MODIFIED EXHIBIT E – CENTRAL COASTAL CALIFORNIA SEISMIC IMAGING PROJECT

STATEMENT OF FINDINGS

Modified Timing Three-Loop Configuration

August 20, 2012

INTRODUCTION TO STATEMENT OF FINDINGS

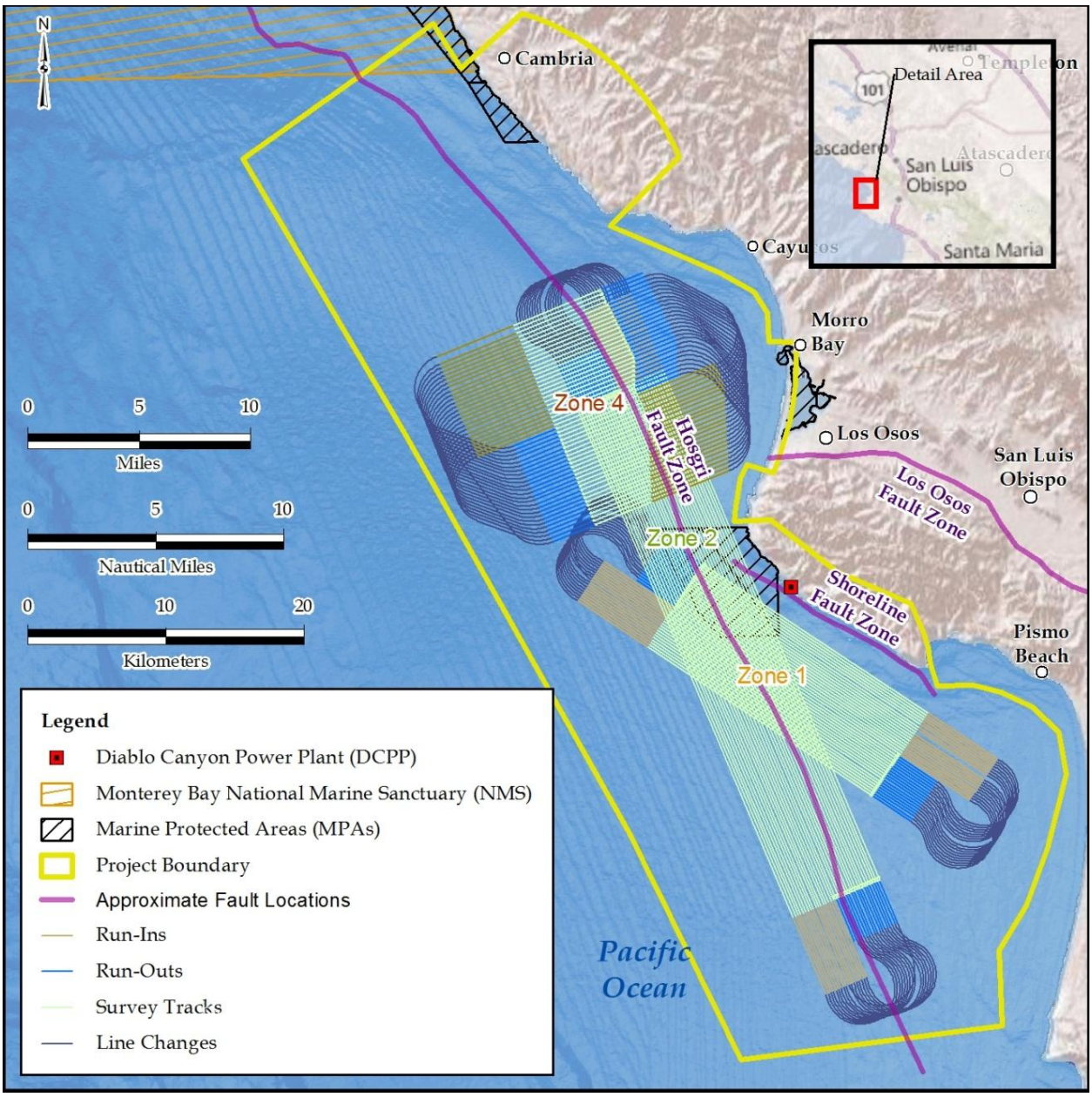
The California State Lands Commission (CSLC) has prepared these Findings to comply with the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.). The CSLC, as the lead agency under CEQA, prepared an Environmental Impact Report (EIR) (State Clearinghouse No. 2011061085) that discloses and analyzes the impacts to the environment that could result from implementation of the Central Coastal California Seismic Imaging Project (Project).[1] The CSLC adopts these Findings specifically as set forth below as part of its discretionary decision to issue a Geophysical Survey Permit to Pacific Gas and Electric Company (PG&E or Applicant). In approving the Project and Permit, the CSLC determined that modifications to the project as proposed by the Applicant were necessary and appropriate; the project as approved is hereinafter referred to as the "Modified Timing Three-Loop Configuration" or "Approved Project" (see Figure 1; see Exhibit C for a diagram of the Project as proposed by PG&E), and is described below.

Under the Approved Project, PG&E would perform a deep (6 to 9 miles [10 to 15 kilometers (km)]), three-dimensional (3D) high-energy seismic survey (that is, a survey involving equipment requiring energy input of greater than 2 kilojoules) using the National Science Foundation (NSF) Research Vessel (R/V) *Marcus G. Langseth*. The intention of the survey is to gather additional scientific information that would help PG&E better understand the relationships and/or connections among several fault zones, including the recently discovered Shoreline Fault, located near the Diablo Canyon Power Plant (DCPP), a nuclear power plant located in Avila Beach, San Luis Obispo County.

Pursuant to Public Resources Code section 6826, the CSLC has the authority to issue permits to conduct geophysical surveys on State sovereign lands, including tide and submerged lands, which extend from the shoreline to 3 nautical miles (nm) offshore. The last time the Commission approved a geophysical survey employing air guns in offshore marine waters within its jurisdiction, however, was more than 25 years ago. At its October 7, 1987, meeting, the Commission determined that permits for geophysical surveys employing air guns could not be issued unless and until an EIR was first certified. The Commission's decision was upheld by the California Court of Appeal. (*Meridian Ocean Systems, Inc., et al. v. California State Lands Commission* [1990] 222

[1] The Final EIR was published in July 2012 and is available on the CSLC website at: www.slc.ca.gov (under the "Information" tab and "CEQA Updates" link).

Figure 1 – Modified Timing Three-Loop Configuration



Cal. App. 3d 153.) The Commission had not received a subsequent application for a geophysical permit entailing the use of air guns until PG&E submitted the subject application in 2011.

Modified Timing Three-Loop Configuration (Approved Project)

While Alternative IIIb (Three-Loop Configuration) as described in the EIR reduces the survey footprint (thereby avoiding two MPAs), shortens the expected survey duration, and reduces several significant impacts as compared to the applicant-proposed Project, the CSLC determines that additional modifications to the survey timing would likely further reduce impacts to some marine species and reduce the adverse social and economic consequences on commercial fishermen, fishing-related businesses, ancillary businesses and the regional communities. **Based on all available information presented, the CSLC adopts a modified version of Alternative IIIb, as set forth below, which incorporates additional survey timing restrictions, as well as aspects of Alternative IIb (Phased Survey), which was also analyzed in the EIR.**

The Modified Timing Three-Loop Configuration consists of Alternative IIIb as modified by the following:

- Project Timing: Project-related activities including mobilization to the area, pre-survey aerial surveys, pre-survey terrestrial surveys, onshore and nearshore geophone deployment, and other initial equipment deployment will not commence prior to **October 15**. Project-related activities will not be conducted after December 31;
- Survey Activities: Use of air guns (i.e., commencement of survey) will not commence prior to **November 1**;
- Phasing Contingency: In the event the survey has not been completed by December 31, 2012, survey and related Project activities may occur between October 15, 2013, and December 31, 2013, subject to the above restrictions (e.g., no use of air guns before November 1, 2013).

In addition to the Geophysical Survey Permit that is the subject of the CSLC's present action, other public agencies will or may need to issue an approval before the Approved Project can proceed. These agencies include, but are not necessarily limited to the following:

- Port San Luis Harbor District;
- San Luis Obispo County;
- California Coastal Commission (CCC);
- California Department of Fish and Game (CDFG);
- California Department of Parks and Recreation;
- California Department of Transportation;
- California Regional Water Quality Control Board, Central Coast Region;
- State Historic Preservation Office;
- National Oceanic and Atmospheric Administration Fisheries Service;

- National Science Foundation;
- U.S. Army Corps of Engineers;
- U.S. Coast Guard; and
- U.S. Fish and Wildlife Service.

In addition to the project as proposed by PG&E, the EIR identifies and analyzes a range of reasonable alternatives to the proposed project, based on input from CSLC staff, the Applicant, local jurisdictions and the public during the EIR scoping hearings, and members of the Independent Peer Review Panel (IPRP) established by the California Public Utilities Commission *(*CPUC).[2] The EIR identifies the No Project Alternative as the environmentally superior alternative because it is the only alternative that would avoid or substantially lessen all identified potentially significant impacts, such that they would be *Less than Significant*. However, CEQA requires that "If the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives" (State CEQA Guidelines,[3] § 15126.6, subd. (e)(2)). Therefore, the EIR analyzes the remaining alternatives and identifies the Environmentally Superior Alternative, as discussed below.

Along with the applicant-proposed project, the EIR analyzes four potentially feasible alternatives that would reduce one or more of the significant effects while achieving most of the project objectives (Table 1):

Table 1 – Alternatives Analyzed in the EIR

Description of Alternative	Alternative #
The No Project alternative.	**I**
A phased alternative, under which part of the survey would be done first, followed by a delay of some months to a year before the second part of the survey was conducted.	**IIb**
A three-zone alternative that would eliminate the northern zone of the survey (Zone 3).	**IIIb**
PG&E's original generalized two-loop "racetrack" survey proposal (which was amended in January 2012), entailing two larger survey zones, instead of four smaller ones.[4]	**IIIc**

The EIR analysis concludes that each of the identified alternatives other than the No Project Alternative would reduce one or more of the significant impacts, but not to a less than significant level (see also Table 2).

[2] The IPRP was established to conduct a peer review of the proposed seismic study plans and, if the Project is implemented, to review study findings. The IPRP includes staff from the CPUC, California Energy Commission (CEC), California Seismic Safety Commission, CCC, and County of San Luis Obispo, with contract support from the California Geological Survey.

[3] The State "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

[4] Based on input from the R/V *Langseth* operator and IPRP members, PG&E determined that the refined survey design (the proposed Project analyzed in the EIR) would better address survey objectives.

Table 2 – Relative Impacts Associated with the Applicant-Proposed Project and Alternatives Analyzed in the EIR

Impact	Proposed Project	No Project	Alternative IIb	Alternative IIIb	Alternative IIIc
Noise Effects on Resident Harbor Porpoises*	Highest	Negligible	Highest	High	Moderate
Noise Effects on Migratory Baleen Whales*	Highest	Negligible	Highest	Moderate-High	Moderate
Conflicts with MPAs and MBNMS	High	Negligible	High	Moderate	Highest
Air and GHG Emissions	High	Negligible	High	Moderate	Highest
Conflicts with Fishing	High	Negligible	Highest	Moderate	High

* Indicates the average rating across all density scenarios for both Injury SEL and NMFS Minimum criteria.

- No Project Alternative: Because under Alternative I the high-energy survey would not take place, the associated impacts on air quality, marine biological resources, Marine Protected Areas (MPAs) and the Monterey Bay National Marine Sanctuary (MBNMS), and commercial and recreational fishing would not occur; however, neither would the project objectives be met.

- Phased Survey: Alternative IIb, assuming both phases were to occur, would have the same footprint, survey timing window (September-December), and total number of survey days as the project as proposed by PG&E, and is therefore expected to have comparable impacts on marine biological resources and the MPAs and MBNMS. Because mobilization and demobilization would be conducted each year, Alternative IIb would result in a net increase in criteria and greenhouse gas (GHG) emissions as compared with the project proposed by PG&E, but would also reduce the emissions in a given quarter and avoid emissions involved in refueling. Repeating mobilization and demobilization may also increase disturbance for some commercial and recreational fishing activities, potentially resulting in higher impacts to those resource areas. If the second phase did not take place, impacts associated with that phase would be eliminated. Alternative IIb would also meet all of the project objectives.

- Three-Loop Configuration: By eliminating the northern survey zone, Alternative IIIb would reduce the duration of the total project from 82 days to 68 days as compared to the project proposed by PG&E, and would shrink the footprint of the survey, thus reducing impacts on marine biological resources, air quality and GHGs, and commercial and recreational fishing. Alternative IIIb would also avoid two of the three MPAs in the Project area, and increase the distance between the survey and the MBNMS. Alternative IIIb, however, would not meet the project objective of gathering data on the Hosgri-San Simeon step-over located in the northern zone.

- Two-Loop Configuration: Because Alternative IIIc would not extend as close to shore as the project proposed by PG&E, the Alternative would reduce impacts on marine mammals; however, the estimated duration of the total project time (including mobilization and equipment set-up) would be 93 days, 11 days longer than the project proposed by the PG&E. As a result, impacts on air quality and commercial and recreational fishing would be somewhat higher than the project proposed by PG&E. Also, the northern tracklines for Alternative IIIc extend into the MBNMS, increasing conflict with MBNMS policy. The Alternative would also not address key target areas (such as the Hosgri/Shoreline intersection) as fully as the project proposed by PG&E.

The EIR analysis determined that Alternative IIIb (Three-Loop Configuration) would have the lowest overall impacts when compared to the other alternatives and the proposed project. This Alternative would accomplish the project objectives associated with survey targets in three of the proposed survey zones, but would not accomplish the objectives for data collection in the northernmost survey zone (Zone 3). In Zone 3, a survey target of interest to PG&E is the Hosgri-San Simeon step-over. However, discussions with PG&E and the IPRP revealed technical opinions that conclusions about the Hosgri-San Simeon step-over feature could be drawn from existing information, or obtained with techniques other than 3D high-energy seismic surveys. As a result of these discussions, the CSLC considers conducting seismic surveys in Zone 3 to be of less technical value than the other three proposed survey zones, and believes that Alternative IIIb would accomplish most of the project objectives. Under Alternative IIIb (Three-Loop Configuration), impacts would primarily be reduced through:

1. Reducing the survey footprint, which would:
    - avoid the White Rock-Cambria MPAs;
    - increase the survey's distance from the MBNMS;
    - reduce impacts to marine wildlife due to noise; and
    - reduce impacts to commercial and recreational fishing from preclusion; and
2. Reducing the survey duration, thereby reducing impacts to marine wildlife, air quality, greenhouse gases, and commercial and recreational fishing. Overall, the survey duration would be reduced by approximately 14 days from 82 days to 68 days - within which the period of active full air gun deployment would be reduced by approximately 7 days, from 41 days to 34 days.

During its consideration of the analysis conducted in preparation of the Final EIR, information provided by PG&E, information obtained through the public review and comment process, and other information in the administrative record, the CSLC determined that incorporating components of Alternative IIb along with additional timing restrictions and adaptive management would modify Alternative IIIb such that impacts to some marine species and adverse social and economic consequences on fishermen and the regional communities could be further reduced. This option, the Modified Timing Three-Loop Configuration, is described above and constitutes the Approved Project upon which these Findings are based.

FINDINGS REQUIRED UNDER CEQA

Findings are required by each "public agency" that approves a project for which an EIR has been certified that identifies one or more significant environmental impacts (Pub. Resources Code, § 21081, subd. (a); State CEQA Guidelines, § 15091, subd. (a)). These findings, as a result, are intended to comply with the above-described mandate that for each significant effect identified in the EIR, the CSLC adopt one or more of the following Findings.

(1) 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 EIR.

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

(3) 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 EIR.

These findings are also intended to comply with the requirement that each finding by the CSLC be supported by substantial evidence in the administrative record of proceedings, as well as accompanied by a brief explanation of the rationale for each finding. (State CEQA Guidelines, § 15091, subds. (a), (b).) To that end, these findings provide the written, specific reasons supporting the CSLC's decision under CEQA to issue the Geophysical Survey Permit for the Modified Timing Three-Loop Configuration. Although the EIR does analyze the Approved Project's conflicts with and preclusion of other ocean uses in the Project area, such as commercial and recreational fishing, economic losses that may occur as a result of the Project are not quantified and compensation for such losses is not proposed for the following reasons:

- Economic effects are not considered to be significant effects pursuant to the State CEQA Guidelines (§ 15131, subd. (a)).
- CEQA requires that "an EIR shall describe feasible measures which could minimize *significant* adverse impacts" [emphasis added] (§ 15126.4, subd. (a)(1)).
- Therefore, no mitigation (compensation) was proposed for economic losses.

Socioeconomic effects are described in the EIR, are considered in the CSLC's Statement of Overriding Considerations (Modified Exhibit F), and are considered in the CSLC's decision to approve the Modified Timing Three-Loop Configuration. In so doing, the Findings, where appropriate, explain the specific reasons the CSLC rejects the Environmentally Superior Alternative as infeasible due to social and economic impacts to the regional communities. Furthermore, as explained below, the CSLC finds that while the Approved Project may result in greater impacts than the Environmentally Superior Alternative in some instances, by confining the project survey window to the November 1 to December 31 window (mobilization may begin October 15), the severity

of impacts would be less than what was identified in the EIR's analysis of Alternative IIb (Phased Survey).

Comparison of Alternative IIIb and the Approved Project

In adopting the Modified Timing Three-Loop Configuration, an option to Alternatives IIIb and IIb, the CSLC has balanced the economic, legal, social, technological, and other benefits of the project, including region- or statewide environmental benefits, against the adverse environmental consequences. In this respect, some specific significant impacts would decrease or may increase as compared to Alternative IIIb, depending on when PG&E completes surveying the target faults identified in its Project Objectives.

Implementation of adaptive management, as suggested during public comment (see Comment Letter No. 23 in the Final EIR, Volume 1, from the Natural Resources Defense Council, Ocean Conservancy, and The Otter Project, May 3, 2012) could also decrease impacts. If all, or part, of the year one survey fails to yield useful data, the survey proposed for year two could be reduced or eliminated and related impacts avoided entirely.

For example:

- With the shortened Project duration, total vessel emissions and emissions during the fourth quarter of 2012 under the Modified Timing Three-Loop Configuration (Approved Project) would be less than those resulting from the Environmentally Superior Alternative (Alternative IIIb), if PG&E is able to complete the Project in a single year. This could be accomplished if there were fewer delays caused by equipment malfunctions, weather, presence of marine mammals, or other circumstances than PG&E anticipates may occur in year one.
- Vessel emissions would likely be greater, however, if PG&E needs to complete the Project in year two, since PG&E would need to bring the survey vessel back to the Project area, and would need to repeat mobilization and demobilization activities, in the second year. However, the severity of the quarterly emissions exceedances would be less.
- Similar impacts relating to some marine mammals, MPAs, and Fishing activities may also be reduced or increased under the Modified Timing Three-Loop Configuration option depending on whether PG&E is able to complete the survey in one year or two years.

ADMINISTRATIVE RECORD OF PROCEEDINGS

These Findings are based on the information contained in the 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. References cited in these Findings can be found in the EIR, Section 9.0, References. The administrative record is located in the Sacramento office of the California State Lands Commission, 100 Howe Avenue, Suite 100-South, Sacramento, CA 95825.

SUMMARY OF FINDINGS

All environmental impacts of the Project identified in the EIR are listed below; the significance of each impact is classified as follows.

Table 3 – Summary of Significance Findings

Definition	Class	Findings Required
Significant and Unavoidable. Significant adverse impact that remains significant after mitigation	**SU**	**Yes**
Less than Significant with Mitigation. Significant adverse impact that can be eliminated or reduced below an issue's significance criteria	**LTSM**	**Yes**
Less than Significant. Adverse impact that does not meet or exceed the identified significance criteria	**LTS**	No
No Impact	**N**	No

Based on initial scoping, the Project was not anticipated to impact the following resource areas, which were eliminated from consideration in the EIR:

- Agriculture and Forestry Resources
- Mineral Resources
- Population and Housing
- Public Services
- Utilities and Service Systems

Furthermore, the analysis in the EIR found that the Project would have less than significant impacts on the following resource areas:

- Aesthetics
- Geology and Soils
- Public Safety
- Sediment and Water Quality
- Traffic and Transportation

For the remaining potentially significant effects, the Findings set forth below are:

1. Organized by significant impacts within the following EIR issue areas:
    - Air Quality [**AQ**];
    - Terrestrial Biological Resources [**TERBIO**];
    - Marine Biological Resources [**MARINEBIO**]
    - Cultural Resources [**CUL**];
    - Greenhouse Gases [**GHG**];
    - Land Use and Recreation [**LU**];
    - Noise [**NO**]; and
    - Commercial Fishing [**FISH**].
2. Numbered in accordance with the impact and mitigation numbers identified in the Mitigation Monitoring Program (MMP) in the EIR (see Section 8.0 of the EIR)

(Findings may not be numbered sequentially, since impacts that are less than significant [LTS] or no impact [N] do not require Findings); and

3. Followed by an explanation of the rationale for each Finding.

Wherever Finding (3) is made, the CSLC has determined that, even after implementation of all feasible mitigation measures and consideration of feasible alternatives, the identified impact would exceed the significance criteria set forth in the EIR. Furthermore, to the extent that potentially feasible measures have been alleged or proposed, the Findings explain why certain economic, legal, social, technological or other considerations render such possibilities infeasible. The significant and unavoidable impacts requiring Finding (3) are identified in the EIR, discussed in the Responses to Comments (Section II of the Final EIR), and explained below. Having done everything it can to avoid and substantially lessen these effects consistent with its legal authority and CEQA, the CSLC finds in these instances that overriding economic, legal, social, and other benefits of the proposed project as modified by the Modified Timing Three-Loop Configuration outweigh the resulting significant and unavoidable impacts. The Statement of Overriding Considerations adopted as Modified Exhibit F applies to all such unavoidable impacts, as required by CEQA (Pub. Resources Code, § 21081, subd. (b); State CEQA Guidelines, §§ 15092, 15093).

EIR FINDINGS

These Findings are based on the information contained in the 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.

CEQA FINDING NO. AQ-1 Class: **SU**

Impact No.:	**AQ-1:** Mobilization and demobilization activities (including equipment deployment and retrieval) would result in daily emissions of criteria pollutants that would exceed air quality significance thresholds.
Finding(s):	(1) 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 EIR. (3) Specific economic, legal, social, technological or other considerations make infeasible the mitigation measures or project alternatives identified in the EIR.

EXPLANATION

During mobilization and demobilization, the survey vessel is expected to emit criteria pollutants[5] while it travels to and from the Project area. Additional emissions are expected from the support boats used to deploy the equipment and to transport the

[5] As discussed in EIR Section 4.2, Air Quality, criteria pollutants include carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter with a diameter of 10 microns or less (PM_{10}) and 2.5 microns or less ($PM_{2.5}$), lead (Pb), sulfates (SO_4), and hydrogen sulfide (H_2S).

survey crew, required equipment, and support provisions to the survey vessel. There would also be some contribution from onshore construction vehicles that would be used to deploy the onshore geophones. Estimated criteria pollutant emissions during mobilization and demobilization (including equipment deployment and retrieval) exceed the daily air quality significance thresholds.

As previously discussed, the EIR analysis determined that Alternative IIIb, which eliminates the northernmost survey zone, would accomplish the project objectives associated with the primary survey targets; the EIR identifies this alternative as the Environmentally Superior Alternative. Mobilization and demobilization vessel emissions for Alternative IIIb would be the same as emissions for the proposed project. However, onshore emissions would be reduced because geophones would not need to be deployed in the Northern area, thereby reducing vehicle emissions associated with that activity. However, even under this Alternative, it is likely that mobilization and demobilization for survey operations would affect air quality. Under the Approved Project, daily emissions of criteria pollutants would be the same as for Alternative IIIb, but would occur over 2 years, if the second survey year were necessary. However, the total emissions as a result of the Approved Project would be greater as a result of having to mobilize and demobilize an additional time. As explained below, the CSLC identified or addressed potentially feasible mitigation measures in the EIR (including in the Response to Comments) that could avoid, substantially lessen, or further reduce the significant effect, based on the environmental analysis in the EIR, and public and public agency input. However, the CSLC has not identified any feasible mitigation measures or project design elements that would reduce the effect to a less than significant level based on the identified thresholds of significance.

Furthermore, to the extent Alternative IIIb, the Environmentally Superior Alternative, could reduce this impact by avoiding the daily emissions associated with the second survey year, the CSLC finds this alternative infeasible based on the economic and social impacts that would result to fishermen, fishing-related businesses, ancillary businesses, and the regional communities and the need to reduce the duration that these community members experience economic hardship in any given year. These impacts are described in EIR Sections 4.13 – Commercial Fishing and 7.1 – Socioeconomic Effects, as well as documented in written comments and oral public testimony provided during the environmental documentation process. Additionally, the CSLC, in its approval is imposing further survey duration and timing constraints to avoid or minimize to the extent feasible the impacts associated with the additional survey year. As a result, the CSLC concludes the above-described evidence in the record renders Alternative IIIb infeasible due to social and economic considerations.[6]

[6] As explained in *California Native Plant Society v. City of Santa Cruz* (2009) 177 Cal.App.4th 957, 1000, "When it comes time to decide on project approval, the public agency's decisionmaking body evaluates whether the alternatives [analyzed in the EIR] are *actually* feasible….At this final stage of project approval, the agency considers whether '[s]pecific economic, legal, social, technological, or other considerations…make infeasible the mitigation measures or alternatives identified in the environmental impact report.' Broader considerations of policy thus come into play when the decisionmaking body is considering actual feasibility than when the EIR preparer is assessing potential feasibility of the alternatives" [citations omitted].

SUMMARY OF MITIGATION AND RATIONALE

MM AQ-1a. The "Standard Mitigation Measures for Construction" listed in the San Luis Obispo County Air Pollution Control District (APCD) CEQA Handbook are established by the APCD to reduce emissions of criteria pollutants from off-road construction equipment, and are routinely applied to projects in San Luis Obispo County. These mitigation measures have proven effective in reducing emissions of criteria pollutants from off-road construction equipment and reducing impacts to sensitive receptors in the project area. The standard mitigation measures are considered to be a standard good practice by the APCD. This measure would be consistent with APCD guidance for reducing emissions for short-term activities.

MM AQ-1b. The Best Available Control Technology (BACT) Measures listed in the current APCD CEQA Handbook are established by the APCD to reduce emissions of criteria pollutants from off-road construction equipment, and are routinely applied to projects in San Luis Obispo County. In particular, these mitigation measures are effective at reducing emissions of ozone precursors (volatile organic carbon [VOC] and nitrous oxides [NOx]). This measure would be consistent with APCD guidance for reducing emissions for short-term activities.

As described above, potentially feasible mitigation measures to reduce this significant impact would involve actions to avoid or reduce total emissions from Project-related vessels and vehicles. Mitigation Measures (MMs) AQ-1a and AQ-1b are identified in the EIR and incorporated into the CSLC's approval and MMP. A requirement that the survey vessel meet the California Air Resources Board's (CARB) Tier 2 engine certification was identified as a potentially feasible measure in the Draft EIR; however, PG&E provided compelling information that it would be technologically infeasible to meet this requirement because the engine power needed to tow the air gun array and hydrophone streamers prevents meeting Tier 2 certification. The CSLC agrees with this conclusion and, therefore, finds the measure infeasible. Other suggestions and recommendations in the record included those provided by the APCD in its written comments. However, as explained in the CSLC's response to the APCD in the Final EIR, it has been infeasible for the CSLC, at this time, to identify a comprehensive set of actions to mitigate this significant impact through avoidance or minimization of emissions. The required actions under MM AQ-1a and MM AQ-1b achieve all that feasible, including setting forth measurable performance criteria, but the impact nonetheless remains significant.

Implementation of the Modified Timing Three-Loop Configuration would reduce air quality impacts by eliminating the need for onshore survey activities in the Northern onshore area. MMs AQ-1a and -1b are designed to reduce emissions of criteria pollutants from off-road construction equipment, and are consistent with measures established by the local APCD to control short-term emissions. However, these measures cannot effectively be applied to vessels, and therefore vessel emissions would not be reduced. (See also AQ-3b.) Therefore, even with implementation of the Modified Timing Three-Loop Configuration, San Luis Obispo County Standard Mitigation Measures and BACT Measures, emissions from vessels would still exceed the daily

significance thresholds and the mitigated emissions would be considered *Significant and Unavoidable*.

CEQA FINDING NO. AQ-2	Class: **SU**
Impact No.:	**AQ-2:** Survey activities would result in daily emissions of criteria pollutants that would exceed air quality significance thresholds.
Finding(s):	(1) 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 EIR. (3) Specific economic, legal, social, technological or other considerations make infeasible the mitigation measures or project alternatives identified in the EIR.

EXPLANATION

As proposed by PG&E, project activities would occur over an 82-day period, including mobilization and demobilization. The actual survey, including anticipated interruptions for equipment maintenance, vessel refueling, and additional shut-downs for marine mammal presence, crew changes, and unanticipated weather delays, would be conducted over 65 days.

Air emissions during survey operations would be primarily from the survey vessel engines as the vessel tows strings of seismic sources (air guns) and sound recording devices (hydrophones) along pre-determined routes. Additional emissions are also expected from the supporting vessels that would be concurrently conducting mammal surveys, supporting the primary seismic vessel, and scouting the area for obstructions. During this time, construction vehicles, including Vibroseis™ and Accelerated Weight Drop (or equivalent) rigs, would also be operated to produce an onshore seismic wave.

As previously discussed, the EIR analysis determined that Alternative IIIb, which eliminates the northernmost survey zone, would accomplish the project objectives associated with the primary survey targets, and identified this alternative as the Environmentally Superior Alternative. Under this Alternative, the active survey operation would be shortened by approximately 7 days (from 41 to 34 days), and refueling would not be needed. These changes combined would reduce the overall survey duration by 14 days (from 82 to 68 days), and would accordingly reduce the potential impacts to air quality due to the Project. However, even under this Alternative, it is likely that survey operations would affect air quality. Under the Approved Project, daily emissions of criteria pollutants would be the same as for Alternative IIIb, but would occur over 2 years, if the second survey year were necessary.

Emission estimates generated in support of the EIR indicate that the criteria pollutant emissions during survey operations would exceed the daily significance thresholds. Consequently, the impact from the uncontrolled emissions during mobilization would be considered *Significant*. As explained below, the CSLC identified or addressed potentially feasible mitigation measures in the EIR (including in the Response to

Comments) that could avoid, substantially lessen, or further reduce the significant effect, based on the environmental analysis in the EIR, and public and public agency input. However, the CSLC has not identified any feasible mitigation measures or project design elements that would reduce the effect to a less than significant level based on the identified thresholds of significance..

SUMMARY OF MITIGATION AND RATIONALE

See discussion under Impact AQ-1, above. Implementation of the Modified Timing Three-Loop Configuration would reduce adverse effects on air quality by reducing the survey duration. As previously discussed under Impact AQ-1, potential impacts from off-road construction equipment could be reduced through the implementation of the Standard Mitigation Measures (MM AQ-1a) and BACT (MM AQ-1b). However, even with the CSLC's approval of the Modified Timing Three-Loop Configuration, these MMs would not reduce emissions from vessels to below the significance threshold identified in the EIR, and no additional feasible measures are known at this time; therefore, the CSLC finds that this effect remains *Significant and Unavoidable*.

CEQA FINDING NO. AQ-3 Class: **SU**

Impact No.:	**Impact AQ-3**: Total Project activities would result in quarterly emissions of criteria pollutants that would exceed air quality significance thresholds.
Finding(s):	(1) 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 EIR. (3) Specific economic, legal, social, technological or other considerations make infeasible the mitigation measures or project alternatives identified in the EIR.

EXPLANATION

Because the total Project duration is expected to last at least one (calendar) quarter, the total emissions must be evaluated against the quarterly significance criteria for criteria pollutants. The total quarterly emissions estimated for the Project exceed the Quarterly Level 1 and 2 air quality thresholds. Under the Approved Project, the emissions associated with total Project activities would not occur during the first fifteen days of the quarter (October 1 through 15), and would be split over two quarters, if the second survey year were necessary, thus reducing the emissions in any one quarter, even with repeated mobilization and demobilization. However, even with this reduction, quarterly criteria pollutant emissions may exceed air quality thresholds. In accordance with San Luis Obispo County APCD rules, an exceedance of the Quarterly Level 1 thresholds requires implementation of Standard (APCD) Mitigation Measures and BACT for construction equipment (MM AQ-1a and AQ-1b, respectively). An exceedance of Level 2 thresholds additionally requires implementation of a Construction Activity Management Plan (CAMP) and off-site mitigation. The CAMP is a plan that contains details about the construction activities and identifies the mitigation measures that will

be used to reduce criteria pollutant emissions. The Applicant will submit the CAMP to the SLO APCD for review and approval prior to the start of construction.

As explained below, the CSLC identified or addressed potentially feasible mitigation measures in the EIR (including in the Response to Comments) that could avoid, substantially lessen, or further reduce the significant effect, based on the environmental analysis in the EIR, and public and public agency input. Furthermore, the Approved Project would further reduce impacts by beginning later in the quarter and, potentially, splitting survey activities and associated emissions over two years. However, the CSLC has not identified any feasible mitigation measures or project design elements that would reduce the effect to a less than significant level based on the identified thresholds of significance.

SUMMARY OF MITIGATION AND RATIONALE

For MM AQ-1 and AQ-2, See discussion under Impact AQ-1, above.

MM AQ-3a. Fugitive dust controls such as those identified in the MM are listed in the current APCD CEQA Handbook, and are established by the APCD to reduce fugitive dust emissions from off-road construction equipment. These mitigation measures are designed to keep fugitive dust emissions below the 20 percent opacity limit identified in the APCD Rule 401 Visible Emissions and to ensure that dust is not emitted offsite. These measures are routinely applied to projects in San Luis Obispo County and would be consistent with APCD guidance for reducing emissions for short-term activities.

MM AQ-3b. Implementation of Emission Reduction Programs (ERP) is an approach used by air pollution control districts and the state of California to help meet air quality standards and reduce community exposure to criteria pollutants. An example of an existing ERP is the SLO APCD Engine Emission Reduction Incentive (EERI) Program. This program provides funding on a first-come-first-served basis to help pay for projects that reduce heavy-duty diesel engine emissions. This mitigation provides an enforceable mechanism for PG&E to coordinate with the APCD to develop specific measures to reduce or offset emissions. Because vessels would be the main source of the estimated emissions, and there are few standard measures suitable for vessels, this mitigation would allow the APCD and PG&E to develop a combination of feasible measures.

As described above, potentially feasible mitigation measures to reduce this significant impact would involve actions to avoid or reduce total emissions from project-related vessels and vehicles, and additionally involve compensatory measures that will be identified in the ERP. MMs AQ-3a and AQ-3b are identified in the EIR and incorporated into the CSLC's approval and MMP as a result. While the MM specifies, to the extent feasible, performance criteria that must be met, the specific provisions of the ERP required by MM AQ-3b are not known at this time, and could not feasibly be known at the time the EIR was prepared. PG&E met with the APCD In April 2012 to discuss project air emissions and the need for PG&E to prepare an ERP. The APCD staff has stated that it is confident that implementation of the to-be-developed ERP would

successfully reduce project emissions below daily and quarterly air quality significance thresholds; however, the particular measures of the ERP that would ensure this reduction are still in development, and rely to a large extent on the information presented in the EIR and identification of vessels and boat owners who may participate (therefore making it infeasible to complete the ERP and include it as an MM in the EIR). The CSLC finds this impact remains and will remain significant until such time that specific feasible mitigation is developed as a result of negotiations between the APCD and PG&E. The CSLC also notes there is no guarantee that this type of mitigation is practicable. Therefore, the Project impacts on air quality remain *Significant and Unavoidable*.

Cumulative Impacts: Impacts to Air Quality as a result of the Project would be cumulatively considerable. While the approval of the Modified Timing Three-Loop Configuration and implementation of the above-described mitigation measures reduce the total emissions in impacts AQ-1, AQ-2 and AQ-3, these impacts all remain *Significant and Unavoidable*, and therefore the CSLC concludes that the cumulative impacts related to Air Quality are likewise *Significant and Unavoidable*. As described in the EIR, any impact that exceeds significance thresholds is cumulatively significant because the significance thresholds used in the EIR were developed by considering the entire air basin.

CEQA FINDING NO. TERBIO-2 Class: **LTSM**

Impact No.:	**TERBIO-2:** Lighting from offshore survey activities would adversely affect migrating birds.
Finding(s):	(1) 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 EIR.

EXPLANATION

Proposed offshore activities would not impact most terrestrial biological resources, but they could impact wildlife migrating or feeding in the offshore project area. Offshore seismic activities would occur 24 hours per day, and lighting would be required at night for safety reasons, and to enhance detection of marine wildlife. Night lighting can be detrimental to animals in nearby areas for a variety of reasons, including disruption of circadian rhythms, disruption of melatonin levels, avoidance due to light sensitivity in species with exceptional night vision, increased predation, increased mortality on roads, and decreased food consumption by small, nocturnal, herbivorous animals. The typical net effect of lighting is that adjacent areas are utilized to less than their fullest extent.

In particular, birds that spend most of their lives at sea are often highly influenced by artificial lighting in coastal areas and in dark, two-dimensional ocean environments. Nocturnal seabird species may be attracted to lights because of their predilection for bioluminescent prey. Fledgling bird species such as murrelets and petrels have a particularly strong tendency to move towards artificial lights; however, the seismic

surveys would be conducted during the late fall months, when fledgling birds would not be expected to occur in the project area.

Artificial night lighting associated with the project could attract and disorient migrating birds. The tendency of birds to move toward lights when migrating at night, and their reluctance to leave the sphere of light influence for hours or days once encountered, has been well documented. This tendency seems to increase on dark nights, coupled with inclement weather. The seismic survey activities would occur during the fall migration season (from September through December), and along the Pacific Flyway bird migration corridor.

In its comments on the Draft EIR, PG&E provided Summary Observation Log Notes documenting avian behavioral reactions to nighttime light from offshore platforms, from a 2010 study prepared for the Bureau of Ocean Energy Management Regulation and Enforcement (BOEMRE). The BOEMRE study found that no adverse reactions by birds to platform lighting were observed. While these observations pertain to illuminated fixed structures, avian behavioral patterns associated with the project, which involves a limited number of moving vessels during night-time activities, are not expected to be markedly different, with the exception that roosting/nesting would not be as likely.

The EIR concludes that impacts of offshore lighting would be relatively small, because (1) vessel lighting would be on a small number of moving vessels (i.e., three), and (2) the nighttime lighting would be short-term (i.e., for approximately 41 days).

As previously discussed, the EIR analysis determined that Alternative IIIb, which eliminates the northernmost survey zone, would accomplish the project objectives associated with the primary survey targets, and identified this alternative as the Environmentally Superior Alternative. Under this Alternative, the active survey operation would be shortened by approximately 7 days (from 41 to 34 days), and refueling would not be needed. These changes combined would reduce the overall survey duration by 14 days (from 82 to 68 days), and accordingly reduce the potential impacts due to nighttime lighting. Under the Approved Project, active survey operations would be similarly shortened and the need for refueling eliminated. Also, because project activities would be limited to October 15 through December 31 of each year, impacts would occur during less of the September-through-December fall migration period, but would have impacts over two years, if the second survey year were necessary. Because of repeated mobilization and demobilization, the overall survey duration would also be slightly longer than Alternative IIIb.

Even under Alternative IIIb, the Environmentally Superior Alternative, and the Approved Project, despite the limited number of ships emitting light and the short duration, lighting could still adversely affect birds in the various ways described above and would be considered a *Significant* impact prior to the implementation of mitigation. The CSLC therefore requires implementation of light reduction measures as described in the EIR and incorporated into the CSLC's approval and MMP.

SUMMARY OF MITIGATION AND RATIONALE

MM TERBIO-2. Light reduction procedures, such as those identified in the MM, are commonly applied to nighttime vessel operations. However, vessel lighting is also essential for safe navigation, and may also improve monitoring efforts for marine mammals (see MM MARINEBIO-12d). This mitigation requires PG&E to minimize vessel lighting that would not interfere with safe operation of the Project vessels.

Safe operation of vessels requires some nighttime lighting, but vessel lighting that can be safely reduced will reduce the impact on seabirds. Implementation of the Modified Timing Three-Loop Configuration would reduce this adverse effect by reducing the survey footprint and duration. With the implementation of the recommended mitigation measure, impacts would be reduced to *Less than Significant*.

CEQA FINDING NO. TERBIO-7

Class: **LTSM**

Impact No.:	**TERBIO-3:** Onshore seismic survey activities may require some limited tree trimming, which could adversely affect native oak trees by improper thinning, or disease transmittance.
Finding(s):	(1) 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 EIR.

EXPLANATION

Onshore terrestrial biological resources—such as special-status species, sensitive natural communities, wetlands and other waters of the United States, and native oak trees—occur throughout the project area. Most of the onshore project components would be restricted to disturbed roads and trails and there would be minimal ground disturbance or impacts to terrestrial resources.

Tree trimming would not likely be required along paved roads with existing vehicular traffic; however, trees may be present along lesser-used unpaved roads and trails. Trees that need to be trimmed to facilitate equipment access along the seismic routes could be adversely affected if they are trimmed improperly (e.g., over-trimmed) or trimmed with contaminated equipment, which could result in the trees becoming diseased. Under the Approved Project, impacts would be equivalent, if the second survey year were necessary, but split up over two years. Potentially feasible mitigation measures to reduce this significant impact would involve actions to minimize tree-trimming and ensure only a qualified person conducted any necessary trimming. MM TERBIO-7 is identified in the EIR and incorporated into the CSLC's approval and MMP as a result.

SUMMARY OF MITIGATION AND RATIONALE

MM TERBIO-7: If trees need to be trimmed to allow the survey vehicles access to survey routes, this measure will require the trimming to be conducted by a certified

arborist to avoid the potential spread of disease and damage to oak and other native trees.

With the implementation of the recommended mitigation measure, impacts would be reduced to *Less than Significant*.

CEQA FINDING NO. TERBIO-8	Class: **LTSM**
Impact No.:	**TERBIO-8:** Onshore trucks and equipment required for the Project would result in the spread of invasive species and the pathogen responsible for Sudden Oak Death.
Finding(s):	(1) 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 EIR.

EXPLANATION

Invasive weeds, which can take over the native vegetation and negatively impact the local economy and natural habitat, can spread through contaminated equipment, including trucks and clothes. Contaminated equipment can also spread Sudden Oak Death (*Phytophthoraramorum*), a disease of oak trees and more than 100 other plant species. This disease has been found throughout much of coastal California, but to date has not become established in San Luis Obispo County. This disease has killed over a million trees in coastal California forests and has the potential for broad ecological changes to natural areas, including significantly increasing the risk of wildfire. This pathogen is also a serious concern to the commercial nursery industry. Trucks contaminated with Sudden Oak Death could spread this pathogen throughout the Project area.

As previously discussed, the EIR analysis determined that Alternative IIIb, which eliminates the northernmost survey zone, would accomplish the project objectives associated with the primary survey targets, and identified this alternative as the Environmentally Superior Alternative. Under this Alternative the onshore survey activities would only be conducted in the Central and Southern areas, and would no longer be needed for the Northern onshore area. Accordingly, the potential for project-related vehicles to spread invasive weeds and/or Sudden Oak Death would be reduced when compared to the proposed project. This reduction would also occur under the Approved Project, which has the same onshore footprint as Alternative IIIb. Potentially feasible mitigation measures to reduce this significant impact would involve actions to minimize the spread of disease through vehicle sanitizing practices. MM TERBIO-8 is identified in the EIR and incorporated into the CSLC's approval and MMP as a result.

SUMMARY OF MITIGATION AND RATIONALE

MM TERBIO-8: This mitigation measure is designed to reduce the spread of invasive weeds and Sudden Oak Death by removing seeds and spores from project-related vehicles prior to entry into the project area.

Implementation of the Modified Timing Three-Loop Configuration would reduce this adverse effect by omitting survey activities in the Northern onshore area. With the implementation of the recommended mitigation measure, impacts would be reduced to *Less than Significant*.

CEQA FINDING NO. MARINEBIO-1 Class: **LTSM**

Impact No.:	**MARINEBIO-1:** Vessel transit during mobilization and demobilization activities would potentially disturb or kill (due to collision) sea turtles, fish, or marine mammals
Finding(s):	(1) 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 EIR.

EXPLANATION

The R/V *Langseth*, R/V *Sea Trek*, and M/V *Dolphin II* would mobilize to the project area from San Diego, approximately 240 nm (444 km) from Morro Bay. The cruising speed of the *Langseth* when not towing seismic gear is up to 12 knots (22 km per hour), and transit from San Diego is expected to require about 6 days. The M/V *Michael Uhl* (or similarly sized local vessel) would also travel within the project area during mobilization and demobilization activities. The cruising speed of the *Michael Uhl* is 8.5 knots (16 km per hour), with a maximum speed of 10 knots (18.5 km per hour).

Sea turtles, fish, or marine mammals could be disturbed or struck by the vessels during mobilization to the project area. As discussed in the EIR, ship strikes involving whales are fairly common, including whales known to migrate through the project area. The timing of the survey, when fewer whales would likely to be in the project area, would reduce potential impacts to migrating whales. During transit to and from the site, the project-related vessels would typically travel at speeds lower than the range of speeds associated with marine mammal collisions (greater than 13 knots [24 km per hour]). However, lethal collisions, even with slow-moving survey boats, have recently occurred in the region and the risk of collisions may increase at night when surface feeding rates increase. As discussed in the EIR, given their behavior patterns, turtles and fish are less likely than whales to be involved in a ship strike.

As previously discussed, the EIR analysis determined that Alternative IIIb, which eliminates the northernmost survey zone, would accomplish the project objectives associated with the primary survey targets, and identified this alternative as the Environmentally Superior Alternative. Under this Alternative, refueling would not be needed, thereby reducing the potential for ship strikes of marine wildlife during transit. Under the Approved Project, refueling would also be eliminated, but mobilization and demobilization would occur twice, if the second survey year were necessary. However, mobilization would not occur until October 15 in both instances, when regional densities of many marine species, particularly marine mammals, are lower than in September. Consequently, although the total duration of mobilization and demobilization would

increase with the Approved Project, the likelihood of collisions during each mobilization is expected to decrease,

Under every alternative except the No Project Alternative, ship strikes remain a possibility during transit. Potentially feasible mitigation measures to reduce this significant impact would involve procedures for reducing the chances of collision by maintaining safe distances when mammals are observed, and for reporting all physical contact and near-misses that may occur during mobilization and demobilization. MM MARINEBIO-1 is identified in the EIR and incorporated into the CSLC's approval and MMP as a result.

SUMMARY OF MITIGATION AND RATIONALE

MM MARINEBIO-1: The development and implementation of protocols that require safe distances from marine mammals during transit will reduce the chances of striking an animal during transit to and from the Project area.

Implementation of the Modified Timing Three-Loop Configuration would reduce this adverse effect by eliminating the need for refueling during the surveys and by timing mobilization during a period of lower marine mammal densities, even though mobilization and demobilization would occur twice; however, the modification but would not avoid this impact altogether. Project vessels will be required to maintain safe distances from marine mammals by implementing protocols that apply to transit to and from the Project area, which will reduce the potential for vessel strikes to *Less than Significant*.

CEQA FINDING NO. MARINEBIO-12	Class: **SU**
Impact No.:	**MARINEBIO-12:** Injury or mortality of marine mammals would occur due to noise during seismic survey acquisition.
Finding(s):	(1) 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 EIR. (3) Specific economic, legal, social, technological or other considerations make infeasible the mitigation measures or project alternatives identified in the EIR.

EXPLANATION

The potential impacts of anthropogenic noise on marine mammals may vary from no effect to potentially lethal. A large amount of research over the last two decades has attempted to quantify these effects. For a species to be affected by noise, the amplitude, duration and frequency of the noise influence how the animal is affected. It is also important to consider the hearing ability and behavioral state of the animal to determine how sensitive it may be to the noise as well as whether the animal is likely to be in the vicinity of the noise source. Potential effects of noise may be classified into the following categories:

- Masking;
- Behavioral disturbance;
- Temporary hearing loss (TTS) or permanent hearing loss (PTS); and
- Other physiological effects (e.g., stress or immune response).

As defined under the Marine Mammal Protection Act (MMPA), "take" means "harass, hunt, capture, kill or collect, or attempt to harass, hunt, capture, kill or collect. "Harassment is defined under the MMPA as any act of pursuit, torment, or annoyance that:

- has the potential to injure a marine mammal or marine mammal stock in the wild *(termed Level A Harassment)*; or
- has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, but which does not have the potential to injure a marine mammal or marine mammal stock in the wild *(termed Level B Harassment)*.

The EIR employs a number of techniques to analyze the expected noise levels and exposure resulting from the project and the effects those conditions may have on marine mammals. The EIR provides estimates of the numbers of expected "takes" by species. The analysis also used factors such as population size, density expected during the survey, and sensitivity to the frequencies that would be generated by the air guns and other noise sources to put those estimates into the context of the vulnerability of each species. For special status species, a single "take"—from either physical injury or behavioral disturbance—is considered to be significant in this analysis. The EIR found *Significant and Unavoidable* impacts to fin, humpback and blue whales resulting from noise. Substantial interference in the movement of any native resident, such as the Morro Bay stock of harbor porpoise, is also considered to be significant. Based on this threshold, the project's impacts on the Morro Bay stock of harbor porpoise are expected to be *Significant and Unavoidable*. Project impacts on sea otters are also considered to be *Significant and Unavoidable* because of the proximity of the survey to sea otter habitat and the species' special status under State and federal laws, although the survey is unlikely to affect pup areas (see Impact MARINEBIO-13 below).

PG&E's proposal to conduct the survey in a window between September and December reduces, but does not eliminate, significant impacts to some marine mammals. More specifically, the likelihood of occurrence of many non-resident marine mammals, particularly the federally endangered blue, fin and humpback whales, decreases over the course of the proposed survey window.

As previously discussed, the EIR analysis determined that Alternative IIIb, which eliminates the northernmost survey zone, would accomplish the project objectives associated with the primary survey targets, and identified this alternative as the Environmentally Superior Alternative. Under this Alternative, the omission of Zone 3 would reduce potential noise-related impacts to marine mammals present within the

northernmost portion of the project area. In addition, the active survey operation would be shortened by approximately 7 days (from 41 to 34 days), and refueling would not be needed. These changes combined would reduce the overall survey duration by 14 days (from 82 to 68 days), and would accordingly reduce the impacts associated with exposure to and disturbance from underwater noise to marine mammals. Under the Approved Project, active survey operations would be similarly shortened and the need for refueling eliminated. Restriction of air gun operation to November and December over two years would also shift the survey further outside the whale migration season than Alternative IIIb, thus reducing impacts to some mysticete species such as the federally endangered blue, fin and humpback whales, and would reduce the level of these impacts as compared to Alternative IIb (Phased Survey) because that alternative assumed a September through December window in both years. However, as described in detail in Section II of the Final EIR (Responses to Comments), the Approved Project would not reduce the overall impact to some marine mammals because it would result in disturbance and injury in two consecutive years instead of a single disturbance; this could particularly impact the resident Morro Bay harbor porpoise population, whose individuals would likely experience the survey both years. Based on the noise modeling results and analysis of impacts to marine mammals expected to be in the area, the potential impact for both Alternative IIIb and the Approved Project is Significant.

Potentially feasible mitigation measures to reduce this significant impact would involve actions to avoid or reduce the instances and severity of marine mammals' exposure to high levels of sound generated from project-related survey activities. Several of PG&E's project design elements and Applicant Proposed Measures are designed to reduce the severity of this effect, including the seasonal timing of the project, and these along with MMs MARINEBIO-12a through -12j are identified in the EIR and incorporated into the CSLC's approval and MMP as a result. Included in these measures are monitoring and shutdown requirements, and an adaptive management strategy to ensure measures are effective in reducing the impact. During the environmental documentation process, the CSLC identified a breadth of potentially feasible measures, as summarized above, and received input from agencies, organizations, and members of the public asserting other potentially feasible measures and alternatives that the CSLC should consider in order to reduce or avoid the impacts. In response, the CSLC incorporated revisions into the Final EIR and MMP where it determined the recommendations were feasible and effective in reducing the impact, and provided a detailed explanation in the responses to comments in the Final EIR where it determined that the measure either would not reduce the effect or for specific economic, legal, technological, or other considerations, the recommendation was infeasible.

As explained below, the CSLC identified or addressed potentially feasible mitigation measures and alternatives in the EIR (including in the Response to Comments) that could avoid, substantially lessen, or further reduce the significant effect, based on the environmental analysis in the EIR, and public and public agency input; this includes selecting Alternative IIIb, the Environmentally Superior Alternative. However, the CSLC has not identified any feasible mitigation measures or project design elements that would reduce the effect to a less than significant level based on the identified thresholds of significance. Furthermore, to the extent Alternative IIIb, the Environmentally Superior

Alternative, could reduce this impact by avoiding the potential increase in marine mammal noise disturbance and/or injury associated with the second survey year on Morro Bay harbor porpoise, the CSLC finds this alternative infeasible based on the economic and social impacts that would result to fishermen, fishing-related businesses, ancillary businesses, and the regional communities and the need to reduce the duration that these community members experience economic hardship in any given year. These impacts are described in EIR Sections 4.13 – Commercial Fishing and 7.1 – Socioeconomic Effects, as well as documented in written comments and oral public testimony provided during the environmental documentation process. Additionally, the CSLC in its approval is imposing further survey duration and timing constraints to avoid or minimize to the extent feasible the impacts associated with the additional survey year. As a result, the CSLC concludes the above-described evidence in the record renders Alternative IIIb infeasible due to economic considerations.

SUMMARY OF MITIGATION AND RATIONALE

MM MARINEBIO-12a: The project as proposed includes the performance of a pre-survey to identify and document the presence of marine mammals in the project area. The purpose of MM MARINEBIO-12a is to conduct the survey to allow for better coverage of the project area, and to process the data obtained from the survey so it can be used to refine the work plan, as needed. By conducting the pre-survey earlier, there is time allowed to analyze the data and communicate the findings to CSLC and NMFS. If the data suggest the implementation schedule needs to be refined, or mammal densities are greater than assumed in the EIR analysis, there would be time to discuss this with CSLC and NMFS to agree on an appropriate set of actions, if any. The additional lead-time also provides a buffer for weather days to ensure the safety of the aerial surveys.

MM MARINEBIO-12b: The project as proposed includes the use of aerial surveys to identify the presence of marine mammals; these surveys would be performed prior to survey initiation, and 1 week prior to initiating survey activities in each survey zone. The aerial surveys would provide valuable information regarding long-range mammal migration rates and routes that would supplement Marine Mammal Observer (MMO) observations onboard the vessels. Recognizing the value of this information, this MM extends the duration of the aerial surveys.

MM MARINEBIO-12c: Several pinniped haul-out areas, where pinnipeds haul out onto land to rest, breed, or nurse pups, occur within the project area. This MM is provided to avoid disturbance to pinnipeds at haul-out areas during aerial surveys and thus avoid the addition of another source of disturbance to marine mammals.

MM MARINEBIO-12d: The project as proposed includes marine mammal monitoring to be performed by qualified marine mammal observers (MMOs) during daylight survey operations; however, PG&E does not provide specifics regarding the nature of the MMO qualifications or the manner in which they would conduct monitoring activities. Given the importance of effective MMO operations, this MM has been developed to provide specifics in this regard. In addition, nighttime monitoring by MMOs is not included as

part of the project, but marine wildlife may be present near survey vessels at night and could be at risk for ship strike. With the proper equipment, it may be possible to monitor for or confirm the presence of marine mammals during nighttime, subject to real-time conditions. Therefore, this MM is provided to enhance the quality and effectiveness of the MMO activities.

MM MARINEBIO-12e: The project as proposed by PG&E included establishment of a Safety Zone (the distance from the air gun array at which noise levels are >160 dB re 1 µPa) and Exclusion Zone (the distance from the air gun array at which noise levels are >180 dB re 1 µPa). If marine mammals are observed within these zones, the survey vessel crew would undertake specified actions to avoid potential takes. This MM is proposed to enhance the protectiveness of this Project element. The 1.1-nm (2-km) Exclusion Zone proposed in this MM is specifically for the full air gun array. This clarification results in the ability for PG&E to apply the proposed marine mammal air gun array power-down procedures, rather than effect immediate shutdowns. As a consequence, additional details are required to estimate appropriate power-down thresholds to calculate Exclusion Zones during actions related to this MM. This MM therefore requires that the pre-survey sound-check be conducted in at least one area of rocky seabed to provide field data for calculation of 180 dB rms array power-down and single air-gun Exclusion Zones.

MM MARINEBIO-12f: The project as proposed specified that a single scout vessel with qualified MMOs would traverse the Exclusion Zone during the surveys. Because of the large size of the survey area, and the potential that it could become necessary to alter course to avoid marine wildlife, a single scout vessel might not be sufficient to observe marine mammals migrating into the Exclusion Zone or into the path of the survey vessel. This MM is provided to further increase the effectiveness of marine mammal monitoring and reduce the potential for noise-related takes. While additional scout vessels could increase the risk of ship strikes, the likelihood of this occurring would be low considering the low speed of these vessels. In addition, the benefit of increasing the detection rate of MMOs would outweigh the potential risk of a ship strike.

MM MARINEBIO-12g: The project as proposed specified that Passive Acoustic Monitoring (PAM) would be employed by MMOs during daylight and nighttime hours to reduce the potential for ship strikes to marine mammals. However, the effectiveness of this technology is limited. Monitoring by MMOs would not be as effective during nighttime hours due to limited visibility. Many resident species will have high densities in inshore areas (including harbor porpoise, sea otters, bottlenose dolphins, and harbor seals). In addition, Church Rock appears to be a hotspot for humpback whales and other cetaceans. Therefore, because of the increased density of marine mammals in these areas, this MM calls for the proposed surveys to be conducted during daylight hours where marine mammal densities are highest to increase detection success by MMOs and to reduce the potential for nighttime ship strikes.

MM MARINEBIO-12h: As noted in the MM, some marine mammal species have long dive times and only spend short periods of time at the surface between dives. This trait can hinder MMO observation effectiveness. Other species are hard to spot at long

range or in poor conditions. Increasing the scan period prior to ramp-up,[7] as specified in this MM, will improve sighting opportunities.

MM MARINEBIO-12i: The purpose of this MM is to provide the opportunity for agency input *before* a take or exceedance of a take limit occurs. If repeated shutdowns occur that information would be considered while the survey is ongoing to assess the mitigation strategy in light of current conditions. This MM is intended to insert flexibility into the overall mitigation strategy by establishing a "performance criterion" or trigger (multiple shutdowns) to alert the CSLC and NMFS of these events, and provide an opportunity for real-time consultation. This MM allows for the discretion of the CSLC, NMFS and the MMOs to evaluate the importance of observed real-time conditions and ensure the identified measures continue to be effective. The MM allows for continued survey operation to avoid disruption to the survey and unnecessary increases in the survey duration, which could itself create further impact.

MM MARINEBIO-12j: This MM is proposed to increase protection of North Pacific Right Whales, which are present today in extremely low numbers (i.e., they are considered "depleted" under the MMPA). Although a sighting of the North Pacific Right Whale is considered to be highly unlikely, this MM addresses that possibility.

While impacts to certain individual species are expected to be below the threshold of significance established for this analysis, even with implementation of the above MMs, the overall potential noise-related Project impacts on marine mammals are considered to be *Significant and Unavoidable.*

CEQA FINDING NO. MARINEBIO-13	Class: **SU**
Impact No.:	**MARINEBIO-13:** Injury or mortality to Southern Sea Otters would occur due to noise during seismic survey acquisition.
Finding(s):	(1) 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 EIR. (3) Specific economic, legal, social, technological or other considerations make infeasible the mitigation measures or project alternatives identified in the EIR.

EXPLANATION

The range for southern sea otters extends from about Half Moon Bay north of the Project area to Santa Barbara in the south. They are resident to the Project area where they inhabit nearshore waters, with the highest density near Point Buchon. In 2010, the

[7] "Ramp-up" is a standard mitigation measure identified in high energy seismic survey guidelines for marine surveys. This has occurred in recognition of the potential risk that immediate hearing damage could occur to a nearby marine mammal if a high-energy sound source, such as an air gun array, were turned on suddenly. The ramp-up procedure generally involves the gradual increase in intensity of a sound source to full operating intensity over a period of time. It is assumed that marine mammals will hear the sound and move away before hearing damage or physiological effects occur.

coast from San Simeon to Point Sal contained 874 sea otters, approximately 30.5 percent of the total population of this stock. They breed between both June and July and October and November. Sea otters feed primarily on invertebrates, and dive depths are typically less than 98 feet (30 m) for females and less than 131 feet (40 m) for males.

Sea otters appear insensitive to seismic noise at ranges greater than 0.6 miles (900 m), but can be disturbed by close approaches from boats. There are limited available data on responses of sea otters to seismic air guns, as well as their hearing abilities, but the ability to raft without immersing their heads and ears is considered enough to preclude injury from noise. Acoustic impacts would be reduced but not eliminated by Applicant Proposed Measures incorporated as part of the project.

For the EIR analysis, the NMFS Level A threshold for cetaceans (180 dB) was used as the Level B threshold for sea otters. Because sea otters have the ability to avoid immersion of their heads and ears, this Level A noise level was considered to be appropriate for assessing the extent of noise impacts to Southern sea otters and was determined to be limited to Level B harassment (i.e., no mortality is expected to occur). Noise modeling results indicated that 62 sea otters (2.2 percent of population) are likely present within the area that would be ensonified to sea otter disturbance levels. In addition, the EIR analysis determined that boat disturbance to sea otters would affect 12 and 8 individuals, respectively, for (1) the survey vessel, and (2) geophone line deployments. The boat disturbance estimates during the survey are for one vessel only. If more vessels would be used for mitigation, then the numbers for boat disturbance should be increased proportionate to the number of vessels present and their proximity to sea otter habitat.

As previously discussed, the EIR analysis determined that Alternative IIIb, which eliminates the northernmost survey zone, would accomplish the project objectives associated with the primary survey targets, and identified this alternative as the Environmentally Superior Alternative. Under this Alternative, the omission of Zone 3 would reduce potential noise-related impacts to sea otters present within the northernmost portion of the project area. In addition, the active survey operation would be shortened by approximately 7 days (from 41 to 34 days), and refueling would not be needed. These changes combined would reduce the overall survey duration by 14 days (from 82 to 68 days), and would accordingly reduce the impacts associated with exposure to and disturbance from underwater noise to sea otters. Based on the noise modeling and analysis of impacts to sea otters expected to be in the area, this potential impact is Significant.

Potentially feasible mitigation measures to reduce this significant impact would involve actions to avoid or reduce the instances and severity of sea otters' exposure to high levels of sound generated from project-related survey activities. Several of PG&E's project design elements and Applicant Proposed Measures are designed to reduce the severity of this effect, including the seasonal timing of the Project, and these along with MMs MARINEBIO-12a through -12i are identified in the EIR and incorporated into the CSLC's approval and MMP as a result. As described above for Impact MARINEBIO-12,

during the environmental documentation process, the CSLC identified a breadth of potentially feasible measures, and received several specific comments asserting other potentially feasible measures and alternatives that the CSLC should consider in order to reduce or avoid the impacts, including a phased survey approach starting later in the season, which would further avoid the sea otter pupping season.

In response, the CSLC incorporated revisions into the Final EIR and MMP where it determined the recommendations were feasible and effective in reducing the impact, and provided a detailed explanation in the responses to comments in the Final EIR where it determined that the measure either would not reduce the effect or for specific economic, legal, technological, or other considerations, the recommendation was infeasible. These specific reasons are also described above for Impact MARINEBIO-12. In this respect, the CSLC has done all that is feasible to identify or address all potentially feasible mitigation measures that could avoid, substantially lessen, or further reduce the significant effect, including approving the Modified Timing Three-Loop Configuration, which restricts the survey to the November 1 – December 31 survey window. However, the CSLC has not identified any feasible mitigation measures or project design elements that would reduce the effect to a less than significant level based on the identified thresholds of significance. Furthermore, to the extent Alternative IIIb, the Environmentally Superior Alternative, could reduce this impact by avoiding the potential increase in disturbance associated with the second survey year on sea otters, the CSLC finds this alternative infeasible based on the economic and social impacts that would result to fishermen, fishing-related businesses, ancillary businesses, and the regional communities and the need to reduce the duration that these community members experience social and economic hardship in any given year. These impacts are described in EIR Sections 4.13 – Commercial Fishing and 7.1 – Socioeconomic Effects, as well as documented in written comments and oral public testimony provided during the environmental documentation process.

SUMMARY OF MITIGATION AND RATIONALE

See MM MARINEBIO-12a through -12i, above.

Acoustic impacts would be reduced by Applicant Proposed Measures incorporated in the project and MMs MARINEBIO-12a through -12i, including survey timing, project-specific Exclusion Zone, air gun ramp-up, aerial surveys, MMOs, and PAM. In addition, although the Approved Project would result in mobilization and demobilization in 2 years rather than one and exposure to sound on two separate survey occasions if the second survey year were necessary, the restricted timing of November-December would help alleviate the overall impact to sea otters. Although implementation of these measures would reduce the impact to sea otters, and the survey is unlikely to affect pup areas, potential impacts on sea otters as a result of the Approved Project would still result in Level B Harassment. Therefore, the impact is considered to be *Significant and Unavoidable* because of the proximity of the survey to sea otter habitat.

Cumulative Impacts: Impacts to Biological Resources – Marine as a result of the project would be cumulatively considerable. While the approval of the Modified Timing

Three-Loop Configuration and implementation of the above-described mitigation measures reduce the total noise exposure and potential for vessel strikes in impacts MARINEBIO-12 and MARINEBIO-13, this impact remains *Significant and Unavoidable*, and therefore the CSLC concludes that the cumulative impacts related to Biological Resources – Marine are likewise *Significant and Unavoidable*. As described in the EIR, the project, even as modified by approval of the Modified Timing Three-Loop Configuration and incorporation of all mitigation measures, would create impacts that when viewed in the context of past, present, and probable future projects are *Significant and Unavoidable*.

CEQA FINDING NO. CUL-1 Class: **LTSM**

Impact No.:	CUL-1: Offshore mobilization/demobilization activities could directly or indirectly impact cultural resources
Finding(s):	(1) 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 EIR.

EXPLANATION

Mobilization and demobilization in the offshore project areas would include placing and retrieving approximately 600 seafloor geophones, using a local vessel and divers, over a period of approximately 11 days (5 days for deployment and 6 days for demobilization). The nearshore geophone routes do not traverse known shipwreck locations. In addition, geophone placement and removal in depths of 10 feet (3 meters) or less would be performed by hand by divers, as opposed to using heavy equipment, and thus would have a limited potential to impact offshore resources. However, PG&E anticipates using a locally available vessel to deploy and retrieve the geophones in depths of 10 to 66 feet (3 to 20 meters), and to transport the divers in shallower locations.

If offshore cultural resources are present, they could be adversely impacted by any anchor deployed from the vessel, if needed, or by the 40 pound (wet) geophones deployed by the vessel. Damage to offshore cultural resources caused by deploying an anchor or geophones could be a significant impact.

Under the Approved Project, the nearshore geophone deployment activities are the same as under the proposed project, except that if survey activities were not completed the first year, the geophone lines would remain on the seafloor for a longer period of time; however, because the geophones are stationary once placed, the potential impacts to undersea cultural resources in the project area are unchanged, and remain potentially significant. Potentially feasible mitigation measures to reduce this significant impact would involve actions to identify and avoid cultural resources such as shipwrecks. MM CUL-1 is identified in the EIR and incorporated into the CSLC's approval and MMP as a result.

SUMMARY OF MITIGATION AND RATIONALE

MM CUL-1: This mitigation measure is designed to reduce potential impacts to undersea cultural resources (e.g., shipwrecks) associated with nearshore activities involving the use of an anchor or geophone placement. Documentation of shipwreck locations would help prevent impacts to cultural resources by providing site-specific information that will aid in avoiding disturbance of these resources during deployment and retrieval of the geophones.

With the implementation of the recommended mitigation measure, impacts would be reduced to *Less than Significant*.

CEQA FINDING NO. GHG-1 Class: **SU**

Impact No.:	**GHG-1:** The Project would result in emissions of GHGs that would exceed significance thresholds
Finding(s):	(1) 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 EIR. (3) Specific economic, legal, social, technological or other considerations make infeasible the mitigation measures or project alternatives identified in the EIR.

EXPLANATION

During the project, the survey and the supporting vessels are expected to emit GHGs. In addition, onshore construction vehicles will also emit GHGs when they deploy and retrieve the onshore geophones. The emissions above were compared to the county-wide and state-wide emissions inventories, and the proposed San Luis Obispo County APCD significance threshold for non-stationary combustion sources. Based on this comparison to county-wide and statewide emissions, the emissions from the project are relatively low. However, the project would exceed San Luis Obispo County APCD's proposed emission threshold and is not an activity undertaken to result in a net reduction of emissions (emission reduction measure, as listed in the 2001 Clean Air Plan). Consequently, the uncontrolled GHG emissions from the project are considered to be potentially significant.

As previously discussed, the EIR analysis determined that Alternative IIIb, which eliminates the northernmost survey zone, would accomplish the project objectives associated with the primary survey targets, and identified this alternative as the Environmentally Superior Alternative. Under this Alternative, the active survey operation would be shortened by approximately 7 days (from 41 to 34 days), and refueling would not be needed. These changes combined would reduce the overall survey duration by 14 days (from 82 to 68 days), and accordingly reduce the potential contributions to greenhouse gases due to the Project. However, even under this Alternative, it is likely that survey operations would adversely affect greenhouse gases. Under the Approved

Project, in contrast, total GHG emissions are expected to be slightly higher than under Alternative IIIb, even considering the more restrictive survey window.

To the extent Alternative IIIb, the Environmentally Superior Alternative, could reduce this impact by avoiding the GHG emissions associated with the second survey year, the CSLC finds this alternative infeasible based on the economic and social impacts that would result to fishermen, fishing-related businesses, ancillary businesses, and the regional communities and the need to reduce the duration that these community members experience economic hardship in any given year. These impacts are described in EIR Sections 4.13 – Commercial Fishing and 7.1 – Socioeconomic Effects, as well as documented in written comments and oral public testimony provided during the environmental documentation process. Additionally, the CSLC in its approval is imposing further survey duration and timing constraints to avoid or minimize to the extent feasible the impacts associated with the additional survey year. As a result, the CSLC concludes the above-described evidence in the record renders Alternative IIIb infeasible due to economic considerations.

SUMMARY OF MITIGATION AND RATIONALE

Implementation of MM AQ-1a, MM AQ-1b, and MM-AQ-3b would result in less fuel consumption and, therefore, reduce GHG emissions. These mitigation measures include reduction of idling times, use of newer and more efficient equipment and use of electrical equipment where feasible, all of which result in less fuel consumption. The measures are among the strategies identified by the EPA Sector Strategies Division as ways of reducing fuel use and GHG emissions from construction related activities. As described above, potentially feasible mitigation measures to reduce this significant impact would involve actions to avoid or reduce total emissions from project-related vessels and vehicles. Mitigation measures to reduce GHG impacts are identified in the EIR and incorporated into the CSLC's approval and MMP. A requirement that the survey vessel meet the CARB Tier 2 engine certification was identified as a potentially feasible measure in the Draft EIR; however, PG&E provided compelling information that it would be technologically infeasible to meet this requirement because the engine power needed to tow the air gun array and hydrophone streamers prevents meeting Tier 2 certification. The CSLC agrees with this conclusion and, therefore, finds the measure infeasible. Other suggestions and recommendations in the record included those provided by the APCD in its written comments. However, as explained in the CSLC's response to the APCD in the Final EIR, it has been infeasible for the CSLC, at this time, to identify a comprehensive set of actions to mitigate this significant impact through avoidance or minimization of emissions. The required actions in the EIR and MMP achieve all that feasible while still achieving the Project Objectives, including setting forth measurable performance criteria, and approving Alternative IIIb, the Environmentally Superior Alternative, but the project will nonetheless result in significant GHG impacts.

As discussed under MM AQ-3b, until it can be demonstrated that emissions reductions in the Emissions Reduction Program (in development) would decrease the emissions below the proposed significance threshold levels, these MMs would not reduce impacts

from emissions of GHGs to *Less than Significant.* Therefore the Project GHG emissions would be considered *Significant and Unavoidable*.

Cumulative Impacts: GHG-related impacts resulting from the Project, like Air Quality impacts, are considered both individually and cumulatively considerable due to the Project's incremental contribution to the overall problem of ozone-depleting and climate change pollutants when combined with past, present, and probable future projects identified in the EIR.

CEQA FINDING NO. LU-1	Class: **SU**
Impact No.:	**LU-1:** Offshore Project activities would adversely impact offshore recreational activities during a peak season.
Finding(s):	(1) 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 EIR. (3) Specific economic, legal, social, technological or other considerations make infeasible the mitigation measures or project alternatives identified in the EIR.

EXPLANATION

The EIR considered potential impacts to the following offshore recreational activities commonly performed in the offshore project area: recreational boating, whale watching, water sports (such as diving, surfing, and swimming), and recreational fishing. Of these, the EIR determined that impacts to recreational fishing would be Significant as described below.

While the recreational fishing season varies somewhat from year to year, it is expected that project activities (anticipated to occur from September through December under the proposed project) would occur during the peak season of some local recreational fishing, such as lingcod, rock fish, and albacore. Recreational fishing would be precluded from the active offshore seismic survey areas.

The recreational fishery for rockfish, Cabezon, and lingcod is open year-round to divers and shore-based anglers, but is closed to boat-based anglers seasonally (for the 2011-2012 season, the lingcod fishery is closed to boat-based anglers from January 1, 2011 through May 1, 2012). Additionally, fishing for these fish is restricted to areas 40 fathoms (240 feet [73 meters]) or less, which includes only the nearshore areas of the coast within the 3-nm State limit. The albacore season changes every year, but generally occurs at some time between August and November.

The project as proposed would not restrict recreational fishing for the entirety of a peak season for all targeted species, and recreational fishing could still take place outside of the active project area. Under the Approved Project the northernmost survey zone is eliminated and the survey window is shortened, thereby reducing areas and times in which recreational fishing would be precluded due to the project; however, impacts will

occur in 2 years instead of one if survey activities are not completed in year one. However, even under the Approved Project, it is likely that survey operations would result in preclusion from certain fishing areas during a peak season and this impact therefore remains significant.

Potentially feasible mitigation measures to reduce this significant impact would involve actions to minimize the survey area and disruption or preclusion of recreational activities. MM LU-1, as a result, was identified in the EIR and incorporated into the CSLC's approval and MMP. The CSLC incorporated revisions into the Final EIR and MMP where it determined recommendations identified during the environmental documentation process were feasible and effective in reducing the impact, and provided a detailed explanation in the responses to comments in the Final EIR where it determined that the suggested measure either would not reduce the effect or for specific economic, legal, technological, or other considerations, the recommendation was infeasible. Specifically, the CSLC incorporated expanded notification procedures into the MM to broaden the suite of recreational interests that would receive notification; however the CSLC found that economic compensation to fishermen and other recreational interests would not avoid or reduce a physical environmental impact (i.e., disruption or preclusion of activity), and was therefore not appropriate mitigation for impacts to recreational fishing (See Findings Required Under CEQA, above, for an explanation of treatment of socioeconomic impacts under CEQA). These impacts are described in EIR Sections 4.13 – Commercial Fishing and 7.1 – Socioeconomic Effects, as well as documented in written comments and oral public testimony provided during the environmental documentation process. Nonetheless, the CSLC finds the economic and social impacts that would result to fishermen, fishing-related businesses, ancillary businesses, and the regional communities and the need to reduce the duration that these community members experience economic hardship in any given year are critical considerations in its approval, and is therefore approving the Modified Timing Three-Loop Configuration, which would reduce the amount of time in any given year these activities would be disrupted.

As explained above, therefore, the CSLC has done all that is feasible to identify or address all potentially feasible mitigation measures that could avoid, substantially lessen, or further reduce the significant effect, including approval of the Modified Timing Three-Loop Configuration. However, the CSLC has not identified any feasible mitigation measures or project design elements that would reduce the effect to a less than significant level based on the identified thresholds of significance.

SUMMARY OF MITIGATION AND RATIONALE

MM LU-1: This mitigation measure is designed to reduce impacts to offshore commercial and recreational activities by establishing a means of communicating project status to allow commercial and recreational interests to plan accordingly. This MM was expanded to establish a centralized means of communicating important and timely information about the project to the public, and identifies some specific parties or organizations that must receive information. Although this mitigation does not avoid the

need to impose temporary restrictions for the public, it would provide better information on which the public can choose to alter recreational and commercial activities.

This mitigation measure would reduce impacts to recreational fishermen due to the project. However, even with implementation of this MM, fishermen would be precluded from certain fishing areas during peak seasons, and the impact would still be considered *Significant and Unavoidable.*

CEQA FINDING NO. LU-2	Class: **SU**
Impact No.:	**LU-2:** Offshore Project activities would conflict with some applicable land use plans.
Finding(s):	(1) 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 EIR. (3) Specific economic, legal, social, technological or other considerations make infeasible the mitigation measures or project alternatives identified in the EIR.

EXPLANATION

A network of MPAs was created in response to California Marine Life Protection Act (MLPA) (Fish & G. Code, §§ 2850–2863) requirements and is intended primarily to protect or conserve marine life and habitat. Three MPAs are present in the Project area as proposed: the Point Buchon State Marine Reserve (SMR) and State Marine Conservation Area (SMCA), the Cambria SMCA, and the White Rock SMCA. Because of the locations of the fault zones, locating the seismic survey within the MPAs was proposed by PG&E to collect data on specific seismic "targets."

As noted above, the offshore survey may result in "take" of marine species, which is prohibited in the MPAs without a permit. Because of this conflict, the EIR's analysis found the project's impact on MPAs to be *Significant and Unavoidable*. The CDFG has authority over the MPAs and would, at its discretion, need to issue a Scientific Collecting Permit (SCP) in order for the project to proceed with any part that would result in "take" in the MPAs. Even with the CSLC's approval of a Geophysical Survey Permit for the Approved Project, the CDFG would still need to consider whether to issue an SCP for parts of the survey over which it has approval authority.

The MPAs in the project area would be considered "environmentally sensitive habitat areas" (ESHAs) under the Coastal Act (Articles 5, 6, and 7), as there is plant and animal habitat in the MPAs that is considered especially valuable, and worthy of MPA designation. In addition, project activity would potentially interfere with ongoing monitoring efforts aimed at measuring the effectiveness of the management of the MPAs, such as the studies conducted by the Collaborative Fisheries Research Program (CCFRP) since 2007.

The northernmost project area extends slightly into the MBNMS; none of the survey lines enter into the MBNMS. In accordance with the National Marine Sanctuaries Act, flying motorized aircraft at less than 1,000 feet (304 meters) is prohibited in this area. For protection of marine mammals, aerial surveys of marine mammals would be conducted using small aircraft. Flights over the offshore project area would occur approximately 10 days prior to survey initiation, and 1 week prior to initiating survey activities in each survey zone. It is possible that this aircraft would fly less than 1,000 feet (305 meters) above the MBNMS, which would conflict with the policy regarding overflight of motorized aircraft above the MBNMS. Potentially feasible mitigation measures to reduce this significant impact would involve actions to avoid or reduce the presence of project-related vessels and equipment in these protected areas and actions to minimize the take of living marine organisms in the MPAs.

As previously discussed, the EIR analysis determined that Alternative IIIb, which eliminates the northernmost survey zone, would accomplish the project objectives associated with the primary survey targets, and identified this alternative as the Environmentally Superior Alternative. Under this Alternative, the survey footprint is reduced, and would avoid the MBNMS and the White Rock-Cambria MPAs – thereby reducing conflicts with MPA policies due to the project. In addition, under this Alternative, the active survey operation would be shortened by approximately 7 days (from 41 to 34 days), and refueling would not be needed. These changes combined would reduce the overall survey duration by 14 days (from 82 to 68 days), and would accordingly reduce potential impacts to marine organisms due to the project. Under the Approved Project, the overall survey footprint would be the same as under the Environmentally Superior Alternative; however, survey operations will cause conflicts with the MPAs and the CCFRP research twice instead of once if the survey is not completed in year one. The CSLC is imposing a restricted survey window to minimize this impact to the extent feasible.

Under the Approved Project, impacts to marine wildlife would not be avoided altogether, and the Point Buchon SMR/SMCA would still remain within the survey footprint. Therefore, conflicts with policies regarding that MPA would not be avoided and the impact, as a result, is considered *Significant and Unavoidable*. During the environmental documentation process, the CSLC identified a breadth of potentially feasible measures, and received several specific comments asserting other potentially feasible measures and alternatives that the CSLC should consider in order to reduce or avoid the impacts, including eliminating placement of seafloor geophones within the MPA boundaries and routing the survey tracklines to outside the MPAs.

As explained below, the CSLC identified or addressed potentially feasible mitigation measures in the EIR (including in the Response to Comments) that could avoid, substantially lessen, or further reduce the significant effect, based on the environmental analysis in the EIR, and public and public agency input. However, the CSLC has not identified any feasible mitigation measures or project design elements that would reduce the effect to a less than significant level based on the identified thresholds of significance.

To the extent Alternative IIIb, the Environmentally Superior Alternative, could reduce this impact by avoiding the MPA land use conflicts associated with the second survey year, the CSLC finds this alternative infeasible based on the economic and social impacts that would result to fishermen, fishing-related businesses, ancillary businesses, and the regional communities and the need to reduce the duration that these community members experience economic hardship in any given year. These impacts are described in EIR Sections 4.13 – Commercial Fishing and 7.1 – Socioeconomic Effects, as well as documented in written comments and oral public testimony provided during the environmental documentation process. Additionally, the CSLC in its approval is imposing further survey duration and timing constraints to avoid or minimize to the extent feasible the impacts associated with the additional survey year. As a result, the CSLC concludes the above-described evidence in the record renders Alternative IIIb infeasible due to economic considerations.

SUMMARY OF MITIGATION AND RATIONALE

MM LU-2: Even with the elimination of the northernmost survey zone, it may still be necessary to conduct aerial overflights over the MBNMS to assess for the presence of marine mammals approaching the survey areas. This mitigation measure would reduce the potential for conflict with MBNMS policies restricting aircraft overflight.

With the implementation of the recommended mitigation measure, impacts due to aircraft overflight over the MBNMS would be reduced to *Less than Significant*. In addition, MMs MARINEBIO-1 and MARINEBIO-12a through -12j would reduce impacts to marine wildlife due to the project, and approval of the Modified Timing Three-Loop Configuration would reduce the above-described conflicts with the MBNMS and MPAs. However, the CSLC determined the elimination of seafloor geophones and re-routing the survey vessel would be infeasible, as the seismic fault lines identified for study are located directly underneath the MPAs and therefore, incorporating the recommendation would not achieve the project objectives. As a result, even with implementation of all feasible MMs, the potential project impacts on marine wildlife, including those within the Point Buchon SMR/SMCA, are considered to be *Significant and Unavoidable.* In addition, project activities would potentially interfere with ongoing monitoring efforts aimed at measuring the effectiveness of MPA management, such as the CCFRP studies. Accordingly, the conflicts with MPA policies would remain *Significant and Unavoidable.*

CEQA FINDING NO. NO-1 Class: **LTSM**

Impact No.:	**NO-1:** The proposed offshore activities would expose persons present in the water to harmful noise levels.
Finding(s):	(1) 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 EIR.

EXPLANATION

Studies have shown that high levels of underwater noise can cause dizziness, hearing damage, or other sensitive organ damage to divers and swimmers, as well as indirect injury due to startle responses. Based on studies evaluated in the EIR, noise levels in excess of 154 dB re 1 µPa could be considered potentially harmful to recreational divers, surfers, and swimmers in the project area. As presented in the EIR, noise at and above these levels has been modeled for the project.

Divers, swimmers, surfers, or other persons may be present in the vicinity of offshore project area waters, but would be unlikely to approach active survey track areas, because the active survey areas would be restricted to non-survey vessels and monitored by project support boats.

The coastline along Point Buchon is rocky cliffs, and would not be amenable to shore access. Furthermore, the general public is precluded from the DCPP property, which represents a significant amount of that shoreline. The distances from the beaches in the Project area vicinity to the nearest survey zones range from approximately 3 to 6.5 nm (5.6 to 12 km). In addition, the Communication Plan required under MM LU-1 (see above) would include notices and beach postings to notify the public of active survey areas.

Therefore, potentially harmful noise levels from the air guns would not be expected to affect swimmers and surfers because there would be a substantial distance between them and the noise source. In addition, they would not be fully submerged. Based on the above, the EIR determines that potential impacts to swimmers and surfers from seismic survey noise are *Less than Significant*.

Divers entering the water from boats have greater opportunity to get close to the survey areas, as compared to swimmers and surfers, and therefore would have greater potential for impacts due to the project noise. Implementation of MM-LU-1 would alert divers to the survey activities and their preclusion from the active survey areas. However, it is possible that divers could enter the project area from locations where notices were not posted, or divers could choose to ignore the postings.

As previously discussed, the EIR analysis determined that Alternative IIIb, which eliminates the northernmost survey zone, would accomplish the project objectives associated with the primary survey targets, and identified this alternative as the Environmentally Superior Alternative. Under this Alternative, the omission of Zone 3 would reduce the active survey areas in which divers would be present. In addition, the active survey operation would be shortened by approximately 7 days (from 41 to 34 days), and refueling would not be needed. These changes combined would reduce the overall survey duration by 14 days (from 82 to 68 days). The potential impacts to divers would be reduced as a result of these changes. In addition, the CSLC is imposing a more restricted survey schedule as part of the Approved Project, such that the impacts are restricted to the November – December window. However, even under the Approved Project, which includes a second year if surveys are not completed the first

year, potential impacts to divers from project noise could be significant. Potentially feasible mitigation measures to reduce this significant impact would involve actions to minimize the potential presence of non-project-related divers in or about to enter the waters in the active survey area. The CSLC therefore requires implementation of measures designed to observe and remove divers from waters in the survey area as described in the EIR and incorporated into the CSLC's approval and MMP.

SUMMARY OF MITIGATION AND RATIONALE

MM NO-1: This mitigation measure would augment MM LU-1 by further reducing the potential for divers to be present in the active survey area, and accordingly would further reduce potential impacts to them due to project noise.

With the implementation of the above recommended mitigation measure and MM LU-1, impacts would be reduced to *Less than Significant*.

CEQA FINDING NO. NO-2 Class: **LTSM**

Impact No.:	**NO-2:** The proposed onshore activities would result in a temporary increase in ambient noise levels in the project vicinity.
Finding(s):	(1) 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 EIR.

EXPLANATION

The project includes the deployment of nodal recording devices called geophones onshore in the Northern, Central, and Southern areas. In the Northern Area, geophones would be deployed in undeveloped land with limited number of noise sensitive receptors, including a community hospital and a bed and breakfast. In the Central Area, the geophones would be placed near the shoreline off of Morro Bay, along the Morro Bay sandspit. In the Southern Area, the geophones would be deployed in mostly undeveloped areas, though portions of the deployment would be near recreational and commercial land uses. These geophones would be deployed by foot, with the support of vehicles that generate noise. The use of vehicles would be limited to a 1-week period before the survey and 1-week period after the survey. Some limited additional vehicle trips to the deployment areas would be needed for routine status checks and maintenance. Once deployed, the geophones would not generate any noise. Therefore, the only noise associated with geophones is the limited use of passenger vehicles to deploy the units during two 1-week periods. As proposed by PG&E, deployment would be limited to the hours of 7 a.m. to 9 p.m.

In addition to geophone deployment and retrieval, noise would also be generated in the Southern Area during onshore seismic surveys using two types of seismic source vehicles (Vibroseis and AWD). The Vibroseis vehicle employs a vibrator to generate vibrations in the earth. When used, the vehicle tires are raised off the ground and the vibrator can then be activated. Four such vehicles would be used synchronously to

generate the desired seismic wave magnitude. The AWD vehicle (or equivalent equipment) would be used on portions of the survey route that are not accessible by the four Vibroseis vehicles. The AWD vehicle generates energy output by dropping a large, heavy, hardened-steel hammer on a base plate positioned on the ground surface. The noise-generating vehicles would be driven to a survey point, activated, and the results recorded. Then the vehicles would be moved to the next location. These vehicles would be used for 1 week and restricted to the hours of 7 a.m. to 9 p.m.

The vehicles would be operated in areas with a limited number of noise-sensitive receptors (mostly recreational areas). Based on this type of receptor and the "impulsive" nature of the generated noise, if operations of the vehicles were occurring regularly throughout the year, long-term noise levels could not exceed a maximum of 75 dBA for any duration and 60 dBA on an hourly basis to be consistent with the General Plan and county ordinance. Extrapolating from the highest of the vehicle measurements, the vehicles would have to remain at least approximately 550 feet from any noise-sensitive receptor to remain under these General Plan and county ordinance thresholds (ignoring the contribution from existing background levels for simplification). When adding the existing background, the distance would need to be greater. However, additional noise attenuation or reduction would be expected due to the presence of vegetation and other barriers between the vehicles and the receptor.

AWD/Vibroseis equipment activation would occur over a short time, typically 1 to 3 minutes per station, including setup and listen time, with actual active noise generation approximately half of that time. As proposed by PG&E, the Southern Area seismic surveys would be conducted along private PG&E roads and trails, where there is no residential housing or fixed recreational facilities and limited recreationists. Use of the vehicles in the Southern Area would be limited to 1 week and the vehicles would only be present at any single location for less than 1 day. Noise impacts to any one receptor would be short term (less than 1 day) and restricted to the hours of 7 a.m. to 9 p.m.

The above project-related activities are similar to construction activities in terms of how they would be assessed with respect to noise impacts. The local ordinance allows for construction activities as long as operations are limited to 7 a.m. to 9 p.m. on weekdays and 8 a.m. to 5 p.m. on weekends. The project as proposed would be limited to the hours of 7 a.m. to 9 p.m. While consistent with the weekday ordinance limit, these hours of operation would be inconsistent with the weekend ordinance limit. Therefore, even though the activities are short-term in nature and would expose a limited number of noise sensitive receptors, the use of the vehicles may have an adverse impact on noise-sensitive receptors because the weekend activities may occur outside the levels allowed by the ordinance. While there are a limited number of expected receptors, some recreational receptors may come within 550 feet of the vehicles during noise generation activities.

As previously discussed, the EIR analysis determined that the Approved Project, which eliminates the northernmost survey zone, would accomplish the project objectives associated with the primary survey targets as effectively the Environmentally Superior Alternative. The onshore seismic noise-generating activities under the Approved Project

are also the same as under the proposed project, but are split over 2 years if the survey is not completed in the first year; thus the potential noise impacts to recreationists in the project Area are substantially the same, and remain potentially significant. Potentially feasible mitigation measures to reduce this significant impact would involve actions to minimize the potential noise and vibration impacts from onshore project activities. The CSLC therefore requires implementation of measures designed to limit the hours of operation of noise-generating equipment as described in the EIR and incorporated into the CSLC's approval and MMP.

SUMMARY OF MITIGATION AND RATIONALE

MM NO-2: This mitigation measure would reduce the effects of project noise on nearby receptors by limiting the hours of noise production.

With the implementation of the above recommended mitigation measure, impacts would be reduced to *Less than Significant*.

CEQA FINDING NO. NO-4	Class: **LTSM**
Impact No.:	**NO-4:** The proposed onshore activities would expose persons to increased groundborne vibration or groundborne noise levels.
Finding(s):	(1) 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 EIR.

EXPLANATION

The only appreciable source of vibration associated with the project that may impact sensitive receptors is the use of the Vibroseis and AWD (or equivalent) vehicles in the Southern Area. However, use of the vehicles in the Southern Area would be limited to a 1-week period, and the vehicles would be operating at any one location for less than 1 day. In addition, receptors would only be exposed during the hours from 7 a.m. to 9 p.m.

As discussed previously, the above activities are similar to construction activities. The local ordinance allows for construction activities as long as operations are limited to the period from 7 a.m. to 9 p.m. on weekdays and 8 a.m. to 5 p.m. on weekends. As proposed by PG&E, the project activities would be limited to the hours from 7 a.m. to 9 p.m. While consistent with the weekday ordinance limit, this period of operation would be inconsistent with the weekend ordinance limit. Therefore, although the vibration-generating activities are short-term in nature and would expose a limited number of receptors to additional vibration levels, the use of the vehicles may have a significant impact on sensitive receptors because the weekend activities may occur outside the levels allowed by the ordinance.

As previously discussed, the EIR analysis determined that the Approved Project, which eliminates the northernmost survey zone, would accomplish the project objectives

associated with the primary survey targets as effectively the Environmentally Superior Alternative. The onshore seismic noise-generating activities under the Approved Project are also the same as under the proposed project, but are split over 2 years if the survey is not completed in the first year; thus the potential noise impacts to recreationists in the project Area are substantially the same, and remain potentially significant.

SUMMARY OF MITIGATION AND RATIONALE

MM NO-2: This mitigation measure would reduce the effects of Project vibration on nearby receptors by limiting the hours of activity.

With the implementation of MM NO-2, impacts would be reduced to *Less than Significant*.

CEQA FINDING NO. FISH-1 Class: **SU**

Impact No.:	**FISH-1:** Offshore Project activities would adversely impact commercial fishing by precluding fishing for all or most of a season.
Finding(s):	(1) 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 EIR. (3) Specific economic, legal, social, technological or other considerations make infeasible the mitigation measures or project alternatives identified in the EIR.

EXPLANATION

As proposed by PG&E, the survey would follow tracklines in four distinct zones. The proposed survey footprint would encompass an area from Cambria to Point Sal, an offshore area of approximately 530 nm^2 (1,820 km^2) extending approximately 15 nm (27 km) offshore, and in water depths of approximately 100 to 1,000 feet [30 to 305 meters]. Within this survey footprint, a number of fisheries and gear types could be affected during the proposed survey period.

The project as proposed would be conducted within an 82-day period during the months of September through December. An estimated 41 days would be required to conduct the surveys, which would be the most restrictive phase of the survey as it relates to interrupting fishing activity. If fishing is precluded in the project area during the entire survey period, multiple gear types and fishing activity would be affected and all or most of a season could be impacted.

The project area supports year-round and seasonal fisheries, the closures of which vary from year to year and cannot be forecasted precisely. For year-round fisheries, the proposed project would restrict approximately one-quarter of the year. For fisheries that are only open during the proposed survey months, the impact would be much greater, and may effectively exclude fishing in the project area for an entire season.

The ability for fishermen to fish in alternate locations is highly dependent on the fishery (gear type, season, and other conditions). Although substitution could, for some fisheries, maintain fishing activity during the proposed survey period, it may also be less efficient and/or incur higher fuel and other costs. For example, fisheries that rely on set gear may be disproportionately affected because it would be either impractical or unreasonable to attempt to move gear around the survey's planned timetable and tracklines, or to seek other areas outside of the project area.

Because the project would adversely affect all or most of a commercial fishing season, the impact is expected to be *Significant*. Potentially feasible mitigation measures to reduce this significant impact would involve actions to minimize the survey area and disruption or preclusion of commercial fishing activities as well as actions to minimize the expected short-term impacts to fishery resources (i.e., impact to CPUE). During the environmental documentation process, the CSLC identified a breadth of potentially feasible measures, and received several specific comments asserting other potentially feasible measures and alternatives that the CSLC should consider in order to reduce or avoid the impacts, including avoiding or minimizing port/harbor closures, conducting the survey during a different time of year, and requiring PG&E to provide economic compensation to commercial fishermen. MM LU-1, as a result, was identified in the EIR and incorporated into the CSLC's approval and MMP.

The CSLC incorporated revisions into the Final EIR and MMP where it determined recommendations identified during the environmental documentation process were feasible and effective in reducing the impact, and provided a detailed explanation in the responses to comments in the Final EIR where it determined that the suggested measure either would not reduce the effect or for specific economic, legal, technological, or other considerations, the recommendation was infeasible. Specifically, the CSLC incorporated expanded notification procedures into the MM to broaden the suite of interests that would receive notification; however, the Approved Project does not eliminate the need for restrictions, and safe survey operations would still be dependent upon environmental conditions and technical requirements. Therefore, impacts to commercial fishing will not be avoided, as fishing will still be precluded from certain areas during part of a peak fishing season. The CSLC also determined that conducting the survey during a different time of year in order to avoid commercial fishing seasons would unacceptably increase significant impacts to marine mammals, and found that economic compensation to fishermen and other recreational interests would not avoid or reduce a physical environmental impact (i.e., disruption or preclusion of activity), and was therefore not appropriate mitigation for impacts to commercial fishing (See Findings Required Under CEQA, above, for an explanation of treatment of socioeconomic impacts under CEQA). These impacts are described in EIR Sections 4.13 – Commercial Fishing and 7.1 – Socioeconomic Effects, as well as documented in written comments and oral public testimony provided during the environmental documentation process. Nonetheless, the CSLC finds the economic and social impacts that would result to fishermen, fishing-related businesses, ancillary businesses, and the regional communities and the need to reduce the duration that these community members experience economic hardship in any given year are critical considerations in its approval, and is therefore approving the Modified Timing Three-Loop Configuration,

which will reduce the amount of time in any given year these activities would be disrupted.

As explained above, therefore, the CSLC has done all that is feasible to identify or address all potentially feasible mitigation measures that could avoid, substantially lessen, or further reduce the significant effect, including approval of the Modified Timing Three-Loop Configuration. However, the CSLC has not identified any feasible mitigation measures or project design elements that would reduce the effect to a less than significant level based on the identified thresholds of significance.

SUMMARY OF MITIGATION AND RATIONALE

MM LU-1 will reduce the effects of preclusion on commercial fishing during the project by providing better information for planning fishing activities during the survey period. MM LU-1 will not eliminate the need to restrict fishing in the project area, but will require PG&E to communicate where active surveys areas would be on a regular basis, which will allow commercial fishermen the opportunity to make more informed choices about whether and where to fish.

Preclusion or disruption of fishing in the project area would have a significant impact on commercial fishing. Implementation of the Approved Project will reduce this adverse effect by reducing the survey footprint and duration, although it will cause impacts to occur in 2 separate seasons if survey activities are not completed the first year. MM LU-1 reduces impacts to commercial fishing by requiring PG&E to provide current information about active survey areas to allow fishermen to make more informed decisions about fishing during the survey. However, even with implementation of the Modified Timing Three-Loop Configuration and MM LU-1, fishermen will still be precluded from fishing in active survey areas during peak seasons, and the impact is still considered *Significant and Unavoidable.*

CEQA FINDING NO. FISH-2	Class: **SU**
Impact No.:	**FISH-2:** Project activities would have short-term adverse effects on catch resulting from survey-related noise.
Finding(s):	(1) 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 EIR. (3) Specific economic, legal, social, technological or other considerations make infeasible the mitigation measures or project alternatives identified in the EIR.

EXPLANATION

The project would have short-term adverse effects on commercial catch caused by the following:

- Restrictions or preclusion in the project area during some or all of the survey (as discussed in Impact FISH-1);

- Fish injury; and/or
- Behavioral response of fish, leading to reduced catch per unit effort (CPUE).

Restrictions and preclusion were discussed above under Impact FISH-1; the adverse effects on catch would be related to reductions in fishing activities in the project area during the survey, resulting in lower catch.

Fish injury, particularly related to hearing effects, may occur, especially if the exposure is in close proximity to the air guns. Hearing effects are expected to be temporary; available relevant studies have not shown long-term physiological impacts or mortality related to Temporary Threshold Shifts (temporary impacts to hearing) in fish. However, these studies have shown various behavioral responses in fish, such as “startle” and “alarm” responses. The study types include observed behavior of caged or captive fish exposed to a noise source (Skalski et al. 1992), and other studies using video-recorded behavior of reef-dwelling fish as an air gun array passes.

The importance of behavioral effects to commercial fishing is the potential to reduce CPUE. For the EIR, a search of literature and publicly available reports was conducted to identify information on short- and long-term effects on CPUE. Studies that provided a timeframe for changes in CPUE measured short-term effects, typically those occurring within a matter of days or weeks. One study conducted in Estero Bay targeted behavioral and CPUE effects, concluding there were behavioral effects above certain noise levels and CPUE dropped by over 50 percent. However, the experiment design did not allow for measurements at various distances from the sound source and did not measure response after the source ended. Therefore, no definitive thresholds could be drawn about changes in CPUE with distance or time from the source.

The EIR assumed that a reduction in CPUE related to noise effects would occur during and immediately after the active survey phase (when the air guns would be in use), or an estimated 41 days. However, the EIR also considered that fishing preclusion would extend longer than the active survey phase to accommodate set-up, movement between survey zones, and other operational requirements. Therefore, CPUE may be recovering in the active survey zones before preclusion of the area has ended. For this reason, the EIR stated effect on catch from reduced CPUE may not be discernible from reduced catch caused by preclusion. In addition, if fishermen sought alternative areas to fish while they were restricted from the area, reduced catch could be offset by catch in areas unaffected or less affected by survey activity and restrictions. It may be also possible for fishing activity to occur in the project area during the survey period outside of restricted areas.

However, because the project would nonetheless adversely affect all or most of a commercial fishing season, the impact is expected to be *Significant*. Potentially feasible mitigation measures to reduce this significant impact would involve actions to minimize the survey area and disruption or preclusion of commercial fishing activities, as well as actions to minimize the expected short-term impacts to fishery resources (i.e., impact to CPUE). During the environmental documentation process, the CSLC identified a breadth of potentially feasible measures, and received several specific comments

asserting other potentially feasible measures and alternatives that the CSLC should consider in order to reduce or avoid the impacts, including avoiding or minimizing port/harbor closures, conducting the survey during a different time of year, and requiring PG&E to provide economic compensation to commercial fishermen. MM LU-1, which provides for a notification and communication plan to minimize disruption of fishing activities, was identified in the EIR and incorporated into the CSLC's approval and MMP. The CSLC incorporated other revisions into the Final EIR and MMP where it determined recommendations identified during the environmental documentation process were feasible and effective in reducing the environmental impact of the Project on commercial fishing, and provided a detailed explanation in the responses to comments in the Final EIR where it determined that the suggested measure either would not reduce the effect or for specific economic, legal, technological, or other considerations, the recommendation was infeasible.

As previously discussed, the EIR analysis determined that the Approved Project, which eliminates the northernmost survey zone and allows the survey to be phased if necessary, accomplishes the project objectives associated with the primary survey targets. Under the Approved Project, the survey footprint is limited to three survey zones, thereby reducing areas in which the Project would preclude fishing, and the total survey duration is reduced, but spread over 2 years. Overall, the Approved Project reduces the impact on catch during each year, but it results in the impact occurring twice. The Approved Project also does not eliminate the need for restrictions, and safe survey operations would still be dependent upon environmental conditions and technical requirements. Therefore, impacts on catch will not be avoided, as fishing will still be precluded from certain areas during part of a peak fishing season, and will be repeated if a second survey year is necessary. The CSLC also determined that conducting the survey during a different time of year in order to avoid commercial fishing seasons would unacceptably increase significant impacts to marine mammals, and found that economic compensation to fishermen and other recreational interests would not avoid or reduce a physical environmental impact (i.e., disruption or preclusion of activity), and was therefore not appropriate mitigation for impacts to commercial fishing (See Findings Required Under CEQA, above, for an explanation of treatment of socioeconomic impacts under CEQA). These impacts are described in EIR Sections 4.13 – Commercial Fishing and 7.1 – Socioeconomic Effects, as well as documented in written comments and oral public testimony provided during the environmental documentation process. Nonetheless, the CSLC finds the economic and social impacts that would result to fishermen, fishing-related businesses, ancillary businesses, and the regional communities and the need to reduce the duration that these community members experience economic hardship in any given year are critical considerations in its approval, and is therefore approving the Modified Timing Three-Loop Configuration, which will reduce the amount of time in any given year these activities would be disrupted, even though it may increase the effects related to CPUE.

As explained above, therefore, the CSLC has done all that is feasible to identify or address all potentially feasible mitigation measures that could avoid, substantially lessen, or further reduce the significant effect, including approval of the Modified Timing Three-Loop Configuration. However, the CSLC has not identified any feasible mitigation

measures or project design elements that would reduce the effect to a less than significant level based on the identified thresholds of significance.

SUMMARY OF MITIGATION AND RATIONALE

MM LU-1 would reduce the effects of the project on commercial fishing catch by providing better information for planning fishing effort during the survey period(s). The mitigation measure does not eliminate the need to restrict fishing in the project area, but requires PG&E to communicate where active surveys areas will be on a regular basis, which will allow commercial fishermen the opportunity to make more informed choices about whether and where to fish.

Reduced catch caused by preclusion of fishing in the project area, fish injury, and reduced fishing success (CPUE) will have a significant impact on commercial fishing. Implementation of the Approved Project will reduce this adverse effect by reducing the survey footprint and duration, and MM LU-1 will reduce impacts to commercial fishing by requiring PG&E to provide current information about active survey areas to allow fishermen to make more informed decisions about fishing during the survey, but these measures are balanced by the survey activities occurring over 2 years instead of 1. Therefore, even with implementation of MM LU-1, fishermen would still experience reduced catch in the project area under the Approved Project, and the impact is still considered *Significant and Unavoidable.*

Cumulative Impacts: The combination of the Approved Project with past, present, and probable future projects will have cumulatively significant effects to commercial fishing because the seismic surveys will contribute to disturbance in the project area. By adding to the seasonal disruption, more fishing activity is likely to be impacted. The disruption will occur at a time that the local commercial fishing industry is in transition and implementing elements of the 2008 *Morro Bay and Port San Luis Commercial Fisheries Business Plan* to establish a sustainable fishery.

Cumulative effects are potentially significant because the local commercial fishing industry has been weakened by other factors, and the proposed seismic surveys may cause additional disruptions.

MM FISH-1, Inclusion of Survey Schedule by Zones in the Project Communication Plan, alleviates some of the impacts to fishing activity by providing better information in a timely fashion to local fishermen to enable them to plan their activities with more certainty. Implementation of this mitigation measure, however, does not reduce the regional cumulative impact to less than significant and therefore this incremental cumulative impact is considered *Significant and Unavoidable*.