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Th15a & 16a

Addendum

July 8, 2016

TO: Coastal Commissioners and Interested Parties

FROM: Alison Dettmer, Deputy Director
Kate Huckelbridge, Senior Environmental Scientist

SUBJECT: Addendum to Staff Report for Application No. 9-16-0160/CC-0001-16, MC Global BP4.

This addendum includes minor revisions and clarifications to the June 24, 2016 staff report on MC Global's project to install and operate a submarine fiber optic cable (and related activities) within and extending offshore of Hermosa Beach. These revisions do not change staff's recommendation that the Commission approve the permit as conditioned.

REVISIONS TO FINDINGS: Staff recommends modifying the staff report as shown below in ~~strikeout~~/underline:

Page 2, Summary of Staff Recommendation, make the following changes: [staff note: this first change is not a project modification, but rather a clarification]:

MC Global proposes the first phase of a multi-phase project to install and operate up to four transpacific submarine fiber optic cables to land at Hermosa Beach, Los Angeles County with the purpose of connecting the United States to various locations along the western rim of the Pacific Ocean (Exhibit 1). The proposed project includes installation of one submarine fiber optic cable and: (1) four marine directional bores from two onshore locations in Hermosa Beach; (2) two landing manholes to provide access to the conduit; (3) a marine fiber optic cable (SEA-US); (4) a buried terrestrial conduit system; (5) an ocean ground bed; and (6) a Power Feed Equipment (PFE) facility to be located within an existing building. This recommendation covers a combined coastal development permit and federal consistency certification; the standard of review for both is Chapter 3 of the Coastal Act.

Page 6, Special Condition 4, make the following changes:

4. **Marine Wildlife Monitoring and Contingency Plan**....

…

- Shipboard observers shall submit a daily sighting report to the Executive Director no later than noon the following day, provided that electronic communications from the CIV are available, that shall be of sufficient detail to determine whether observable effects to marine mammals are occurring.

Page 7, Special Condition 5, make the following changes:

5. Cable Burial Depth. The cable shall be buried to a depth of 1.0 meter in waters up to 1200 meters, except where precluded by seafloor substrates. Where a 1.0-meter burial depth cannot be achieved, the Permittee shall bury the cables to the maximum depth feasible.

Page 10, Special Condition 17, make the following changes:

17. **Frac-Out Contingency Plan.** …

…

(d) Methods for detecting the accidental release of drilling fluids that include: (1) monitoring by a minimum of one biological monitor ~~onshore and two biological monitors offshore~~ throughout drilling operations to ensure swift response if a release (i.e., frac-out) occurs; (2) continuous monitoring of drilling pressures to ensure they do not exceed those needed to penetrate the formation; (3) continuous monitoring of mud returns at the exit and entry pits to determine if mud circulation has been lost; (4) continuous monitoring by spotters to follow the progress of the drill bit during the pilot hole operation, and reaming and pull back operations; and (5) a protocol for using fluorescent dye to detect a frac-out on the sea floor during offshore HDD activities.

Page 13, 1st full paragraph, make the following changes:

Cable Landing Sites, Directional Bores and Landing Manholes
MC Global proposes two cable landing sites, each ~~encompassing~~ of which will temporarily occupy approximately 8000 square feet, located on 25th St., just east of Hermosa Ave., and Longfellow Ave., just east of Hermosa Ave (Exhibit 3).

Page 13, 3rd full paragraph, make the following changes:

After drilling is complete, spent drill fluids and cuttings will be collected and disposed of at a permitted landfill. The entire HDD process is expected to take approximately three or four weeks at each landing location and will be conducted during daylight hours seven days a week.

Page 43, 3rd paragraph, make the following changes:

Once a cable is laid, fishing gear could snag cable segments that are insufficiently buried or exposed on the seafloor, resulting in gear damage or loss. If gear is snagged and lost, fishermen would incur financial losses from abandoned gear and lost fishing time. MC Global will

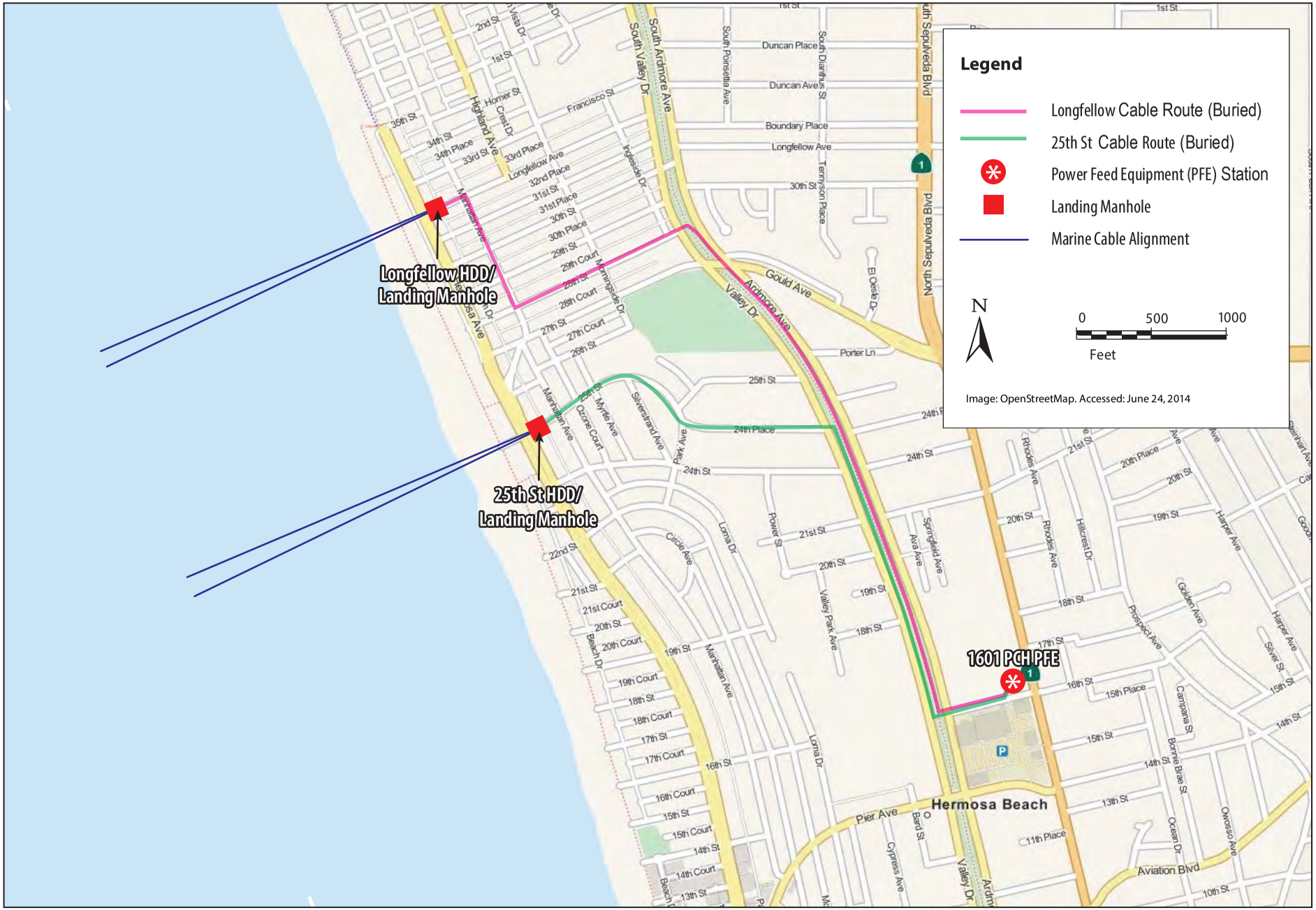
minimize potential fishing conflicts and effects through a number of measures. Most importantly, **Special Condition 5** requires MC Global to bury the cable to a depth of 1.0 meter in waters up to 1200 meters, except where precluded by seafloor substrates. Where a 1.0-meter burial depth cannot be achieved, MC Global shall bury the cables to the maximum depth feasible. MC Global estimates it can bury the cable along 93% of the cable route. Buried cable will minimize the potential for fishing gear entanglement and gear damage or loss. MC Global will lay the cable on the seafloor and will not attempt to bury it in waters between 1200 meters and 1800 meters in depth. However, according to local fisherman (pers.com. Halmay and McCorkle, 6/28/16), there is minimal, if any, fishing below a depth of 1200 meters in this area, and the types of equipment that could be used in areas deeper than 1200 meters are not expected to interact with the cables on the seafloor.

Page 54, add the following to the Other category under Substantive File Documents:

Personal Communication from Mike McCorkle, South Bay Cable/ Fisheries Liaison Committee, to Kate Huckelbridge, California Coastal Commission, dated 6/28/16.

Personal Communication from Peter Halmay, South Bay Cable/ Fisheries Liaison Committee, to Kate Huckelbridge, California Coastal Commission, dated 6/28/16.
"Seadoc 2009-2014," spreadsheet developed by Cassidy Teufel and Kate Huckelbridge, California Coastal Commission, dated 6/17/16.

Page 57, Exhibit 3, replace with revised Exhibit 3 (attached)



Graphics ... 00513.15 (5/19/16) TG

ICF INTERNATIONAL

MCG Terrestrial Facilities
Hermosa Beach, CA

EXHIBIT 3

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Staff:	KH-SF
Staff Report:	6/24/16
Hearing Date:	7/14/16

STAFF REPORT: REGULAR CALENDAR

Application No.: **9-16-0160**

Consistency Certification No.: **CC-0001-16**

Applicant: **MC Global BP4, Inc.**

Location: In state and federal waters offshore of Hermosa Beach out to the edge of the continental shelf; and several locations within the City of Hermosa Beach, Los Angeles County, including: (1) Longfellow Rd. just east of Hermosa Ave., (2) 25th St. just east of Hermosa Ave., (3) 1601 Pacific Coast Highway, and (4) an underground conduit system connecting sites (1) and (2) with site (3) underlying the existing street network.

Project Description: Install and operate one submarine fiber optic cable extending from Hermosa Beach, through California state and federal waters, and landing in Southeast Asia. Includes construction of two onshore landing sites, each accommodating two marine directional bores, one Power Feed Equipment (PFE) facility, one ocean ground bed, and a buried terrestrial conduit system to connect the landing sites with the PFE (Exhibits 1, 2 and 3).

Staff Recommendation: Approval with conditions (CDP); Concurrence with conditions (Consistency Certification).

SUMMARY OF STAFF RECOMMENDATION

MC Global proposes the first phase of a multi-phase project to install and operate up to four transpacific submarine fiber optic cables to land at Hermosa Beach, Los Angeles County with the purpose of connecting the United States to various locations along the western rim of the Pacific Ocean (Exhibit 1). The proposed project includes installation of: (1) four marine directional bores from two onshore locations in Hermosa Beach; (2) two landing manholes to provide access to the conduit; (3) a marine fiber optic cable (SEA-US); (4) a buried terrestrial conduit system; (5) an ocean ground bed; and (6) a Power Feed Equipment (PFE) facility to be located within an existing building. This recommendation covers a combined coastal development permit and federal consistency certification; the standard of review for both is Chapter 3 of the Coastal Act.

The key Coastal Act issues raised by this project are the potential for adverse impacts to marine resources and commercial fishing. The proposed project has the potential to harm marine mammals, fish, hard bottom habitat, soft bottom habitat and marine water quality. To minimize impacts, Commission staff recommends several conditions designed to protect marine habitats and sensitive species. These include **Special Condition 4** requiring MC Global to submit a Marine Wildlife Monitoring and Contingency Plan (MWMCP), **Special Condition 5** that requires the cable to be buried to a depth of 1.0 meter, and **Special Condition 6** requiring MC Global to avoid and eliminate cable suspensions. **Special Conditions 11** and **12** require MC Global to survey the cable every 5 years and to eventually remove it from state waters. In addition, **Special Conditions 15** and **16** require MC Global to quantify impacts to hard bottom substrate and mitigate for those impacts through payment of a hard bottom mitigation fee to be used to remove derelict fishing gear and marine debris from waters off of Southern California. Further, **Special Conditions 17, 18, 19** and **20** require MC Global to submit plans to protect against the discharge of hazardous and non-hazardous substances into the marine environment. As conditioned, the Commission staff recommends the Commission find the proposed project would be consistent with Sections 30230, 30231 and 30232 of the Coastal Act.

The proposed project also has the potential to result in conflicts and impacts to commercial and recreational fishing activities. To minimize this potential, **Special Conditions 7, 8**, and **9** require MC Global to notify fisherman of the location of the installed cable and any areas of exposed or suspended cable. In addition, **Special Condition 22** requires MC Global to adhere to the requirements included in and existing Fishing Agreement (Exhibit 10). As conditioned, the Commission staff recommends the Commission find the project would protect commercial and recreational fishing interests and is therefore consistent with Coastal Act Section 30234.5.

Commission staff recommends that the Commission **approve** coastal development permit application 9-16-0160, as conditioned, and **conditionally concur** with consistency certification CC-0001-16.

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APPENDICES

EXHIBITS

MOTION AND RESOLUTION

1. Coastal Development Permit

Motion:

*I move that the Commission **approve** Coastal Development Permit 9-16-0160 subject to the conditions set forth in the staff recommendation.*

Staff recommends a **YES** vote on the foregoing motion. Passage of this motion will result in conditional approval of the permit and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

Resolution:

The Commission hereby approves Coastal Development Permit 9-16-0160 and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the policies of Chapter 3 of the Coastal Act. Approval of the permit complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.

2. Consistency Certification

Motion:

I move that the Commission conditionally concur with MC Global's Consistency Certification CC-0001-16 on the grounds that, if modified in accordance with the following conditions, the project described therein would be consistent with the enforceable policies of the California Coastal Management Program (CCMP).

Staff recommends a **YES** vote on the motion. Passage of this motion will result in a concurrence with the certification and adoption of the following resolution and findings. An affirmative vote of a majority of the Commissioners present is required to pass the motion.

Resolution to Conditionally Concur with Consistency Certification:

The Commission hereby conditionally concurs with MC Global's Consistency Certification CC-0001-16 on the grounds that, if modified in accordance with the following conditions, the project described therein would be consistent with the enforceable policies of the CCMP.

II. APPLICANT'S CONSISTENCY CERTIFICATION

MC Global has certified that the proposed activity complies with the California Coastal Management Program and will be conducted in a manner consistent with such program.

III. STANDARD CONDITIONS

The coastal development permit (9-16-0160) is granted subject to the following standard conditions:

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

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

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

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

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

IV. SPECIAL CONDITIONS

This permit is granted subject to the following special conditions, as applicable to both Coastal Development Permit (CDP) No. 9-16-0160 and Consistency Certification (CC) No. CC-0001-16:

1. **Performance Bond.** Prior to issuance of this permit, the applicant shall provide a surety bond or other security device guaranteed by The Permittee acceptable to the Executive Director of the Coastal Commission (hereinafter "Executive Director"), for $500,000, and naming the Coastal Commission as the assured, to guarantee the faithful observance and performance of the applicant of the terms and conditions of this permit. The surety bond or other security device shall be maintained in full force and effect at all times until both cables have been removed pursuant to **Special Condition 12** of this permit.

2. **Other Permits and Approvals:** PRIOR TO THE START OF CONSTRUCTION, the applicant shall provide to the Executive Director copies of all other local, state, and federal permits required to perform project-related work. These permits and approvals include:

a. Regional Water Quality Control Board – Los Angeles Region: final approved 401 water quality certification.
b. U.S. Army Corps of Engineers: Authorization under Nationwide Permit #12, pursuant to Rivers and Harbors Act Section 10 and Clean Water Act Section 404.

3. **Environmental Impact Report Mitigation Measures.** This permit incorporates those mitigation measures identified in the March 2016, *Final EIR for the Transpacific Fiber-Optic Cables Project* (State Clearinghouse No. 2015041004) concerning marine habitats, biological resources, fishing, public access, cultural resources and hazards that are attached to this report as **Exhibit 10.**

4. **Marine Wildlife Monitoring and Contingency Plan (MWMCP**). AT LEAST 60 DAYS PRIOR TO THE START OF CABLE INSTALLATION ACIVITIES, The Permittee shall prepare a MWMCP for review and approval by the Executive Director. The Permittee shall implement the MWMCP during all marine operations (e.g., cable installation, post-lay inspection, burial, maintenance and repair, retrieval of entangled fishing gear, and inspection surveys). The MWMCP shall include the following elements, and shall be implemented consistent with vessel and worker safety:

- Prior to the start of offshore activities The Permittee shall provide awareness training to all Project-related personnel and vessel crew, including viewing of an applicable wildlife and fisheries training video, on the most common types of marine wildlife likely to be encountered in the Project area and the types of activities that have the most potential for affecting the animals.
- A minimum of two National Marine Fisheries Service (NMFS)-qualified marine mammal observers shall be located on the cable installation vessel (CIV) to conduct observations, with two observers on duty during all cable installation activities. The MWMCP shall identify any scenarios that require an additional observer on the CIV or other Project vessel and, in these cases, make recommendations as to where they should be placed to ensure complete coverage of the surrounding marine environment.
- Shipboard observers shall submit a daily sighting report to the Executive Director no later than noon the following day that shall be of sufficient detail to determine whether observable effects to marine mammals are occurring.
- The observers shall have the appropriate safety and monitoring equipment adequate to conduct their activities (including night-vision equipment).
- The observers shall have the authority to stop any activity that could result in harm to a marine mammal or sea turtle. For monitoring purposes, the observers shall establish a 1,640 foot (500 meter) radius avoidance zone around the CIV and other Project vessels (if required by the MWMCP) for the protection of large marine mammals (i.e., whales) and a 500-foot (152-meter) radius avoidance zone around the CIV and other Project vessels (if required by the MWMCP) for the protection of smaller marine mammals (i.e., dolphins, sea lions, seals, etc.) or sea turtles.
- In the event that a whale becomes entangled in any cables or lines, the observer shall immediately notify NMFS and the Executive Director, so appropriate response measures can be implemented. Similarly, if any take involving harassment or harm to

a marine mammal occurs, the observer shall immediately notify the Executive Director, NMFS and any other required regulatory agency.

- While cable is being deployed, cable-laying vessel speeds shall be limited to less than 2 nautical miles per hour (knots), with the speed of Project support vessels while assisting the cable-laying vessel moderated to 3 to 5 knots to minimize the likelihood of collisions with marine mammals and sea turtles.
- Propeller noise and other noises associated with cable laying activities shall be reduced or minimized to the extent feasible.
- The captain of the CIV and the Permittee's Project management team shall be responsible for ensuring that the MWMCP is implemented.
- A final report summarizing the results of monitoring activities shall be submitted to the Executive Director and other appropriate agencies no more than 90 days following completion of cable installation and retrieval activities. The report shall include: (a) an evaluation of the effectiveness of monitoring protocols and (b) reporting of (i) marine mammal, sea turtle, and other wildlife sightings (species and numbers); (ii) any wildlife behavioral changes; and (iii) any project delays or cessation of operations due to the presence in the project area of marine wildlife species subject to protection.

5. **Cable Burial Depth**. The cable shall be buried to a depth of 1.0 meter except where precluded by seafloor substrates. Where a 1.0-meter burial depth cannot be achieved, the Permittee shall bury the cables to the maximum depth feasible.

6. **Avoid and Eliminate Cable Suspensions**. AT LEAST 60 DAYS PRIOR TO THE START OF CABLE INSTALLATION ACTIVITIES, the Permittee shall prepare a Cable Slack Management Plan for review and approval by the Executive Director. The plan shall include the following elements to avoid and eliminate cable suspensions:
   - During cable surface-lay operations, the Permittee shall employ a remotely-operated vehicle ("ROV") to track cable-lay operations and provide real-time ROV video feed to the cable ship.
   - If the ROV video feed identifies a suspended segment of cable that can be eliminated or minimized by repositioning or introduction of additional cable slack, the Permittee shall recover the cable and reinstall it using the above methods.
   - During post-lay inspection and burial operations, The Permittee shall use a ROV to reposition and/or bury to 1.0 meter any suspended or exposed cable segment, unless precluded from doing so by seafloor substrates.

7. **Notification of Exposed Cable**. During the marine cable installation phase of the project, the Permittee shall submit to (a) the Executive Director, (b) the U.S. Coast Guard (for publication in a Notice to Mariners), and (c) the signatories of the Fishing Agreement (see **Special Condition 22**), weekly notices containing preliminary as-built coordinates of any unburied or exposed sections of cable. The Permittee shall also make radio broadcast announcements on the local fishers' emergency radio frequency that provide the current cable installation location and a toll-free number that can be called for additional information.

8. **As-Built Documentation**. Within 45 days of completing marine cable installation, The Permittee shall submit to the Executive Director and the signatories of the Fishing Agreement (see Special Condition 22) the following: (a) as-built plans in writing (Route

Position List) and alignment or strip charts depicting bathymetry, seafloor substrates or features, seabed profile, depth of cable burial below the seafloor, and cable tension; (b) electronic as-built plans (in a format to be determined by the Fishing Agreement signatories); and (c) as-built cable plans overlaid on National Oceanic and Atmosphere Administration ("NOAA") navigation charts. The cable location shall be obtained by an acoustic navigation system linked to a surface differential global positioning system. The transponder for the acoustical navigational system shall be mounted on the equipment used for cable burial. The cable shall be considered installed the day after the last day of post-lay inspection burial operations.

9. **Changes to Nautical Charts:** WITHIN 30 DAYS OF COMPLETING INWATER CONSTRUCTION, the Permittee shall provide written verification to the Executive Director that the Permittee has submitted project-related information to the National Oceanic and Atmospheric Administration (NOAA) to be included on area nautical charts. Information submitted shall include as-built drawings, blueprints, or other engineering documents which depict the completed development; geographic coordinates of the location, using a Differential Geographic Positioning System (DGPS) unit or comparable navigational equipment; and the Permittee's point of contact and telephone number.

10. **Cable Installation Report**. WITHIN 60 DAYS OF CABLE INSTALLATION, the Permittee shall submit to the Executive Director a cable installation report containing, at minimum, the following: (a) a summary of pre-lay, cable-laying, and burial methods used; (b) a summary of slack control equipment and methods applied during cable installation; (c) results from the post-lay burial survey indicating the depth of burial achieved along the cable route; (d) identification of any areas of cable suspension greater than 1.0 meter from the seafloor and a description of why cable could not be re-routed to avoid suspended cable; (e) a map depicting the cable route and indicating areas where the cable could not be buried and where cable suspensions of greater that 1.0 meter from the seafloor are present; (f) an evaluation of the consistency of cable installation with the project description and applicable special conditions of this permit; and (g) a description of any observed fishing activity during the pre-lay and cable installation project phases.

11. **Cable Surveying**. Starting in 2020, and then every five years thereafter (unless otherwise determined by the Executive Director based on a finding that portions of the cable route have not remained buried), the Permittee shall survey those portions of the cable route from the mean high tide line to where project operations extend into federal waters out to the 1,000-fathom depth contour to verify that the cables have remained buried consistent with the as-built cable burial plan. The survey shall be conducted by a third party, approved by the Executive Director, using a ROV equipped with video and still cameras. Within 30 days of survey completion, The Permittee shall submit to the Executive Director a report describing the results of the survey (including still images) and a copy of the videotape(s) recorded during the cable survey. The videotape(s) shall include a display that identifies the date, time, position, water depth, and heading of the ROV. If the survey shows that a segment(s) of a cable is no longer buried consistent with the as-built cable burial plan, the Permittee shall, within 30 days of survey completion, submit to the Executive Director for approval a plan to re-bury those cable segments. Upon approval of the plan by the Executive Director, the Permittee shall proceed to implement the plan in accordance with the time schedule specified therein.

12. **Cable Removal**. WITHIN 90 DAYS OF EITHER TAKING A CABLE OUT OF SERVICE or after the expiration or sooner termination of the Permittee's City of Hermosa Beach lease(s) or permit(s), the Permittee shall apply for an amendment to this permit to remove the cable(s) from the territorial waters of the State of California. Upon approval by the Commission of the permit amendment, the applicant shall implement the cable removal project authorized by the amendment in accordance with the time schedule specified therein.

13. **Grunion Run Monitoring**. If project-related construction activities on the beach will occur during the seasonally predicted grunion run and egg incubation period as identified by the California Department of Fish and Wildlife (generally April through August), then prior to construction activities on the beach, the applicant shall have a qualified biologist conduct a survey of the project site to determine presence of California grunion. If the biologist determines that any grunion spawning activity is occurring and/or that grunion are present in or adjacent to the project site, then no construction, maintenance, grading, or sand-disturbing activities shall occur on, or adjacent to, the area of the beach where grunion have been observed to spawn until the next predicted run in which no grunion are observed. Surveys shall be conducted for all seasonally predicted run periods in which material is proposed to be placed at any of the above sites. The Permittee shall have the biologist provide inspection reports after each grunion run observed and shall provide copies of such reports to the Executive Director and to the California Department of Fish and Wildlife.

14. **Anchoring Plan**. AT LEAST 30 DAYS PRIOR TO THE COMMENCEMENT OF OFFSHORE ACTIVITIES, the Permittee shall prepare and submit an Anchoring Plan to the Executive Director for review and approval that describes how the Permittee will avoid placing anchors on sensitive ocean floor habitats and pipelines. The Plan shall include at least the following information:
    - A list of all vessels that will anchor during the Project and the number and size of anchors to be set;
    - Detailed maps showing proposed anchoring sites that are located at least 40 feet (12 meters) from rocky habitat identified during the Marine Biological Resource Survey;
    - A description of the navigation equipment that would be used to ensure anchors are accurately set; and
    - Anchor handling procedures that would be followed to prevent or minimize anchor dragging, such as placing and removing all anchors vertically.

15. **Hard Bottom Seafloor Study.** WITHIN 60 DAYS OF CABLE INSTALLATION, the Permittee shall submit to the Executive Director for review and approval the results of a Hard Bottom Study that quantifies the extent of hard bottom substrate that is impacted by the installed cable out to the edge of the Outer Continental Shelf. The study will use data collected during cable installation and/or post-lay burial operations to determine areas where the cable is in direct contact with or is suspended above hard bottom substrate. At least 30 days prior to the cable installation work, the Permittee shall submit to the Executive Director for review and approval a proposed methodology for collecting the necessary data and calculating the hard bottom impact. Still-photographs of representative habitat shall be taken in any area of rocky substrate traversed by the cable.

The survey shall quantify the extent of exposed rocky substrate, including type and relief along the cable corridor and the height and length of any cable suspended over rocky or soft substrates at heights greater than 1.0 meter from the seafloor.

16. **Hard Bottom Mitigation Fund.** The applicant shall compensate for all project-related impacts to hard bottom habitat through payment of a compensatory hard bottom mitigation fee to be used to remove derelict fishing gear and other marine debris from waters in the Southern California Bight. This work will be carried out pursuant to a Memorandum of Agreement ("MOA") by and between the California Coastal Commission and the Regents of the University of California on behalf of the UC Davis Wildlife Health Center's California Lost Fishing Gear Recovery Project.

The amount of the hard bottom mitigation fee shall be calculated by applying a 3:1 mitigation ratio to the total square footage of impacted hard bottom and then multiplying that acreage by a compensation rate of $13.80 per square foot. The total square footage of hard bottom impacted shall be calculated by multiplying the linear distance of cable laid on or suspended over hard bottom by approximately twice the width of the cable (i.e., 3 inches). The fee shall be paid to the UC Davis Wildlife Center within 30 calendar days of the approval of the Executive Director of the results of the hard bottom study required by **Special Condition 16**. The applicant shall provide evidence of this payment to the Executive Director within the same time frame.

17. **Frac-Out Contingency Plan.** PRIOR TO ISSUANCE OF THIS PERMIT, the Permittee shall submit to the Executive Director for review and approval a Frac-Out Contingency Plan. The plan shall include, at a minimum:
    (a) An evaluation of a worst-case spill volume;
    (b) A commitment to use water as a drilling fluid for the last 60-100 feet of the HDD bore before the drill punches out into the exit pit.
    (c) Measures describing training of personnel, monitoring procedures, equipment, materials and procedures in place for the and prevention, containment, clean up, and disposal of released drilling muds, and agency notification protocols;
    (d) Methods for detecting the accidental release of drilling fluids that include: (1) monitoring by a minimum of one biological monitor onshore and two biological monitors offshore throughout drilling operations to ensure swift response if a release (i.e., frac-out) occurs; (2) continuous monitoring of drilling pressures to ensure they do not exceed those needed to penetrate the formation; (3) continuous monitoring of mud returns at the exit and entry pits to determine if mud circulation has been lost; (4) continuous monitoring by spotters to follow the progress of the drill bit during the pilot hole operation, and reaming and pull back operations; and (5) a protocol for using fluorescent dye to detect a frac-out on the sea floor during offshore HDD activities.
    (e) Protocols the Permittee will follow if there is a loss of circulation or other indicator of a release of fluids.
    (f) Protocols the Permittee will follow if there is a fluid release on beach or other onshore habitat (e.g., isolating the area through construction of temporary berms/dikes and use of silt fences, straw bales, absorbent pads, straw wattles, and plastic sheeting).

(g) Protocols the Permittee will follow if there is a fluid release in marine waters (e.g., immediately erect an isolation/containment environment (underwater boom and curtain).

(h) If a frac-out and fluid release occurs, the Permittee shall immediately halt work and notify and consult with the staffs of the City, Coastal Commission, CDFW's Office of Spill Prevention and Response, and National Oceanic and Atmospheric Administration Fisheries regarding appropriate incident-specific actions to be undertaken before HDD activities can begin again.

18. **Spill Prevention and Response Plan.** PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the Permittee shall submit a Project-specific Spill Prevention and Response Plan to the Executive Director for review and approval. The Plan shall identify the worst-case spill scenario and demonstrate that adequate spill response equipment will be available. The Plan shall also include preventative measures the Permittee will implement to avoid spills and clearly identify responsibilities of onshore and offshore contractors and the Permittee personnel and shall list and identify the location of oil spill response equipment (including booms), appropriate protocols and response times for deployment. Petroleum-fueled equipment on the main deck of all vessels shall have drip pans or other means of collecting dripped petroleum, which shall be collected and treated with onboard equipment. Response drills shall be in accordance with Federal and State requirements. Contracts with off-site spill response companies shall be in-place and shall provide additional containment and clean-up resources as needed.

19. **Critical Operations and Curtailment Plan (COCP).** PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the Permittee shall submit a Final COCP to the Executive Director for approval. The COCP shall define the limiting conditions of sea state, wind, or any other weather conditions that exceed the safe operation of offshore vessels, equipment, or divers in the water; that hinder potential spill cleanup; or in any way pose a threat to personnel or the safety of the environment. The COCP shall provide for a minimum ongoing 5-day advance favorable weather forecast during offshore operations. The plan shall also identify the onsite person with authority to determine critical conditions and suspend work operations when needed.

20. **Marine Discharge**. There shall be no marine discharge of sewage or bilge/ballast water from vessels either installing or repairing the cables. A zero-discharge policy shall be adopted for all project vessels.

21. **Stormwater Management Plan:** PRIOR TO ANY PROJECT-RELATED GRADING OR FILLING, the Permittee shall provide for the Executive Director's review and approval a Stormwater Management Plan that describes all structural and non-structural measures the Permittee will implement to avoid and minimize stormwater-related impacts during construction activities. The Plan shall identify measures the Permittee will implement to store and/or contain materials, soils, and debris originating from the project in a manner that precludes their uncontrolled entry and dispersion into nearby waters or habitat areas. Any debris that inadvertently enters coastal waters or waters shall be removed immediately. The Plan will identify Best Management Practices (BMPs) that will be implemented during project activities to prevent erosion and excessive sedimentation and to protect wetlands, coastal waters and upland habitats from stormwater runoff associated with project activities.

22. **Compliance With Fishing Agreement Requirements**. In a manner consistent with the requirements of Sections 1.1(a) through 1.1(k) of the Fishing Agreement (see Exhibit 10), the Permittee shall comply with all deadlines for payment, reimbursement, and compensation of all expenses of the Cable Committee and Cable Committee representatives, as approved by the Cable Committee in its Annual Budget.

23. **Cable Repairs**. The Permittee shall provide notice of proposed cable repairs in writing to the Executive Director and in a U.S. Coast Guard Notice to Mariners 15 days prior to any cable repair or maintenance activity, or as soon as possible for emergency repairs.

24. **Cable Entanglements and Gear Retrieval**. In the event that fishermen snag a cable and lose or cut gear, or that any other type of entanglement occurs (e.g., whale), the Permittee shall use all feasible measures to retrieve the fishing gear or object. The Permittee shall notify the Executive Director within 48 hours of its knowledge of gear loss or other cable entanglement. Retrieval shall occur no later than six weeks after discovering or receiving notice of the incident, unless otherwise authorized by the Executive Director. If full removal of gear is not feasible, the Permittee shall remove as much gear as practicable to minimize harm to wildlife (e.g. fishes, birds, and marine mammals). Within two weeks of completing the recovery operation, the Permittee shall submit to the Executive Director a report describing (a) the nature of and location of the entanglement (with a map) and (b) the retrieval method used for removing the entangled gear or object or the method used for minimizing harm to wildlife if gear retrieval proves infeasible.

25. **Onshore Construction Limitations.** Onshore project construction related to the installation of the ocean ground bed and horizontal drilling activities is prohibited Memorial Day weekend (beginning the preceding Friday) through Labor Day.

V. FINDINGS AND DECLARATIONS

A. PROJECT DESCRIPTION

MC Global proposes the first phase of a multi-phase project to install and operate up to four transpacific submarine fiber optic cables to land at Hermosa Beach, Los Angeles County with the purpose of connecting the United States to various locations along the western rim of the Pacific Ocean (Exhibit 1). The proposed project includes installation and operation of the first cable (SEA-US) from a landing site located in Hermosa Beach out to the edge of the continental shelf (Exhibit 2). The SEA-US cable will connect California to Southeast Asia, with landings in Hawaii, Guam, the Philippines and Indonesia. In addition, the proposed project includes construction and operation of onshore facilities to facilitate operation of the SEA-US cable and up to three additional future cables. Specifically, the proposed project includes the following components:

- Four marine directional bores to provide housing for the fiber optic conduit. The bores will be drilled from two onshore locations (2 bores at each location), travel under the beach and surf zone, and resurface approximately 4000 feet offshore.

- Two landing manholes to be installed at the directional bore sites to provide access to the conduit.
- The SEA-US cable system, including marine and terrestrial fiber optic cable, ground cable and power cable.
- A buried terrestrial conduit system constructed from the landing manhole at each landing site to the PFE facility.
- One ocean ground bed consisting of anodes installed into holes drilled in the beach down to the seawater level below the beach surface.
- One Power Feed Equipment (PFE) facility to be located within an existing building.

Each of these components will be described in detail below.

Cable Landing Sites, Directional Bores and Landing Manholes

MC Global proposes two cable landing sites, each encompassing approximately 8000 square feet, located on 25th St., just east of Hermosa Ave., and Longfellow Ave., just east of Hermosa Ave (Exhibit 3). Each landing site marks the landward end of two directional bores that extend below the surface, to a point approximately 4000 feet offshore (See Exhibit 4). The purpose of each bore is to provide a conduit for a submarine cable to come ashore without causing disruption to the seafloor or beach within the surf zone. The landing site would serve as the principal staging area for installation of the directional bores. MC Global may also use an existing vacant lot at the north end of Redondo Beach as a secondary staging area. Approximately 30 tractor-trailer loads of construction equipment and materials would be delivered to the principal staging area over the course of the project, at a maximum rate of 5 trucks per day.

Each bore will be drilled using a process called horizontal directional drilling (HDD). To install each bore, workers would first excavate an HDD entry pit within the landing site (approximately 10 feet wide by 12 feet long by 4 feet deep). Next, the HDD rig, positioned at the entry pit, would be used to drill a hole. As the bore hole is drilled, sections of 6 inch steel conduit used to house the fiber optic and power cables are advanced into the hole. During the drilling process, returned drilling fluid (usually a combination of inert clay and water) and bore cuttings would collect in the entry pit, and drill fluid would be treated and recycled back into the drill stem. For the last sixty feet of the bore, the HDD contractor will switch from drill fluids to freshwater. Once the exact exit location is determined, divers will use water jets to excavate 10-15 cubic yards of sediment to expose the end of the bore pipe and then cut off the drill steel. Finally, a temporary pull-line will be installed using a pipe pig to facilitate pulling the submarine cable through the conduit (Exhibit 4).

After drilling is complete, spent drill fluids and cuttings will be collected and disposed of at a permitted landfill. The entire HDD process is expected to take approximately three or four weeks and will be conducted during daylight hours seven days a week. With time for staging and demobilization included, MC Global and its contractors expect to occupy the bore sites for a period ranging from seven to eight weeks in total.

To facilitate future access to the cable, one landing manhole will be constructed at the landward end of each of the directional bores (Exhibit 3). The landing manhole, measuring approximately 8 feet wide by 12 feet long by 9 feet deep, will contain the splice where the submarine cable

connects to the terrestrial cable. A separate surface concrete vault (4 foot wide by 5 feet long by 2.5 feet deep) will be constructed at grade on the land side of each manhole to allow for the installation of future cables without surface disturbance. Each manhole is expected to take two days to complete.

Once the HDD bore and landing manholes are installed, the contractor will use a winch to pull the marine cable from the cable-lay vessel through the directional bore pipe and into the landing manhole where it will be ready to connect to the terrestrial cable system. This process is expected to take approximately two days and will be monitored by divers from the main workboat. Once the connection is complete, the bore sites will be restored, which will involve pavement repair and restriping in paved areas and grading to original contours and revegetation in unpaved areas.

Submarine fiber optic cable system

MC Global proposes to install the SEA-US cable along the alignment shown in Exhibit 2. This alignment was selected to avoid known marine features such as the Santa Monica and Redondo Canyons, areas under consideration for the Channel Islands National Marine Sanctuary, explosives dumping areas, fisheries associated with Tanner Bank and Cortes Bank, contaminated sediments associated with the Palos Verdes Shelf and the Hyperion sewerage outfall, and commercial vessel anchoring and pilot boarding areas (Exhibits 6 and 7).

Before installing the submarine fiber optic cable on the seafloor, MC Global will conduct a pre-lay grapnel run to clear debris from the cable corridor. Anything snagged on the grapnel, such as discarded fishing gear, will be retrieved and disposed of onshore. The grapnel will not be pulled over areas of hard bottom or in the vicinity of existing buried cables. Once the pre-lay grapnel run is complete, MC Global will begin laying the fiber optic cable. Beginning at the end of the bore pipe, the cable will be payed out by the cable lay vessel and temporarily laid on the seafloor. Up to water depths of about 98 feet (30 meters), divers using hand jets will then open up a small furrow under the cable, allowing the cable to drop into the furrow. Sediments disturbed by the jets would then settle back over the cable, burying it to an optimal depth of 3.28 feet (1 meter) where feasible. From water depths of 98 feet to 328 feet (30 – 100 meters), a Remotely Operated Vehicle (ROV) will use water jets to bury the cable. Several passes by the ROV may be required to reach the target depth of 3-4 feet (1-1.2 meters).

From 328 feet (100 meters) to 3,037 feet (1200 meters) at the edge of the continental shelf, the cable will be installed using a cable plow (Exhibit 5). The plow, as it is pulled by the cable-laying ship, slices through the ocean floor sediments while simultaneously feeding the cable into the newly created furrow. As the sled continues to move forward, the weight of the sled coupled with the weight of the soil, closes and compacts the furrow, effectively burying the cable to a target burial depth of 3.28 feet (1 meter). In areas where the plow is not able to achieve the targeted burial depth due to bottom conditions, an ROV will be used to attempt to bury the cable as described above. Deeper than 3,037 feet, the cable will be laid directly on the seafloor.

Terrestrial Conduit System

The terrestrial conduit system links the marine fiber optic cable to existing and future fiber optic infrastructure. The conduit system consists of three 4-inch diameter plastic conduits, each containing three innerducts for the fiber optic cable, ground cable and power cable. The first conduit houses the proposed active telecommunications cable. The second conduit is for

connecting a future cable to existing fiber optic infrastructure. The third conduit would be used as a temporary or permanent replacement cable in the event that one of the other two cables had to be taken out of service. Installation of all three conduits is proposed as part of the current project to minimize the need for future excavations or interruptions in service.

The proposed terrestrial conduit system will be installed within public Right-of-Ways (streets) and a Greenbelt area along the route shown on Exhibit 3. Pre-cast concrete manholes will be placed every approximately 1,200 to 2,500 feet along the proposed route to allow future access for maintenance. Approximately ninety percent of the terrestrial conduit system will be installed using trenchless construction. Trenchless technology uses small guided bores that travel along an underground alignment. The bore machine operates similarly to the HDD drill rig, but on a smaller scale. These smaller bores are drilled between consecutive entry/exit pits (measuring about 4 feet wide by 8 feet long by 5 feet deep) placed approximately every 500 feet. Once the bore is complete, a conduit is pulled through the hole. It is possible that conventional boring, which requires excavation of a larger push pit to accommodate the drilling and jacking equipment, could be necessary if an underground geologic formation or the presence of underground utilities preclude the use of trenchless construction.

Short segments of the terrestrial conduit system could be installed using trenching methods where boring is infeasible or undesirable, such as at manhole locations and connection points to existing structures at the PFE facilities. If trenching is required, a backhoe will be used to excavate a 12 to 18 inch wide by 48-60 inch deep trench. Once the trench is complete, the conduit will be placed inside. Installation of the terrestrial conduit system is expected to take approximately four weeks.

Once the conduit is installed, trenches and bore pits will be backfilled with native soil, imported aggregate base, or sand cement slurry, and compacted. Removed material that is not used for backfilling will be disposed of at an appropriate site. Finally, the innerduct and cables will be pulled through the conduits. The contractor will introduce a pulling lubricant straight into the conduit to reduce friction.

Ocean Ground Bed

An earth array ground bed will be installed for the proposed SEA-US cable to provide both cathodic protection to control corrosion and a ground for the electricity that powers the submarine cable amplifiers. Installation of the ocean ground bed will involve drilling holes down to seawater (approximately 20 feet deep), and inserting an anode in each hole. A copper ground cable will connect the tops of the anodes to one another and then to the landing manhole and will be protected by placing sacks of concrete on top of the cable to form a concrete cap. The anodes, located approximately 10 feet below grade, and the ground cable connecting the anodes to the landing manhole, located approximately 6 feet below grade, will then be covered with sand.

Power Feed Equipment (PFE) Facilities

The purpose of the PFE facility is to convert and apply the electric current necessary to operate the marine fiber optic cable. In addition, the PFE facility houses the interconnection between the proposed fiber optic cable and existing fiber optic cable infrastructure. The proposed PFE facility will require approximately 740 square feet of space and will be housed within the existing Hermosa Pavillion building, located at 1601 Pacific Coast Highway (Exhibit 3). It will include one 80kW diesel backup generator, one 700-gallon fuel tank, two air conditioning units,

and one 80-kW pad-mounted transformer. Construction and testing of the PFE facility is expected to take approximately three months.

MC Global estimates that construction of the proposed project will take approximately 3-4 months in total. Work will occur during daylight hours 7 days per week, but will be limited on Saturday and only consist of two 30 minute periods on Sunday to allow for circulation of the marine directional bore pump.

Once installed, the marine and terrestrial portions of the fiber optic cable do not require routine maintenance. However, damage caused by salt water intrusion into the conduit, anchors or snagged fishing gear could result in a fault that would need to be repaired. If the cable is buried in the vicinity of the fault, a standard grapnel would be used to recover the cable in burial depths up to 20 inches. If the cable is buried deeper, a de-trenching grapnel, divers and an ROV could be used to remove the cable from the burial trench and bring it to the surface. There, the cable would be repaired and then reburied in its original position to the extent practicable. If the cable is not buried, it might be possible to bring the cable to the surface without cutting it.

MC Global estimates that the proposed fiber optic cable project would have a life of approximately 25 years. Within 90 days of either taking the cable out of service or the expiration of the lease approved by the City, MC Global would notify the City, the Commission and other applicable agencies of the status and the proposed disposition of the inactive cable. At the end of the cable's life, MC Global proposes to abandon the cable in place, both in the water and on land.

B. PRIOR FIBER OPTIC CABLE PROJECTS APPROVED BY COASTAL COMMISSION

The Coastal Commission has approved a number of fiber optic cable projects in offfshore waters:

- In January 1992, the Coastal Commission approved the installation, operation, and maintenance of one cable, HAW-5, and four conduits (#4-91-61) offshore of Montana de Oro State Park.
- In September 1994, the Coastal Commission approved two additional cables, TPC5-T1 and TPC5-G (#4-91-61-A1) offshore of Montana de Oro State Park.
- In April 2000, the Coastal Commission approved the installation of two fiber optic cables and five offshore conduits by MFS Globenet and MCI WorldCom (E-99-011) at Montana de Oro State Park.
- In May and June 2000, the Coastal Commission approved the installation of two fiber optic cables by AT&T (E-98-029) off of Montana de Oro State Park.
- In June 2000, the Coastal Commission approved the installation of three fiber optic cables and three conduits by PC Landing Corporation and PAC Landing Corporation at Grove Beach (E-98-27).
- In September 2000, the Coastal Commission approved the installation of one fiber optic cable and five conduits at Manchester State Beach, and one cable off of Montana de Oro State Park by AT&T Corporation (E-00-004).
- In December 2000, the Coastal Commission approved the installation of a festoon fiber optic cable along the California coastline landing onshore at four locations (Morro Bay,

Leadbetter Beach in Santa Barbara, Manhattan Beach, and Mission Beach in San Diego) by Global West Network, Inc. (E-00-008).

- In July 2002, the Coastal Commission approved the installation of two fiber optic cables landing at the City of Hermosa Beach in Los Angeles County by Tyco Networks (US), Inc. (E-01-029).
- In September 2005, the Coastal Commission approved the installation of a research fiber optic cable extending Moss Landing to the Smooth Ridge in Monterey Bay by the Monterey Bay Aquarium Research Institute (MBARI) (E-05-007).
- In March 2009, the Coastal Commission approved the installation of two additional fiber optic cables by AT&T (E-08-021) off of Montana de Oro State Park.

Through its federal consistency authority, the Coastal Commission has also concurred with numerous other consistency certifications, consistency determinations, and negative determinations for submarine fiber optic cable-related projects in other areas of the state by, for example, the Navy, Coast Guard, Federal Aviation Administration, MCI WorldCom, AT&T, Global West, and Tyco Networks (US).

C. OTHER AGENCY APPROVALS

City of Hermosa Beach

The City of Hermosa Beach (City) is the lead agency under the California Environmental Quality Act (CEQA) for the proposed project. On April 19, 2016, the City certified the final EIR for the project and issued a Precise Development Permit for the proposed project. Ownership and management of the tidelands offshore of the City was granted to the City by the State Lands Commission. On May 24, 2016, the Hermosa Beach City Council voted to approve granting an easement to MC Global to construct and operate the proposed project in the granted tidelands offshore of the City. The City of Hermosa Beach does not have a certified Local Coastal Program, and thus the Commission will consider both the onshore and offshore portions of the project as part of a CDP.

Regional Water Quality Control Board – Los Angeles Region (RWQCB)

The RWQCB regulates waste discharges into receiving waters in the project area. On September 14, 2015, the Applicant submitted an application for a Section 401 water quality certification. The RWQCB is expected to issue a final water quality certification in July 2016.

South Coast Air Quality Management District (SCAQMD)

The SCAQMD is the local air district responsible for implementing federal and State air quality standards in the project area. The Applicant is required to obtain approval from the AQMD for use of a backup generator. This approval is expected in October 2016.

U.S. Army Corps of Engineers (Corps)

The Corps has regulatory authority over the proposed project under Section 10 of the Rivers and Harbors Act of 1899 (*33 U.S.C. 1344*) and Section 404 of the Clean Water Act (CWA) (*33 U.S.C. 1344*). The Applicant requested federal authorization from the Corps on September 14, 2015. The Corps is processing the request under Nationwide Permit #12 (Utility Line Activities) and a final decision is expected in July 2016.

D. DREDGING AND PLACEMENT OF FILL IN COASTAL WATERS

Coastal Act Section 30233(a) states:

> *The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:*
>
> *(1) New or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities.*
>
> *(2) Maintaining existing, or restoring previously dredged depths on existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps.*
>
> *(3) In open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities and the placement of structural pilings for public recreational piers that provide public access and recreational opportunities.*
>
> *(4) Incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.*
>
> *(5) Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.*
>
> *(6) Restoration purposes.*
>
> *(7) Nature study, aquaculture, or similar resource dependent activities.*

Coastal Act Section 30233(a) imposes three tests on a project that includes dredging and/or fill of open coastal waters. The first test requires that the proposed activity must fit into one of the seven categories of uses enumerated above. The second test requires that there be no feasible less environmentally damaging alternative. The third test requires that feasible mitigation measures be provided to minimize the project's adverse environmental effects.

Allowable Use Test

One of the seven allowable uses of fill under 30233(a) is a coastal-dependent industrial facility. The proposed MC Global SEA-US transoceanic fiber optic cable, whose purpose is to directly connect the United States with Southeast Asia, is "coastal-dependent" since it requires "a site on, or adjacent to, the sea to be able to function at all" as defined in Coastal Act Section 30101. The Commission thus finds that the proposed SEA-US cable meets the allowable use test of Coastal Act Section 30233(a).

Alternatives

The Commission must further find that there is no feasible less environmentally damaging alternative to the proposed project, especially with respect to the impacts of submarine cables

and cable installation on marine organisms and hard bottom habitat. In order to find that there is no less environmentally damaging alternative to the proposed project, it is necessary to investigate the three types of alternatives: (a) alternatives to the proposed landing sites; (b) alternative offshore routes; and (c) installation methods.

Alternatives to the Proposed Landing Sites

The Project EIR examines alternative landing sites in Hermosa Beach, Morro Bay, and other Los Angeles basin sites.

Hermosa Beach Sites

The EIR examines alternative landing locations within Hermosa Beach. The applicant's preferred alternative incorporated landing sites on the beach at 2nd Avenue and Longfellow Avenue. The EIR assessed impacts associated with these landing sites as well as alternative street landing sites inland from the beach sites (Exhibit 8). However, after Commission staff expressed concerns related to public access, visual impacts and impacts to beach habitat associated with the beach landing sites, MC Global revised the project description to eliminate the beach landing sites. Street landing sites are very limited because most sites would block garage or driveway access for residents, hinder access to the beach, or the streets are too narrow to accommodate the boring operation. Thus, the proposed landing sites are the only feasible landing sites that meet project objectives.

Finally, at Commission staff's request, the applicant provided an analysis of staggering construction of the landing sites, so that one landing site was constructed now for the proposed cable and for the first anticipated future cable, and the second landing site was constructed when the third and fourth cables were ready to be installed. A single landing site would reduce impacts to public access, noise, nearshore water quality, and marine habitat. However, according to MC Global, it is important to land the first two cables in separate facilities because one cable will serve as an emergency backup to the other. Two landing locations increase reliability and security and decrease the likelihood that one event would disable both cables. The Commission therefore agrees with the applicant that constructing only one cable landing site would not meet the objectives of the project to increase reliability in telecommunications service to the Los Angeles area.

Morro Bay Site

The EIR also examines an alternative cable landing site at Morro Bay, given that there is a de facto submarine cable corridor in Morro Bay. However, a Morro Bay landing would fail to meet the project objective of providing the Los Angeles Basin with additional fiber-optic cable capacity. In addition, the additional distance required to land the cable in Morro Bay would reduce the speed of the signal, which would also fail to meet project objectives. Thus, this alternative was eliminated from consideration.

Other Los Angeles Basin Site

The EIR assesses the comparative impacts from landing the cable in a different Los Angeles Basin locality. However, the EIR concludes that "another coastal location would not necessarily offer clear advantages in reducing the Project's significant environmental impacts. Thus, this alternative was eliminated from consideration, and the Commission agrees with the applicant and finds that there is no feasible less environmentally damaging landing site alternative.

Alternative Offshore Routes

MC Global sited the proposed SEA-US cable route and future proposed cable routes to minimize or avoid sensitive marine habitats and other known marine features. Areas that were identified by MC Global for avoidance or impact minimization included: rocky substrates, marine sanctuaries, proposed marine sanctuary boundary expansion, fishing areas, explosives dumping areas, contaminated sediments, commercial outfalls and anchorages, submarine canyons and unstable substrates, as well as known significant marine cultural resources. Exhibits 6 and 7 show the proposed cable route and several hazards and habitat areas that were avoided. In addition, MC Global worked with local fishing organizations to choose routes with minimal potential to affect fisheries. Specifically, the following areas were avoided:

- Santa Monica and Redondo Canyons
- Areas under consideration for the Channel Islands National Marine Sanctuary
- Explosives dumping areas
- Fisheries associated with Tanner Bank and Cortes Bank
- Contaminated sediments associated with the Palos Verdes Shelf and the Hyperion sewerage outfall
- Commercial vessel anchoring and pilot boarding areas

Although the proposed project will not avoid all hard bottom substrate, impacts to communities that surround these areas will be minimized. MC Global conducted a Marine Biological Resources Survey that concluded that the majority of hard bottom habitat within the cable corridor consisted of scattered and isolated low relief rocks and some pieces of debris (i.e., abandoned fishing gear or anchors). No high-relief rocky areas were identified. These results are fairly typical of the surrounding marine environment. Although the EIR did not specifically analyze alternate marine cable routes, it is not likely that, due to the prevalence of scattered low-relief rocky outcrops in the relatively narrow corridors available, that an alternate route could be found that would be able to completely avoid or even significantly decrease impacts to hard bottom areas. Therefore, the Commission finds that there is no feasible less environmentally damaging alternative marine route to the proposed project.

Installation Method

The applicant proposes to land the cable onshore through a marine bore installed using HDD technology. Using HDD to install the bore significantly below the surface eliminates the need to use trenching on the beach or to place the cable directly in the surf zone where it could result in adverse impacts to intertidal species or become exposed and result in a hazard to beach-goers and mariners. The Commission's findings for approval of CDP E-01-029 for a fiber optic cable project in the same area proposed by Tyco Networks (US) stated:

> *The Coastal Commission staff geologist believes that given shoreline erosion predictions, sand migration studies, extreme storm events during El Nino years, and other factors, that a trenched cable would likely be exposed at least once, if not multiple times, during the life of the project, resulting in additional public access, recreation, water quality, and marine resource impacts in the future due to repair activities.*

In addition to the Tyco cable described above, the Commission has approved several projects that employed HDD technology to bring submarine fiber optic or power cables onshore, and has generally found it to be the environmentally superior method for landing the cable onshore.[1] Thus, the Commission finds that there is no environmentally superior alternative to the proposed cable installation method of HDD.

Accordingly, for the reasons described above, the Commission finds that the proposed project is the least environmentally damaging feasible alternative and therefore meets the second test of Coastal Act Section 30233(a).

Mitigation

The final requirement of Coastal Act Section 30233(a) is that dredging and filling of coastal waters may be permitted if feasible mitigation measures have been provided to minimize any adverse environmental effects. In Sections E, and F of this report, the Commission has identified feasible mitigation measures that will minimize the adverse environmental effects of the SEA-US cable. These mitigation measures include requiring MC Global to bury the cable to a depth of 1 meter, avoid and eliminate cable suspensions, provide notification to fisherman of the location of the cable and any exposed sections (to reduce the potential for snags), submit plans to minimize impacts from anchoring, frac-outs, spills of hazardous material and stormwater runoff, and to assess and mitigate for impacts to hard bottom incurred by the proposed project. With the imposition of the conditions of this permit, the Commission finds that the third test of Coastal Act Section 30233(a) has been met.

E. MARINE RESOURCES AND WATER QUALITY

Section 30230 of the Coastal Act states:

> *Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.*

Section 30231 of the Coastal Act states:

> *The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow,*

[1] E-98-27 (PC Landing Corporation and PAC Landing Corporation), E-99-011 (MFS Globenet and MCI WorldCom), E-00-004 (AT&T Corporation), E-01-021 (Tyco Networks), E-08-021 (AT&T), E-13-001 (Venoco, Inc.).

encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

Coastal Act Section 30232 states:

Protection against the spillage of crude oil, gas, petroleum products, or hazardous substances shall be provided in relation to any development or transportation of such materials. Effective containment and cleanup facilities and procedures shall be provided for accidental spills that do occur.

The offshore portion of the project extends from the shoreline at Hermosa Beach, through the Santa Monica Basin and outer Santa Barbara Channel and out to the edge of the Outer Continental Shelf (Exhibit 2). This area is known for its biological diversity and contains several valuable marine habitats characterized by both soft and hard substrate, and supports several special-status species. Although not located within a State or federal Marine Protected Area, the project site is in the vicinity of the Channel Island National Marine Sanctuary, Point Vicente State Marine Conservation Area (SMCA), several SMCAs on Catalina Island, and the Santa Barbara Island State Marine Reserve (SMR) (Exhibit 7). Santa Monica Bay is also designated as Essential Fish Habitat (EFH) and serves as an important commercial fishery for a variety of fish and invertebrate species.

The proposed project involves the installation of fiber optic cable on the seafloor from the shoreline out to the edge of the OCS and has the potential to result in impacts to marine mammals and sea turtles, fish, hard bottom habitat, soft bottom habitat, and marine water quality. Each of these potential impacts is discussed in detail below.

1. Marine Mammal and Sea Turtle Impacts

There are three potential types of impacts to whales and other marine wildlife due to the proposed project: entanglement with the project cable, entanglement with "ghost nets" or abandoned fishing gear, and collision with project vessels.

Potential Whale Entanglement with the Project Cable

Marine mammals that live and migrate through coastal waters in the project area may become entangled in unburied or insufficiently buried cable or in cable suspensions. Whale species commonly observed in the area offshore of Hermosa Beach include gray whales (*Eschrichtius robustus*), humpback whales (*Megaptera novaeangliae*), blue whales (*Balaenoptera musculus*), fin whales (*B. physalus*), minke whales (*B. acutorostrata*), sperm whales (*Physeter microcephalus*), and killer whales (*Orincus orca*), several of which are listed as endangered under the federal Endangered Species Act. In addition, several types of dolphins and porpoises, including bottlenose dolphins (*Tursiops truncates*), Pacific white-sided dolphins (*Lagenorhynchus obliquidens*) and Risso's dolphins (*Gampus griseus*) are also common in the area. Other types of marine mammals such as pinnipeds (*e.g.,* sea lions, harbor seals), fissipeds (*e.g.,* sea otters) and sea turtles have also been observed.

Of the marine mammal species that frequent the area, two species--the California gray whale (*Eschrichtius robustus*) and sperm whale (*Physeter macrocephalus*)--have the potential to become entangled due to, respectively, bottom-feeding behavior or deep-diving behavior.

Approximately 20,000 gray whales migrate through California waters each year between Alaskan waters and Baja California. Due to their abundance off the Pacific coast, their tendency to hug the shoreline during migration and their bottom feeding patterns, gray whales may face the highest risk of entanglement with insufficiently buried or exposed cables. The majority of southbound (November to January) gray whales migrate within 2 nautical miles (nm) from shore, while the northbound migration occurs much closer to shore, with mother and calves reported within kelp beds and sometimes only yards from the shoreline. These distances, however, vary seasonally over time, particularly due to the deterring presence of boat traffic. The number of migrating gray whales recorded near San Clemente Island suggests that a significant proportion of the total population crosses the project area during the southbound and northbound migrations (E&E, 2001).

Gray whales usually feed nearshore in soft-bottom sediments, and also typically feed opportunistically during migration (MMS 1989). Gray whales forage on the seafloor by diving, rolling onto one side on the seafloor, and sucking up sediments that the whale filters with its baleen (E&E, 2001). One study also found sea floor gouges approximately 15 centimeters deep created by migrating gray whales offshore of Northern California, and concluded that migrating gray whales interact with the muddy part of the central marine shelf (at 60-120 meter water depths), although this behavior was determined to be secondary to their migratory objective (Cacchione et al, 1987). Gray whales can also dive in waters from 150 to 200 meters deep, but usually prefer shallower water.

Sperm whales are much less abundant off the coast of California than gray whales, numbering only approximately 1,200 individuals. Sperm whales typically inhabit deep open waters, and are the deepest and longest diving of all cetaceans. Sperm whales regularly dive to water depths between 200 and 1,000 meters (E&E, 2001). Sperm whales are the only species confirmed to have been entangled in a submarine cable, and their deep diving puts them at risk of entanglement with insufficiently buried, exposed, or suspended cables. However, based on aerial and boat surveys off California, sperm whales are usually found north of the project area (Fahy 2002). In addition, unlike gray whales, sperm whales do not bottom feed; instead, they feed solely on squid and octopi found in the water column (E&E, 2001). NMFS has therefore determined the risk of sperm whale entanglement to be very low (Fahy 2002).

Several older studies have documented occurrences of whale entanglements with submarine cables. A study by Heezen (1957) documents fourteen examples of sperm whale entanglements with submarine telegraph cables worldwide between 1930 and 1955.[2] Heezen postulated that the sperm whales became entangled "…while swimming along in search of food, with their lower jaw skimming through the upper layer of sediment. It may also be that the whales attacked the cable mistaking it for prey." The report also documented possible entanglements of baleen (*e.g.,* gray) whales in shallower water, and one humpback whale reported entangled in Alaskan waters.

In the October 2008 *IEEE Journal of Oceanic Engineering*, Wood and Carter published the results of a new evaluation of two substantial fault databases to determine the occurrence of whale entanglements with telecommunication cables since the 1955-1966 time period. Wood and Carter discuss the 14 cable faults occurring between 1877 and 1955 attributed to whales in Heezen's 1957 study, and they cite a 1969 study of the Alaska-mainland USA telegraph system

[2]At the time of the study, there were nearly a half-million miles of cable laid on the sea floor in various parts of the world (Heezen 1957). That figure has more than doubled in the years since (Rampal 1998).

which reported two whale entanglements prior to 1966. Wood and Carter state that both of the aforementioned studies "continue to be cited as examples of the potential threat posed to whales by submarine cables although there is a suggestion, unsupported by definitive data, that entanglements may not have occurred since 1955-1966." Wood and Carter's 2008 report concluded that:

> *Before 1955-1966, up to 16 faults in submarine telegraphic cables were reported and attributed to entanglements with mainly sperm whales. Circumstantial evidence suggests that capture was related to excessive slack in repaired cables laid in areas of rough and/or steep topography. Since 1955-1966, substantial fault data sets contain no reference to whale entanglements. This cessation and its continuation to the present day is largely related to marked changes in submarine cable design, deployment, and maintenance as well as advances in marine surveying. The period from 1955 to 1966 marked the phased replacement of submarine telegraphic cables by coaxial types, which were superseded by fiber-optic systems in the 1980s. Cables of the posttelegraphic era have different torsional and flexile characteristics, are laid with just enough slack to follow the seabed topography, and are commonly buried below the seabed on the continental shelf and upper continental slope – the main sounding habitat of sperm whales. Furthermore, precision marine surveys allow for accurate cable placement to avoid areas where potential ensnaring suspensions may result.*

Despite these findings, the potential for whale entanglement with submarine cables still exists. Given the diving depth ranges of both gray whales and sperm whales, and the bottom-foraging behavior of gray whales, the presence of suspensions in the submarine cable increases the risk of whale entanglement in cables. In addition, the potential for entanglement is present during the initial installation of the cable as cable is payed out from the cable-laying vessel on the surface and traverses the entire length of the water column before it is buried in the seafloor sediments. Due to the protection of these marine mammals under the Endangered Species Act and the Marine Mammal Protection Act, entanglement or injury impacts due to insufficiently buried or exposed cables or from cable-laying would be significant. MC Global estimates that approximately seven percent of the total cable distance to the edge of the continental shelf (approximately ten miles) crosses hard substrate where the cable will not be buried and will instead be placed on the ocean floor, thus creating the potential for cable suspensions.

The Project EIR analyzed the risk to whales from cable entanglement and concluded that the impact was not significant. Specifically, the EIR listed several factors that contribute to this conclusion:

- The vast majority (i.e., 93%) of the cable in the nearshore environmental where whales transit the coast will be buried.
- In hard bottom areas where the cable cannot be buried, the cable would be kept to a very low profile off the seafloor (i.e., 1 to several inches).
- Cable slack would be stabilized to a level within the range of 2 to 3 percent in areas where the cable cannot be buried to ensure that the cable conforms to the slopes and peaks of the seabed and is not more than 1 foot off the bottom, thus preventing spans from developing.

Furthermore, the Project EIR also states:

> *Of the 11 known commercial fiber-optic cable landings in coastal California waters installed since 2000, no known or reported entanglements between whales and fiber optic cables have occurred (AMS, 2015). While there remains a small risk of marine mammal entanglement (Read et al., 2006), unlike fishing nets and other gear, fiber optic cables are thicker (approximately 2 inches [5 centimeters] in diameter) and consist of a single thread which reduced the likelihood of entanglement.*

To ensure that the proposed project minimizes the potential for whale and other marine wildlife interaction with the project cables, and to document any future entanglements, the Commission requires that several conditions be met by the applicant. **Special Condition 3** requires MC Global to implement the mitigation measures related to marine resources included in the final EIR (Exhibit 9). Mitigation Measure BIO-10a, 10b and 10c requires MC Global to include a biologist for marine mammal and sea turtle monitoring, modify vessel operations when wildlife are present and to report collisions. To further reduce the potential for entanglement during cable laying, **Special Condition 4** requires MC Global to submit a Marine Mammal Monitoring and Contingency Plan to the Executive Director for review and approval. The plan will incorporate the marine protection elements of Mitigation Measures BIO-10a, 10b and 10c but goes farther to also include provisions for marine wildlife training for project personnel, reduced vessel speed during cable-laying activities and minimization of propeller noise. In addition, the MWMCP must also describe a marine wildlife monitoring program that includes two NMFS-approved marine mammal observers responsible for monitoring a 500-1640 foot radius around the Project vessels. The observers will send daily sightings reports to the Executive Director and other agencies and will have the authority to stop any activity that could result in harm to a marine mammal or sea turtle.

To minimize the potential for entanglement once the cable is installed, **Special Condition 5** requires MC Global to bury the cable to a depth of 1.0-meter except where precluded by seafloor substrates. Where a 1.0-meter burial depth cannot be achieved, MC Global is required bury the cables to the maximum depth feasible. In order to ensure that cable installation is consistent with the project description, **Special Condition 8** requires MC Global to submit to the Executive Director and the signatories to the Fishing Agreement (required by **Special Condition 22**) the as-built plans, including burial depth, of the project cable.

To minimize the occurrence of suspended cable, **Special Condition 6** requires MC Global submit to the Executive Director for review and approval a Cable Slack Management Plan that describes the steps MC Global will take during cable installation to identify and eliminate, where feasible, segments of cable that are suspended above the seafloor.

As a preventive measure against potential future entanglement impacts, **Special Condition 11** requires that starting in the year 2020 and then every five years thereafter (unless otherwise determined by the Executive Director based on a finding that portions of the cable route have not remained buried), MC Global shall survey the cable to verify that the cable has remained buried consistent with the as-built cable burial plan. In addition, **Special Condition 12** requires MC Global to apply for an amendment to this permit to remove the cable within 90 days of either taking the cable out of service or after the expiration or sooner termination of MC Global's easement in state waters off of Hermosa Beach.

In order to ensure compliance with these and other conditions, **Special Condition 1** requires MC Global to post a performance bond in the amount of $500,000 to cover its cable operations in State and federal waters out to the 1,800-meter water depth.

Entanglement with Ghost Nets and Abandoned Fishing Gear

Fishermen may snag gear or nets on cables. When this occurs, fishermen generally abandon their gear or nets (creating "ghost nets"), thereby creating a risk to marine mammals and other species. Pursuant to a "Fishing Agreement" executed by MC Global with various fishermen and their representatives (see Exhibit 10), when it appears that a fisherman has snagged a cable, he or she is expected to cut the gear instead of risking damage to the cable. If the fisherman was operating consistent with established procedures, MC Global will reimburse the fisherman for the lost gear. This abandoned gear, and particularly the nets, can become a hazard to marine life, potentially entangling marine mammals and fish, preventing them from feeding and causing them to drown.

To address these concerns, the proposed project was designed to reduce impacts to commercial and recreational fishing. The practice of burying the cable to an optimal depth of 1 meter will ensure that the vast majority of the cable is buried beneath the surface and does not create a potential hazard for fisherman. MC Global estimates that only 7% of the cable length will be laid on the surface and thus available to snag fishing gear. To further minimize the likelihood that fisherman come into contact with the cable, **Special Condition 8** requires MC Global to provide the signatories to the Fishing Agreement with as-built plans of the installed cable, including information related to burial depth and cable suspensions. This information can be used by fisherman to avoid potentially problematic areas where the cable is exposed. In addition, **Special Condition 9** requires MC Global to provide NOAA with the information necessary to update their nautical charts to reflect the position and burial status of the installed cable.

Although the entanglement of fishing with the proposed cable is not expected to occur, to provide additional assurance that any gear that does become entangled would not pose a threat to marine wildlife, **Special Condition 24** has been added to require MC Global to use all feasible measures to retrieve any fishing gear or object that becomes entangled in a cable no later than six weeks after discovering or receiving notice of the incident. If full removal is not feasible, MC Global shall remove as much gear as practicable to minimize harm to wildlife. Within two weeks of completing a recovery operation, MC Global is required to submit to the Executive Director a report describing the nature and location of the entanglement and the retrieval method used.

Marine Mammal or Sea Turtle Collision with Project Vessels

The proposed project could also result in impacts to marine mammals and sea turtles from collisions with or harassment from project vessels during marine operations associated with the proposed project. As described above, several species of marine mammals are known to inhabit the waters in the vicinity of the proposed project. Ship strikes of whales present the most serious concern. In 2007, four blue whales were found dead in the vicinity of the Santa Barbara Channel and Los Angeles-Long Beach Harbors with direct or indirect evidence of having been struck by a ship. However, the slow speeds necessary for project vessels during cable installation activities

are likely to limit the potential for collisions with marine mammals or sea turtles. The EIR states that:

> *Ship strikes during cable installation is highly unlikely since the speed of the ship during the cable laying activities is slower (approximately 0.5 to 1.5 knots while plowing) than migrating whales or fast-swimming sea lions. According to the Large Whale Ship Strike Database, the majority of strikes were by vessels traveling between 13 and 15 knots, there are no reported collisions below 2 knots (Jenson and Silber, 2003). Nevertheless, there remains a small risk of marine mammals and sea turtles encountering Project vessels and, therefore, there is a potential for collisions. Any collision or potential for harm to marine mammals and sea turtles would be a significant impact.*

In addition, the EIR states that impacts from noise and vessel movement have the potential to result in behavioral changes or disruptions in migration routes. These impacts, however, are expected to be temporary and geographically isolated and would not cause disruptions substantially different than normal ship traffic through the area.

The EIR also describes three mitigation measures that are designed to reduce the impact marine mammals and sea turtles to a less than significant level. These mitigation measure require monitoring by a qualified biologist, modification of vessel operations when marine mammals and sea turtles are present, and reporting any collisions to the appropriate Federal and State agencies. **Special Condition 3** requires MC Global to implement these mitigation measures. However, although these measures are likely to decrease the risk of a collision, they do not go far enough to protect marine species as required under the Section 30230 of the Coastal Act. For example, for previous cable-laying projects of similar scope, the Commission has generally required two marine wildlife monitors to ensure adequate coverage of the project area. In addition these conditions do not identify an appropriate avoidance zone, require project vessels to reduce speeds to avoid collisions, or provide for awareness training for the vessel crew. Thus, consistent with previous fiber optic submarine cable project approvals, the Commission has included an additional mitigation measure to ensure that impacts to marine mammals and sea turtles are minimized and healthy populations of marine organisms are maintained. **Special Condition 4** requires MC Global to submit a Marine Wildlife Monitoring and Contingency Plan to the Executive Director for review and approval. This plan incorporates elements of the EIR mitigation measures described above but also includes provisions for a minimum of two marine wildlife observers, the establishment of 500-1640 foot avoidance zone, limits on project vessel speed and training for project personnel. With these conditions in place, the potential for adverse impacts to marine mammals and sea turtles from collisions with project vessels or harassment from noise associated with project activities will be minimized.

2. Fish

The distribution of fishes in Santa Monica Bay, like the rest of the California Coast, is influenced by depth, substrate type, temperature and ocean currents. According to the EIR, nearshore rocky areas in the Southern California Bight (SBC) vary widely with respect to the observed assemblages of macroinvertebrates and fishes. Many of the most abundant species in the SBC are schooling fish found in the water column such as senorita (*Oxyjulis californica*) and blacksmith (*Chromis punctipinnis*) or demersal (i.e., fishes living on or near the sea floor)

species such as kelp bass (*Paralabrax clathratus*) and California sheephead (*Semicossyphus pulcher*) often associated with giant kelp communities. In soft substrates, the most widespread benthic habitat in the SBC, fish assemblages are characterized by flatfishes such as sandabs (*Citharichthys* spp), California halibut (*Paralichthys californicus*) and other demersal species as well as several species of pelagic fishes, such as northern anchovy (*Engraulis mordax*), topsmelt and California grunion (*Leuresthes tenuis*). Grunion have been observed to spawn on the sandy beaches of Hermosa Beach. In addition, the proposed cable route passes through areas of Santa Monica Bay designated as Essential Fish Habitat for three Fishery Management Plans: (1) Pacific Coast Groundfish, Coastal Pelagic Species, and Highly Migratory Specie, and through an area designated as a Cowcod (Sebastes levis) Conservation Area.

In contrast to benthic species, fish species are not likely to experience direct impacts from project activities. Cable installation activities will result in a temporary increase in turbidity that will likely cause mobile species such as fish and marine mammals to avoid the project area. However, sediment is likely to settle relatively quickly (i.e., within a matter of hours), and the relatively narrow project footprint will not substantially limit available habitat. Thus, these impacts are not expected to be significant. During cable-lay operations, the cable installation vessel will move slowly, allowing any mobile species to avoid the descending cable. There is a low probability that fish species could be harmed by a frac-out during HDD operations, largely due to increases in turbidity. However, it is likely that in the event of a frac-out, fish species will avoid the immediate area. Implementation of **Special Condition 17** (discussed in detail in the next section) will further reduce the potential for a frac-out. Further, **Special Condition 19** requires MC Global to submit a Critical Operations and Curtailment Plan which describes the sea and weather conditions under which project activities can safely proceed, thus minimizing sediment dispersal and the potential for release of hazardous material by limiting construction activities to avoid periods of storms or heavy seas.

In addition to fish in the water column, a frac-out could result in adverse impacts to grunion spawning, eggs and larvae. Grunion move onto sandy beaches to spawn at night during the spring and summer months after high tide events. Any beach-disturbing activity during or after grunion spawning could have a negative impact on grunion spawning success. Although the HDD bore itself will not result in impacts to grunion spawning due to its depth far below the surface, a frac-out that releases bentonite muds to the surface could smother any grunion, eggs and/or larvae that are present. As currently scheduled, HDD operations are expected to occur in late summer and fall of 2016, thus avoiding the grunion spawning season altogether. However, to ensure that grunion spawning runs are protected in the event of unforeseen schedule adjustments, **Special Condition 13** requires MC Global to monitor the beach for grunion runs if construction of the HDD bore occurs between March and August. If grunion are confirmed to be spawning on the beach, then all HDD operations must stop until the spawning event is complete. This measure, in combination with **Special Condition 17** will ensure that grunion spawning activities are sufficiently protected.

Another potential concern for fish species are impacts associated with noise from construction activities. Criteria developed by several federal and state agencies, including the National Marine Fishery Service (NMFS), United States Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW) set a threshold-type criteria for exposure to

impulse sounds at 206 dB. [3] Lower levels may cause fish to alter their behavior patterns by avoiding the affected area, but are not expected to cause injury. Project-related underwater noise is expected to originate from project vessels and from HDD activities at the exit pit. For marine vessels, underwater noise is generally correlated with vessel speed. One study measured sound levels from a tug travelling at 11 knots at 160dB at a distance of 2 meters. Due to underwater attenuation, noise levels would be reduced to less than 120 dB at a distance of 200 meters. Background levels of noise in the near-shore environment are often close to 120 dB due to both anthropogenic and natural sources of noise. Noise from HDD activities would originate from drilling activities near the exit pit. Fortunately, the exit pit will be located in soft-bottom habitat and noise associated with HDD will be significantly less than if the drill was required to break through hard rock. Based on this information, noise levels are not anticipated to reach levels that would cause injury in fish. As an additional precaution, **Special Condition 4** requires MC Global to limit the speed of project vessels to two nautical miles per hour (knots), further reducing noise levels associated with project activities.

Finally, the proposed project also has the potential to result in disturbance to Essential Fish Habitat and the Cowcod Conservation Area. Specifically, in areas of soft substrate, the pre-lay grapnel run and cable installation activities including use of the sea plow or ROV to bury the cable could result in short term disturbance associated with the displacement of sediments and minor, local turbidity effects from suspended sediments. In addition, resuspension of contaminated sediments could occur, although the areas of highest concentration will be avoided. These potential impacts are likely to be short-lived, with full recovery expected within a year. In hard bottom areas, horizontal movement and strumming of the cable has the potential to harm organisms in the immediate vicinity of the cable. However, according to the Project EIR, "methods and equipment used to install undersea cables have improved over the years to greatly reduce horizontal movement during installation, and for this Project an impact width of only 0.25 feet (3 inches; 7.6 centimeters) is assumed. Thus, impacts to hard substrate in Essential Fish Habitat are expected to be minor and localized. Further, although recovery in hard bottom areas is expected to be longer than in soft-bottom areas, the small width of the disturbance corridor would limit impacts to individuals. Therefore, as stated in the EIR, the proposed project is not likely to lead to any measurable reduction in the capacity of these environments to support fishes identified in the Fishery Management Plans.

3. Benthic Species: Hard Substrate Impacts

Cable-laying operations could adversely impact hard substrate habitat and associated biota. Hard substrate is exposed rocky seafloor area that provides habitat for a diverse group of plants and animals. Common epifaunal invertebrates occurring in the hard substrate areas vary based on depth and substrate relief height. Along much of the California coast, there is a strong positive association between the types of communities and the depths and substrate types in which they occur. Hard substrates, including rocky bottoms, rock outcrops, and rock crevices, provide habitat and shelter for numerous sessile organisms, demersal fishes, and mobile invertebrates such as lobsters and crabs. In shallow waters (less than 200 meters or 656 feet), algae, including giant kelp, eelgrass and anemones such as Corynactis californica are present. At these depths (and deeper), depending on favorable high relief substrate, current speeds and sedimentation rates, branching hard and soft corals have also been reported. In deeper waters (greater than 600

[3] Underwater standard ((dB re 1µPa @ 1m).

meters or 1,968 feet), hydroids provide substrate to anemones, amphipods, polychaetes, and ectoprocts. Gorgonians, large sponges, shrimp, crinoids, and ophiuroids, brittle stars, and seastars are also present.

Hard substrate (especially high-relief substrate) and its associated biota are rare, and therefore any effect to them is potentially significant. Impacts to high-relief substrate in particular are significant because: (a) deepwater reefs are relatively rare along the central and southern California coast; (b) they support a diverse assemblage of epifaunal invertebrates; (c) they attract fish as a nursery ground, food source, and as shelter; and (d) epibiota residing on rocky substrates are sensitive to mechanical disturbance and increased sediment loads.

Adverse impacts (*e.g.,* crushing, scraping, and/or displacement) to hard substrate can occur during cable installation and subsequent movement of the cable on the seafloor due to currents and wave action. In their study on the environmental impacts of a one- to three-inch submarine cable offshore of Half Moon Bay, Kogan et al. (2006) found incisions, scrapes, and vertical grooves from 2.5-inches to 17.5-inches wide in rocky substrate along the cable route. Hard substrate was altered or damaged by these scrapes and grooves and typical epifaunal organisms were absent. Placement of the project cable on rocky substrates would disrupt associated bottom communities, likely crushing and/or dislodging small, sessile or relatively sedentary invertebrates along a narrow strip. Sessile species may experience repeated, localized disturbances throughout the life of the cable if it moves due to current action.

Potentially significant impacts to hard substrate and biota could occur if rock features are crossed with the grapnel or if anchors are placed directly on hard bottom. The grapnel will be dragged along the proposed alignment in soft sediment areas and is expected to disturb a three foot-wide area along the centerline of the cable lay corridor. However, to avoid impacts to hard bottom associated with the pre-lay grapnel run, MC Global will not deploy the grapnel in areas of rocky seafloor substrate. Impacts to hard bottom habitat from anchors would be temporary, and will be removed as soon as the vessel has completed its work**.** However, studies have shown that hard bottom ecosystems are slow to recover from direct impacts. Thus, it is likely that areas impacted by project anchors could take many years to recover, even though the impact itself is short-lived. Thus, to further reduce the potential for impacts to hard substrate from project anchors, **Special Condition 14** requires MC Global to submit for Executive Director review and approval an anchoring plan demonstrating that hard bottom substrate areas are avoided and listing equipment and procedures to be used to ensure anchors are accurately placed.

MC Global will, however, lay cable over areas of hard substrate. The Commission calculates the hard substrate impact area by multiplying the length of cable that will be laid over hard substrate by double the cable width (because the cable does not necessarily stay stationary). In this case, MC Global estimates the length of cable to be laid over hard substrate to be 16.5 kilometers (54,120 feet). Double the width of cable is 3 inches or 0.25 feet. The projected hard substrate impact area is thus 13,530 square feet. As described above, cable-laying activities and any ongoing movement of the cable over the life of project, has the potential to damage or crush rocky substrate and its associated biota.

In previous marine cable related projects, the applicant has agreed to compensate for potential project-related impacts to hard substrate and its biota by paying an agreed upon sum to the UC Davis Wildlife Health Center's California Lost Fishing Gear Recovery Project. Started in 2005

by the SeaDoc Society, a marine ecosystem health program of the UC Davis Wildlife Health Center, the primary purpose of the Recovery Project is to remove commercial fishing gear that is accidentally lost or intentionally discarded in California's marine environment. The Commission has previously found contributions to the Recovery Project to be an acceptable form of compensation for unavoidable adverse impacts to hard substrate and the organisms it supports. Recently, in combined CDP/Consistency Certification no. E-08-021/CC-005-09, the Commission accepted AT&T's offer of $100,000 to the Recovery Project as adequate to compensate for potential project-related impacts to 5,500 square feet of hard substrate and its biota. Subsequent marine cable projects have used this $100,000 dollars per 5,500 square feet of impact area figure approved under E-08-021/CC-005-09 to determine appropriate compensatory funds for different areas of impact. For example, the Commission approved a payment of $32,000 (32% of $100,000) to compensate for a hard bottom impact of 1760 square feet (32% of 5,500 square feet).

Derelict fishing gear is likely found in the water along the entire coast of California. The gear is potentially hazardous to divers and an array of wildlife including seabirds, turtles, sea otters, and other marine mammals. Derelict fishing gear affects the marine environment in several ways: it can continue to "catch" fish and marine animals, which become enmeshed or trapped, and it can damage the habitat upon which it becomes entangled or upon which it rests. It is also a visual blight on the seafloor, diminishing the natural aesthetic quality of the seafloor and rocky habitat. Currently, the SeaDoc Society is focusing gear recovery efforts in the newly established Central Coast Marine Protected Areas network and near the Channel Islands.

Commission staff recently examined data on completed compensatory mitigation work to quantify the acreage of compensation that could be achieved for the funds provided to the Recovery Project for this purpose. In total, the Recovery Project has received $801,193 in compensatory mitigation funds to mitigate impacts to a collective total of 24,325 square feet of hard bottom habitat from seven fiber optic cable projects and two pipeline removal projects. With these funds, the Recovery Project was able to collect 1301 items of derelict fishing gear over 105 field days, resulting in the enhancement of an estimated 64,702 square feet. These data show that the Recovery Project was able to achieve enhancement of marine habitats at a mitigation ratio of 2.7 to 1 and for a cost per area of $12.38/square foot. When this cost per acre figure is adjusted to 2016 dollars using the Consumer Price Index, the result is $13.80/square foot.

Moving forward, the Commission finds that it is appropriate to use the results from the analysis of Recovery Project data described above to determine an appropriate mitigation fee for impacts to hard bottom substrate from submarine cable projects. The Commission also finds that applying a 3:1 mitigation ratio is appropriate in this case because of the nature of the mitigation work performed by the Recovery Project. The Recovery Project's work removes chronic sources of habitat and wildlife disturbance and loss, but they do not actively restore habitat areas after those sources of disturbance are removed. The actual "restoration" of the disturbed areas is achieved through natural recruitment of missing organisms over time. It can often take years for that natural recovery to occur on marine hard substrate habitats (Lissner et al., 1991). Compensating for this time lag between the impact and the success of the mitigation site is one of the principal reasons the Commission has applied mitigation ratios in other cases. Another key consideration is the likelihood of mitigation success. Once the Recovery Project removes a source of disturbance from a particular area, it is highly likely that natural recovery of the restored site will occur over the long-term. However, unlike terrestrial mitigation projects where

the Commission generally requires conservation easements or other types of protections to protect against future ecological damage, there is no similar mechanism that can be applied to protect marine mitigation sites. Thus, the Commission cannot assume that future anthropogenic disturbance of the same site will not occur in the future. It is likely that some of the sites that are restored by the Recovery Project could be subjected to future damage as lost fishing gear re-accumulates or other types of damage are sustained. Thus, in this case, the uncertainty in the long term restoration of the site also justifies applying a 3:1 mitigation ratio when calculating the appropriate mitigation fee.

As described above, MC Global estimates that the proposed project could impact approximately 13,530 square feet of hard bottom substrate. This impact area was determined using data from a Burial Assessment Survey, conducted in 2015, that used sonar to determine substrate type within the cable corridor. These data are then used to forecast the anticipated depth of burial that can be achieved, but can only provide an estimate of the impact. To determine the actual impact**, Special Condition 15** requires MC Global to conduct a post-lay burial survey of the installed cable to quantify the extent of actual hard bottom impacts. The survey shall also quantify the height and length of any cable suspended at heights greater than 1.0-meter from the seafloor. Within 45 days of completing the survey, MC Global will submit to the Executive Director a written report describing the results of the survey for review and approval.

Additionally, **Special Condition 16** requires MC Global to compensate for all project-related impacts to hard bottom habitat through payment of a compensatory hard bottom mitigation fee to the UC Davis Wildlife Center to be used to remove derelict fishing gear and other marine debris from waters in the Southern California Bight. The total hard bottom mitigation fee will be calculated by applying a 3:1 mitigation ratio to the total square footage of impacted hard bottom and then multiplying that acreage by a compensation rate of $13.80 per square foot. The total square footage of hard bottom impacted will be calculated by multiplying the linear distance of cable laid on or suspended over hard bottom by approximately twice the width of the cable (i.e., 3 inches).

The mitigation work will be carried out pursuant to a Memorandum of Agreement ("MOA") by and between the California Coastal Commission and the Regents of the University of California on behalf of the UC Davis Wildlife Health Center's California Lost Fishing Gear Recovery Project. Once the mitigation funds are received, the Recovery Project will submit a spending plan to the Executive Director for review and approval that includes, at minimum, a description of the mitigation project and its estimated cost. The first priority of the mitigation work will be to characterize and conduct recovery operations at the Marine Forest Society site off Newport Beach.[4] The second priority will be to recover known (previously located and/or reported) and

[4] In 1988, the Marine Forests Society ("MFS") deposited a variety of materials on the ocean floor off of Newport Beach, including 1,500 automobile tires tied together, 2,000 plastic jugs wrapped in plastic mesh, and 100 2-ft. long air-filled 6-in. PVC pipes. This development occurred without the benefit of a Coastal Development Permit and in violation of lease agreement with the Department of Fish and Game (DFG). Since 1989, the State of California has attempted to enforce Coastal Act and Federal Coastal Zone Management Act requirements to remove this debris and restore the marine resource impacted from this act of unpermitted development, but it has been unable to do so. The Commission and DFG conducted a dive survey of the structure on May 28, 2008, and have documented the status of the unpermitted development. The project is not being managed by the now defunct MFS, and is failed debris. This debris harms marine life, poses threats to small vessels, and interferes with the public's enjoyment of the ocean and beaches.

opportunistically encountered derelict commercial fishing nets, traps and other types of gear within the Southern California Bight. The removal of derelict nets snagged on rocky bottom habitat or on underwater structures, or in some cases still attached to fishing vessels, is critical because this form of derelict fishing gear (net) presents a significant entanglement/drowning risk to wildlife and to underwater users (divers, scientists, engineers). The Recovery Project will also recover lost trap gear that results in hazards, blight, and/or interferes with fishing, emphasizing recovery soon after the close of commercial seasons. Project personnel will collect data on all gear recovered, including location, type, substrate type and impacts to resources and habitat. The overall scope of the field effort will be dependent upon the final determination of mitigation funds, but based on the estimated impact amount and the resultant fee, it is likely that the final mitigation fee will provide sufficient funding to accomplish work under both priorities described above.

The Commission believes that removing lost fishing gear, abandoned tires and other marine debris from the marine environment will offset the projected impacts to rocky bottom areas caused by cable-laying activities. Thus, with the above special condition incorporated, impacts to hard bottom habitat and the associated benthic species will be minimized.

4. Benthic Species: Soft Bottom Habitat Impacts

Soft-bottom areas are unconsolidated sediments (e.g., gravel, coarse-grained and mixed sediments, sand, and mud) that provide habitat to epifauna (surface living) and infaunal (below-surface living) organisms. Impacts to epifauna and infauna due to the proposed project are of concern because: (1) the proposed cable burial will disturb their seafloor habitat; (2) many infaunal organisms have limited mobility and cannot easily escape habitat disturbance or rapidly repopulate regions of disturbance; and (3) they are a source of food for more mobile epifaunal and pelagic marine organisms such as crabs, fin fish, and marine mammals.

Soft-bottom benthic communities in the nearshore areas of the proposed cable routes are comprised of species associated with the sand and gravel substrate typical of the high-energy and dynamic environments of the California coast. As depth increases from the shore to 200 meters (656 feet), the density of infaunal species increases, most likely because of the greater stability of the sediments. Examples of dominant species present at shallow water depths (subtidal to 30 meters or 98.4 feet) include several species of red algae and epibenthic biota such as the ornate tube worm (*Diopatra ornata*), cancer crabs (*Cancer* sp.), the slender crab (*Cancer gracilis*), the masking crab (*Loxorhynchus crispatus*), octopus (*Octopus rubescens* and *O. bimaculatus/bimaculoides*), the white sea pen (*Stylatula elongata*), the sea cucumber (*Parastichopus californicus*), the sunflower star (*Pycnopodia helianthoides*). In the coarser sand habitats, the invertebrate community was typically dominated by ornate tubeworms and sand dollars when they were present in colonies occupying fairly narrow bands. Demersal fish present include the California halibut and other flat fish species. From 30-150 meter (98.4-410 feet) depths, species such as sea pens, several species of anenomes, the sea slug (*Pleurobranchea californica*), and the leafy flat star (*Petalaster [Luidia] foliolata*), and flatfish are also present. At 125-600 meter (410-1,968 feet) depths, most of the epibenthic fauna are sea urchins. At deeper depths, soft substrates are generally inhabited by sea pens, octopus, sea stars, and multiple species of small polychaetes and crustaceans. However, in deep basin areas (*e.g.,* below roughly 600 meters or 1,968 feet), low oxygen conditions contribute to decreased abundance and biomass of invertebrates. However, in near-island habitats like the Santa Barbara Channel, which

comprise a significant portion of the proposed cable routes, the above communities become diverse and abundant. The proposed cable routes pass outside the current boundaries of the Channel Islands National Marine Sanctuary, and are also outside proposed Sanctuary boundary expansion areas. According to the EIR, no threatened or endangered soft-bottom benthic species were identified during surveys or are known to exist in the project area.

Approximately 93 percent of the proposed cable route crosses soft-bottom habitat. In October 2015, Applied Marine Sciences, Inc. (AMS) completed a remotely-operated-vehicle (ROV) survey of the seafloor habitats within the proposed cable route corridor between proposed offshore terminus of the landing borepipe in 62 feet of water depth out to a water depth of 520 feet. Data collected during that survey were used to characterize the seafloor habitat and associated biota.

The EIR states that potential impacts to marine habitats and associated biota could occur throughout the cable laying operation, including those resulting in seafloor disturbance (i.e., pre-lay grapnel clearance, diver support vessel anchoring, excavation around the conduit, and the laying and burial of the cable). In addition, during periodic surveying of the cable route as required by **Special Condition 11**, any cable segments that have become exposed will be reburied with an ROV jet pursuant to an approved re-burial plan.

In evaluating the significance of potential project impacts on soft-bottom habitat and associated biota, the EIR states that:

> *Any effects to soft sediment biota during cable installation, operation, or abandonment can be expected to be minimal and short term. The use of a cable plow to create a temporary furrow along the seafloor into which the fiber-optic cable is placed and immediately buried would result in a temporary disturbance of benthic infauna (animals living in the sediments of the seafloor) and epifauna (animals living on the surface of the seafloor). It is estimated that the actual area of disturbance is less than 8 meters wide, the size of the plow itself, with the most severe effects being limited to the 3.3-foot- (1-meter-) wide trench. Most mobile invertebrates and fish can be expected to avoid the plow and return to the area shortly after the plow has left. Any benthic infauna inhabiting the upper biotic sediment layers disturbed by the plow and then replaced into the furrow on top of the cable can be assumed would be smothered and killed. The loss would be minimal, based on the extremely small area of the seafloor affected relative to the surrounding area… In addition to being a relatively small area of disturbance, the benthic infauna that would be affected in the soft-bottom areas are common species that would readily repopulate the disturbed area after the cable is laid…Recolonization would occur both by migration from adjoining, undisturbed seafloor areas and by natural recruitment.*

Studies have shown that additional factors, including the fact that the disturbance to benthic habitat does not involve the removal of sediment, and the proximity of the disturbed sediments to undisturbed sediments, will also serve to minimize the amount of time until benthic organisms to recover (AMS 2015). Thus, impacts to soft bottom habitat from the proposed project are expected to by minor and temporary for the following reasons: (1) the area of impact is relatively small compared to the geographical extent of this habitat type offshore of Hermosa Beach; (2) the species that are likely to be impacted are common and will readily repopulate; and (3) studies

have shown that recolonization and recovery of most soft-bottom communities is rapid following short-term and localized disturbance.

5. Marine Water Quality Impacts

The proposed project offshore lies in open coastal waters off of Santa Monica Bay and the Southern California Bight. The Hermosa Beach landing site is located in Santa Monica Bay, a coastal embayment between Point Dume and the Palos Verdes peninsula, located in one of the most densely populated areas on the west coast. Water quality conditions within the bay are affected by general oceanographic conditions as well as point and non-point sources of pollutants, including wet and dry weather flows through storm drains and urban runoff, and municipal and industrial wastewater discharges, the latter representing the largest source of pollutants to the bay. The Hyperion Treatment Plant alone discharges an average of 352 million gallons per day of treated sewage. Other point sources are the Joint Water Pollution Control Plant with outfalls off the Palos Verdes peninsula, the Chevron Refinery in El Segundo, the El Segundo and Scattergood Generating Stations, and the Redondo Beach L.L.C. Generating Station. In the project area, DDT and PCBs are the contaminants of highest concern in the sediments of Santa Monica Bay.

The principal potential impacts on marine water quality due to the proposed project are: (1) impacts to filter-feeding benthic organisms due to increased turbidity during cable installation (including grapnel, burial, re-burial, repair, and water-jetting operations) and the suspension and resettling of contaminated sediments within Santa Monica Bay; (2) impacts on benthic habitat and water quality due to potential release of the drilling fluid bentonite if a "frac-out" occurs during horizontal directional drilling operations; (3) the release of fuel, hazardous material, sewage or bilge/ballast water from project vessels; and (4) increased erosion, sedimentation, and other potential water quality impacts related to terrestrial construction activities.

Turbidity and Redistribution of Contaminated Sediments

The size of the turbidity plume caused by cable installation activities (*i.e.*, grapnel, jetting, and burial) depends on the grain size of the bottom sediments, rates at which the suspended particles settle to the bottom or are dispersed by bottom currents, and the energy produced by the trenching equipment. Increases in turbidity can degrade water quality by reducing light penetration, discoloring the ocean surface, or interfering with filter-feeding benthic organisms sensitive to increased turbidity. At the conduit terminus, water jetting operations to expose the newly installed conduit will result in localized increases in turbidity. However, the EIR states that the majority of nearshore sediments consist largely of sand, which is expected to settle rapidly within the immediate area of the conduit, resulting in only minor impacts to marine water quality. The pre-lay grapnel run, laying of the cable, jetting of sediments during cable installation, and use of the sea plow farther offshore will result in local and temporary increases in turbidity. According to the EIR:

> *Project activities would be expected to suspend sediments and increase turbidity for 4 hours at any one location (E&E, 2001). The greatest concentrations would be in the immediate vicinity of the Project activities. Dilution through dispersion by currents and settling of heavier particles would greatly reduce impacts beyond the immediate vicinity. The duration of increased turbidity would be short, and*

> *most suspended sediments would not be visible at the water surface and would also settle out of the water column within hours of any activity.*

Thus, due to the minor and short-term nature of the increase in turbidity, impacts to filter-feeding and other benthic organisms will not be significant.

As the proposed cable routes travel through Santa Monica Bay, they could disturb areas containing sediments contaminated with DDT, PCBs, and metals, resulting in dispersal and potential uptake of these contaminants by benthic organisms. The degree of sediment contamination in Santa Monica Bay is dependent on location and depth. The proposed cable route avoids known locations of contaminated sediments. Thus, any unknown contaminated areas encountered along the cable route are likely to be characterized by low contaminant concentrations. In addition, the proposed construction methods are not likely to result in significant redistribution of sediments. However, cable installation activities could still result in water quality impacts associated with exposure to contaminated sediments. The EIR states:

> *The pre-lay grapnel run, cable installation, and cable repair would result in the temporary suspension and dispersal of potentially contaminated toxic sediments. Impacts on organisms could occur if high levels are encountered, with sub-lethal effects if lower concentrations are encountered, or possibly an increased potential for bioaccumulation of contaminants in organisms through the food chain. Sediments are naturally re-suspended and dispersed by wave action and ocean floor currents throughout very large areas of Santa Monica Bay. The volume of contaminated sediments potentially re-suspended and dispersed via natural processes is far more than that anticipated to be caused by the very small-scale Project construction activities (Table 3.3-8). Project activities are isolated to a very small footprint and, therefore, can only generate very small amounts of re-suspended sediment. Also, the Project avoids heavily contaminated areas and re-suspended sediment in areas of cable laying would be far below levels of re-suspended sediment from natural processes that would occur in larger areas. This impact would not be significant (Class III) because the proposed Project would not add contaminants to the area, the area affected is relatively small, and suspended sediments are expected to disperse within 1 day with a low likelihood of reaching toxic levels to wildlife…*

Frac-outs during HDD Operations

MC Global will use bentonite, a non-toxic drilling fluid, during HDD operations. HDD activities could result in the inadvertent release of drilling fluids (i.e., frac-out) onto the beach or surf zone above the bore. Although it does not pose an acute toxicity threat, bentonite releases can smother benthic organisms and contribute to increases in turbidity. To minimize the potential impacts associated with a frac-out, the City has required Mitigation Measure HWQ-1 which requires MC Global to submit a Frac-out Contingency Plan that establishes the operational procedures and responsibilities for the prevention, containment, and clean-up of frac-outs associated with HDD operations. **Special Condition 3** incorporates this mitigation measure included in the EIR into this CDP. In addition, **Special Condition 17** adds additional requirements to the Frac-out Contingency Plan to ensure it is consistent with Coastal Act requirements and past Commission approvals. Specifically, **Special Condition 17** requires that

the Frac-out Contingency Plan also includes provisions to use water as a drilling fluid for the last 60-100 feet of the HDD bore, a monitoring procedure using fluorescent dye to detect a frac-out occurring on the seafloor where visibility is poor, and protocols to be followed in the event of a loss of drilling pressure and a confirmed frac-out. With these measures in place, the potential for a frac-out will be minimized and in the event a frac-out does occur, MC Global will have procedures in place to ensure that any impacts are temporary and minor.

Project Vessel Releases

The proposed project requires the use of several different marine vessels and equipment to support the construction and operation of the SEA-US cable. It is possible that marine vessels could discharge fuel or other hazardous fluids, sewage water, bilge water, debris, or ballast water into the marine environment. Depending on the size and contents of the release, impacts to marine organisms could be significant. Although the likelihood of a spill occurring is low, the EIR includes several mitigation measures to further reduce the risk of a spill from a project vessel. HWQ-2a, 2b and 2c require MC Global to develop a Spill Prevention Plan, a Vessel Waste Management Plan and a Shipboard Oil Pollution Emergency Plan, respectively. In addition, **Special Condition 18** requires MC Global to submit a project-specific Spill Prevention and Response Plan to the Executive Director for review and approval. In addition to the requirements of HWQ-2a and HWQ-2c, the Plan shall identify the worst-case spill scenario and demonstrate that adequate spill response equipment is available. In addition, the Plan shall clearly identify responsibilities, list and identify the location of oil spill response equipment, and include a plan for conducting training and response drills. Further, **Special Condition 19** requires MC Global to implement an Executive Director-approved Critical Operations and Curtailment Plan (COCP). The COCP defines the limiting conditions of sea state, wind, or any other weather conditions that would hinder safe operation of vessels and equipment or a potential spill cleanup. Finally, consistent with previous fiber optic cable projects, **Special Condition 20** requires implementation of a zero discharge policy for all project vessels.

Erosion from Terrestrial Activities

Terrestrial and horizontal directional drilling construction activities at the two staging sites, installation of the ocean ground bed in Hermosa Beach, and terrestrial cable installation activities have the potential to result in water quality impacts due to storm water discharges, accelerated soil erosion, and sedimentation. MC Global is in the process of seeking a 401 Certification from the Regional Water Quality Control Board that will address these issues. **Special Condition 2** requires MC Global to submit evidence of approval of the 401 Certification to the Executive Director. To further ensure that impacts associated with stormwater runoff and erosion are minimized, **Special Condition 21** requires MC Global to submit a Stormwater Management Plan to the Executive Director for review and approval that identifies Best Management Practices to control erosion and stormwater runoff from the project site.

In addition, inadvertent releases of oil or other hazardous material from construction-related vehicles or equipment has the potential to degrade water quality of nearby ground or surface waters. To minimize the likelihood of a spill, the City required Mitigation Measures HAZ-1, HAZ-1b, HAZ-1c, and HAZ-1d (incorporated into this permit through **Special Condition 3**) that require MC Global to develop a Spill Prevention and Contingency Plan for terrestrial construction activities, conduct worker training related to recognizing and responding to spills,

maintain equipment to avoid leaks, and practice refueling practices. Implementation of these measures will minimize the potential for an inadvertent release of hazardous materials during terrestrial construction activities.

To summarize, with the inclusion of the Special Conditions described above, the proposed project will minimize the potential for adverse impacts associated with increased turbidity, resuspension of contaminated sediments, inadvertent release of drilling fluids or hazardous substances, discharges from project vessels and runoff from terrestrial activities.

6. Conclusion

For the reasons discussed above, the Commission finds that the proposed project, as conditioned by **Special Conditions 3, 4, 5, 6, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, and 21**, will be carried out in a manner that maintains marine resources and sustains the biological productivity and quality of coastal waters and protects against the spillage of hazardous substances into the marine environment and is therefore consistent with Coastal Act Sections 30230, 30231 and 30232.

F. ENVIRONMENTALLY SENSITIVE HABITAT

Coastal Act Section 30240 states:

> *(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.*

The terrestrial components of the proposed project are located largely in public right-of-ways and areas zoned as Open Space (i.e., the Green belt between S. Ardmore Avenue and S. Valley Drive (see Exhibit 3). Land use surrounding the terrestrial conduit routes is mainly residential, commercial and recreational and does intersect any native terrestrial habitats. Portions of the proposed project will be located on or beneath sandy beach areas. Although the beach areas within the project footprint are heavily used for recreational purposes and are not considered ESHA, nearby sandy beach areas have been observed to provide habitat for special status species, such as the state and federally listed western snowy plover (*Charadrius niviosus nivosus*) or the California least tern (*Sternula antillarum browni*). California brown pelican (fully protected in California), black skimmer (California Species of Special Concern), and double-crested cormorant (California Species of Special Concern) are likely to fly over the Project, but there is no nesting or roosting habitat for these species within or adjacent to Project impact areas and project activities are not expected to interfere with foraging behaviors. Black skimmers nest on sandy beaches, but the high levels of recreation and beach management disturbance make the Project area unlikely to support nesting.

The only project component that has the potential to impact special status species is the installation of an ocean ground bed below the beach surface near each landing site. MC Global anticipates that installation of both bores will take approximately 3 days and will involve drilling holes into the sand down to sea level, placing the anodes in the holes, connecting the tops of the

anodes and finally covering the anodes with sand. Equipment needed to install the ocean ground bed would include a backhoe and a small water well drilling unit. These project activities could result in disturbance to snowy plovers or least terns nesting nearby. To minimize the potential for any impacts to these species, the City included Mitigation Measure BIO-1:

> ***BIO-1: Avoid Disturbing Roosting Western Snowy Plovers or California Least Terns.*** *If the beach landing sites are selected, the directional bore and facility installation activities will be conducted outside of the roosting period for western snowy plovers (September through March) as feasible, to avoid impacts on roosting snowy plovers. If the beach landing sites will be established, and construction activities at the bore sites must occur during the roosting season, a qualified biologist approved by the City will contact USFWS and CDFW to determine if the site(s) are within a Special Protection Zone for roosting western snowy plovers. If the landing site(s) are within a Special Protection Zone, construction activities will not be allowed until western snowy plovers are no longer present. If the area is not within a Special Protection Zone, a qualified biologist will survey the area for western snowy plovers using established protocols and in coordination with USFWS and CDFW to determine if plovers are present. If present, no work will occur until after snowy plovers leave the roost site for the season. The qualified biologist will also survey the area for California least terns using established protocols and in coordination with USFWS and CDFW to determine if California least terns are present. If surveys are negative for western snowy plovers or California least terns, work may proceed during the roosting period and the biologist will be present to monitor the establishment of the beach landing sites to ensure that no western snowy plovers or California least terns are injured or killed, should they arrive in the area subsequent to work commencing. The sites will include fencing/walls that will prevent western snowy plovers or California least terns from entering the work areas. The biologist will conduct weekly site visits to ensure that fence/walls are intact until construction activities are finished at the sites and all equipment is removed from the beach. The results of the preconstruction survey will be submitted to the City prior to the establishment of beach landing sites. All biological monitoring efforts will be documented in monthly compliance reports to the City.*

MC Global clarified that the above condition would apply to any work conducted on the beach, regardless of the landing site selected (MC Global, personal communication on 6/22/16) and would thus be applicable to work associated with installation of the ocean ground beds. Implementation of this measure will ensure that potential snowy plover and least tern habitat located adjacent or near to the project site is not degraded by project-related activities and continues to be available for use by snowy plovers and least terns. **Special Condition 3** incorporates the Mitigation Measures included in the EIR that relate to biological resources into this CDP, including BIO-1. Thus, with the above measure in place, special status species will be protected against disturbance-related impacts associated with the proposed project.

In addition to special-status species, the proposed project has the potential to result in adverse impacts to nesting birds. Native birds could nest in ornamental plantings, on buildings or other structures or on the ground within the project area. Biological surveys conducted by MC Global observed a red-shouldered hawk and a Cooper's hawk. These species are protected under the

Migratory Bird Treaty Act and Fish and Game Code Sections 3503 and 3513. According to the EIR:

> *If present adult birds would flee from equipment during Project construction/installation. However, nestlings and eggs of ground-nesting birds or birds nesting in ornamental trees, landscaping, or equipment and facilities would be vulnerable to injury during Project construction. Construction and demolition activities conducted during the nesting season could destroy bird nests, including eggs or nestling birds, or could disturb nesting birds to the point of nest failure. Project activities would occur in small, localized areas at the two landing sites, at periodic access points for underground boring, and at the PFE facilities. Installation activities would occur within a developed, urbanized area and would be generally consistent with current human activity levels from recreationists, traffic, and other sources of noise and disturbance. Any birds nesting in the Project area are expected to be acclimated to and tolerant of human disturbance, and Project activities are not expected to result in substantial adverse impacts. Nonetheless, noise and vegetation removal in the Greenbelt and Valley Park may result in loss of nests, eggs, or nestlings without mitigation.*

To address these potential impacts, the City required Mitigation Measure BIO-2 which requires MC Global to hire a qualified biologist to conduct preconstruction surveys for nesting raptors and other birds within 100 feet of all work areas. If an active nest is identified, a 50 foot buffer will be established around the nest to minimize potential impacts from vegetation trimming and construction noise. These buffers may be adjusted by the biologist based on conditions around the nest, planned construction activities, tolerance of the species and other pertinent factors. The full text of the condition can be found in Exhibit 9. Implementation of this measure reduces the potential for direct or indirect impacts to nesting birds. **Special Condition 3** incorporates the Mitigation Measures included in the EIR that relate to biological resources into this CDP, including BIO-2. Thus, with the above measure in place, nesting birds will be protected against disturbance-related impact associated with the proposed project

With the incorporation of Mitigation Measures BIO-1 and BIO-2 under **Special Condition 3,** the Commission finds that habitat supporting special-status species and nesting birds is protected against any disruption of habitat values, and thus, the proposed project is consistent with Section 30240 of the Coastal Act.

G. COMMERCIAL AND RECREATIONAL FISHING

Coastal Act Section 30234.5 states:

> *The economic, commercial, and recreational importance of fishing activities shall be recognized and protected.*

Commercial fishing is an important component of the regional economy in southern California. The major fishing ports in the project area are San Pedro and Terminal Island at the Port of Los Angeles near Long Beach, 18 miles southeast of Hermosa Beach. In 1999, commercial fishery

landings at the Port of Los Angeles were ranked 8th by poundage (194.7 million pounds) and 16th by dollar value ($36.1 million) nationwide. In 2014, the Port of Los Angeles's nationwide ranking had dropped to 58th by poundage (20.3 pounds) and 25th by dollar value ($55.2 million) (CDFW 2014, NOAA 2014). Other nearby fishing ports includes Port Hueneme, Redondo Beach, and Newport Beach. The most common fishing gear types used in the project area include nets, trawls, pots and traps, trolling, and hand lines.

Recreational fishing in the area is predominantly by hook-and-line. Rocky headland areas in the Point Buchon area are fished for rockfish, lingcod, and cabezon. Other target species in this area include barracuda, bonito, and white sea bass. Trolling for salmon occurs parallel to shore out to depths just over 300 feet from near Point Sal to Cayucos. Fishers on charter boats also troll for albacore farther offshore.

Potential Project-Related Impacts

The gear types with the greatest potential for interacting with cables are bottom trawls.[5] Fishing may still occur over the cables, whether buried or unburied, but in areas where the cable is not buried (*e.g.,* over rocky substrates or on steep slopes), is insufficiently buried, or becomes exposed, and where trawling occurs, the gear may be snagged, damaged, or abandoned if the fisherman is forced to cut his gear. Fishing will also be temporarily precluded during cable installation and repair operations. The principal impacts to fishing due to the proposed project therefore are: (1) preclusion from the project area during cable installation and repair; (2) fishing gear-cable conflict or entanglement; (3) and economic losses due to fishing-cable conflicts, including preclusion and gear loss.

Commercial fishing will be precluded from the cable installation corridor and safety zone during marine activities associated with cable installation. While the duration of these activities will vary along the cable corridor, in-water activities could take a total of 10 weeks. Temporary economic impacts to fishermen therefore could result during cable installation. Pursuant to the federal Submarine Cable Act (47 U.S.C. 21 §24), all vessels are required to maintain a distance of at least one nautical mile from a vessel laying or repairing a cable and one-quarter mile from the buoy of a vessel intended to mark the position of a cable when being laid or out of order. However, de facto preclusion created by all cable installation activities will be temporary and in constant motion as the cables are being laid and/or buried so there will be sufficient access to other fishing and boating areas in the project area. Moreover, once the cables are buried, there will be unrestricted access to these areas. Fishing could occur at locations within the route, but away from the cable-laying vessel(s), throughout the installation period. Therefore, a temporary fishing preclusion zone should not be a significant impact to commercial and recreational fishermen.

To minimize potential conflicts and impacts to fishing from cable installation, operation, and repair, MC Global became a party to an existing agreement between fiber optic cable companies representing the UNITY and Tata cables and the Southern California Cable & Fishing

[5] Bottom longlines also have a high potential for interacting with cables on the seafloor, but this type of fishing gear is now prohibited in California.

Agreement dated June 8, 2002 with the Southern California Trawlers Association, the Los Angeles Commercial Fishermen's Association, the Southern California Commercial Fishing Association, and individual fishermen not represented by a fishing association (hereinafter referred to as the "Fishing Agreement" – See Exhibit 9 for the full text). The Fishing Agreement includes the following provisions:

- Distribute as-built cable installation information in writing, electronically, and on navigational charts of cable location and burial depth after installation to assure that accurate positions and depths are known to fishermen and other interested parties;
- Establish and fund a Cable Committee with fishermen and cable company representatives to "…reduce potential conflicts between the installation, continuation, and maintenance of the Cable Projects and commercial fishing activities along the California Coast";
- Fund and hire, through the Cable Committee, a Cable Committee Liaison Officer to carry out Cable Committee activities;
- Approval by the Cable Committee of all future cable alignments;
- Allow a representative of the fishing community to observe all cable-laying activities;
- Fund a Commercial Fishing Industry Improvement Fund in the amount of $25,000 annually, for enhancement of commercial fisheries and the commercial fishing industry and support facilities. The funds are intended to be used for fisheries research, education, management, safety, and socioeconomic purposes;
- Establish a 24-hour hotline to take calls from fishermen who believe they have snagged their gear on fiber optic cables;
- Pay 100% of the costs of gear sacrificed by fishermen as a result of snagging cable provided 1) the fisherman has informed the 24-hour toll-free telephone hotlines of its situation; and 2) the fisherman's conduct was consistent with the Fishing Vessel Operating Procedures established in the Fishing Agreement; and pay additional claims according to Cable Committee guidelines based on the principle of "making the fisherman whole for his economic loss resulting from the Covered Cable snag";
- Pay "reasonable compensation" to fishermen economically impacted by cable installation or repair activities;
- Release any claims they might otherwise have against individual fishermen and refrain from taking any administrative, legal, or other action to sanction and/or recover damages against fishermen who comply with terms and conditions of the Fishing Agreement;
- Assume all liability, responsibility, and risk for any damage which may occur to their cables resulting from their inability to construct, maintain, place, and continue those cables in a manner which does not interfere with traditional fishing operations;
- Pay $500 for each vessel engaged in trawl fishing in the project area that is owned or operated by a fisherman who signs the Fishing Agreement for use in upgrading communication and navigation equipment; and
- Resolve disputes with fishermen according to Dispute Resolution procedures.

Special Condition 22 requires MC Global to abide by the provisions of the Fishing Agreement. To further minimize potential conflicts with fishing during cable repairs, **Special Condition 23** requires MC Global to provide notice in writing to the Executive Director and in a U.S. Coast Guard *Notice to Mariners* 15 days prior to any cable repair or maintenance activity, or as soon as possible for emergency repairs.

To address the economic impacts of preclusion from the project area, in Section 1.2(f) of the Fishing Agreement, MC Global agrees to "provide reasonable compensation to Fishermen who suffer damage as a result of the acts of installing, repairing, replacing, or maintaining of the Cable Projects, or any incidental activities in connection therewith. The amount of such compensation, as well as those entitled to receive it, shall be determined by the Cable Company, implementing guidelines approved by the Committee prior to installation." This portion of the Fishing Agreement does not specify the amount of compensation to fishermen; it allows for Cable Committee input into the quantity and recipients of the compensation through "guidelines."

Once a cable is laid, fishing gear could snag cable segments that are insufficiently buried or exposed on the seafloor, resulting in gear damage or loss. If gear is snagged and lost, fishermen would incur financial losses from abandoned gear and lost fishing time. MC Global will minimize potential fishing conflicts and effects through a number of measures. Most importantly, **Special Condition 5** requires MC Global to bury the cable to a depth of 1.0 meter except where precluded by seafloor substrates. Where a 1.0-meter burial depth cannot be achieved, MC Global shall bury the cables to the maximum depth feasible. MC Global estimates it can bury the cable along 93% of the cable route. Buried cable will minimize the potential for fishing gear entanglement and gear damage or loss.

To minimize the potential that that fishing gear is snagged on exposed cable, several conditions have been added to ensure fisherman and other interested parties are notified of the as-built location of the cable as well as the location of exposed sections of the cable. **Special Condition 7** requires MC Global to notify fishermen of areas of exposed cable during the marine cable installation phase of the project by submitting to (a) the Executive Director, (b) the U.S. Coast Guard (for publication in a *Notice to Mariners*), and (c) the signatories of Fishing Agreement, weekly notices containing preliminary as-built coordinates of any unburied or exposed sections of cable. MC Global is also required to make radio broadcast announcements on the local fishers' emergency radio frequency that provide the current cable installation location and a toll-free number that can be called for additional information. **Special Condition 8** requires MC Global to submit to the signatories of the Fishing Agreement electronic and hard copy as-built plans overlaid on NOAA navigation charts. Further, **Special Condition 10** requires MC Global to submit to the Executive Director a final cable installation report that includes a summary of cable installation and cable slack methods used; identification of any areas of cable suspension greater than 1.0 meter above the seafloor; an evaluation of the consistency of cable installation with MC Global's project description and conditions of this permit; and a description of any observed fishing activity during the pre-lay and cable installation project phases. In addition, **Special Condition 9** requires MC Global, within 60 days of completion of cable installation, to submit evidence to the Executive Director that AT&T has submitted to NOAA the geographical coordinates of the cable as-built plans using a Differential Geographic Positioning System unit or comparable navigational equipment so that NOAA can update its navigational charts for this area of coast.

In areas where the cable is suspended over the seafloor, there is a greater chance of fishing gear snags and entanglements. To minimize cable suspensions, **Special Condition 6** requires MC

Global to submit a "Cable Slack Management Plan" to the Executive Director for review and approval. The Plan will describe the steps MC Global will take during cable installation to identify and eliminate, where feasible, segments of cable that are suspended above the seafloor.

To make sure that buried cable remains buried, **Special Condition 11** requires MC Global to conduct a cable burial survey in 2020 and then every five years thereafter (unless otherwise determined by the Executive Director based on a finding that portions of the cable route have not remained buried), to verify that the cables have remained buried consistent with the as-built cable burial plan required by **Special Condition 8**. The survey shall be conducted using a remotely operated vehicle ("ROV") equipped with video and still cameras. If the survey shows that a segment(s) of a cable is no longer buried consistent with the as-built cable burial plan, MC Global shall, submit to the Executive Director a plan to re-bury those cable segments.

To address potential impacts during cable repairs or cable re-burial, **Special Condition 23** requires MC Global to provide notice of such proposed repair or re-burial to the Executive Director and in a US Coast Guard Notice to Mariners 15 days prior to any cable repair or maintenance activity, or as soon as possible for any emergency repairs. In addition, within 90 days of either taking a cable out of service or after the expiration or termination of MC Global's lease agreement with the City, **Special Condition 12** requires MC Global to apply for an amendment to this permit to remove the cables from the seafloor.

In order to ensure compliance with these and other conditions, **Special Condition 1** requires MC Global to post a performance bond in the amount of $500,000 to cover its cable operations in State and federal waters out to the 1,800-meter water depth

With implementation of these measures, the Commission finds that project-related impacts to commercial and recreational fishermen will be minimized and the proposed project is consistent with Section 30234.5 of the Coastal Act.

H. PUBLIC ACCESS AND RECREATION

Coastal Act Section 30210 states:

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

Coastal Act Section 30220 states:

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

Proposed project activities may result in short-term disruption to recreational boaters and beach users. During marine cable installation, recreational fishers and other boaters must avoid the cable installation ship. Pursuant to the federal Submarine Cable Act (47 U.S.C. 21), the master of any vessel must keep a distance of at least one nautical mile from a vessel engaged in laying or repairing a cable and at least ¼ of a mile from buoys intended to mark the position of a cable

when it is being laid. Therefore, the project may cause recreational vessels to change their course. However, the preclusion zones created by cable installation and repair activities will be temporary or in constant motion as the cables are being laid and/or buried so there will be sufficient access to other fishing and boating areas in the project area. Moreover, once the cables are laid, full access will be restored. Because of the short-term nature of the preclusion zones, the disruption of fishing and boating is not significant.

The onshore installation of an ocean ground bed and horizontal directional drilling (HDD) activities may inconvenience beach users in the short-term. Installation under the beach of two ocean ground beds (4-6 anodes spaced 10-feet apart), one at 25th St. and one at Longfellow Avenue will require three to five days of work. During this period, a maximum of 40,000 square feet of beach area (100' by 40'), will be fenced off and unavailable to beach users at each location. To minimize impacts to beachgoers, MC Global sited the location of the ocean ground beds near the existing seawall, well away from the shoreline and existing volleyball nets.

HDD activities, estimated to take 4 weeks to complete for each bore, will take place on 25th St. between Hermosa Ave. and Manhattan Ave. and Longfellow Avenue between Hermosa Ave. and Manhattan Ave. These sites are located on city streets and will not result in the displacement of beachgoers. However, HDD activities will require the closure of an entire City block at each location. Pedestrian access to the beach and the Strand will be maintained at all times. However, vehicle access to the beach via 25th St. and Longfellow St. will not be available for the duration of HDD operations at each location. In addition, a total of 17 public parking spaces located on the closed City streets will be precluded for the drilling period. Furthermore, project-related traffic could affect traffic flow and create congestion in the immediate Project vicinity.

To address concerns related to traffic circulation, the City required MC Global to submit a Construction Traffic Control Plan (Mitigation Measure TT-1a). The Plan will include feasible measures to reduce Project-related truck trips and reduce temporary traffic delays, notify affected property owners about the timing and duration of obstructions, coordinate with emergency service providers and local transit authorities, and ensure the safe passage of pedestrians and bicycles through the project site. **Special Condition 3** incorporates Mitigation Measures included in the EIR that relate to public access, including TT-1a into this CDP.

Directional drilling activities also could generate noise that could interfere with the recreational experience of beach users. According to the EIR, ambient daytime noise measurements on the beach range from 43 dBA to 78 dBA. The two primary sources of project-related noise are the drill rig and the mud system. MC Global estimates uncontrolled drilling noise levels to be 85 dBA at 40 feet from the drill site. To reduce noise levels by 10-15 dBA, MC Global is proposing to install a temporary 8-foot tall sound barrier wall, enclosing the cable landing sites on all sides. Further, Mitigation Measure N-2a, included in the EIR and incorporated into this CDP through **Special Condition 3**, requires MC Global to employ noise-reducing construction practices to reduce project-related noise to the maximum extent feasible. To further minimize any impacts to beach users due to project activities, **Special Condition 25** prohibits onshore project construction associated with directional drilling activities and the installation of the ocean ground beds during Redondo Beach and Hermosa Beach's peak beach use season, Memorial Day weekend through Labor Day.

With these above-described measures in place, the Commission finds that any project-related impacts to public access and beach users will be minimal and temporary and therefore concludes the project would be consistent with Sections 30210 and 30220 of the Coastal Act.

I. CUTURAL RESOURCES

Coastal Act Section 30244 states:

> *Where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.*

Historic and cultural resources are places or objects that possess historical, cultural, archaeological or paleontological significance and include sites, structures, or objects significantly associated with, or representative of earlier people, cultures and human activities and events. Project-related activities have the potential to disturb or damage Native American artifacts and shipwrecks of potential cultural resources value. Disturbance of surface and subsurface soils both in the onshore and offshore environment could directly destroy a previously unrecorded historic or archaeological resource, including human remains, or disrupt the site such that the historic or archaeological context of the resource is altered adversely.

Onshore Resources

The EIR documents several potential cultural resources within the Project vicinity. A cultural resources record search, archival research and a pedestrian survey identified 13 different historic resources within the Project vicinity, all of which are part of the built environment. The EIR also documents a consultation with the Native American Heritage Commission that failed to identify any Native American cultural resources. In addition, a paleontological resources records search revealed that the likelihood of encountering buried paleontological deposits is considered low in this area. Furthermore, according to the EIR:

> *The City of Hermosa General Plan Existing Conditions Report…makes the argument that the area of Hermosa Beach is not considered sensitive for prehistoric resources, especially in the low-lying areas near the beach. This assertion is based on the statement that shifting beach sands and sand dunes are too dynamic to preserve prehistoric sites and on evidence that the Gabrieleno/Tongva generally located their settlements away from beaches…While this is likely accurate for the potential for encountering sites dating to the later prehistoric period, there is still potential for encountering prehistoric archaeological deposits that date to before the stabilizing of the modern shoreline around 5000 years BC and for encountering historic era archaeological deposits, especially those dating to the early 20th Century.*

The proposed project includes ground disturbing activities associated with installation of the terrestrial conduit system, installation of the ocean ground beds and HDD activities that could adversely impact buried archeological or paleontological resources. To minimize the potential for damage to these resources, the EIR includes several Mitigation Measures that require MC Global to monitor for and evaluate any discovered resources. Mitigation Measures CR-1b, CR-

2a, CR-2b, CR-4a, CR-4b and CR-5 requires MC Global to develop Archeological, Cultural and Paleontological Resource Monitoring Plans that includes provisions for archeological, paleontological and Native American monitoring of all ground-disturbing activities, procedures to follow in the event that previously unknown resources or human remains are discovered, and a process for collection and reporting of any appropriate artifacts. These mitigation measure are incorporated into this CDP under **Special Condition 3** (see Exhibit 9)**.**

Offshore Resources
In the offshore environment, project-related activities have the potential to disturb, disrupt or degrade prehistoric sites and watercraft and historic shipwrecks found on or within ocean sediments. Impacts from HDD boring activities, the pre-lay grapnel run, and cable installation, burial and repair activities have the potential to displace or destroy elements of these resources that could, according to the EIR, "result in the loss of integrity, loss of structural and compositional information that could have addressed important research questions." Preliminary records searches indicate a total of 52 shipwrecks and 3 aircraft within the general Project vicinity. However, these results are not accurate enough to determine potential impacts associated with the proposed project.

To minimize the potential for adverse impacts to marine cultural resources, the City required three mitigation measures, CR-6a, CR-6b and CR-6c. CR-6a requires MC Global to conduct a Pre-Construction Offshore Archaeological Resources Survey using acoustic survey (i.e., Chirp System) techniques to find evidence of prehistoric archeological deposits. Results of this survey will be used by a qualified marine archaeologist to produce a Marine Archaeological Resource Assessment Report. CR-6b requires MC Global to hire a qualified maritime archaeologist to conduct a Pre-Construction Offshore Historic Shipwreck Survey using standard underwater remote sensing approaches. CR-6c requires MC Global to develop and Avoidance Plan that details how proposed project elements, including the proposed cable route or installation procedures will be modified to avoid any resources discovered under the Marine Archaeological Resource Assessment Report or the Historic Shipwreck Survey. These mitigation measure are incorporated into this CDP under **Special Condition 3 (**see Exhibit 9)

The Commission finds that with these measures in place the project will not adversely impact cultural resources and is therefore consistent with Section 30244 of the Coastal Act.

J. GEOLOGY

Coastal Act Section 30253(2) states that:

> *New development shall:*
>
> *(2) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.*

Geologic conditions vary widely along the terrestrial cable route, at Hermosa Beach and along the HDD bore trajectory, and along the submarine cable routes. The terrestrial portion of the cable route ranges in slope from level to gently sloping and is underlain by beach and dune sands. The onshore portions of the project do not cross any active fault, although the region is subject to strong ground shaking from faults in the region. Liquefaction of the unconsolidated beach sands may be expected during severe ground shaking. Extrapolating from an exploratory 150-foot bore near the proposed HDD bore site at Hermosa Beach, the proposed HDD bore trajectory consists of sand, gravel, and cobbles of varying densities.

Liquefaction of the upper several meters of sediments on the sea floor, in which the cable is to be installed, is possible at various locations. The bulk density of the fiber optic cable is greater than that of the liquefied sediments, and so the cable may be expected to sink within the liquefied sediments. Such sinking will serve to bury the cable to a greater depth than its installation depth, and may remove some cable slack and increase cable tension.

MC Global selected the two marine cable routes to avoid several significant geologic features that could impact the cable, including submarine canyons, unstable substrates, and rocky substrates. From the HDD "punch-out" location offshore, the marine cables pass through gravel areas through which petroleum seeps may occur, and then through sandy and clayey sediments in Santa Monica Bay. After descending the slope of the Santa Monica Basin (where the potential for liquefaction exists), the marine routes cross other ridges and basins that alternately are underlain by soft and firm sediments and bedrock; ridges contain bedrock outcrops and firm sediments, and basins are floored by soft to firm sediments. Toward the western end of the routes, the routes cross the Patton Ridge and the steep, rocky Patton Escarpment, which marks the edge of the continental shelf.

There are no active faults within the proposed project footprint or within 1 mile of the terrestrial portions of the project. The closest known active faults are the Palos Verdes Fault Zone, approximately 2.5 miles south of the 25th St. landing site, and the Newport-Inglewood fault, approximately 8 miles northeast of the Longfellow St. landing site.

Stability of Landing Site

There are no significant concerns with the geological stability of the landing site at Hermosa Beach in terms of shoreline retreat associated with coastal erosion or sea level rise, since there is no coastal bluff present at Hermosa Beach. Further, a Sea-Level Rise Vulnerability Assessment prepared by the City in 2014 notes that the City has gained an additional 250 feet of beach sand width between 1935 and 1990, primarily due to opportunistic beach replenishment programs conducted elsewhere in Santa Monica Bay. If these beach projects continue, Hermosa Beach is likely to add additional beach width into the future, thereby reducing the potential effect of sea level rise on the proposed project. In addition, the Study indicates that the central and southern portions of Hermosa Beach shoreline are the most vulnerable to sea level rise, rather than the northern portion of the shoreline where the proposed project would be located. Further, after discussions with Commission staff, MC Global eliminated the beach landing sites from the project. The proposed street landing sites are located almost 500 feet inland from the beach landing sites, and are therefore less vulnerable to erosion and destabilization due to storm events, wave runnup and sea level rise.

In addition, no active faults are crossed by or are located within one mile of the terrestrial portion of the project, although the Palos Verdes Fault Zone is located approximately two miles south of Hermosa Beach. The beach dune areas located at Hermosa Beach have liquefaction potential, but this area is not identified as being prone to earthquake-induced landslides. The proposed HDD bore depth of 100 feet under the seafloor avoids all such potential geological risks at the landing site.

Geologic Processes and the Submarine Cable

The safety of the submarine cables along their routes offshore is of concern because, as described in the Section E, repair operations have the capacity to adversely impact marine organisms. Accordingly, to limit the need to conduct repair operations, the potential for breaks or damage to the cable related to erosion, scour, unstable soils, seismic activity or other hazards should also be minimized. To address these concerns, **Special Condition 5** requires MC Global to bury the cable to a depth of 1 meter where feasible. Burying the cable will protect it from scour and erosion associated with marine currents and waves. MC Global estimates that it can bury the cable along approximately 93% of the route. The City also included Mitigation Measure GEO-1 in its approval, incorporated into this CDP under **Special Condition 3**, which requires MC Global to conduct a geotechnical study to evaluate seafloor conditions (including characterization and grain size analysis of subsurface sediments) and identify geologic hazards. MC Global is then required to use this information to realign the cable where feasible to avoid unstable areas or hazards.

Even with these measures in place, it is possible that the cable could sustain impacts associated with geologic processes. Given submarine currents present on the continental shelf, burial to the 1.0-meter depth may not be sufficient in all locations to prevent exposure of the cable by scouring. Further, the relatively steep slopes (up to 15 %) on which the cables are to be installed could be subject to slumping and/or sliding, which could expose or break the cables. Exposure of the cable on the seafloor could subject it to damage by anchoring or trawling operations. To identify areas of cable that may have been exposed, **Special Condition 11** requires that in 2020 and every five years thereafter for the life of the project, MC Global shall survey the portion of the cable route from the mean high tide line to the 1000-fathom depth to verify that the cables have remained buried consistent with the as-built cable burial plan required by **Special Condition 8**. If the surveys show that previously buried portions of the cable have become exposed, MC Global must submit a plan to re-bury those cable segments, thus reducing the potential for future damage or breaks in the cable.

Potential Impacts Related to Horizontal Directional Drilling Activities

One of the primary geologic concerns related to the proposed project is that horizontal directional drilling operations could result in release of drilling fluids (bentonite) into the nearshore or marine environment. Most likely is the release of bentonite through fractured bedrock and sediments, or as a result of a "frac-out," in which the drilling bore creates fractures that extend to the seafloor as a result of drilling fluid pressures that exceed the strength of the rocks or sediments being drilled. Such inadvertent release of drilling fluid to the seafloor results from drilling through brittle, fractured and/or poorly consolidated rocks or sediments, the

maintenance of too-high fluid pressures in the bore during drilling, and drilling at too shallow a depth below the seafloor.

To minimize the potential impacts associated with a frac-out, the City has required Mitigation Measure HWQ-1 which requires MC Global to submit a Frac-out Contingency Plan that establishes the operational procedures and responsibilities for the prevention, containment, and clean-up of frac-outs associated with HDD operations. **Special Condition 3** mitigation measures included in the EIR related to water quality into this CDP, including the requirements of HWQ-1. In addition, **Special Condition 17** adds additional requirements to the Frac-out Contingency Plan to ensure it is consistent with Coastal Act requirements and past Commission approvals. Specifically, **Special Condition 17** requires that the Frac-out Contingency Plan also include provisions to use water as a drilling fluid for the last 60-100 feet of the HDD bore, a monitoring procedure using fluorescent dye to detect a frac-out occurring on the seafloor where visibility is poor, and protocols to be followed in the event of a loss of drilling pressure and a confirmed frac-out. With these measures in place, the potential for a frac-out will be minimized and in the event a frac-out does occur, MC Global will have procedures in place to ensure that any impacts are temporary and minor.

With these conditions in place, the Commission finds the proposed project is therefore consistent with Section 30253(2) of the Coastal Act.

K. CALIFORNIA ENVIRONMENTAL QUALITY ACT

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

The City of Hermosa Beach, acting as lead CEQA agency, certified an Environmental Impact Report for the proposed project on April 19, 2016.

The proposed development has been conditioned in order to be found consistent with the Chapter 3 policies of the Coastal Act. Mitigation measures, including conditions addressing marine resources, dredge and fill of coastal waters, water quality, ESHA, public access and cultural resources will minimize all adverse environmental impacts. As conditioned, there are no feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse impact which the activity may have on the environment. Therefore, the Commission finds that the proposed project is the least environmentally-damaging feasible alternative and is consistent with the requirements of the Coastal Act to conform to CEQA.

L. FEDERAL CONSISTENCY

The Commission's action in this case authorizes both a CDP for the proposed project and results in a conditional concurrence with MC Global's federal consistency certification. In the case of a conditional concurrence with a consistency certification, the following procedures are triggered under the federal consistency regulations (15 CFR Part 930):

> 930.4 Conditional Concurrences.
>
> *(a) Federal agencies, applicants, persons and applicant agencies should cooperate with State agencies to develop conditions that, if agreed to during the State agency's consistency review period and included in a Federal agency's …approval under subparts D [or] E … of this part, would allow the State agency to concur with the federal action. If instead a State agency issues a conditional concurrence:*
>
> > *(1) The State agency shall include in its concurrence letter the conditions which must be satisfied, an explanation of why the conditions are necessary to ensure consistency with specific enforceable policies of the management program, and an identification of the specific enforceable policies. The State agency's concurrence letter shall also inform the parties that if the requirements of paragraphs (a)(1) through (3) of the section are not met, then all parties shall treat the State agency's conditional concurrence letter as an objection pursuant to the applicable Subpart and notify, pursuant to §930.63(e), applicants, persons and applicant agencies of the opportunity to appeal the State agency's objection to the Secretary of Commerce within 30 days after receipt of the State agency's conditional concurrence/objection or 30 days after receiving notice from the Federal agency that the application will not be approved as amended by the State agency's conditions; and*
> >
> > *(2) The … applicant (for Subparts D and I), … shall modify the applicable plan, project proposal, or application to the Federal agency pursuant to the State agency's conditions. The Federal agency, applicant, person or applicant agency shall immediately notify the State agency if the State agency's conditions are not acceptable; and*
> >
> > *(3) The Federal agency (for Subparts D, E, F and I) shall approve the amended application (with the State agency's conditions). The Federal agency shall immediately notify the State agency and applicant or applicant agency if the Federal agency will not approve the application as amended by the State agency's conditions.*
>
> *(b) If the requirements of paragraphs (a)(1) through (3) of this section are not met, then all parties shall treat the State agency's conditional concurrence as an objection pursuant to the applicable Subpart.*

Right of Appeal.

Pursuant to subsection (a)(1) quoted in the prior section and Subpart H of the federal consistency regulations, within 30 days from receipt of notice of a Commission conditional concurrence to which the MC Global does not agree, MC Global may request that the Secretary of Commerce override this objection. 15 CFR §§ 930.4(a)(1) & 930.125(a). In order to grant an override request, the Secretary must find that the proposed activity for which MC Global submitted a consistency certification is consistent with the objectives or purposes of the Coastal Zone Management Act, or is necessary in the interest of national security. A copy of the request and supporting information must be sent to the California Coastal Commission and U.S. Army Corps of Engineers. The Secretary may collect fees from MC Globalfor administering and processing its request. [Note: This right of appeal does not apply to the CDP, but only to the activity authorized under the consistency certification.]

APPENDIX A: SUBSTANTIVE FILE DOCUMENTS

Coastal Development Permit Application and Federal Consistency Certification Materials:

Application for Coastal Development Permit 9-16-0160, dated February 19, 2016.

Applied Marine Sciences (AMS), Survey Report: Seafloor Habitat & Biological Characterization Assessment of the SEA-US Fiber Optic Cable Route Offshore Hermosa Beach, California by Remotely Operated Vehicle (ROV), February 2016.

Notification of changes to project description, submitted March 18, 2016.

Response to Notice of Incompleteness, submitted April 29, 2016.

Consistency Certification CC-0001-16, dated April 29, 2016.

Results from SEA-US Burial Assessment Survey, submitted 5/27/16

Environmental Documents:

Applied Marine Sciences (AMS), Survey Report: Seafloor Habitat & Biological Characterization Assessment of the SEA-US Fiber Optic Cable Route Offshore Hermosa Beach, California by Remotely Operated Vehicle (ROV), February 2016.

City of Hermosa Beach, *Final EIR for the Transpacific Fiber Optic Cable Project*, March 2016.

Ecology and Environment (E&E) for the City of Hermosa Beach. *Final Environmental Impact Report, prepared for the Tycom Transpacific Fiber Optic Cable and Hermosa Beach Landing Project*, November 2001.

Published Articles and Reports:

Cacchione, Drake, Field, and Tate. "Sea-floor gouges caused by migrating gray whales off northern California," Continental Shelf research, Vol. 7, No. 6, pp. 553-560.

Heezen, B.C. "Whales entangled in deep sea cables." Deep-Sea Research 4:105-115, 1957.

Kogan, Paul, Kuhnz, Burton, Von Thun, Greene, and Barry, 2006. *ATOC/Pioneer Seamount cable after 8 years on the seafloor: Observations, environmental impact*. Continental Shelf Research, Vol. 26, pp. 771-787.

Lissner, Andrew, Taghon, Gary, Diener, Douglas, Schroeter, Stephen, Dixon, John, 1991. Recolonization of Deep-Water Hard-Substrate Communities: Potential Impacts from Oil and Gas Development. Ecological Applications, Vol. 1, No. 3 (August 1991), pp. 258-267.

Minerals Management Service, Department of the Interior. *Gray Whale Monitoring Study: Final Report*, prepared by MBC Applied Environmental Sciences, August 1989.

Rampal, G. *Undersea Fiber-Optic Cable Systems Undergoing Unprecedented Growth*, Sea Technology, Vol. 39, No. 3, 10-19, 1998.

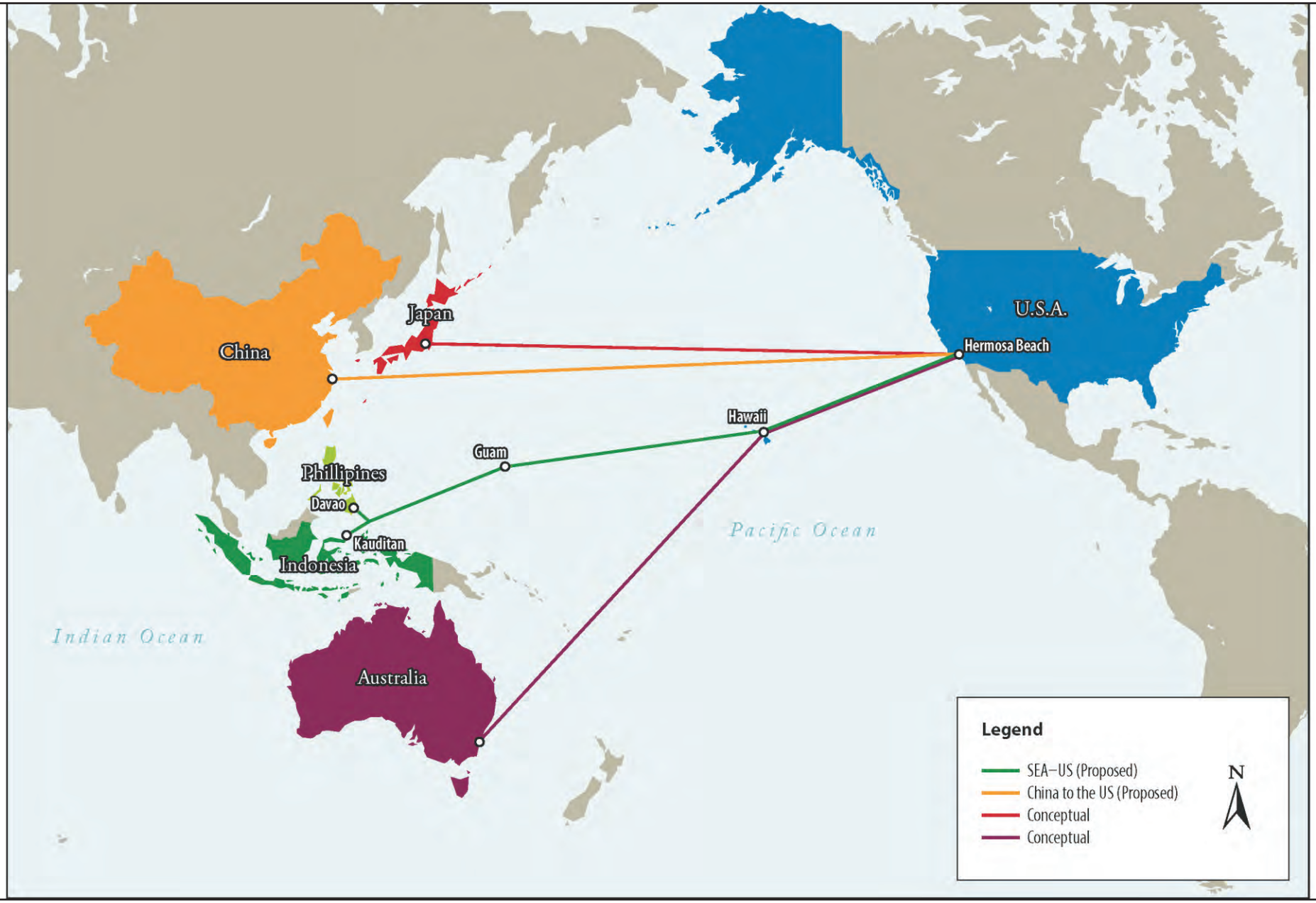
Wood, M.P. and Carter L. "Whale Entanglements with Submarine Communication Cables." IEEE Journal of Oceanic Engineering, Vol. 33, No. 4, October 2008.

Other:

California Department of Fish and Wildlife, Data on Final California Commercial Landings, 2014. https://www.wildlife.ca.gov/Fishing/Commercial/Landings#26004609-2014.

Electronic communications from Chris Brungardt, ICF International, Kate Huckelbridge, California Coastal Commission, dated 7/15/14, 8/5/14, 3/18/16, 3/30/16, 4/29/16, 5/27/16, 6/3/16, 6/7/16, 6/10/16, 6/16/16, 6/20/16, 6/22/16, 6/23/16.

NOAA Office of Science and Technology, Commercial Fishery Statistics, 2014. https://www.st.nmfs.noaa.gov/commercial-fisheries/index

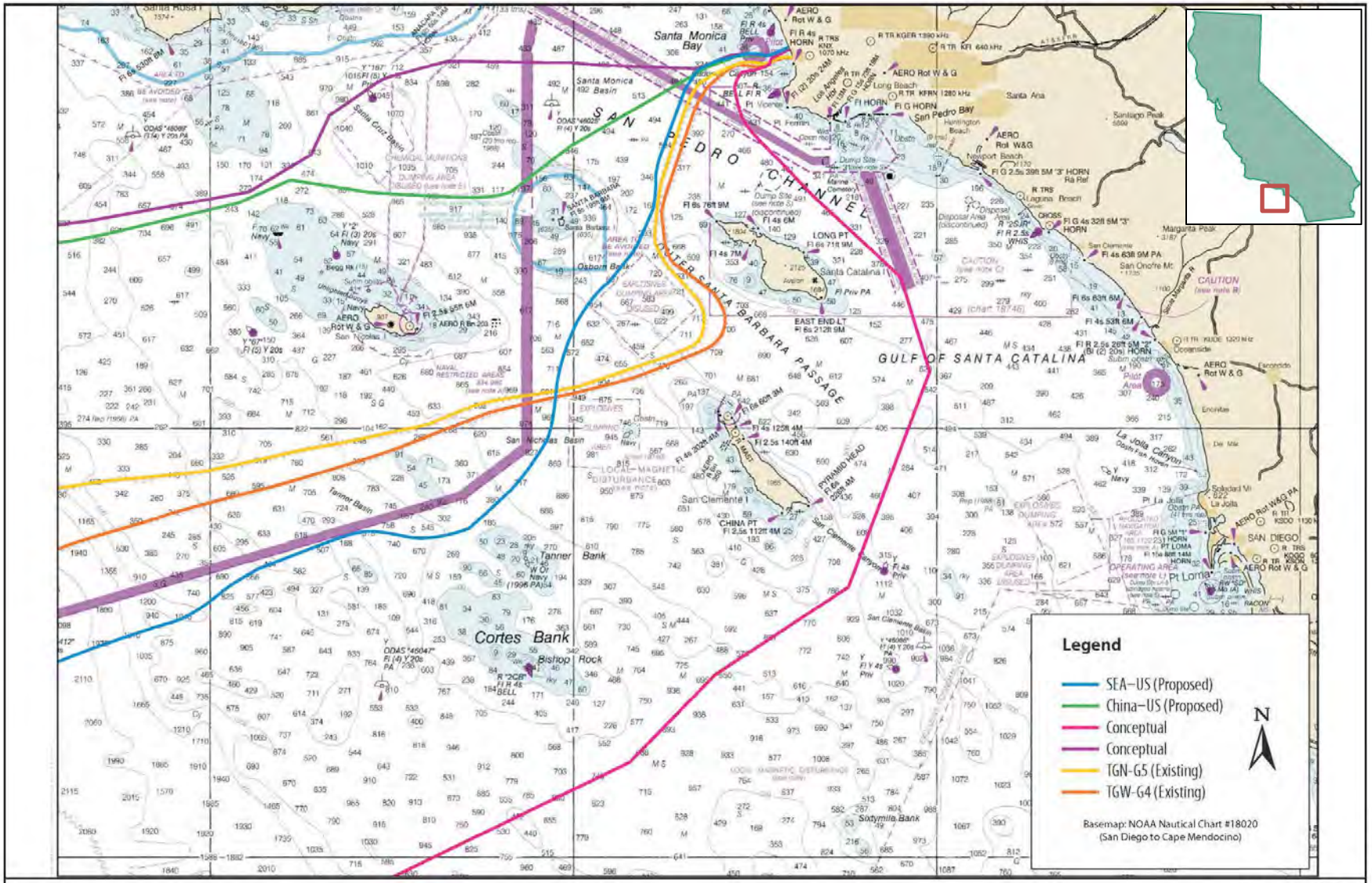


Source: ICF

Figure 1-1

Systems Overview

EXHIBIT 1

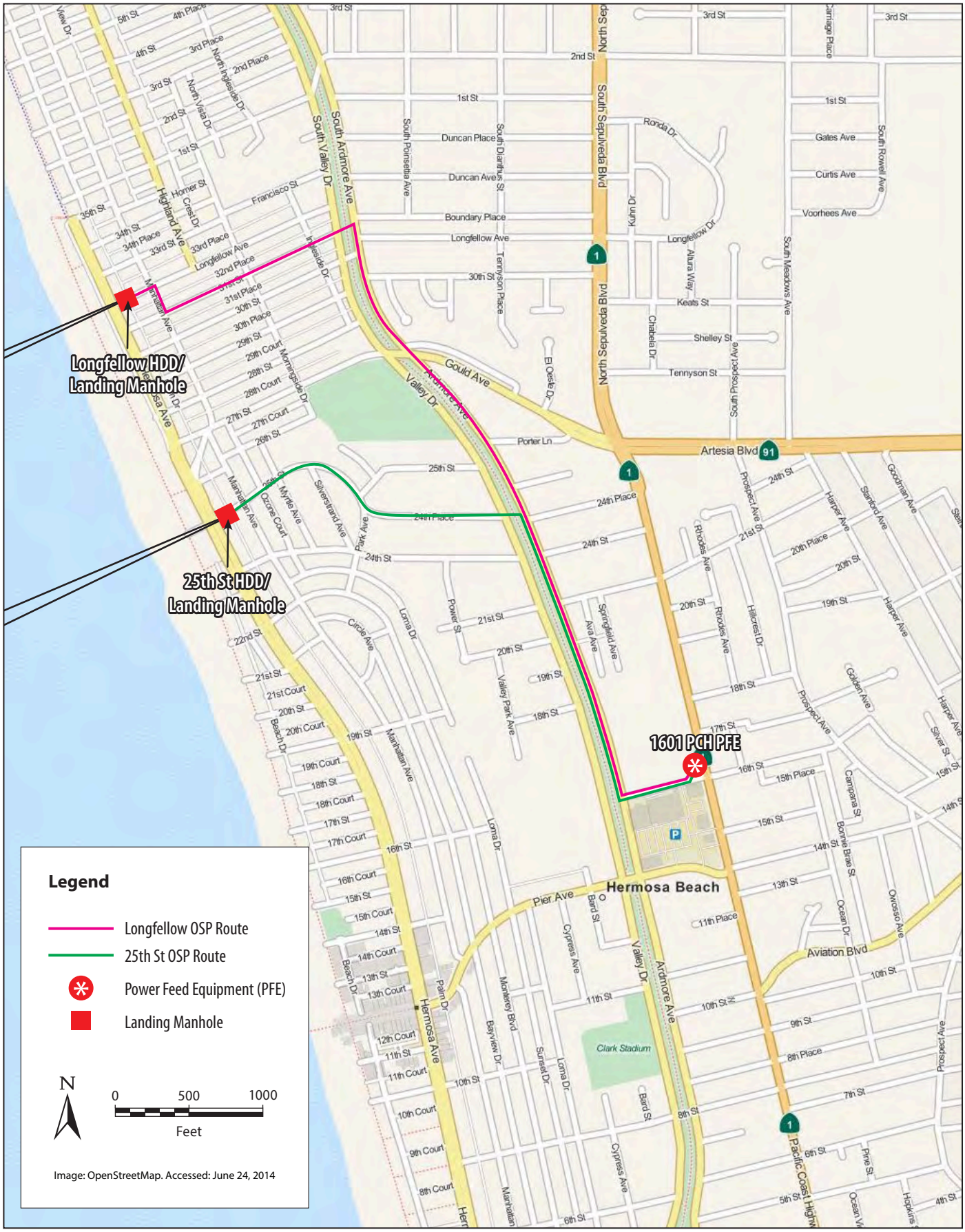


Source: ICF

Figure 1-2

Proposed Marine Routes

EXHIBIT 2



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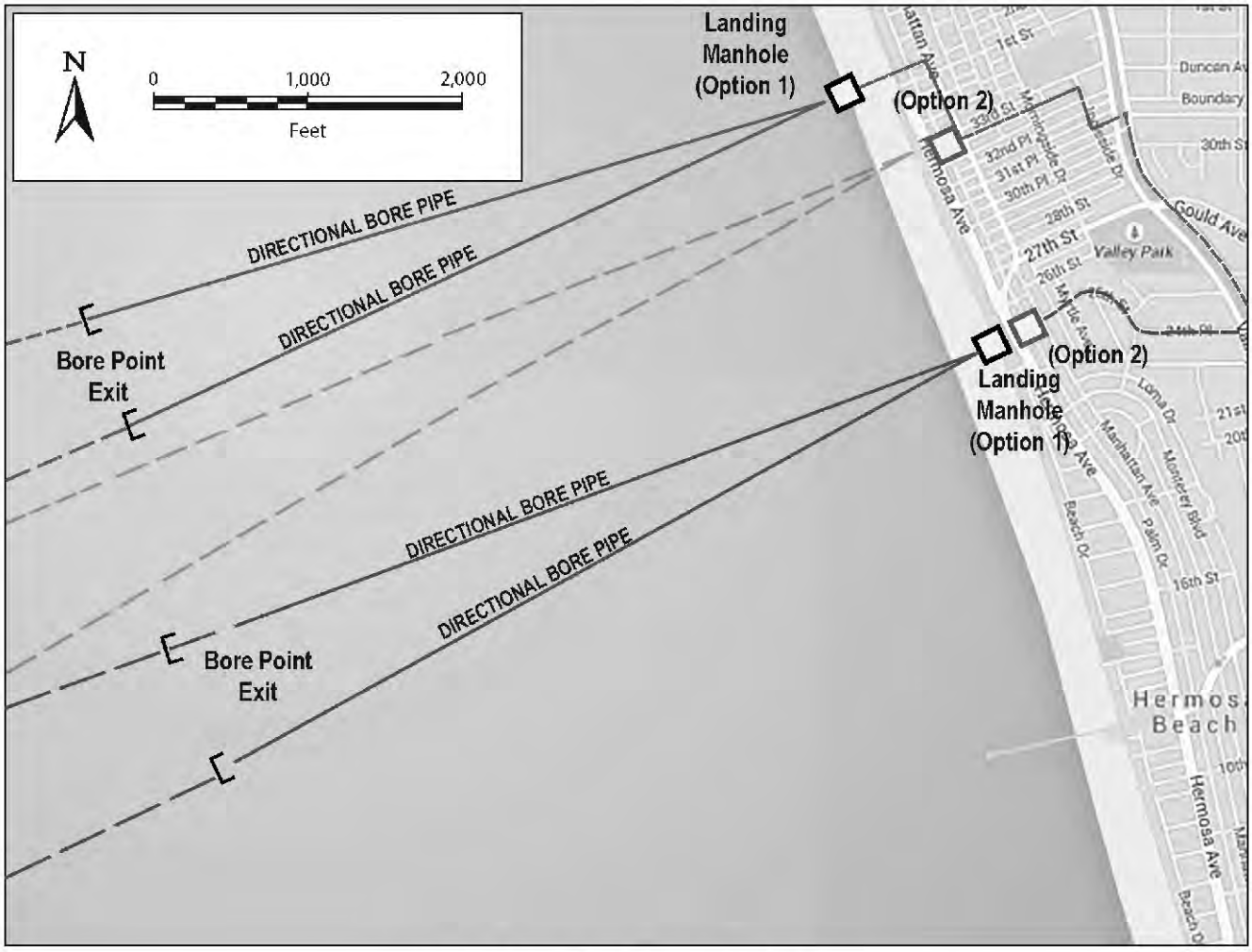
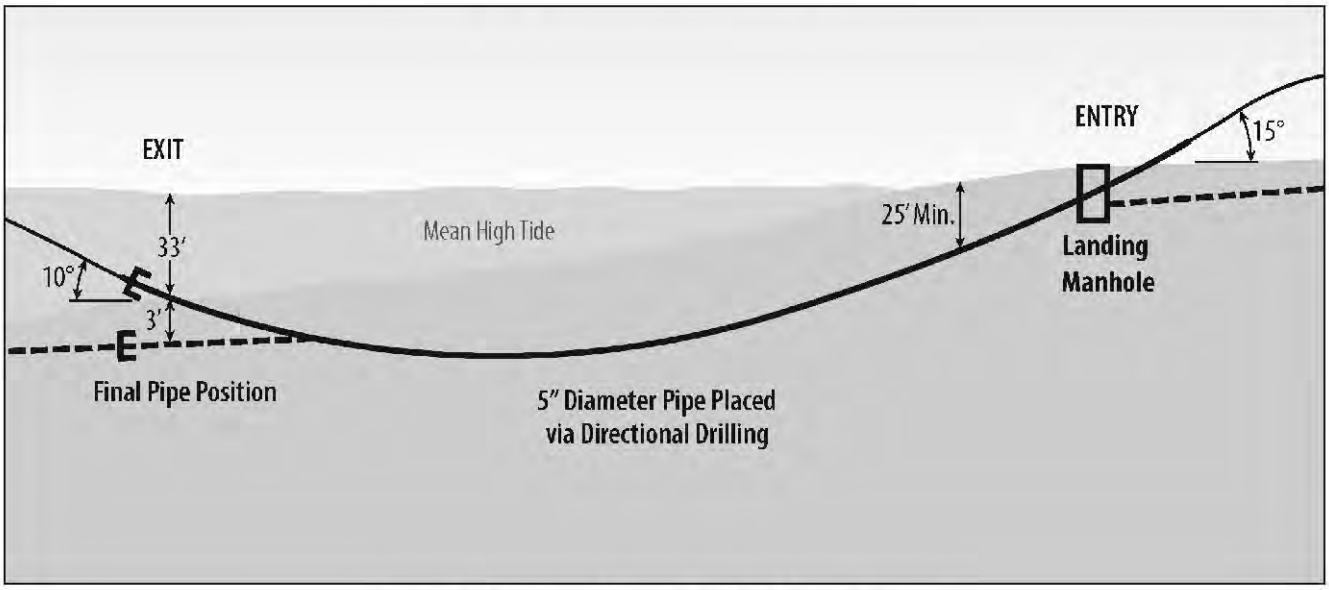
Proposed Terrestrial Facilities



Marine Directional Bore Plan View

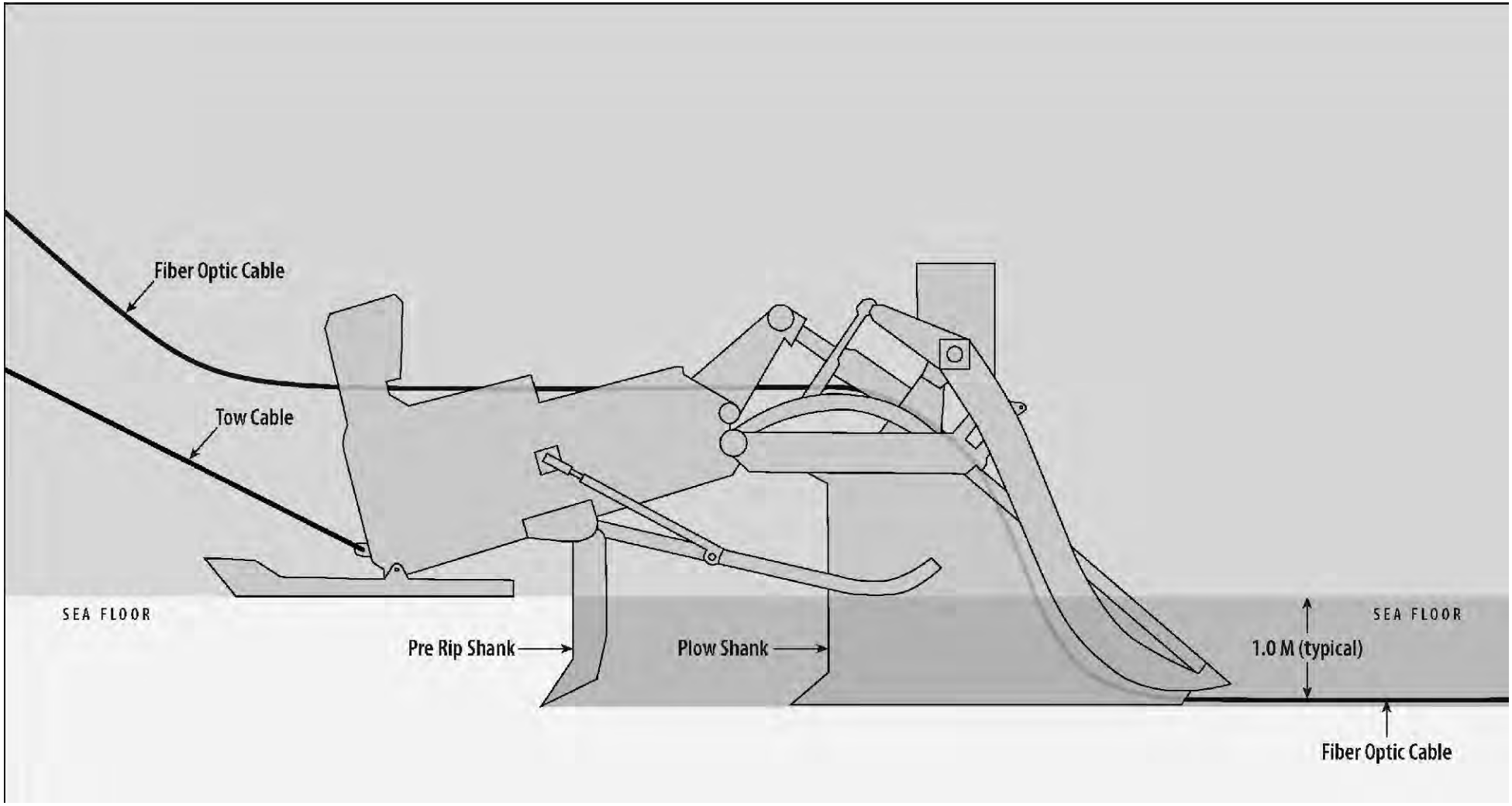


Marine Directional Bore Profile View (Typical)

Source: ICF

Figure 2-11

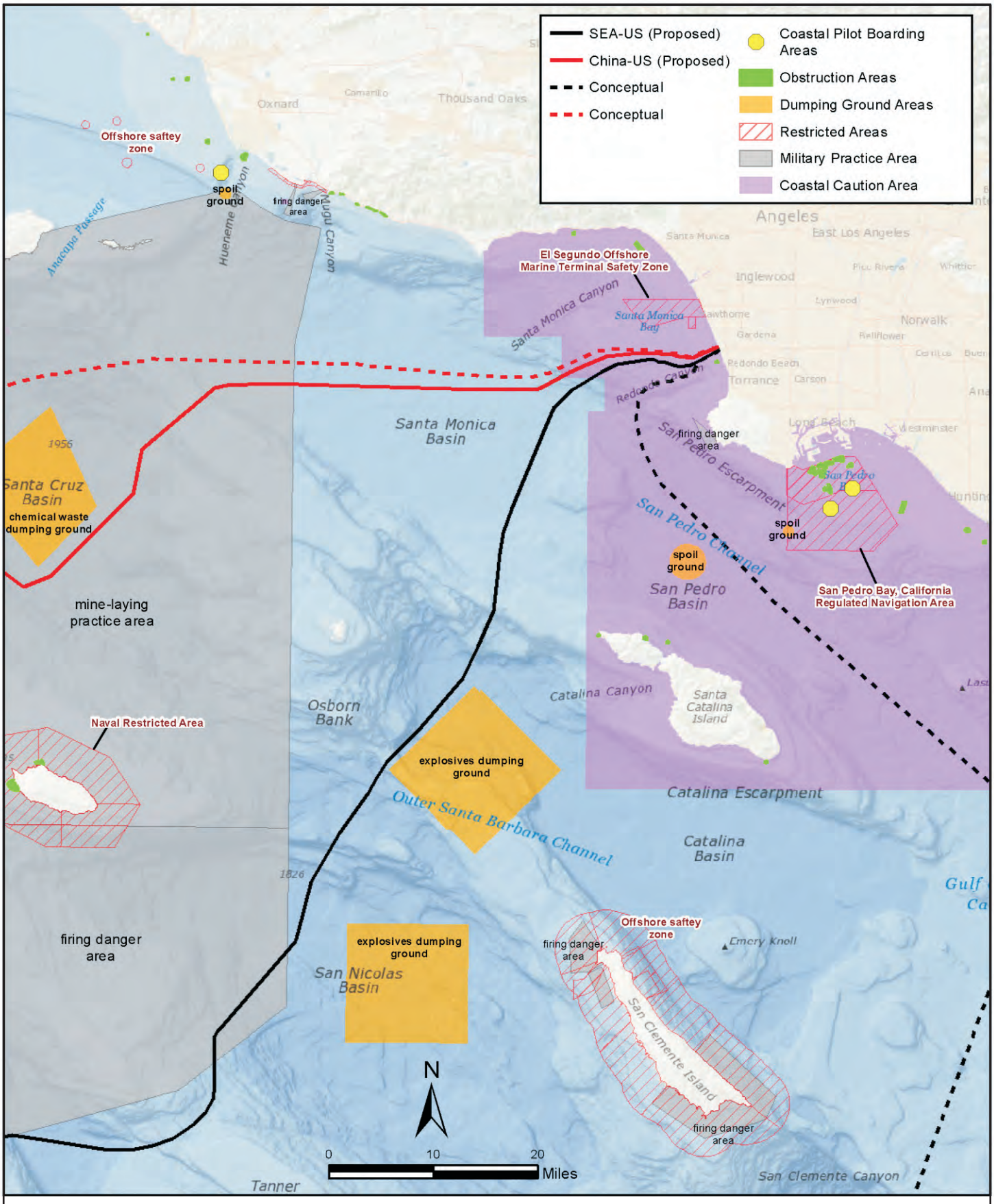
Marine HDD Plan



Source: ICF

Figure 2-16
Sea Plow

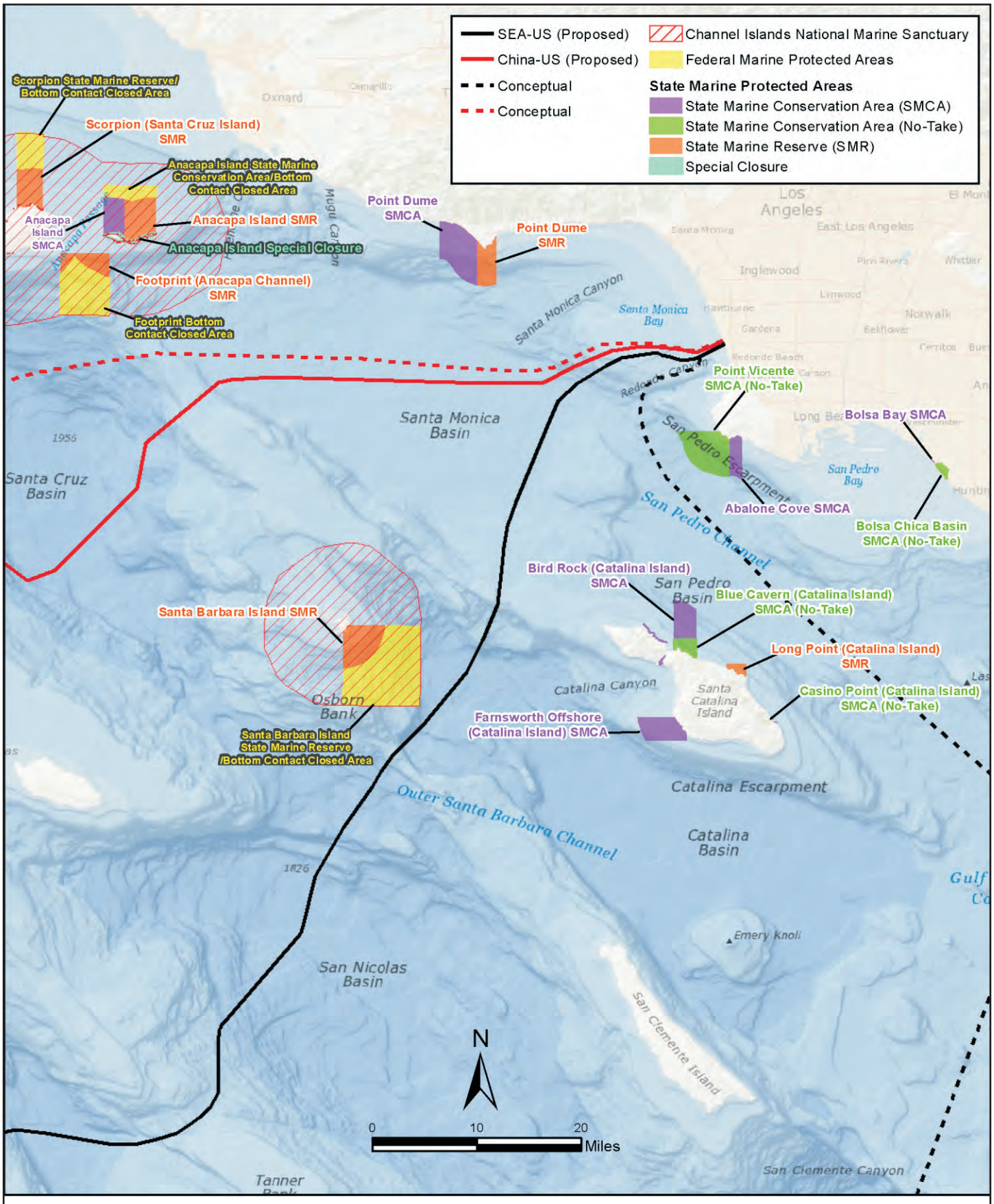
EXHIBIT 5



Source: ICF International, NOAA, ESRI

Figure 2-17

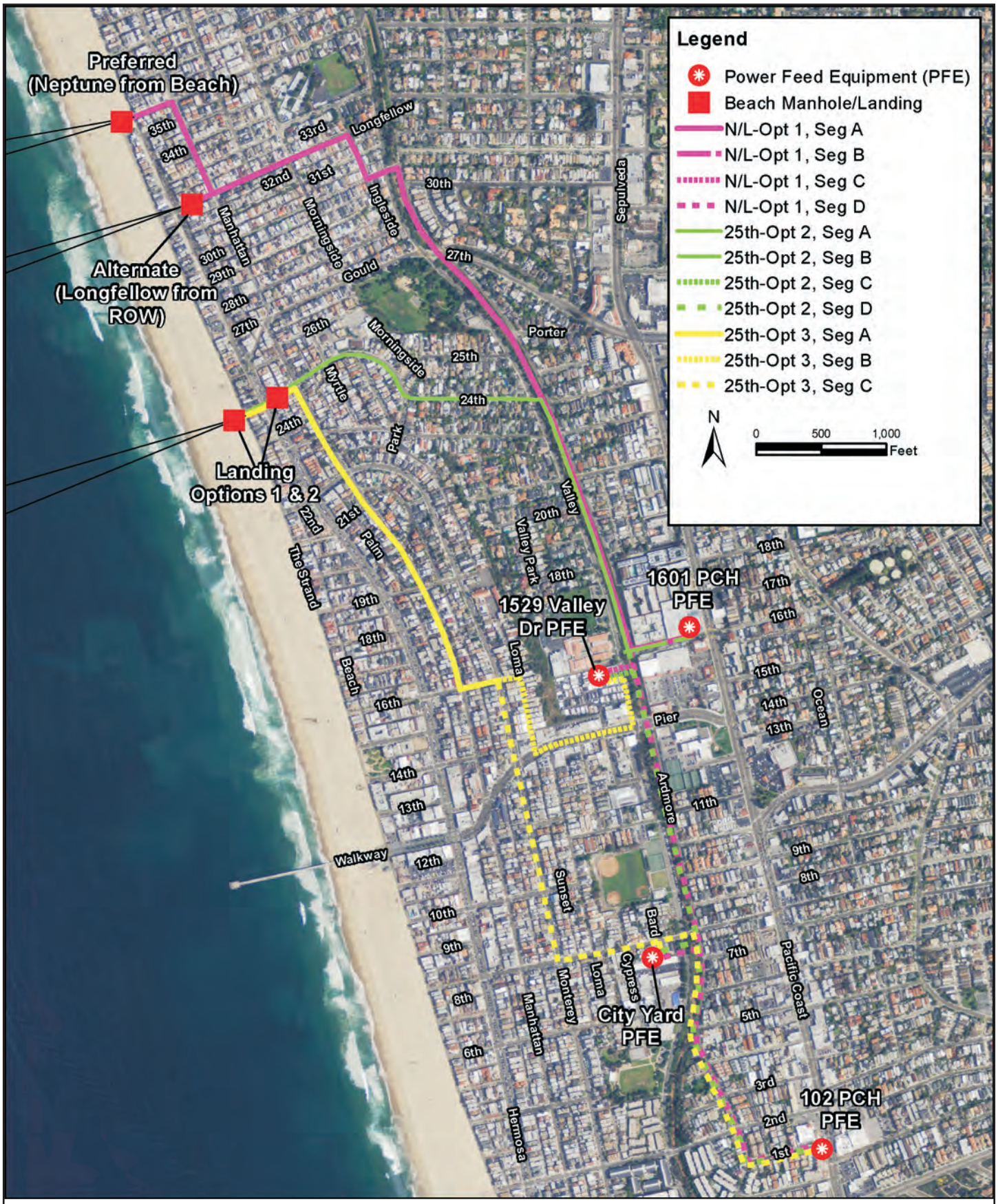
Hazards



Source: ICF International, NOAA, ESRI

Figure 2-18

Marine Protected Areas



Source: ICF International,
City of Hermosa Beach,
NAIP Imagery, 2014

Figure 2-1

Terrestrial Facilities Concept Layout

Mitigation Measures from the City of Hermosa Beach's Final EIR for the Transpacific Fiber-Optic Cables Project (March 2016) That Are Incorporated Into CDP 9-16-0160 and CC-0001-16

BIO-1 Avoid Disturbing Roosting Western Snowy Plovers or California Least Terns. If the beach landing sites are selected, the directional bore and facility installation activities will be conducted outside of the roosting period for western snowy plovers (September through March) as feasible, to avoid impacts on roosting snowy plovers. If the beach landing sites will be established, and construction activities at the bore sites must occur during the roosting season, a qualified biologist approved by the City will contact USFWS and CDFW to determine if the site(s) are within a Special Protection Zone for roosting western snowy plovers. If the landing site(s) are within a Special Protection Zone, construction activities will not be allowed until western snowy plovers are no longer present. If the area is not within a Special Protection Zone, a qualified biologist will survey the area for western snowy plovers using established protocols and in coordination with USFWS and CDFW to determine if plovers are present. If present, no work will occur until after snowy plovers leave the roost site for the season. The qualified biologist will also survey the area for California least terns using established protocols and in coordination with USFWS and CDFW to determine if California least terns are present. If surveys are negative for western snowy plovers or California least terns, work may proceed during the roosting period and the biologist will be present to monitor the establishment of the beach landing sites to ensure that no western snowy plovers or California least terns are injured or killed, should they arrive in the area subsequent to work commencing. The sites will include fencing/walls that will prevent western snowy plovers or California least terns from entering the work areas. The biologist will conduct weekly site visits to ensure that fence/walls are intact until construction activities are finished at the sites and all equipment is removed from the beach. The results of the preconstruction survey will be submitted to the City prior to the establishment of beach landing sites. All biological monitoring efforts will be documented in monthly compliance reports to the City.

BIO-2 Conduct preconstruction surveys for nesting raptors and other birds. Prior to commencement of construction, the applicant shall retain a qualified avian biologist approved by the City of Hermosa Beach to conduct pre- construction surveys for nesting birds within 100 feet of work areas on the beach, along the greenbelt, and in Valley Park. The preconstruction survey for active nests will occur within 2 weeks of the start of construction activities if construction activities in these areas occur between March 1 and August 31 (the period covering the nesting season for most birds). If an active nest is identified during the survey, a 50-foot (15-meter) buffer zone will be established around the nest to minimize potential impacts on nesting activities from vegetation trimming and construction noise.

The prescribed buffers may be adjusted by the qualified avian biologist based on existing conditions around the nest, planned construction activities, tolerance of the species, and other pertinent factors. The qualified avian biologist shall conduct regular monitoring of the nest to determine success/failure and to ensure that

Project activities are not conducted within the buffer(s) until the nesting cycle is complete or the nest fails. The avian biologist shall be responsible for documenting the results of the surveys, nest buffers implemented, and the results of ongoing monitoring and shall provide a copy of the monitoring reports for impact areas to the City on a monthly basis.

If trees or existing structures with nests are to be removed as part of Project-related construction activities, they shall be done so outside of the nesting season to avoid impacts to nesting raptors and other birds. If removal during the nesting season cannot be avoided, all trees shall be inspected for active nests by the biologist. If nests are found within these structures and contain eggs or young, no activities within a 50-foot buffer shall occur until the young have fledged the nest.

BIO-6a Minimize Crossing of Hard-Bottom Substrate Communities. The proposed cable routes will be set to minimize crossing of high-relief rocky outcroppings. Sections that cross high- relief rocky outcroppings that may have suitable habitat for sensitive species and communities (e.g., deep-sea coral communities) will be identified during geophysical surveys. Attempts will be made to adjust the cable alignment within boundaries of the surveyed route to avoid or reduce crossing the outcroppings. The applicant will include in the burial report a detailed account of all hard-bottom substrate communities crossed during the cable laying activities, including the measures taken to reduce and/or minimize the amount crossed.

BIO-10a Include a Biologist for Marine Mammal and Sea Turtle Monitoring During All Vessel Activities. Monitoring by a biologist familiar with marine mammal and sea turtle behavior will be the work area such that interactions may occur, the biologist will have the authority conducted during all marine cable lay, post lay burial, or inspection activities that occur within the continental shelf of California. In the event that marine mammals or sea turtles are present in the immediate area of the Project vessels or are approaching to halt vessel operations until any risk of collision has passed. A report documenting the monitoring activities including the number of marine mammals or turtles observed and any avoidance actions required will be submitted to the City within 30 days of cable laying operations on the continental shelf.

BIO-10b Modify Vessel Operations When Marine Mammals and Sea Turtles are Present. Vessels operating with marine mammals or sea turtles in the area will modify operations to achieve the following to reduce the potential for interactions marine mammals.

- When paralleling whales or sea turtles, support vessels will operate at a constant speed that is not faster than the whales or sea turtles.
- Female whales will not be separated from their calves.
- Support vessels will not be used to herd or drive whales or sea turtles.
- If a whale or sea turtles engages in evasive or defensive action, Project support vessels will drop back until the animal calms or moves out of the area.

BIO-10c Report Collisions. Collisions with marine mammals or sea turtles will be reported

to the City within 48 hours and to federal and state agencies pursuant to each agency's reporting procedures. Any further compensation or mitigation required by an agency as the result of a collision with marine mammals or sea turtles shall be determined by the respective agency.

- Should an animal collide with a vessel and require assistance, the applicant shall provide all required funds as compensatory mitigation to ensure the recovery and management of the animal as determined by the responsible agency. In the event of a mortality, the applicant shall provide compensatory mitigation for the conservation and management of the species at a rate to be determined by the responsible agency if necessary.

CR-1b Archaeological Monitoring Plan. Prior to any ground-disturbing activities, an Archaeological Monitoring Plan shall be developed by a qualified archaeologist with provision for review and input by concerned Native Americans and approval by the City. The Plan will also address worker safety during ground disturbing activities and installation of power feed equipment in the City Maintenance Building. The Plan is to include provisions for archaeological and Native American monitoring, detailed documentation of all early twentieth-century artifact-bearing deposits exposed during ground-disturbing site work, and development of a clear collection policy for both prehistoric and historic artifacts, subsequent artifact analysis, reporting of findings, and disposition and/or curation of any significant artifacts recovered. All reports of findings shall be filed with the SCCIC.

CR-2a Evaluate and Treat Incidental Discovered Cultural Resources. In the event that previously unidentified cultural resources are uncovered during Project implementation, all work within 100 feet of the discovery will be halted and redirected to another location. The find will be secured, and a cultural resources specialist who meets the Secretary of Interior Professional Qualifications Standards will be contacted immediately. The cultural resources specialist will inspect the discovery and determine whether further investiga-tion is required. If additional impacts to the discovery can be avoided, the resource will be documented on California Department of Parks and Recreation cultural resource records (Form DPR 523) and filed at the California Historical Resources Information System; no further effort will be required. If additional disturbance to the resource cannot be avoided, the cultural resources specialist will evaluate the significance and California Register of Historical Resources eligibility of the resource and (if warranted) implement data recovery excavation or other appropriate treatment measures. If cultural materials are discovered at the directional bore sites, appropriate treatment may also include the exploration and data recovery excavation of the resource where it would be impacted by the borers in addition to the bore site itself. The methods and results of evaluation or data recovery work at an archaeological find will be documented in a professional level technical report to be filed with the South Central Coastal Information Center.

CR-2b Monitor for cultural resources. Any Project-related ground-disturbing activities, with the exception of trenchless construction or directional boring, that will affect

naturally occurring sediments below any artificial fill must be done in the presence of an archaeological monitor who is working under the supervision of an archaeologist who meets the Secretary of Interior Professional Qualification standards, or who meets those standards themselves. Although it is not possible to monitor trenchless construction, directional boring, or conventional boring, the entry/exit sites for these techniques should be monitored. If, during the course of monitoring, a potentially significant resource is discovered, the archaeological monitor will have the authority to stop or redirect ground-disturbing activities away from the resource until it can be evaluated. The archaeological monitor must be able to: (1) recognize cultural resources; (2) take accurate and detailed field notes, photographs, and location coordinates; and (3) document Project-related ground-disturbance activities, their locations, and other relevant information, including a photo-graphic record. The monitor shall identify, record, evaluate and determine appropriate treatment for any resources inadvertently discovered during ground disturbance. If cultural resources are encountered inadvertently, treatment shall occur as per Mitigation Measure CR-2a.

CR-4a Evaluate and Treat Incidental Discovered Paleontological Resources. If paleontological resources are encountered during Project subsurface construction, all ground-disturbing activities within 25 feet (7.6 meters) will be halted or redirected to avoid additional impact and a qualified paleontologist contacted to assess the situation, consult with agencies as appropriate, and make recommendations for the treatment of the discovery. Project personnel will not collect or move any paleontological materials. Adverse effects on such deposits will be avoided by Project activities. Upon completion of the assessment, a report documenting methods, findings, and recommendations will be prepared and submitted to the City of Hermosa Beach and, if paleontological materials are recovered, they would be stored at a paleontological repository, such as the Natural History Museum of Los Angeles County.

CR-4b Monitor for Paleontological Resources. A paleontological monitor will be present during ground disturbance when a depth of approximately 8 feet (2.4 meters) or greater is reached to monitor for paleontological resources that may be encountered in the older Quaternary terrace deposits that underlie the surficial dune and beach deposits. The paleontological monitor will be able to: (1) recognize fossils and paleontological deposits, and deposits that may be paleontologically sensitive; (2) take accurate and detailed field notes, photographs, and locality coordinates; and (3) document project-related ground-disturbing activities, their locations, and other relevant information, including a photographic record.

CR-6a Conduct a Pre-Construction Offshore Archaeological Resources Survey. A pre-construction offshore archaeological resources survey will be conducting using results of an acoustic survey (e.g., a Chirp System survey) for evidence of erosion/incision of natural channels, the nature of internal channel-fill reflectors, and overall geometry of the seabed, paleochannels and the surrounding areas will be analyzed for their potential to contain intact remains of the past landscape that

could have the potential to contain prehistoric archaeological deposits. In the active nearshore environment, such features may have been disrupted during inundation from rising sea level and/or deeply buried within Holocene sediments. Core samples collected to confirm isopach data of the survey area (i.e. depth and age of sediments) will be examined as part of this survey. Analysis of isopach and core data shall determine whether additional core samples are needed. Based on the CHIRP (subbottom) and coring data, a Marine Archaeological Resources Assessment Report shall be produced by a qualified maritime archaeologist to document effects on potential historic properties. The report will be submitted to the City and other appropriate agencies, and reviewed by the Coastal Commission and State Historic Preservation Officer.

CR-6b Conduct a Pre-Construction Offshore Historic Shipwreck Survey. A qualified maritime archaeologist, in consultation with the City of Hermosa Beach, shall conduct an archaeological survey of the proposed cable routes. The archaeological survey and analysis shall be conducted following current BOEM and U.S. Army Corps of Engineers (Los Angeles District) standard specifications for underwater/marine remote sensing archaeological surveys (Guidelines for Providing Geological and Geophysical, Hazards, and Archaeological Information Pursuant to 30 CFR Part 585). The archaeological analysis shall identify and analyze all magnetic and side scan sonar anomalies that occur in each cable alignment defined by a lateral distance of 0.5 kilometers on each side of the proposed cable route for sonar and 50 meters on each side for magnetometer. This analysis shall not be limited to side scan and magnetometer data any may include shallow acoustic (subbottom) data as well as AUV and/or multibeam data that may have a bearing on identification of anomalies representative of potential historic properties. The analysis shall include evaluation to the extent possible of the potential significance of each anomaly that cannot be avoided within the cable corridor. If sufficient data is not available to identify the anomaly and make a recommendation of potential significance, the resource(s) shall be considered as potentially eligible for the National and California registers and treated as a historic property. If any cultural resources, i.e., shipwrecks, downed aircraft or other remains are discovered as the result of the marine remote sensing archaeological survey, the proposed cable route or installation procedures shall be modified to avoid the potential historic property. BOEM administratively treats identified submerged potential historic properties as eligible for inclusion on the National Register under Criterion D, and requires project proponents to avoid them unless the proponent chooses to conduct additional investigations to confirm or refute their qualifying characteristics. BOEM typically determines a buffer (e.g., 50 meters) from the center point of any given find beyond which the project must be moved, in order to ensure that adverse effects to the potential historic property will be avoided during construction.

CR-6c Prepare an Avoidance Plan. As per §30106 and §30115 of the Coastal Act of 1976, "where developments would adversely impact archaeological…resources as identified by the State Historic Preservation Officer, reasonable mitigation

measures shall be required" (Pub. Res. Code §30244). An avoidance plan, therefore, shall be developed and implemented to avoid all documented resources from the Marine Archaeological Resources Assessment Report and the Offshore Historic Shipwreck Survey Report, provide for addressing discoveries of as yet unidentified resources encountered during planned marine survey and construction, and provide mitigation monitoring if deemed necessary during construction to ensure compliance.

GEO-1 Avoid Unique Geological Features and Hazards. Prior to construction, the applicant will conduct a geotechnical study evaluation of sea floor conditions and geologic hazards for the marine portion of the Project. Using this information, the applicant shall re-align the cable where feasible to avoid unstable areas or hazards. The geotechnical study will be prepared by a qualified and must contain bathymetry data, characterization of sub-surface sediments and grain size of sub-surface sediments, of the seabed at representative areas. The marine geotechnical survey will be conducted using an accurate electronic positioning system (accuracy of 3m or less) and a side-scan sonar at a minimum. Vessel speed should not exceed 4 knots. The side-scan sonar should have a resolution capability of 600 KhZ operating at 50m or less per channel. The applicant will use these studies to determine the appropriate engineering for the marine portions of the Project to minimize geotechnical hazard impacts.

HAZ-1a Spill Prevention and Contingency Plan. The applicant will prepare and shall strictly adhere to a Spill Prevention and Contingency Plan (SPCP) for terrestrial construction activities. The SPCP will be submitted to the City of Hermosa Beach Fire Department for approval prior to issuance of the City's construction permit. At a minimum, the plan will include the following:

- Hazard assessment, which shall contain: A copy of the MSDS for every hazardous material used, CAS number, SIC Code, United Nations Identification Number, A list of the chemical names and any common names of every hazardous material (As defined by the City of Hermosa Beach Municipal Code Section 8.16.020), The maximum amount of hazardous material handled or used at any one time over the course of a year, The characteristics of all hazardous material disclosed including, but not limited to, the degree such material may be toxic, flammable, reactive and corrosive.,
- Spill prevention and containment, which shall include: Specific information as to how and where hazardous materials are handled or used in order to allow fire and safety personnel to prepare adequate emergency response plans for the potential release of such hazardous materials, including clear and legible diagrams and annotated site maps.,
- Emergency Response Procedures for both a release and/or a threatened release of a hazardous material, which shall include: The name, title, and twenty-four (24) hour telephone number of a contact person, and an alternate, representing the business who can provide technical information and assistance in the event of a release or a threatened release of hazardous

materials. The contact person shall have full facility access, site familiarity, and authority to make decisions regarding incident mitigation, in conjunction with the fire department

- Reporting procedures including a contact list, and
- Closing the spill incident

HAZ-1b Worker Training. Prior to construction, all construction site workers will be trained to recognize and respond to spills as mandated by the required plans, including which authorities to contact. The crews will be supplied with, and trained in, the use of containment devices and spill kits which contain at a minimum sorbent booms and pads, personal protective equipment and detailed emergency response guidance. The workers will also be trained in the proper response to a drilling fluid frack out and the proper procedures in the event of a total loss of return or frack out as well as the proper containment and disposal procedures. Records of all training will be sent to the City at the end of each Project construction phase along with a report detailing the training plans.

HAZ-1c Maintain Equipment. Prior to entry on the construction site, and periodically during construction, all construction equipment will be inspected for line breakage and leakage. Any equipment found to be chronically or continuously leaking will be immediately removed off site and repaired before returning to operation.

HAZ-1d Refueling Practices. Absorbent material such as pads or drip pans will be placed underneath all vehicles and equipment during equipment refueling or maintenance. If the beach landing sites are utilized for the boring activities, refueling activities may only be conducted within a designated and contained refueling area. Any refueling activity on the beach must also be conducted at least 100 feet (30.5 meters) from the mean high tide line. Any and all fluids drained from equipment will be collected in leak-proof containers and disposed of at an appropriate recycling facility if possible. If no recycling facility is available, an appropriate disposal facility may be used.

HWQ-1 Frac-out Contingency Plan. The applicant shall develop and adhere to a Frac-out Contingency Plan. The Frac-out Contingency Plan will establish the operational procedures and responsibilities for the prevention, containment, and clean-up of frac-outs associated with the Project's directional boring operation. Any frac-out shall be reported to the City within 4 hours. In addition to utilizing industry standard practices during boring, the plan shall specify which, if any, additives that are to be used in the boring process. These additives shall be industry standard and non-toxic. In the event of a suspected marine frac-out, divers and non-toxic tracking dye shall be utilized to locate and confirm the frac-out. If a marine frac-out does occur, cleanup activities shall be conducted consistent with safe working practices. If a frac-out persists uncontained in the marine environment for more than 48 hours after attempting to correct the discharge, the boring contractor shall remove the bore pipe as necessary and a new bore path shall be attempted. At the end of terrestrial construction activities the Applicant shall prepare a concise

summary report detailing all frac-out-related activities including incidents, response, and cleanup activities. The summary report shall contain copies of the monitoring logs.

- The frac-out contingency plan shall specify a designated frac-out monitor who will observe the surface conditions as the drill head progresses and look for evidence of a frac-out. The frac-out monitor shall be required to maintain a separate log of all potential and actual frac-out events. The log shall contain the following information:
    - Details on the release
        - Estimate of the amount of bentonite released and size of the area impacted,
        - Location, date, and time of release,
        - Success of cleanup action
    - Name and telephone number of person reporting,
    - How the release occurred,
    - Type of activity surrounding the area of the frac-out,
    - Description of methods used to clean up and secure the site
    - Listing of current permits obtained for the Project.

HWQ-2a Spill Prevention Plan. The Project shall include a spill prevention plan to ensure fuel, oils, and fluids used for equipment operation and maintenance are prevented from entering the environment. This plan shall also include the procedures for reporting all spills to the relevant agencies, and a report, to be prepared by the applicant and submitted to the City at the end of each construction phase documenting all incidents during each phase. All of the vessels that are expected to be utilized as part of the proposed Project would be required to maintain compliance with the Vessel General Permits as required by the Clean Water Act Section 402. These permits impose strict limits on incidental discharges, including those from lubricants, for all vessels which operate within three nautical miles of the U.S. coastline. These permits require the use of environmentally acceptable lubricants and other preventative measures (USEPA, 2012). Failure to comply with the requirements of the vessel permits would result in a violation of the Clean Water Act Section 402 Permit.

HWQ-2b Vessel Waste Management Plan. Require all vessels to be equipped to collect, contain, and treat waste products. If any ballast water is discharged, the location and volume would be documented and all debris falling into the water must be documented by time, date, and location. All documented incidents shall be reported to the City and other relevant agencies at the end of each phase.

HWQ-2c Shipboard Oil Pollution Emergency Plan. The vessels contracted by the Applicant will have shipboard oil pollution emergency plans (SOPEPs) prepared for the installation, repair, and monitoring of the Project. The SOPEPs will be prepared to be compliant with the International Convention for the Prevention of Pollution from Ships (MARPOL) Annex I and V. This plan will contain the preventative measures and the procedures which will be followed in the event of a

spill in the nearshore or offshore environment and will include at a minimum:

- Purpose and need for the plan
- Assessment of the potential hazards
- Spill Prevention and Containment
- Emergency Response Procedures
- Reporting Procedures to the City and other relevant agencies
- Closing of the spill incident, and
- A Spill notification contact list

N-2a Employ Noise-Reducing Construction Practices. The construction contractor shall implement noise-reducing construction practices to reduce noise to the greatest extent feasible. Measures that can be implemented include, but are not limited to, the following:

- All stationary construction equipment shall be located at the greatest distance feasible from residences and other noise-sensitive receptors.
- Based on the equipment layout, portable noise barriers shall be strategically positioned around equipment at each cable landing site to absorb and reduce noise generated by operation of the equipment. The noise barriers will be positioned so as not to interfere with the operation of the equipment. These portable noise barriers will be in addition to the perimeter noise barrier to be installed around each cable landing site.
- All construction equipment, including the horizontal directional drill rig, shall be well maintained and include mufflers or other sound attenuation devices consistent with manufacturer specifications (as applicable).
- Material stockpiles and mobile equipment staging, parking, and maintenance areas shall be located as far as practicable from noise-sensitive receptors.
- The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only.

TT-1a Construction Traffic Control Plan. Prior to the start of construction, the project applicant shall submit a Construction Traffic Control Plan for review and approval by the City of Hermosa Beach, the City of Manhattan Beach (for affected roadways only), Caltrans (for Pacific Coast Highway only), and all agencies with jurisdiction over public roads and transportation facilities that would be directly affected by the construction activities and/or would require permits and approvals. The Construction Traffic Control Plan shall include, but not be limited to:

- The locations and use of flaggers, warning signs, lights, barricades, delineators, cones, arrow boards, etc. according to standard guidelines outlined in the Manual on Uniform Traffic Control Devices, the Standard Specifications for Public Works Construction, and/or the California Joint Utility Traffic Control Manual.
- The locations of all road or traffic lane segments that would need to be temporarily closed or disrupted due to construction activities.
- Methods to reduce temporary traffic delays to the maximum extent feasible and prohibit delivery of construction materials during peak traffic periods

(6:00 to 9:00 a.m. and 3:30 to 6:30 p.m. Monday through Friday, or as directed in writing by the affected public agency in encroachment or other permits). This should also include feasible ways to avoid construction-related trips during peak traffic periods.

- Methods to comply with all specified requirements within necessary surface transportation permits or agreements, including but not limited to encroachment permit(s) from all affected jurisdictions.
- Plans to provide written notification to property owners and tenants at properties affected by access restrictions to inform them about the timing and duration of obstructions and to arrange for alternative access if necessary. The coordination shall occur at least one week prior to any blockages.
- Plans to coordinate in advance with emergency service providers to avoid restricting the movements of emergency vehicles. Police departments and fire departments shall be notified in advance by the project applicant of the proposed locations, nature, timing, and duration of any roadway disruptions, and shall be advised of any access restrictions that could impact their effectiveness. At locations where roads will be blocked, provisions shall be ready at all times to accommodate emergency vehicles, such as immediately stopping work for emergency vehicle passage, providing short detours, and developing alternate routes in conjunction with the public agencies. Documentation of the coordination with police and fire departments shall be provided to the City of Hermosa Beach and/or City of Manhattan Beach prior to the start of construction.
- Provisions for ensuring detours or safe movement of pedestrians and bicycles through all affected facilities.
- Plans to coordinate with Beach Cities Transit (BCT) and the Los Angeles County Metropolitan Transit Authority (MTA) at least one month prior to construction and present ways to minimize potential impacts to bus transit service on PCH, Longfellow Avenue, and any other affected route. Documentation of the coordination with bus transit companies shall be provided to the City of Hermosa Beach and/or City of Manhattan Beach prior to the start of construction. Should the ongoing maintenance activities at manholes affect active bus stops, coordination with the affected bus transit agencies shall address means to reduce disruptions to bus services.
- Define the method for maintaining close coordination, prior to and during construction, with all agencies responsible for encroachment permits on each affected roadway, to minimize cumulative impacts of multiple simultaneous construction projects affecting shared portions of the circulation system.

SECOND AMENDMENT
TO THE
SOUTHERN CALIFORNIA CABLE & FISHING AGREEMENT

This Second Amendment (this "Amendment**"**) to the Southern California Cable & Fishing Agreement dated as of June 8, 2002 (the "Fishing Agreement") is agreed to this 10th day of February 2016, by a majority vote of the Board of Directors of the Committee. All capitalized terms not otherwise defined herein shall have the meaning set forth in the Fishing Agreement or the First Amendment to that Agreement.

WHEREAS, upon completion of install, testing and commissioning and Project Unity's acceptance of Cable Segment 4 pursuant to the Unity Supply Contract dated 23 February, 2008, Tyco Telecom transferred ownership of Cable Segment 4 to a collective group of entities referred to as "UNITY," also known as Unity Cable System which includes Network i2i Limited, successor of rights and obligation of Bharti Airtel limited, having its registered office and principal office in Port-Louis, Mauritius; Global Transit Ltd., having its registered office and principal office in Malaysia; Google Cable Bermuda Ltd., having its registered office in Hamilton HM 11, Bermuda and principal office in Mountain View, California, and which is an affiliate of GU Holdings Inc., having its registered office in Wilmington, Delaware and its principal office in Mountain View, California; KDDI America, Inc., having its principal office in New York, New York; Pacnet Services (USA) Inc., having its registered office in Wilmington, Delaware, USA and its principal office in Hong Kong; and Singapore Telecommunications Limited, having its registered office and principal office in Singapore;

WHEREAS, on transfer of title of Cable Segment 4 to Project Unity Tyco Telecom transferred its obligations under the Fishing Agreement and under the Coastal Permit for Cable Segment 4 to Project Unity with the authorization of the California Coastal Commission, including its obligations under Sections 1.1(a) through 1.1(k) of the Fishing Agreement included under Special Condition 24 of the Coastal Permit;

WHEREAS, a collective group of entities referred to as "SEA-US" [also known as Southeast Asia-US Cable System, which includes GTI Corporation (GTI), Globe Telecom, Inc. (Globe), Hawaiian Telcom Services Company, Inc. (HTSC), RAM Telecom International, Inc. (RTI), TeleGuam Holdings, LLC, d/b/a GTA TeleGuam (GTA), PT Telekomunikasi Indonesia International (Telin), and Telekomunikasi Indonesia International (USA) Inc. (Telkom USA)] proposes to install a subsea communications cable landing in Hermosa Beach, California with required permits and the authorization of the California Coastal Commission, including obligations related to a Fishing Agreement;

WHEREAS, The South Bay Cable/Fisheries Liaison Committee, Inc. (SBCFLCI) was formed on May 21, 2011 by restatement of its articles of incorporation filed with the California Secretary of State and is a successor to the Los Angeles Commercial Fishing Association and the Southern California Fishing Association referenced in paragraph one of the Southern California Cable & Fishing Agreement dated as of the 8th day of June, 2002;

WHEREAS, the SEA-US Cable, whose estimated, pre-survey route was agreed by the Fishing Industry Directors of the South Bay Cable Fisheries Liaison Committee and South Bay Cable/Fisheries Liaison Committee, Inc.'s directors on May 23, 2015, will be a "Covered Cable" under the Fishing Agreement, along with existing Tata and Unity cables;

WHEREAS, Tata (US), Project Unity, and SEA-US seek to allocate the costs of their respective obligations under the Fishing Agreement as outlined in this Amendment by and through their undersigned representatives;

WHEREAS, Section 2.3(e) of the Fishing Agreement allows amendment to the Fishing Agreement only by vote of the Board of Directors of the Committee;

WHEREAS, the Board of Directors of the Committee would like to amend certain provisions of the Fishing Agreement to reflect such transfer and make certain other clarifications in the Fishing Agreement, including incorporation of the allocation agreement between Tata (US), Project Unity and SEA-US;

NOW THEREFORE, the Board of Directors of the Committee hereby approve the following and Tata (US) and each of the undersigned companies within Project Unity and SEA-US agree as follows:

Section 1 Amendment of Agreement.

1.1 The definition of the term "Cable Company" is modified in the Fishing Agreement so that such term shall be defined as follows:

"Cable Company" means Tata Communications (US), Inc. ("Tata (US)") with respect to Cable Segment 5, Project Unity with respect to Cable Segment 4, and SEA-US with respect to the SEA-US Cable, and, where applicable, all three companies: Tata (US), Project Unity and SEA-US.

1.2 The first paragraph of Section 1.1(c) of the Fishing Agreement and First Amendment are deleted and replaced with the following:

(c) Representation. The Committee will be governed by a Board of Directors initially consisting of seven (7) Association and Fishermen representatives (the "Industry Directors") and seven (7) Cable Company representatives (the "Cable Company Directors"). In order to ensure appropriate representation, additional fishermen's associations may join the Committee, and Directors may be added by a majority vote of the Committee. In the event that the number of Industry Directors and Cable Company Directors on the Committee are not equal, the Directors that are fewer in number shall be allocated additional vote(s) so that the Industry Directors and Cable Company Directors have an equal number of votes on any matter to be voted on by the Committee. Notwithstanding any provision herein to the contrary, the number of votes held by the Cable Company Directors shall be divided equally among the Cable Company Directors appointed to the Committee by Tata (US), Project Unity, and SEA-US. A Director may delegate

his responsibilities and ability to vote on any matter to an alternate. The Industry Directors shall be selected in a manner specified in the Bylaws and drawn from the harbors that are home ports of fishermen who work in the Covered Area. The Cable Company Directors shall be appointed by Tata (US), Project Unity, and SEA-US so that, unless mutually agreed by Tata (US), Project Unity, and SEA-US, each of Tata (US), Project Unity, and SEA-US have an equal number of Cable Company Directors on the Committee.

1.3 Section 1.2 (b), paragraphs (2), (3), and (4), concerning fisherman observer requirements and facilities, and guard vessel selection are deleted in their entirety and replaced with the following:

1.2 (b) Installation Observation and Guard Ship Assignments

(2) The qualifications, selection process, procedures, and facilities for fishermen observers on cable survey, installation, and inspection vessels shall be agreed by the fishermen Directors on the Committee and the Cable Company whose cable is being surveyed, installed or inspected.

(3) The qualifications, selection process, procedures, and facilities for guard vessels if required for cable survey, installation, and inspection shall be agreed by the fishermen Directors on the Committee and the Cable Company whose cable is being surveyed, installed or inspected.

1.4 Section 1.7 of the Fishing Agreement and First Amendment are deleted and replaced with the following:

1.7 Commercial Fishing Industry and Improvement Fund

(a) Tata (US) shall annually deposit a total of Twenty-Five Thousand Dollars ($25,000) in a special fund or funds as directed by the fishing industry Directors on the Committee, for enhancement of commercial fisheries and the commercial fishing industry and support facilities, in relation to Cable Segment 5. Such deposit shall be made within 45 days of receipt of an invoice from the Committee, which shall be issued on the anniversary of the start of cable installation in the Covered Area.

(b) Project Unity shall annually deposit a total of Twenty-Five Thousand Dollars ($25,000) in a special fund or funds as directed by the fishing industry Directors on the Committee, for enhancement of commercial fisheries and the commercial fishing industry and support facilities, in relation to Cable Segment 4. Such deposit shall be made within 45 days of receipt of an invoice from the Committee, which shall be issued on the anniversary of the execution date of the First Amendment to the Agreement.

(c) Within 45 days of the execution of this Amendment, in response to an invoice from the Committee, SEA-US shall deposit a total of Twenty-Five Thousand Dollars ($25,000) in a special fund or funds as directed by the fishing industry Directors on the Committee, for enhancement of commercial fisheries

and the commercial fishing industry and support facilities, in relation to the SEA-US Cable. Annually thereafter, SEA-US shall deposit Twenty-Five Thousand Dollars ($25,000) to said fund or funds as directed by the fishing industry Directors on the Committee. Such deposit shall be made within 45 days of receipt of an invoice from the Committee, which shall be issued on the anniversary of the execution date of this Amendment to the Agreement.

(d) The Cable Company shall not have the authority to control the utilization of moneys from the fund or funds receiving moneys pursuant to this Section 1.7. The Associations and the Fisherman agree that the moneys described in this section shall be used for fisheries research, education, management, safety, socioeconomic or development purposes, shall not be utilized for any illegal or immoral purpose, and shall in no event be utilized to oppose the activities of the Cable Company.

(e) Lease applications for projects in addition to the project specified in Section 1.9 shall constitute new projects for the purpose of this Section. For each cable installed as part of a new project (after the initial two cables), the Cable Company installing the cable shall annually contribute an additional $25,000 in the same manner provided in this Section for their initial cable.

(f) In the event that any mitigation to address potential impacts to the commercial fishing industry is ordered by action of a governmental agency, the payment of such ordered mitigation shall offset funds required to be paid pursuant to this paragraph.

(g) To facilitate payment for costs related to the SEA-US Cable under this Agreement, SEA-US shall identify the appropriate representative to receive invoices from the Committee, including any invoices required under this Section and Section 1.1, and promptly notify the Committee as to the identification of the appropriate representative, relevant contact information, and any changes to that information.

Any payment required under this Agreement that may be in default by either Tata (US), Project Unity or SEA-US will remain solely the responsibility of the defaulting entity.

1.5 Section 1.9 of the Fishing Agreement is hereby amended to include the SEA-US Cable.

1.6 Section 1.12 of the First Amendment is hereby deleted and replaced with the following, hereby agreed to by Tata (US) and the undersigned companies for Project Unity and SEA-US:

1.12. Cost Sharing between Tata (US), Project Unity, and SEA-US

(a) To the extent practicable, the Committee shall utilize the same budget and procedures for all three Covered Cables. Tata (US), Project Unity, and SEA-US shall endeavor to work with the Committee toward consolidation of the Committee's activities, including, but not limited to, establishing one budget for all three cables under Section 1.1(e) and utilizing the same Cable Committee Liaison Officer under Section 1.1(h). Notwithstanding any other provision of this Agreement, Tata (US), Project Unity, and SEA-US shall maintain hotlines which may be separate, as provided under Section 1.3 and Exhibit B to the Fishing Agreement for their respective cables.

(b) Any payments, funding or reimbursement approved by the Committee or required under a budget issued by the Committee as provided under Section 1.1(e), which includes reasonable amounts for the activities described in Sections 1.1(f), 1.1(h) through (k), shall be shared equally between Tata (US), Project Unity and SEA-US, each of which paying one-third of the costs; provided, however, that (1) costs solely related to Cable Segment 5 shall be paid by Tata (US) only, costs solely related to Cable Segment 4 shall be paid by Project Unity only, and costs solely related to the SEA-US Cable shall be paid by SEA-US only, as determined by Tata (US), Project Unity and SEA-US, and (2) Tata (US), Project Unity and SEA-US each shall bear their own costs incurred in implementing the Fishing Agreement.

1.7 Section 2.3(e) of the Fishing Agreement and First Amendment are deleted and replaced by the following:

(e) This Agreement may be amended only by a majority vote of the Board of Directors of the Committee and the directors of South Bay Cable/Fisheries Liaison Committee, Inc., except that Section 1.12 may be amended only in writing by Tata (US), Project Unity, and SEA-US.

Section 2 Expenses.

Notwithstanding any other provision to the contrary, the Associations' and the Fishermen's compensation and attorneys' fees shall be paid by SEA-US for time and travel expenses reasonably incurred to achieve execution of this Amendment at rates and in amounts approved by the Committee. Such time charges and expenses reasonably incurred by Association representatives, Fishermen and attorneys representing the Fishing Industry in the preparation and review of this Agreement shall be paid for their inputs in developing this Amendment by SEA-US up to a cumulative total of $15,000. Requests for reimbursement by individuals should be submitted to the Committee for invoicing to SEA-US. The monies required under this section shall be paid by SEA-US within 45 days of receipt of invoices from the Committee, unless there is a question or dispute concerning an invoice. The Committee shall forward invoices for costs under this Section to the SEA-US representative.

SEA-US shall promptly notify the Committee as to any changes to the appropriate representative to receive invoices from the Committee under this Section, as well as the contact information for

that representative. Costs for on-board fishermen representatives and guard vessels if required during SEA-US Cable survey and installation shall be separate and not included in this $15,000.

Section 3 Entire Agreement.

This Amendment contains the entire understanding of the parties hereto with respect to the matters addressed herein, and no prior agreements or understandings between or among any of the parties hereto relative to the matters addressed herein shall be effective after the execution of this Amendment.

Section 4 Full Force and Effect.

This Amendment amends the Fishing Agreement and its First Amendment and the terms and provisions hereof shall supersede and govern over any inconsistent terms or provisions contained in the Fishing Agreement and its First Amendment. All terms and provisions of the Fishing Agreement not expressly modified herein are hereby confirmed and ratified and remain in full force and effect.

Section 5 Miscellaneous

(a) This Amendment shall be by and between and for the benefit of the Associations, the South Bay Cable/Fisheries Liaison Committee, Inc., the Cable Companies and individual commercial fishermen and fishing vessel owners licensed to fish along the California coast who fish in the Covered Area and signed the Fishing Agreement.

(b) Tata (US) and each of the undersigned companies of Project Unity represent that it has the power to enter into this Amendment and to perform its obligations as set forth in this Amendment.

(c) The obligations agreed to in this Amendment shall be binding on Tata (US) and each of the companies of Project Unity and each of the companies of SEA-US and their respective successors and assigns.

(d) Nothing in this Amendment shall be construed to create or constitute a partnership, agency or similar relationship or to create joint or several liability on the part of any of the parties.

(e) This Amendment, and the rights and obligations of the parties arising hereunder, shall be governed by and construed in accordance with the laws of the State of California except provisions of that law referring governance or construction to the law of another jurisdiction.

(f) This Amendment may be executed in counterparts, all of which shall be considered one and the same Amendment, and shall become effective when all of the counterparts have been signed by the Parties to this Amendment and delivered to the other Parties. Facsimile or PDF copies shall be considered as originals.

(g) RAM Telecom International, Inc. (RTI) represents that it has the power to enter into this Agreement and to sign on behalf of all of the companies of SEA-US.

[SIGNATURE BLOCKS FOLLOW ON THE NEXT PAGE]

[SIGNATURE BLOCKS FOR SECOND AMENDMENT TO SOUTHERN CALIFORNIA CABLE & FISHING AGREEMENT]

IN WITNESS WHEREOF, the undersigned agree, for good and valuable consideration, to share in the costs under the Fishing Agreement as outlined in this Amendment.

Tata Communications (America) Inc.

By: DocuSigned by: 91C4C977448B450...
Name: John R. Freeman
Title: General Counsel
Date: February 26, 2016

Project Unity as represented by:

Network i2i Limited

By:_____
Name:
Title:
Date:

Global Transit Ltd.

By:_____
Name:
Title:
Date:

GU Holdings Inc.

By:_____
Name:
Title:
Date:

[SIGNATURE BLOCKS FOR SECOND AMENDMENT TO SOUTHERN CALIFORNIA CABLE & FISHING AGREEMENT]

IN WITNESS WHEREOF, the undersigned agree, for good and valuable consideration, to share in the costs under the Fishing Agreement as outlined in this Amendment.

Tata Communications (US), Inc.

By:_____
Name:
Title:
Date:

Project Unity as represented by:

Network i2i Limited

By:_____
Name: Naushad Ally Sahoboo
Title: Director
Date: 08/08/2016

Global Transit Ltd.

By:_____
Name:
Title:
Date:

GU Holdings Inc.

By:_____
Name:
Title:
Date:

[SIGNATURE BLOCKS FOR SECOND AMENDMENT TO SOUTHERN CALIFORNIA CABLE & FISHING AGREEMENT]

IN WITNESS WHEREOF, the undersigned agree, for good and valuable consideration, to share in the costs under the Fishing Agreement as outlined in this Amendment.

Tata Communications (America) Inc.

By:_____
Name:
Title:
Date:

Project Unity as represented by:

Network i2i Limited

By:_____
Name:
Title:
Date:

Global Transit Ltd.

By:_____
Name: CHRIS WILSON
Title: DIRECTOR
Date:

GU Holdings Inc.

By:_____
Name:
Title:
Date:

[SIGNATURE BLOCKS FOR SECOND AMENDMENT TO SOUTHERN CALIFORNIA CABLE & FISHING AGREEMENT]

IN WITNESS WHEREOF, the undersigned agree, for good and valuable consideration, to share in the costs under the Fishing Agreement as outlined in this Amendment.

Approved As To Form:
LEGAL DEPARTMENT
By:
Name: Neil O'Donnell
Date:
TCINT/LD/004-06 APPROVED FOR SIGNATURES

Tata Communications (America) Inc.

By:_____
Name:
Title:
Date:

Project Unity as represented by:

Network i2i Limited

By:_____
Name:
Title:
Date:

Global Transit Ltd.

By:_____
Name:
Title:
Date:

GU Holdings Inc.

By: _____
Name: DOYLE BARLOW
Title: AUTHORIZED SIGNATORY
Date: 15 FEBRUARY 2016

[SIGNATURE BLOCKS FOR SECOND AMENDMENT TO SOUTHERN CALIFORNIA CABLE & FISHING AGREEMENT]

KDDI America, Inc.

By: _____
Name: SATORU MANABE
Title: President & CEO
Date: 2/24/2016

Pacnet Services (USA) Inc.

By: _____
Name:
Title:
Date:

Singapore Telecommunications Limited

By: _____
Name:
Title:
Date:

SEA-US as represented by:

RAM Telecom International, Inc. (RTI),

By: _____
Name:
Title:
Date:

[SIGNATURE BLOCKS FOR SECOND AMENDMENT TO SOUTHERN CALIFORNIA CABLE & FISHING AGREEMENT]

KDDI America, Inc.

By:_____
Name:
Title:
Date:

Pacnet Services (USA) Inc.

By:_____
Name: JIM FARGAN
Title: DIRECTOR
Date:

Singapore Telecommunications Limited

By:_____
Name:
Title:
Date:

SEA-US as represented by:

RAM Telecom International, Inc. (RTI),

By:_____
Name:
Title:
Date:

[SIGNATURE BLOCKS FOR SECOND AMENDMENT TO SOUTHERN CALIFORNIA CABLE & FISHING AGREEMENT]

KDDI America, Inc.

By:_____
Name:
Title:
Date:

Pacnet Services (USA) Inc.

By:_____
Name:
Title:
Date:

Singapore Telecommunications Limited

By: [signature]
Name: Linette Lee
Title: Director, Submarine Cable Investment
Date:

SEA-US as represented by:

RAM Telecom International, Inc. (RTI),

By:_____
Name:
Title:
Date:

[SIGNATURE BLOCKS FOR SECOND AMENDMENT TO SOUTHERN CALIFORNIA CABLE & FISHING AGREEMENT]

KDDI America, Inc.

By:_____
Name:
Title:
Date:

Pacnet Services (USA) Inc.

By:_____
Name:
Title:
Date:

Singapore Telecommunications Limited

By:_____
Name:
Title:
Date:

SEA-US as represented by:

RAM Telecom International, Inc. (RTI),

By: Russell Matulich
Name: Russell A. Matulich
Title: President & CEO
Date: 10 February 2016

[SIGNATURE BLOCKS FOR SECOND AMENDMENT TO SOUTHERN CALIFORNIA CABLE & FISHING AGREEMENT]

Fishermen Directors and Directors of the South Bay Cable/Fisheries Liaison Committee, Inc.:

Peter Halmay

Mike McCorkle

Mike Kucura

Gary Burke

Chris Hoeflinger

Gerry Richter

Neil Guglielmo

[SIGNATURE BLOCKS FOR SECOND AMENDMENT TO SOUTHERN CALIFORNIA CABLE & FISHING AGREEMENT]

Fishermen Directors and Directors of the South Bay Cable/Fisheries Liaison Committee, Inc.:

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Mike McCorkle
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Gary Burke

_____
Chris Hoeflinger

_____
Gerry Richter

_____
Neil Guglielmo

[SIGNATURE BLOCKS FOR SECOND AMENDMENT TO SOUTHERN CALIFORNIA CABLE & FISHING AGREEMENT]

Fishermen Directors and Directors of the South Bay Cable/Fisheries Liaison Committee, Inc.:

_____
Peter Halmay

_____
Mike McCorkle

_____ 2-24-16
Mike Kucura

_____
Gary Burke

_____
Chris Hoeflinger

_____
Gerry Richter

_____
Neil Guglielmo

[SIGNATURE BLOCKS FOR SECOND AMENDMENT TO SOUTHERN CALIFORNIA CABLE & FISHING AGREEMENT]

Fishermen Directors and Directors of the South Bay Cable/Fisheries Liaison Committee, Inc.:

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Mike Kucura

Gary Burke
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Gary Burke

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Chris Hoeflinger

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Gerry Richter

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Neil Guglielmo

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Fishermen Directors and Directors of the South Bay Cable/Fisheries Liaison Committee, Inc.:

_____
Peter Halmay

_____
Mike McCorkle

_____
Mike Kucura

_____
Gary Burke

_____
Chris Hoeflinger

_____ 2-16-16
Gerry Richter

_____
Neil Guglielmo

[SIGNATURE BLOCKS FOR SECOND AMENDMENT TO SOUTHERN CALIFORNIA CABLE & FISHING AGREEMENT]

Fishermen Directors and Directors of the South Bay Cable/Fisheries Liaison Committee, Inc.:

_____
Peter Halmay

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Mike McCorkle

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Mike Kucura

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Gary Burke

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Chris Hoeflinger

_____
Gerry Richter

_____
Neil Guglielmo