class I** noise impacts, based on exceedances of local noise ordinances in City of Oxnard. In contrast, the

Arnold Road Shore Crossing/Arnold Road Pipeline and Point Mugu Shore Crossing/Casper Road Pipeline Alternatives are located in Ventura County, which has different noise ordinances. Through implementation of AM NOI-4a, and MM NOI-4b through MM NOI-4f, MM NOI-5a, MM NOI-6a, and MM NOI-6b during construction and maintenance operations at these locations, noise levels could be reduced below local noise ordinance levels required at the closest residence (**CEQA Class II**). In addition, noise levels at the closest residence to the Mandalay shore crossing meet the City of Oxnard noise ordinance levels (**CEQA Class II**). Therefore, the shore crossing alternatives would result in a smaller contribution to cumulative noise impacts to sensitive receptors in comparison with the proposed shore crossing and pipeline route. Given that the Cabrillo Port Santa Barbara Channel Alternative and Clearwater Port shore crossing both would occur at the Reliant Energy Mandalay Generating Station, if both were to be installed simultaneously, noise levels could exceed City of Oxnard noise ordinance levels (**CEQA Class I**).

RECREATION

Offshore

Impacts on offshore recreation can result from restricted access or changes to the aesthetic quality of the area.

The presence of large permanent structures or LNG carriers may reduce the quality of the recreational experience for some individuals. In addition to the FSRU that would be constructed for the Cabrillo Port Project, existing and future projects with permanent or large offshore facilities include the Clearwater Port, OceanWay, existing future offshore oil platforms, and naval activities at the Point Mugu Sea Range.

The presence of the FSRU in conjunction with permanent changes to Platform Grace from the Clearwater Port and the OceanWay project is considered a significant cumulative impact for which no mitigation exists (**CEQA Class I**). If the Cabrillo Port Santa Barbara Channel Alternative were implemented, it would have similar cumulative impacts.

TRANSPORTATION

The Project is not expected to add significantly to the cumulative impact on transportation. No public roads would be permanently eliminated or created by Project activities. Ventura County has plans to expand roads on portions of Hueneme Road, Pleasant Valley Road, Rice Avenue, and Santa Clara Avenue by 2010. If these activities occurred simultaneously with the installation of the Project pipeline, short-term cumulative impacts on traffic could occur (**CEQA Class II**). These impacts could include traffic slowdowns and/or detours that could last several days. Mitigation measures TRANS-1a and TRANS-1b would reduce this impact to below its significance criteria, and other projects would likely have similar mitigation measures.

Road maintenance activities in the Project area could include repaving, clearing road shoulders, and similar activities. If these activities were to occur at the same time and

place as the Project, short-term cumulative impacts on traffic could occur (**CEQA Class II**). These impacts would be limited to temporary disruptions such as slower traffic or detours lasting several days at a time. MM TRANS-4a, MM TRANS-4b, and MM TRANS-5a, as well as BMPs that would likely be used for the possible maintenance projects occurring concurrently, would reduce or eliminate any significant impacts.

If any of the proposed construction projects for Oxnard or Santa Clarita were to occur simultaneously with the proposed Project, a net increase in traffic in each respective area would result from workers and equipment going to and from the construction sites. These are temporary impacts that would cease at the end of construction.

The Project would reduce its contribution to local traffic by implementing traffic control plans (MM TRANS-1a) and implementing notifications, schedule shifts and carpooling BMPs (MM TRANS-1b). These mitigation measures would reduce the impacts, but they could not be fully avoided. Therefore, if other local projects with similar impacts were to occur simultaneously, temporary cumulative impacts on the overall traffic conditions could occur (**CEQA Class II**). The cumulative contribution to traffic impacts from the Gonzales Road Pipeline Alternative and Center Road Pipeline Alternative 1 would be greater than the proposed Project in the Oxnard area because both pass through residential areas. Center Road Pipeline Alternatives 2 and 3 would have a similar contribution to cumulative traffic impacts as the proposed Project because these routes largely pass through agricultural areas.

Also, the contribution to degradation of roads from the Project would be mitigated through MM TRANS-5a, which requires the Applicant or its designated representative to repair roads to their pre-construction condition (**CEQA Class II**); NEPA minor adverse, short-term). Therefore, the Project would not contribute to cumulative impacts on roads.

In Santa Clarita, construction of the Line 225 Pipeline Loop route would require closure or rerouting of the South Fork Trailhead bike path for about 10 to 14 days (**CEQA Class II**). If construction of multiple projects were to occur concurrently in Santa Clarita, multiple bike paths could close or be rerouted temporarily. However, these closures would be temporary and rerouting of the paths during the short construction period is often possible. Therefore, this project would not contribute to cumulative impacts on bike trails. Line 225 Loop Alternative would have similar cumulative impacts to the Line 225 Pipeline Loop.

Potential cumulative impacts from the proposed Clearwater Port project have not been included in this analysis because the application for the Clearwater Port project that has been filed under the DWPA is currently under review by the agencies and has not been deemed complete, has not been confirmed by the agencies, and does not provide sufficient detail to allow evaluation of onshore transportation impacts. Therefore the lead agencies have determined that information from the application should not be relied upon or cited in the cumulative analysis of the Cabrillo Port Final EIS/EIR. However, to provide information for disclosure and comparison of this project under the CEQA, the cumulative analysis uses information on the Clearwater Port project that is

available on the Clearwater Port public website, the California Energy Commission website, and other sources available to the general public.

WATER QUALITY AND SEDIMENTS

Onshore

The shore crossings for the Clearwater Port and the Santa Barbara Channel/Mandalay Shore Crossing/Gonzales Road Pipeline Alternative offshore pipelines are both proposed to be located at the Reliant Energy Mandalay Generating Station. It is assumed that the Clearwater Port shore crossing would be conducted in a similar manner as the one proposed for the Cabrillo Port Project; therefore, potential adverse impacts would be minimized. However, if construction were to occur simultaneously, there could be a cumulative adverse impact.

The cumulative effects on onshore water resources as a result of construction at stream crossings for the proposed Center Road Pipeline and its alternatives could be adverse but could be mitigated through the implementation of MM WAT-3a, MM WAT-4a through MM WAT-4c, and MM GEO-1b to reduce the impact to a level that is less than the significance criteria (**CEQA Class II**). Based on permits and existing studies for the identified projects and the locations and types of water resources in the onshore Project area, the proposed Project and the Center Road Pipeline alternatives would not contribute to any further degradation of surface water quality, primarily because activities that would result in temporary or short-term discharges to surface water would require adherence to permit conditions and BMPs that aim to reduce or avoid such impacts. Therefore, this Project and the Center Road Pipeline alternatives would not contribute significantly to changes to local water quality and sediment.

If Line 225 Loop alternative were implemented, the Santa Clara River would be crossed using either an existing bridge or HDD. The potential cumulative water quality impacts of construction of any of the projects in the vicinity of the Santa Clara and installation of the Project pipeline in the pipeline bridge would be less than those if HDD were used for this alternative. Impacts from HDD would be similar to those of the proposed Project and are addressed under Impact WAT-4. Implementation of mitigation WAT-3a, WAT-4a, WAT-4c would reduce this alternative's impact to less than significant, so the cumulative contribution of this alternative to water quality would be negligible.

The location or method of onshore water crossings for the Clearwater Port are not known; therefore, the potential cumulative effects are uncertain. However, it is assumed that similar mitigation measures and permits would be required to ensure that potential impacts to water resources would be minimized.

1 ACRONYMS

AIS	Automatic Identification System
AM	Applicant-proposed measure
ATBA	area to be avoided
BHPB	BHP Billiton LNG International Inc.
BMPs	best management practices
CARB	California Air Resources Board
CCC	California Coastal Commission
CDFG	California Department of Fish and Game
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CINMS	Channel Islands National Marine Sanctuary
CO	carbon monoxide
CPUC	California Public Utilities Commission
CSLC	California State Lands Commission
DMP/DEIS	Draft Management Plan/Draft EIS
DTSC	Department of Toxic Substances Control
DWP	Deepwater Port
DWPA	Deepwater Port Act
EEAP	Employee Environmental Awareness Program
EFH	Essential Fish Habitat
EIR	Environmental Impact Report
EIS	Environmental impact Statement
EBRV	Energy Bridge™ Regasification Vessel
FERC	Federal Energy Regulatory Commission
FSRU	floating storage and regasification unit
GREAT	Ground Water Recharge Enhancement and Treatment Program
ha	hectares
HAZOP	hazard and operability study
HCA	high consequence area
HDB	horizontal directional boring
HDD	horizontal directional drilling
IOU	investor-owned utilities
IRA	Independent Risk Assessment

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JOFLO	Joint Oil/Fisheries Committee of South/Central California
km	kilometers
LNG	liquefied natural gas
m	meters
m^2	square meters
MARAD	U.S. Maritime Administration
MMcf	million cubic feet
MMS	U.S. Department of the Interior, Minerals Management Service
MP	milepost
MW	megawatts
NBVC	Naval Base Ventura County
NEPA	National Environmental Protection Act
NM	nautical miles
NO_2	nitrogen dioxide
NOP	Notice of Preparation
NO_X	nitrogen oxides
OCS	Outer Continental Shelf
PG&E	Pacific Gas & Electric Company
PLEM	pipeline-ending manifold
ppm	Parts per million
QRA	quantitative risk analysis
ROC	reactive organic compound
ROW	right-of-way
SCE	Southern California Edison
SCV	submerged combustion vaporizer
SES	Sound Energy Solutions
SHOBA	shore bombardment range
SOAR	Southern California Anti-submarine warfare Range
SOCAL	Southern California Operations Area
SoCalGas	Southern California Gas Company
SWTR	shallow water training range
TSS	Traffic Separation Scheme
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USEPA	U.S. Environmental Protection Agency

UXO	unexploded ordnance
VAFB	Vandenberg Air Force Base
VHF	very high frequency
VTS	Vessel Traffic Service

Exhibit G: Statement of Overriding Considerations

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EXHIBIT G: STATEMENT OF OVERRIDING CONSIDERATIONS

1.1 INTRODUCTION TO STATEMENT OF OVERRIDING CONSIDERATIONS

The California Environmental Quality Act (CEQA) requires a lead agency to balance the benefits of a project against the unavoidable environmental effects of such project in determining whether to approve the project. Since the Final EIR identifies significant impacts of the Cabrillo Port LNG Deepwater Port (the Project) that cannot feasibly be mitigated to below a level of significance, Class I impacts, the California State Lands Commission (CSLC), as the lead agency, must state in writing its specific reasons for approving the Project in a "Statement of Overriding Considerations" pursuant to sections 15043 and 15093 of the State CEQA Guidelines.

Based on the Final EIR, and other information provided by BHP Billiton LNG International Inc. (BHPB, or the Applicant) and gained through the public involvement process which is recorded in the administrative record, this Statement of Overriding Considerations provides the specific reasons supporting the approval of this Project by the lead agency. State CEQA Guidelines section 15093(a) notes that, "If the specific economic, legal, social, technological, or other benefits of a proposed project outweigh the unavoidable adverse environmental effects, the adverse environmental effects may be considered 'acceptable'."

This Statement of Overriding Considerations presents the beneficial impacts derived from the Project, reasons for approving the Project, and a list of the specific significant effects on the environment attributable to the Project that cannot feasibly be mitigated to below a level of significance.

1.2 ADOPTION OF STATEMENT OF OVERRIDING CONSIDERATIONS BY THE LEAD AGENCIES

The CLSC has balanced the benefits of this project against significant unavoidable impacts that would remain after mitigation is applied and adopt this Statement of Overriding Considerations.

As noted in Chapter 5, the effects in all resource areas were evaluated to determine any significant or unavoidable impacts. In general, most adverse impacts associated with the proposed Project are anticipated to be short-term and/or localized, or would be reduced to below their significance criteria by implementation of feasible mitigation measures. Impacts and mitigation measures are identified and discussed throughout Chapter 4 of the Final EIR in their respective sections. A summary of all impacts and mitigation is provided in Table 6.1-1 in Chapter 6 of the Final EIR, "Conclusions and Recommendations."

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1.3 ENVIRONMENTAL EFFECTS OF THE PROJECT THAT CANNOT BE MITIGATED TO LESS THAN SIGNIFICANT

Although the Applicant has revised the proposed Project in several ways since the issuance of the March 2006 Revised Draft EIR in response to agency and public comments (Project changes are presented in Chapter 1), twenty significant Project impacts that cannot be mitigated to below their significance criteria remain.

The Final EIR found that although the likelihood of an accident is very low, there are unavoidable public safety impacts including the potential for accidental release of LNG (unignited flammable vapor) offshore at the DWP or of natural gas (potentially flammable) from the onshore facilities that could result in irreversible damage either offshore or onshore.

Class I Air Impacts include exceeding emissions thresholds in Ventura and Los Angeles Counties during construction, the potential for exceeding air quality standards in the case of an accident, and the potential for LNG carriers and support vessels to contribute to ambient ozone impacts in the areas located downwind of the Project.

Marine mammals could be adversely affected by noise, and there is a possibility that individual marine and terrestrial mammals, such as sea turtles, birds, and fish could be injured or killed. An irreversible or irretrievable effect on the overall species baseline populations is, however considered unlikely.

In addition, Class I agriculture, aesthetics, noise, recreation, and water quality impacts were identified.

All Class I impacts, as defined under the CEQA, are listed below within the following categories: 1) Temporary – returns to baseline conditions after the activity stops; 2) Short-term – returns to baseline conditions on its own within one year of the activity; 3) Long-term – returns to baseline conditions after restoration and monitoring; and 4) Permanent – never returns to baseline conditions.

Temporary impacts include the following six impacts:

- **Impact AIR-1.** Project construction activities in Ventura and Los Angeles Counties would generate emissions that exceed quantitative thresholds for criteria pollutants in designated air quality nonattainment areas.
- **Impact AIR-2.** Onshore Project construction activities would generate particulate emissions that could cause or contribute to existing or projected violations of ambient air quality standards.
- **Impact AIR-3.** An LNG spill from the FSRU or a pipeline rupture would result in a natural gas release and/or a fire that could cause temporary increases in ambient air concentrations of criteria pollutants in excess of air quality standards, expose sensitive receptors and the general public to substantial concentrations of toxic air contaminants, and/or create objectionable odors.

- **Impact NOI-4.** HDB at the shore crossing and HDD or other drilling techniques at onshore waterways and intersection crossings could temporarily increase noise levels for sensitive receptors. Noise levels could exceed local noise ordinances or permit conditions
- **Impact NOI-5.** HDB, HDD, boring, trenching, and other construction activities could temporarily create vibration levels at sensitive receptors
- **Impact NOI-6.** Site preparation, pipeline installation, and construction of aboveground facilities could temporarily increase noise levels for sensitive receptors, such as schools and residences. Noise levels may exceed county and/or city noise ordinances or permit conditions during the installation of the onshore pipeline and associated structures.

Short term impacts include the following impact:

- **Impact WAT-5b:** An accidental release of diesel fuel to marine waters violates Federal and State water quality standards or objectives.

Long term impacts include the following six impacts:

- **Impact BioMar-6.** An accidental release of a natural gas, fuel, or oil could cause morbidity or mortality of marine biota, including fish, invertebrates, seabirds, and special status species such as sea turtles, through direct contact or ingestion of the material.
- **Impact BioMar-8.** A release of LNG, natural gas, fuel, or oil could cause injury or mortality of marine mammals through direct contact or ingestion of the material.
- **Impact PS-2.** A high-energy collision of another vessel with the FSRU or an LNG carrier or an intentional attack could cause a rupture of the Moss tank(s) holding LNG, leading to a release of an unignited flammable vapor cloud that could extend beyond the 1,640-foot (500 m) radius safety zone around the FSRU, impact any members of the boating public in the identified potential impact area, and impact boats traveling in the Traffic Separation Scheme.
- **Impact PS-3.** Fishing gear could become hung up on the pipeline and potentially damage one or both of the subsea pipelines. Similar damage may occur due to a seismic event or subsea landslide.
- **Impact PS-4.** The potential exists for accidental or intentional damage to the onshore pipelines or valves carrying odorized natural gas. Damage, fires, and explosions may occur due to human error, equipment failure, natural phenomena (earthquake, landslide, etc.). This would result in the release of an odorized natural gas cloud at concentrations that are likely to be in the flammable range.
- **Impact PS-5.** In the event of an accident, there is a greater likelihood of injury, fatality, and property damage near Center Road Pipeline MP 4.1, an HCA.

Permanent impacts include the following seven impacts:

- **Impact AES-3.** The FSRU would change the visual character of the ocean view for recreational boaters.
- **Impact AGR-2.** Expansion of the Center Road Valve Station in Ventura County would require conversion of approximately 0.1 acre (0.04 ha) of agricultural land to non-agricultural uses.
- **Impact AIR-5.** Emissions of NOx and ROC generated from LNG carriers, tugboats, and the crew/supply vessel operating in California Coastal Waters could contribute to ambient ozone impacts in the areas located downwind of the Project.
- **Impact BioMar-5.** Noise from construction and operation vessels or equipment could disrupt migrations; interfere with or mask communications, prey and predator detection, and/or navigation; cause adverse behavioral changes; or result in temporary or permanent hearing loss.
- **Impact NOI-2.** Recreational boaters and fishers at certain distances from the facility could hear noise generated by FSRU operations over the long-term.
- **Impact NOI-3.** LNG carriers, crew boats and supply vessels, or helicopters could temporarily increase noise levels for sensitive receptors, such as recreational boaters and fishers.
- **Impact REC-3.** The presence of the Project would alter the recreational experience of recreational boaters, including tourists and visitors on whale-watching trips and other visitors to the Channel Islands National Park.

1.4 BENEFICIAL IMPACTS OF THE PROJECT THAT MEET PROJECT OBJECTIVES (CLASS IV).

The State CEQA Guidlines at section 15093 indicates that beneficial impacts of the project may be noted in the Statement of Overriding Considerations.

The overall Project purpose, need, and objectives are to increase the natural gas supply in California, and to increase natural gas supply reliability and diversity. Each of these benefits is discussed in 1.4.1 and 1.4.2 below.

Additional benefits to air quality and the regional economy are discussed in 1.4.3 and 1.4.4 through 1.4.5, respectively.

1.4.1 Improving the Reliability and Diversity of California's Natural Gas Supply

The California Energy Commission (CEC) estimates that California's demand for all uses of natural gas will grow by approximately 0.7 percent annually from 2006 to 2016, even after taking into account maximum increased conservation and the use of renewable energy. According to the CEC's 2005 Natural Gas Assessment Update, California's total annual consumption of natural gas was 2,200 billion cubic feet in 2003; by 2013, natural gas demand in the State is projected to reach 2,400 billion cubic feet,

in part as a result of the growing use of natural gas for electricity generation. The CEC has thus recommended that California secure and diversify its sources of natural gas to ensure a sufficient and reliable supply of natural gas.

With respect to natural gas, the 2005 Integrated Energy Policy Report states:

> California clearly needs to increase the diversity of its natural gas supply portfolio. Being at the end of a long interstate pipeline network, California must also have access to a variety of sources. LNG is one such potentially cost-competitive and reliable source. . . . LNG simultaneously presents natural gas supply opportunities, additional infrastructure capacity into the West Coast, and coastal industrial development challenges. In considering LNG projects currently proposed for California, the state must address safety, environmental, and gas quality issues associated with these projects in an efficient and equitable manner (CEC 2005b).

The 2005 Natural Gas Assessment Update states:

> The State should also pursue strategies to generate 33 percent of its electricity from renewable energy. Even with these aggressive actions, however, the statewide demand for natural gas will continue to grow by at least one percent per year requiring additional natural gas imports into the State.

The State of California's Energy Action Plan II: Implementation Road Map for Energy Policies encourages the development of additional in-state natural gas storage to enhance reliability and mitigate price volatility. The CPUC recently reaffirmed that both the State's Integrated Energy Policy Report and Energy Action Plan recognize the need for additional natural gas supplies from LNG terminals on the West Coast:

> "However, even with strong demand reduction efforts and our goal of 20% renewables for electric generation by 2010, demand for natural gas in California is expected to roughly remain the same, rather than decrease, over the next 10 years. This is because, a substantial portion of the other 80% of electric generation (not met by renewable energy sources) will need natural gas as its fuel source, and natural gas will still be needed for the growing number of residential and business customers of the natural gas utilities." (Peevey 2006)

The corresponding benefits of the Project are that it will accomplish this goal of increasing the reliability and the diversity of the supply of natural gas for domestic consumption for the lifetime of the Project (maximum 40 years).

1.4.2 Controlling Natural Gas Costs in California

Fuel costs are one of the underpinnings of the California economy. One way to reduce the cost of fuel is to ensure competition among fuel sources:

> "Rising natural gas prices directly affect California's economy and consumers. High gas prices increase consumers' cost of living and reduce their purchasing power for other goods and services. Californians feel the effects of rising natural

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> gas prices with more expensive home heating and electricity bills, and higher prices for food and consumer goods. According to a 2004 Mortgage Bankers Association Economic Commentary, "High energy prices act as a tax on consumers…that …tend[s] to slow consumer spending…"
>
> "California relies upon imports to meet 85 percent of its demand for natural gas. In the future, California will face growing competition from other Western States and the Midwest for natural gas supplies and interstate pipeline capacity. To compete successfully against other states, California consumers will be expected to pay higher natural gas prices and pipeline transportation rates.
>
> Today's high natural gas prices reflect declining supplies, increased competition from other states to satisfy the regional natural gas demand, and the dominance of the U.S. natural gas market upon California prices. In the future, natural gas prices can be expected to continue increasing unless demand is lowered or imports increase to boost available supplies." (CEC 2005b)

The Cabrillo Port Project will provide an increase in natural gas imports to the state and thereby ensure competition and help keep the price of natural gas affordable for Californians.

1.4.3 Benefits to Achieving Statewide Air Quality Goals

In response to consultations initiated during the environmental process, the Air Resources Board, in a memorandum dated October 4, 2005, stated,

"The Air Resources Board (ARB) staff support efforts to secure natural gas supplies to meet California's current and future natural gas demands. Natural gas is a clean air strategy that has significantly contributed to the air quality improvements California has achieved. We believe that natural gas needs to continue to be a clean air strategy in order for California to meet our air quality goals."

The analysis of Air Quality in Section 4.6 of the Final EIR, specifically Impact AIR-5 , concludes that the proposed Project would create a net increase in NO_x emissions from marine vessel traffic The proposed Project would also create a net increase in ROC emissions from marine vessel traffic. These net increases in offshore ozone precursor emissions have the possibility of contributing to ambient ozone impacts on shore within Ventura County and Los Angeles County, both of which are designated as nonattainment areas for ozone. The emissions of ozone precursors from project marine vessels represent a significant and unavoidable impact (Class I).

With due consideration of the above described analysis, the augmentation and diversification of California's supplies of natural gas as discussed in Section 1.4.1, would, on balance, facilitate and continue California's progress toward meeting its statewide air quality goals.

1.4.4 Beneficial Impacts from Project Construction on Tax Revenue

Project Construction would result in a beneficial impact on local tax revenue.

The Project is expected to have a substantial but temporary direct economic impact of pumping $83 million into the regional economy. This impact does not include additional economic impacts from multiplier effects. To the extent that specialized LNG civil works and equipment are imported from outside the region, the multiplier effect would be reduced. The FSRU would be constructed in either Finland or the Far East, where shipyards have the capacity to construct the specialized vessel.

The largest direct expenditures, estimated to be $50 million over the 8-month construction period, would come from locally procured supplies, equipment, materials, and services. In addition, terminal services would be procured locally to support the FSRU and pipeline construction ($31.9 million.). These expenditure categories would comprise 98 percent of the total construction period expenditures.

Approximately $1 million in construction payroll would enter the regional economy by increasing the disposable incomes of workers, households, and businesses directly or indirectly affected by the Project.

In addition to the direct economic impacts a range of indirect and total economic impacts would be generated by the initial direct construction expenditures. Since the size of the gross multiplier that should be applied is uncertain, a range of total potential economic impacts is presented.

During construction, the indirect economic impacts or temporary benefits to the regional economy would range between $42 million and $125 million, depending on multiplier effects. Direct expenditures can potentially generate between $125 and $208 million in total non-recurrent economic impacts over the 8-month construction period. While temporary, these economic benefits from the Project are substantial.

Expected tax revenues generated during construction represent one-time benefits to state and local governments. Tax revenues would be generated from the taxes on goods, services, and materials and supplies purchased locally. In addition, the State of California would receive state payroll taxes. The impacts from these construction-phase tax revenues are temporary and moderate in size.

The State of California could expect to receive a one-time tax benefit of approximately $3.2 million during construction. The majority of this fiscal benefit would originate in the estimated $50 million in spending on locally procured materials and supplies. In addition, State payroll taxes derived from the construction period payroll and sales taxes on goods and services purchased locally by workers would generate tax revenues. While substantial in size, the construction period tax revenues are a one-time event.

1.4.5 Beneficial Impacts from Project Operation on Tax Revenue

Project operations would result in a beneficial impact on local tax revenue.

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During operations, the Project would generate an annual direct economic benefit of $13.3 million for the regional economy. This direct economic impact does not include any multiplier effect (indirect impacts). The annual direct economic impact is moderate in size and long-term in nature and would last for the Project's duration.

Salaries represent the largest share of the annual direct expenditures. It is estimated that annual regional spending on goods and services by the 30 (off-FSRU shift) workers would total $1.3 million per year. This spending estimate is based on 30 percent of $ 4.2 million per year in annual direct wages (out of total labor costs of $5.7 million) that would be spent on housing, food, and onshore entertainment between shifts.

Supplies purchased locally to sustain operations ($2.3 million/year) represent 17 percent of direct annual expenditures. Expenditures for marine terminal services ($2.2 million/year) represent tugboat operations (standby tugboat and crew, $1.9 million) and loading masters ($0.3 million/year).

During facility operations indirect economic impacts or annual recurrent benefits to the regional economy would be between $6.7 million and $20 million, depending on multiplier effects. Direct expenditures would generate between $20 and $33.6 million in total recurrent economic impacts over the life of the facility, depending on multiplier effects. These annual recurrent economic benefits from Project operations are long-term but moderate in size.

Annual tax revenues would accrue to state and local governments on a recurrent basis. Estimated annual tax revenues from the Project could defray some of the costs/expenditures arising from Project operations.

Workers would spend part of their wages on local goods and services. The State of California could receive $171,696 annually from payroll taxes. These tax revenues were estimated at 4.0 percent of the total annual payroll of $4,292,400. The 4 percent includes state withholding and California disability withholding.

At the state and local level, the estimated tax revenues would not significantly alter public revenues. Operating period tax revenues are relatively small compared to other tax revenue sources.

The Applicant has also pledged additional community assistance to each community in which it has a presence. In a letter to the Applicant's stakeholders, the company's Chief Executive Officer, Chip Goodyear, stated that: "One of our key community performance measures is our commitment to spend 1 percent of our pre-tax profits (on a 3-year rolling average) on community programs. I am pleased to report that, in the 2 years since we made this commitment, we have exceeded this target."

1.5 OVERRIDING CONSIDERATIONS CONCLUSION

The CSLC finds that the beneficial, additional source of natural gas to be provided by the Cabrillo Port LNG Deepwater Port Project, the diversification of the State's gas supply, the benefit to California meeting its air quality goals, and the related stability

benefits to the California economy, as well as the temporary and longer-term tax revenue benefits of this Project, outweigh the unavoidable adverse environmental effects discussed above. The CSLC therefore finds that in light of these benefits, the adverse environmental effects of the Project are acceptable.

EXHIBIT H

State of California **Public Utilities Commission**
San Francisco

M E M O R A N D U M

Date : December 12, 2006

To : President Peevey

From : Richard A. Myers, Energy Division
Harvey Y. Morris, Legal Division

Subject : California's Need for LNG Supplies

As you requested, this memorandum provides a summary of why California needs liquefied natural gas (LNG) supplies in its future and why LNG terminals should not be sited onshore in or near densely populated areas.

I. LNG Supplies Should Be a Component of California's Natural Gas Portfolio

On average, California requires a little more than 6000 million cubic feet per day (MMcfd) of natural gas and obtains about 85-90% of its natural gas supplies from outside of California. These out-of-state supplies are delivered by interstate pipelines from natural gas producing basins in the southwestern and Rocky Mountain regions of the U.S. and in western Canada. Only the remaining 10-15% is obtained from California production, which production has been overall declining.

It is prudent for California to have access to a diverse portfolio of natural gas supplies to assure adequacy of supplies to the State and to have ample access to the lowest cost supplies of natural gas as market conditions change. The California Public Utilities Commission (CPUC) has become especially concerned in recent years about the adequacy of natural gas supplies to the State, and the increasing price of natural gas. Our concerns are based on several developments that we've observed in the natural gas market over the past few years (particularly since about 2002), and that may well continue in the future. These developments include:

- natural gas prices that are about three to four times the prices in 2002,
- decreasing production rates from natural gas wells in North America,

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- decreasing imports of natural gas from Canada, the United States' main source of natural gas imports, and a big part of California's portfolio,
- future increases in national gas demand, partly due to increasing natural gas demand for electric generation,
- the realistic possibility that a portion of Rocky Mountain production, another important part of California's supplies, will be diverted to Midwestern and eastern markets, and
- potential changes in the southwest and northwest interstate pipeline markets.

Increases in the price of natural gas, not just in California but across the U.S., have been occurring due to a variety of factors. Some of the primary reasons include the increased tension between national supply and demand, the price of oil, and the increased cost of drilling. Prices have more than tripled between 2002 and now, and the prices have also become much more volatile. It is important to keep in mind that, because the natural gas market is strongly integrated and California heavily depends on out-of-state supplies, trends in market prices that California consumers pay are heavily determined by overall North American market developments, including increased demand in the other states, Canada and Mexico. In fact, in the future, natural gas prices are expected to be increasingly influenced by international developments.

The CPUC believes that LNG should be a component of California's natural gas supply portfolio. As part of the State's Energy Action Plan (EAP), the CPUC and the California Energy Commission (CEC) are placing considerable emphasis on trying to meet a substantial portion of the State's energy needs through increasing reliance on energy efficiency measures and renewable energy for electric generation. However, even with strong demand reduction efforts and our goal of 20% renewables for electric generation by 2010, demand for natural gas in California is expected to roughly remain the same, rather than decrease, over the next 10 years. This is because, a substantial portion of the other 80% of electric generation (not met by renewable energy sources) will need natural gas as its fuel source, and natural gas will still be needed for the growing number of residential and business customers of the natural gas utilities. Therefore, the State's EAP also endorses obtaining new natural gas supply sources, such as LNG. Accordingly, one focus of the CPUC's current natural gas regulatory efforts has been to enable access to California's natural gas utility systems by new supply sources, including LNG.

A. Decreasing production rates from natural gas wells in North America

In recent years, there has been a noticeable decline in the rates of production of natural gas in both the U.S. and Canada. That is, analysts have found that once a typical new natural gas well begins producing, its rate of production is declining more rapidly than in

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previous years. This is due to the fact that the most prolific sources and inexpensive supplies of natural gas have already been developed in most of the producing basins in North America. Consequently, more and more wells are needed to be drilled in order just to keep the level of production steady. This factor has dampened expectations about the level of domestic production in the future.

Natural gas price increases have lead to a dramatic increase in drilling of new natural gas wells. For example, in the U.S. the number of gas wells drilled in 2005 was 2 ½ times the number drilled in 1999, leading to a 33% increase in the total number of producing gas wells. However, there has been no significant increase in domestic production of natural gas - U.S. gas production was actually slightly lower in 2005 than in 1999. California natural gas production has declined by about 30% since 1999.

The U.S. Energy Information Administration (EIA) expects that, due to increased drilling and increased production in a small number of producing basins, total U.S. domestic production will increase in future years, but by only about 7.6% from 2005 to 2015, not nearly enough to match the EIA's forecasted 15.2% increase in national demand during that same period.[1]

B. Decreasing imports from Canada and diversion of Canadian supplies to other markets

The U.S. imported about 17% of its natural gas requirements from Canada in 2005, and Canada is by far the largest source of natural gas imports to the U.S., still well above LNG imports. California imported about 23% of its requirements from Canada in 2005. However, decreasing production rates are also occurring in Canada. In addition, many analysts expect that Canada will be using greater amounts of natural gas in the future for its own needs. The EIA now expects that imports of natural gas from Canada will decline by 45% in the next 15 years. This will have important implications for the U.S. in general and for California specifically.

Market developments had already impacted the price and volume of Canadian imports to California a few years ago. In the 1990's, Canadian Alberta supplies were the lowest-priced supplies available to California, largely because those supplies were constrained by the amount of pipeline capacity to transport gas to other markets in the U.S. Due to the low price, the interstate pipeline from Canada was typically full. However, new and expanded pipelines were built that allowed Alberta supplies to flow to Midwestern and eastern markets in the U.S. and to increase the Alberta supplies to eastern markets in

[1] Data from the EIA in this memorandum is from the EIA's Annual Energy Outlook 2007 (Early Release), which was just issued in the beginning of December, 2006.

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Canada. This had a dramatic impact on the price of Canadian supplies to California. California imported 20% less gas from Canada in 2005 than in 2001, even though California still depended upon Canadian supplies for 23% of its demand in 2005.

C. Diversion of Rocky Mountain supplies to other markets

Fortunately for California, production of natural gas in the Rocky Mountains increased in recent years and more supplies were able to be delivered to California on a 2003 pipeline expansion from that region. California received more than twice as much Rocky Mountain supplies in 2005 compared to 2001.

However, just like Canadian production, Rocky Mountain production is also becoming constrained, and this has lead to the proposal of another major pipeline out of the Rocky Mountain region that will also deliver supplies to Midwestern and eastern markets. While market analysts expect that Rocky Mountain production will be one of the few natural gas producing areas in the U.S. that will increase production in the future, the new pipeline system could result in less Rocky Mountain production being delivered to California in the future.

D. Increasing demand, particularly from electric generation

While North American production is generally expected to remain flat or slightly increase in coming years, natural gas demand is expected to steadily increase, outstripping increases in domestic production and Canadian imports. Even if demand in California does not increase due to our strong energy efficiency and renewable energy programs, total natural gas demand in the U.S. is expected by the EIA to increase by 15.2% from 2005 to 2015. One of the main reasons that national demand is expected to increase is because electric generation relies heavily on natural gas as a fuel, and will do so increasingly in the future.

The amount of natural gas delivered as a fuel for electric generation in the U.S. increased by over 40% from 1997 to 2005 and amounts to well over 25% of total consumption. Natural gas used by electric generators in California is an even greater proportion of total demand, amounting to about 35-40% of total consumption.

The EIA forecasts an increase in natural gas demand by electric generators of about another 23% between 2005 and 2015. This estimate even assumes a 13% increase in coal use by electric generation. Increased emphasis on greenhouse gas emissions reductions may, however, result in even greater usage of natural gas, rather than coal or oil.

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E. Changes in the interstate pipeline market

While there is currently ample interstate pipeline capacity from the producing gas basins connected to California, some changes have been occurring, and may be occurring in the future, that could have a significant impact on the State's ability to fully employ that pipeline capacity.

The FERC has clearly indicated that firm deliveries of natural gas on interstate pipelines can only be assured if shippers have contracts for firm capacity on those pipelines. Over the last 10 years, there has been a marked decline in the volume of capacity in firm contracts (which have California delivery points) between shippers and the two primary southwestern interstate pipelines, El Paso Natural Gas Company (El Paso) and Transwestern Pipeline Company (Transwestern). At the same time, there has been a large increase in the demand in states east of California. If parties in those states obtain firm pipeline capacity rights on Transwestern and El Paso, while certain firm contracts with California delivery points are not obtained by pipeline shippers, California would no longer be assured that it will be able to use the previously available capacity on these pipelines at all times, i.e. on a firm basis.

In addition, due to likely changes in the future configuration of gas flows on the Transwestern pipeline system, much of the capacity currently available to California on that pipeline, could be essentially diverted to the Phoenix area market. Transwestern is currently proposing a pipeline lateral on its system that could deliver natural gas to the Phoenix area. If firm capacity rights are obtained by pipeline shippers to the Phoenix area, this will result in a reduction of the amount of gas that could be delivered to California on Transwestern on a reliable basis.

Likewise, if more of the Alberta production is used in Canada, California would not be able to have the same amount of firm access to the Canadian supply, from which California previously benefited. In fact, Gas Transmission Northwest Corporation (GTN) estimates that there is approximately 450 MMcf/d of unsubscribed capacity on its interstate pipeline, which transports natural gas from Canada to California.

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F. Increasing prices and price volatility

The price of natural gas has significantly increased since about 2002. During the 1990's and from the summer of 2001 through the fall of 2002, the average price was very steady, in the range of $2.00-$3.00 per million British thermal unit (MMBtu). During the California energy crisis, from the Summer of 2000 through the Spring of 2001, unreasonably high natural gas prices were being charged at the California border, resulting from market manipulation. Because there were ample supplies of natural gas, much of the rest of the North American markets at that time benefited from lower prices than California (with the exception of a few other western states affected by the California border prices.) There were many California ratepayers (residential and businesses), who had great difficulties paying for such high natural gas prices at that time in addition to the unreasonably high electric prices, which were independently caused by separate manipulation of the electric market.[2]

The price of natural gas has increased in years after 2002 and has become much more volatile, mainly due to market "fundamentals," i.e. the increased tension between North American supply and demand and certain other factors such as the price of oil. Higher natural gas prices are occurring not only in California but throughout North America. As noted above, the ability to produce natural gas supplies has become increasingly difficult. In addition, the cost of production has greatly increased. Most market forecasts indicate that demand will steadily increase to a greater degree than domestic production increases, while Canadian imports will decline, and that demand will only be met through increasing reliance on imports of LNG. Without new supplies from LNG to meet this demand in the future, there will be even greater upward pressure on the price of gas. Considering all of the electric generation plants dependent upon natural gas for fuel, natural gas price increases will cause electric prices to increase as well. There are many residential ratepayers and businesses, who cannot afford substantial increases in their gas and electric utility bills.

Further, if the supply/demand balance becomes tighter, the volatility of the price will become even more pronounced. Events such as swings in the weather (such as very warm weather in the summer, cold weather in the winter, or low precipitation) or sudden losses in production, e.g. due to hurricanes, will have even greater impacts on prices. Heightened price volatility makes it more difficult for consumers to manage their natural gas costs, and conditions in which constraints in supplies and/or infrastructure exist can be conducive to market manipulation.

[2] The damages to California ratepayers from just the natural gas manipulation during the energy crisis has been estimated to be approximately $8 billion.

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Therefore, to help place downward pressure on natural gas prices, lessen the likelihood of skyrocketing prices, and enhance California's portfolio of supply, it is essential that LNG becomes a new source of supply for California.

G. Efforts must be placed both on demand reduction and obtaining new supplies

Rather than wait to see how the market develops in the future, the CPUC believes it is much more reasonable to take a balanced approach now to assure ourselves that the State will have adequate supplies and access to a diverse portfolio of supplies down the road. The State should both promote strong demand reduction efforts and further its access to a variety of natural gas sources, including new sources such as LNG supplies for at least a portion of its supply requirements in coming decades.

To gain access to LNG supplies will not occur quickly. The only terminal at this time which appears positioned to deliver LNG to California in the next few years is the Sempra LNG Costa Azul terminal in Baja Mexico. Supplies from that terminal will not begin until 2008 at the earliest. Even though that terminal is a short distance from the California border, California will only receive a portion of the natural gas from that terminal's 1000 MMcfd of delivery capability, as Mexican entities already have firm commitments for a substantial amount of that supply, and other demand, such as in Arizona, will be competing with California for the remaining supply.

II. LNG Import Terminals Should Be Sited in Remote Locations

The CPUC has recognized both the need for LNG terminals to provide additional natural gas supplies to California and the need to site them in remote locations away from densely populated areas, due to the hazardous nature of these terminals. For example, in 1944, LNG spilled from storage tanks in Cleveland, and the resulting LNG vapor cloud ultimately ignited into a fire, which killed 130 people and injured 225 people. More recently, on January 19, 2004, there was an accident at the LNG export facility in Algeria, where 27 people were killed and 56 people were injured from the resulting explosions and fires.

The Sempra LNG terminal is in a remote area in Baja California, Mexico and already more than 50% constructed. A review of the trade press, discussions with LNG project sponsors, and statements by market analysts at conferences indicate that in addition to the Sempra LNG terminal, the market will support an LNG import terminal along the California coast. There are at least three LNG import terminals, which have been proposed to be located in federal waters at least 10 miles offshore along the Southern

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California coast and other potential projects as well. Therefore, LNG terminals do not need to be sited onshore in densely populated areas in California. There is no reason to expose the people in densely populated areas to any of the safety risks from an onshore LNG terminal when there are these much safer alternatives offshore.

Recent studies, which have used different assumptions to calculate the furthest distance that people could be harmed from the release of LNG as a result of an accident, terrorist attack or earthquake in worst-case scenarios, have estimated such distances to be in a range of between 4.3 to 7.3 miles from the LNG terminal or ship transporting LNG to the terminal. This is the distance that a flammable vapor cloud could spread before the LNG would become too dissipated and no longer be flammable. In all likelihood, the vapor cloud would be ignited and become a flash fire prior to reaching that maximum distance.

According to the Sandia National Laboratories Report (November 2005), in the event that the release of LNG is ignited right away and becomes a pool fire, the distance at which heat from the fire would pose a serious threat to people could reach 1.6 miles from the LNG terminal or LNG ship in a worst-case scenario. This is based upon the heat flux of 5 kilowatts per square meter (kW/m^2), which would be so hot as to cause a person to receive at least second-degree burns after an exposure to this heat of just 30 seconds.

Many scientists, including Dr. Jerry Havens (who has studied LNG safety issues for more than 30 years and is the CPUC's retained LNG safety expert), have criticized the use of the 5 kW/m^2 heat flux standard. People could be harmed by lower heat flux levels at distances more than 1.6 miles from the pool fire, because their exposure might well be for a period of time greater than 30 seconds. In a worst-case scenario, a lower heat flux of approximately 1.5 kW/m^2 (the level at which no significant harm would result to an individual even for extended exposure), would not be met until the distance from the pool fire was more than 4 miles.

Therefore, even in a worst-case scenario, an LNG import terminal at least 10 miles offshore would pose no danger or risk to the general population onshore. Under all of the recent studies of worst-case scenarios, the flammable vapor cloud, heat and/or fire would dissipate and would not spread to reach the shoreline or even get as close as 2.6 miles offshore.

For these same reasons, it is also clear that an LNG import terminal should not be sited onshore in or near a densely populated area. A worst-case scenario accident at an LNG terminal could endanger very many people in a densely populated area, living or working less than the above distances from the terminal (e.g., up to 7.3 miles for a flammable vapor cloud or 4 miles for the heat from a pool fire.) Onshore fires can also lead to secondary fires and spread to even greater distances than offshore fires, which will not spread on ocean water beyond the maximum distance that the LNG vapor cloud remains flammable (i.e., 7.3 miles).

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Even in LNG accidents that resulted in releases affecting shorter distances than in the worst-case scenarios, too many people in a densely populated area could be in harm's way. Just a ten-minute accidental spill from an LNG ship while it is unloading LNG at a terminal could result in the release of up to 550,000 gallons of LNG.

For these reasons, LNG import terminals should not be sited in densely populated areas in California, particularly because California has much safer alternatives: the proposed LNG terminals at least 10 miles offshore.

cc: Commissioner Brown
Commissioner Grueneich
Commissioner Bohn
Commissioner Chong

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