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

F 4a

STAFF RECOMMENDATION

ON CONSISTENCY DETERMINATION

Consistency Determination No.	CD-043-06
Staff:	LJS-SF
File Date:	6/2/2006
60th Day:	8/1/2006
75th Day:	8/16/2006
Commission Meeting:	8/11/2006

FEDERAL AGENCY: **U.S. Navy**

PROJECT LOCATION: West Cove, San Clemente Island and Southern California Anti-Submarine Warfare Range (SOAR), offshore of San Clemente Island, Los Angeles County (Exhibits 1 and 2)

PROJECT DESCRIPTION: Refurbishment of seafloor electronic equipment (cable arrays, hydrophones, projectors) within SOAR

SUBSTANTIVE FILE DOCUMENTS: See Page 20

EXECUTIVE SUMMARY

The U.S. Navy (Navy) has submitted a consistency determination for refurbishment of cable arrays and underwater communications hardware at the Southern California Anti-Submarine Warfare Range (SOAR), offshore of the western side of San Clemente Island, located 60 miles offshore of Southern California. The proposed work does not include any changes to or

expansion of the ongoing anti-submarine warfare (ASW) training operations conducted by the Navy at this underwater range. SOAR extends from 4 to 31 nautical miles off the western shore of San Clemente Island, encompasses 670 square nautical miles of ocean, and reaches water depths in excess of 7,800 feet. The refurbishment hardware to be placed within the coastal zone off San Clemente Island is comprised of new trunk cables and a junction box that would connect the new SOAR cable arrays with the existing upland Cable Termination Shelter at West Cove on San Clemente Island. The proposed cable arrays, hydrophones, and underwater telephones would all be located in the SOAR range outside the coastal zone. The Navy proposes to refurbish SOAR instrumentation in order to maintain maximum communications and tracking capability, and to minimize the risk of system failures due to ongoing cable damage in the nearshore zone. The proposed refurbishment will create a back-up system at SOAR and will allow the range to operate at full capacity by using both the existing and proposed sensor systems.

The project is an allowable use and the least environmentally damaging alternative to refurbishing the SOAR range. The use of horizontal directional drilling (HDD) will avoid trenching or anchoring of cables through the intertidal zone and offshore kelp beds. The two HDD bores will exit onto sandy seafloor 3,000 feet offshore in 90 feet of water, and the nine SOAR cable arrays will be laid on sands and muds. Installation of the cable arrays and associated communications hardware and will not adversely affect marine habitats. The project includes spill prevention, monitoring, and response plans to ensure that the use of HDD technology will not adversely affect ocean water quality.

While the proposed cable-laying activities would represent a small fraction of vessel traffic that currently occurs in the SOAR range, all project vessels will abide by Naval regulations regarding marine mammal sighting and reporting to avoid adverse effects to marine mammals that frequent ocean waters off San Clemente Island. Construction of the proposed project would not adversely affect the habitat or the nesting and foraging activities of the endangered Western snowy plover or California brown pelican. Upland construction will incorporate project-specific best management practices for erosion control and site revegetation. Should the proposed cable arrays reach the end of their operational life or are no longer used by the Navy, the Navy will coordinate with the Commission to determine the appropriate level of federal consistency review to address cable array removal. The proposed project includes adequate avoidance, minimization, and mitigation measures to protect coastal resources, and is consistent with the marine resource and water quality policies of the CCMP (Coastal Act Sections 30230, 20331, 30233, and 30240).

In reviewing previous onshore and offshore Navy projects at San Clemente Island, the Commission determined that military restrictions on public access, recreation, and commercial and sport fishing are necessary and consistent with Coastal Act policies. The proposed SOAR refurbishment project would not require any expansion of current restrictions in the waters offshore of San Clemente Island. The proposed SOAR project is consistent with the public access, recreation, and fishing policies of the CCMP (Coastal Act Sections 30210, 30212, 30220, 30234, and 30234.5).

STAFF SUMMARY AND RECOMMENDATION

I. STAFF SUMMARY.

A. Project Description. The U.S. Navy (Navy) has submitted a consistency determination for refurbishment of cable arrays and underwater communications hardware at the Southern California Anti-Submarine Warfare Range (SOAR), offshore of the western side of San Clemente Island, located 60 miles offshore of Southern California (**Exhibits 1 and 2**). The proposed work does not include any changes to or expansion of the ongoing anti-submarine warfare training operations conducted by the Navy at SOAR, and is a follow-up to repairs at SOAR concurred with by the Commission in March 2005 (CD-015-05). SOAR extends from 4 to 31 nautical miles off the western shore of San Clemente Island, encompasses 670 square nautical miles of ocean, and reaches water depths in excess of 7,800 feet. The SOAR refurbishment hardware to be placed within the coastal zone are the new cables (0.5 to 3.0 inches in diameter) and junction box that would connect the SOAR arrays with the existing upland Cable Termination Shelter at West Cove on San Clemente Island. The proposed cable arrays, hydrophones, and underwater telephones would be located well outside the coastal zone.

The Navy describes the SOAR range as follows:

> *SOAR is instrumented with a network of underwater hydrophones and underwater telephones (UWTs, also referred to as projectors), which terminate at a data processing facility, the Cable Termination Shelter (CTS), located inland from the coastal zone at West Cove on SCI. The cables that connect SOAR to the CTS cross the coastal zone through the West Cove Restricted Area (no anchorage)(Figure 1-1).* **[Exhibit 3]**
>
> *The system is comprised of 20 individual hydrophone cables and 8 multiplexed strings of 8 hydrophones each, for a total of 28 cables and 84 hydrophones (Figure 1-2). Additionally, there are 6 UWTs individually cabled to shore. The hydrophones are used for tracking underwater vehicles, and the UWTs are used for underwater communications with submarines. Both are critical in conducting safe and effective ASW training.*

The Navy proposes to refurbish SOAR instrumentation in order to maintain communications and tracking capability, to minimize the risk of system failures due to cable damage in the nearshore zone, and to reduce the time to repair system failures. SOAR elements were installed in 1985, 1988, and 1991. The Navy reports that several recent failures of hydrophones and UWTs have resulted in significant reductions in tracking capability and submarine communications coverage. These system failures are the result of random survivability failures, abrasion on the seabed, and interactions with sports and fishing boat anchors. A partial repair was completed in 2005 for the UWTs and other components to restore SOAR capabilities to baseline levels (CD-015-05). However, additional failures continue to occur in a random and unpredictable manner, resulting in impaired performance of the system. Currently, there is no redundancy built into the system to maintain coverage and capability at 100 percent. Repairs take more than one year to complete due to the specialized nature of the equipment, advanced engineering design required for repair and replacement activity, and regulatory and permit processing. The proposed refurbishment

will create a back-up system at SOAR and will allow the range to operate at full capacity by using both the existing and proposed sensor systems. The proposed refurbishment will not allow for any expansion of SOAR operations beyond the current levels of anti-submarine warfare training.

The consistency determination first describes the proposed SOAR refurbishment elements:

2.2.1 Terminology

This section addresses the UTR (Underwater Tracking Range) *design and ocean engineering considerations for the SOAR refurbishment. For reference, there are two types of sensors: hydrophones and UWTs* (Underwater Telephone). *Hydrophones are used to convert acoustic energy into electrical energy, and are used to receive and record sounds on the range. UWTs are used for underwater communications. A node is defined as the electronic package that is deployed on the sea floor and contains one or two sensors. A node containing a single hydrophone sensor is referred to a uni-directional. A node containing two sensors (hydrophone and UWT) is referred to a bi-directional. Several nodes and the associated cabling form an array.*

2.2.2 Deep Water Cable and Node Deployment

The SOAR Refurbishment would consist of nine arrays, identified (for the purpose of this document) by letters A through I proceeding north to south, with the number of in-line nodes varying from 8 to 10. **[Exhibit 4]** *All of the nodes would be in deep water beyond the coastal zone. This configuration has been developed such that each node overlays the existing nodes for a one-for-one refurbishment. This configuration provides an accommodation of two traditional design limits for in-line nodes, the array cable length, and the node count, while minimizing installation concerns such as sharp cable turns in deep water. Installation of cable on a path parallel with the steep slope onto SCI is also avoided. The node locations (marked with an "H") and estimated cable routes are illustrated in Figure 2-1. The depth of the array, number and type of nodes, and lengths of cable required per array is summarized in Table 2-1. Most of the nodes would be uni-directional. The coordinate boundaries of SOAR, numbered 001 through 016 in Figure 2-1, would remain unchanged.*

The new nodes would be located within about 820 ft (250 m) of some of the existing node locations on the seafloor. Due to the configuration of nodes on an array (some of the existing nodes are individually cabled), the cable routes in water depths greater than about 4,000 ft (1,200 m) (deep water) would not be exactly the same as the existing arrays. The new cable routes would overlay and cross over existing cables. Previous installation planning and successful historical cable deployments indicate that the seafloor within SOAR is relatively level with little if any underwater obstructions or seafloor anomalies.

2.2.3 Mid-Water Depths Cable Deployment

The array cables between approximately 330 and 4,000 ft (100-1,200 m) water depth (mid-water) would follow the same existing general path, avoiding steep terrains. The cables would cross the coastal zone boundary at depths varying from approximately 1,000 to 1,500

ft (300-450 m). The spreading out or turning of cables is planned to occur at a constant depth, thus minimizing the placement of cables at angles to the downward slope. Historically, there have been no cable failures or installation impediments along the existing mid-water cable route. Given proven success and existing oceanographic data, following the existing cable routes would yield successful results for the new arrays. A second reason for following the existing cables is that this route proceeds shoreward within the West Cove Restricted Area (no anchorage) (see Figure 1-1) where anchoring is prohibited (33 CFR 334.921).

2.2.4 Nearshore Cable Deployment

As the cables pass through shallow water they must be landed on the shore via a sea/shore interface (SSI). The SSI is defined as the deployment of cables and necessary components from the shore-side facility, CTS (cable termination shelter)*, seaward to an underwater J-box.* **[Exhibits 5 and 6]** *The underwater J-box is equivalent to a distribution panel. All SOAR Refurbishment sea/shore interface items require stabilization to immobilize nearshore components for long-term survivability. Additionally, cables would be stabilized past the J-box in diver-accessible depths.*

The underwater J-box would connect the trunk cables [from San Clemente Island] *to the arrays. It would contain pressure housings and a bottom mounted structure to enclose the transition between the trunk cables and the internode cables. The J-box would contain pre-terminated internode cable "pigtails" or "branching units." These pigtails would be coiled in the box and individually raised to the surface for connecting to an individual array.*

The trunk cable is defined as the segment from the in-water J-box to a dry termination in close proximity to the CTS. The trunk cables would be contained within directional drilled pipes/bores. The trunk cables will be routed from the HDD (horizontal directional drilling) *bore exit to the J-box encased in either surfaced-laid drilled pipe or split pipe. The trunk cable core would comprise power conductors and fiber optic elements surrounded by polyethylene insulation. One or multiple layers of steel armor wires would be the outermost layer. Terrestrial cable(s) would connect the trunk cables from an external cable vault/termination box to an indoor termination/distribution box within the CTS.*

The type of bottom terrain, location of nearshore kelp, and paths of the multiple existing cables affect the SSI design. Several options are available, all with varying levels of cost, installation complexity, and ability to protect the cable.

Double-armored cable encased in split pipe (two halves of pipe fastened around the cable) has successfully protected cable used in water depths of 0-90 ft (0-27 m). Some double-armored cables which were not encased in split pipe have been damaged by abrasion in depths from 10-15 ft (3-5 m). Beyond 90 ft (27 m), minimal cable protection, such as over-armored cable for a short distance, exists. Most of the existing SCORE UTR failures have been caused by cable failures in water depths of less than 180 ft (55 m), within a horizontal distance of 5,250 ft (1,600 m) from shore. Most failures are attributed to anchors and rock-induced abrasions.

The SOAR Refurbishment would improve cable protection by a combination of protective installation methods in shallow water followed by armoring to an increased water depth of 328 ft (100 m) approximately 15,000 ft (4,500 m) in horizontal length from the West Cove shoreline. The primary improvement would be to employ HDD during the cable installation process. Two HDD bores would be drilled to a water depth of approximately 90 ft (27 m). The drill pipe(s) or split pipe would be extended to encase the trunk cables from the bore exits to the J-box located seaward of the bore exit. The J-box must be placed within diver access either via scuba or surface supplied air diving, at a maximum depth of 100 ft (30 m). The array cables beyond the J-box would contain additional layers of steel armor wires to a water depth of 328 ft (100 m). The two trunk cables would terminate in an external cable vault or a shore termination vault near the HDD drill site. A trench would be dug for placement of the terrestrial cables connecting the trunk cables from the cable vault/termination box to an indoor termination /distribution box within the CTS.

2.2.5 Shore System

The Shore System comprises a new SES and an underwater communications system. Both systems would contain new hardware that would be operated independently of the SOAR existing hardware. The existing SOAR software would be modified to interface with the new hardware.

The consistency determination next describes the proposed construction elements of the SOAR refurbishment project:

2.5.1. Overview

. . . The Proposed Action (Figures 2-2a and 2-2b) includes an onshore drill site of approximately one acre, located at an elevation of approximately 50 ft (15 m) on the terrace approximately 400 ft (120 m) inland from the coastal zone. An onshore cable trench would extend between the drill site and the CTS. The underwater construction site shown in Figures 2-2a and 2-2b has been identified as an area free of existing cables, obstructions, rocky outcroppings, or sensitive resources, and will support the HDD exit points and underwater J-box. The underwater construction site encompasses 27.16 acres (10.99 hectares [ha]) on the seabed in depths of 90-140 ft (27-43 m) (within the coastal zone). Both the onshore and offshore sites have been designed conservatively to accommodate all of the required installation activities.

HDD would be used to create two borings for the installation of 2 trunk cables in pipes which would emerge on the seabed in the underwater construction site. The drill pipe would likely be a ferrous (iron) material. The drill length(s) would be approximately 3,300 ft (1,000m). The drill pipes would emerge at "punchout" locations on the seabed and extend seaward as near as practicable to the underwater J-box (see Section 2.3.3). The trunk cables would be contained within surface-laid drill pipe or split pipe between the drill pipe emergence and the J-box. The underwater construction site is on soft-bottom or otherwise low-relief habitat outside of the kelp bed (Figure 2-2a), allowing the support vessel to be positioned above the exit without impacting the kelp. The exact horizontal and vertical

profiles of the drill path(s) are not known and would be determined by drilling contractor and approved by the Naval Undersea Warfare Center (NUWC). For planning purposes, a drill rig area of approximately one acre (0.4 ha) was identified as sufficient for this operation. Figure 2-3 shows the layout of a typical HDD site, which would be accommodated within the onshore construction site.

2.5.2 Description of Drilling Process

NUWC performed a market survey of potential HDD contractors. The follow description summarizes the most viable HDD drilling process for SCI. The HDD drill path and punchout location are within the coastal zone.

The drill hole must be large enough to accommodate a pipe capable of containing any cable(s) that are required to pass through it. Based on typical trunk cable configurations and the need for redundancy, the SOAR Refurbishment would require two 1.5 to 3-inch (3.7-7.5 cm) diameter cables, which would be installed in two directionally drilled bores. HDD water requirements on average are approximately 10,000 gallons (38,000 liters) per day. The water is mixed with bentonite clay to make a slurry or "cutting" fluid. Bentonite clay (sodium bentonite) is a non-toxic, naturally occurring substance which would be purchased from a commercial source by the contractor, brought to SCI, and stored at the construction site. Water is available on SCI for the operation and would be transported by truck from existing water storage tanks on SCI to an onsite tank that would supply the HDD operation. Excess returns of the water/clay mixture and the excavated material would be dried and trucked for disposal to the SCI landfill which is located farther inland in the north-central part of the island.

The HDD process would involve drilling and horizontal placement of piping into the ground, ultimately angling the bore hole into the seabed offshore. The placement of the drill rig would require level ground, so some site grading would be required prior to the commencement of HDD. The drill rig would be anchored into the ground for stabilization. Therefore, an approximate area of 8 ft x 10 ft (2 m x 3 m) would have to be excavated to a depth of 8 - 10 ft (2 - 3 m) for the placement of an H-shaped anchor; the anchor hole would be backfilled by dirt and then attached to the drill rig for stability. Following the completion of HDD, the anchor would be removed and the hole backfilled.

"Drilling mud" consisting of water and bentonite clay would be injected under pressure into the interior of the drill pipe. The drilling fluid would transfer energy to the rotating drill head which would make contact with the soil. Drilling fluid (mud and drilling cuttings) would return back through the HDD bore hole, which would be approximately 1 inch (2.5 cm) larger than the diameter of the pipe. This process would continue for an estimated 24 days per bore. Allowing for 2 bores, including site set up and demobilization time, the entire duration of the drilling operation at West Cove would be approximately 60 days (see Table 2-3).

To provide protection for the trunk cables, the drill pipe would be extended out of the bore exit and along the seabed or split pipe would be installed over the trunk cables to the J-box

location. At the conclusion of HDD, the drilling contractor would install pulling lines within the pipe, allowing the trunk cables to be attached by divers and pulled ashore when the cable arrives by ship. The end of the pipe would be capped and sealed to prevent foreign material from entering and clogging the pipe prior to the cable deployment. A concrete vault 5 ft by 10 ft (1.5 m by 3 m) would be built at the shore entry point of the drill pipe to receive the trunk cables.

Drilling would be conducted in accordance with the Bentonite Monitoring and Spill Prevention Plan prepared for the project (NUWC 2006). Key features of this plan are the monitoring of fluid pressure and returns from the bore hole, adjustments in the drilling process to minimize the loss of fluids and their possible release into the environment, and provisions for diver inspection and cleanup if a release of drilling mud onto the seabed is suspected. During the final stage of drilling, bentonite addition would be discontinued, and only water would be used, thus minimizing the release of the clay when the bore punches out onto the seabed.

2.5.3 Underwater Junction Box and Trunk Cable Installation

The trunk cables (inland of the coastal zone) would terminate onshore at a cable vault as described above. Cable(s) connecting the trunk cables to the SES would be placed in a trench excavated between the cable vault and CTS. The trench would be approximately 2 ft (0.6 m) deep and wide and would be 371 ft (113 m) long.

The underwater J-box (within the coastal zone) would connect the trunk cables to the arrays. It would contain pressure housings and a bottom-mounted structure to enclose the transition between the trunk cable and the internode cable(s). The J-box would contain pre-terminated internode cable "pigtails". These pigtails would be coiled in the box and individually raised to the surface for connecting to an individual array. The box would be designed for low profile, minimizing the probability of snagging a small boat anchor. The box would be designed for diver stabilization in the deployed environment. The structure would be low-profile to reduce drag. The box would contain provision for stabilizing to the seafloor. For planning purposes it is assumed that the J-box would be 10 ft (3 m) on a side and 5 ft (1.5 m) high.

For the SOAR Refurbishment, a single J-box would be installed for the system. The J-box and its associated trunk cables would be deployed prior to the sensor array cable deployment. Prior to departing for sea, the trunk cable would be terminated to the J-box. The trunk cables would both be pulled through the HDD bores, followed by the lowering of the J-box to the seafloor. All system components deployed beyond the drill pipe exit would be stabilized using conventional methods and the experience gained with previous SOAR cable stabilization efforts. Cable and J-boxes would be secured to the seafloor. Stabilization would be performed following cable installation using a smaller vessel.

2.5.4 Array Installation

The deployment of the cables would utilize conventional cable laying machinery including a linear cable engine (LCE) and cable pans. From the J-box, the array cables would be

directly laid on the seabed, without mechanical excavation, in a common corridor within the West Cove Restricted Area (no anchorage) as shown in Figure 2-2b. Each array cable would be double-armored for protection, from the J-box to a depth of 328 ft (100 m). The coastal zone boundary would be crossed at depths of roughly 1,000-1,500 ft (300-350 m) Figure 2-2b. Sensors would not be deployed within the coastal zone; their deployment would occur in depths of approximately 2,600 to 5,900 ft (800-1800 m) within the boundaries of SOAR, approximately 4 to 32 nm (7 to 60 km) offshore.

The new SOAR cables may follow the existing cable routes as the sensors are deployed. The intent is to laterally adjust the sensor positions slightly for the new hydrophones. The new cables would lie in proximity to the existing cables in the deep water (greater than 4,000 ft [1,200 km]) and in proximity to cables in the mid-water depths (330 to 4,000 ft [100 to 1,200 km]). During the offshore deployment of the arrays, the bi-directional and uni-directional nodes would be tested to ensure that the sensors are functional. After the installation is complete, a positional survey would be performed to determine the exact geodetic locations of the sensors on the range. The equipment tests and position survey would use existing SOAR resources, including in-water transducers and shipboard receiving/global positioning systems that are routinely used during normal range maintenance activities.

The proposed SOAR refurbishment project is currently scheduled to occur over a two-year period between September 2007 and October 2009.

B. <u>Related Commission Actions on Ocean Cable Projects</u>. On November 15, 1989, the Commission concurred with a Navy consistency determination (CD-045-89) for construction of the "FOCUS" (Fiber Optic Communication Underwater System) project, which called for installation of two fiber optic cable lines extending between Point Mugu and San Nicolas Island. On July 11, 2003, the Commission conditionally concurred with the Navy's proposed replacement of two sections of its FOCUS cables at and offshore of San Nicolas Island (CD-50-03), in part using horizontal directional drilling (HDD) technology to install cables underneath the shoreline and nearshore areas to avoid sensitive marine habitats. The Commission did not require mitigation for any potential hard bottom habitat impacts or other potential biological impacts from the seafloor cables, and in fact the Commission did not oppose the Navy's commencement of the project. The Commission was concerned over the long-term disposition of the cable in the event it was no longer needed. The Commission requested the Navy to agree to remove the cable when no longer needed. The Navy agreed to return to the Commission at that future date and analyze the benefits versus impacts of removal.

However, the Navy did not agree to the first part of the Commission's condition requiring removal of the *existing* cable being replaced. The condition stated:

1. <u>Cable Removal</u>. After installation of the replacement FOCUS cable lines at San Nicolas Island and after the replacement cable lines are operational, the Navy will remove all portions of the bypassed FOCUS cable segments that are not grouted extensively into rocky substrate to anchor them in place. Cable segments that sit on

> *either rocky or sandy substrate, whether anchored (using bolts or other hardware) or not, must be removed within one year after the replacement FOCUS cable lines become operational. At that time, the Navy will submit to the Executive Director written confirmation and the necessary supporting materials (including, but not limited to, maps, diagrams, and written reports) that adequately document the removal of the bypassed FOCUS cable segments. In addition, prior to commencement of project construction, the Navy will submit to the Executive Director a written commitment to remove the proposed new FOCUS cable replacements when they reach the end of their operational life or are no longer used by the Navy.*

Added to the condition was the Commission's clarification that:

> *However, for the proposed new FOCUS cables, the Navy can: (1) at a future date submit materials to the Commission which document that leaving the new cables in place on the ocean floor will be less harmful to the marine environment than removing them; and (2) based on that documentation, request that the Commission eliminate the measure to remove the new FOCUS cable segments when no longer used by the Navy.*

The Navy did agree that for the *new* cable, it would return to the Commission at such time that the cable is not being used, with additional analysis to determine whether the new (but at that future date, non-operational) cables should be abandoned in place or removed. The Navy also agreed to continue the dialogue over the cable being replaced, including joining the Commission in informal mediation efforts with the Federal Consistency Coordinator in NOAA's Office of Ocean and Coastal Resource Management (OCRM) to attempt to resolve the disagreement over the existing cable. To date, no such mediation discussions have yet commenced.

In reviewing several commercial fiber optic cable proposals in recent years, including CC-111-01/CDP E-01-029 (Tyco), CC-028-00/CDP E-99-011 (MCI WorldCom), and CC-110-00/CDP E-00-008 (Global West), the Commission adopted conditions requiring the cable companies to: post performance bonds to ensure condition compliance (in particular cable removal after the useful life of the cables has ended); bury cables 1 meter deep or to the maximum lesser depth feasible (except in hard bottom habitat); submit detailed location plans to affected fishermen (out to a depth of 1,800 meters); include trained wildlife monitors on the cable laying vessels and provide wildlife monitoring reports to the Commission; where burying is infeasible, place the cable as close as possible to the seafloor (including using ROVs to follow the operation and reposition the cable where feasible); survey the cable every 2 years and rebury exposed segments (out to a depth of 1,800 meters); when no longer being used, remove the cables in active fishing areas and any unburied cables at depths of less than 1000 meters when no longer being used; retrieve any fishing gear lost due to the presence of the cable; survey hard bottom areas and report any damage caused (out to 1200 meters); mitigate any hard bottom habitat effects through payments to a Department of Fish and Game artificial reef program; and compensate fishermen for any economic losses caused by the cable.

In March 2005 the Commission concurred with a Navy consistency determination (CD-015-05) for cable and other equipment repair and replacement at the Southern California Anti-Submarine

Warfare Range (SOAR) at and offshore of San Clemente Island. This project consisted of repairing and replacing damaged hydrophones, communications projectors, and associated cables that connect the underwater range with the data processing facility at West Cove on the northwest side of San Clemente Island. The project was confined to previously disturbed areas, was a minor addition to an extensive existing cable and equipment array, and was designed to minimize impacts to kelp and hard bottom habitat.

For all the above Navy and commercial cable projects, the Commission found the cables to be allowable uses under Section 30233(a) of the Coastal Act as an incidental public service.

Finally, the Navy is also in the process of preparing a programmatic assessment of the SOAR underwater submarine range activities. The Navy currently anticipates publishing a Draft San Clemente Island Range Complex Environmental Impact Statement (EIS) in late 2006 or early 2007. As it did for the testing and training activities on the Point Mugu Sea Range (CD-2-01), to the north and west of the underwater submarine range at San Clemente Island, the Navy will submit a consistency determination to the Commission for the overall anti-submarine warfare range program and its potential coastal zone effects when the Draft EIS is released.

C. Federal Agency's Consistency Determination. The U.S. Navy has determined the project consistent to the maximum extent practicable with the California Coastal Management Program.

II. STAFF RECOMMENDATION.

The staff recommends that the Commission adopt the following motion:

MOTION: I move that the Commission **concur** with consistency determination CD-043-06 that the project described therein is fully consistent, and thus is consistent to the maximum extent practicable, with the enforceable policies of the California Coastal Management Program (CCMP).

Staff Recommendation:

The staff recommends a **YES** vote on the motion. Passage of this motion will result in an agreement with the determination 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 Concur with Consistency Determination:

The Commission hereby **concurs** with the consistency determination by the U.S. Navy, on the grounds that the project described therein is fully consistent, and thus is consistent to the maximum extent practicable, with the enforceable policies of the CCMP.

III. Findings and Declarations:

The Commission finds and declares as follows:

A. Marine Resources and Water Quality. The Coastal Act provides:

Section 30230: *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*: 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, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.*

Section 30233: *(a) 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. ...

(5) 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.

Section 30240: *(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.*

(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.

1. Marine Resources. The proposed SOAR refurbishment project involves filling within coastal waters and therefore triggers the three-part test of Section 30233(a)(5): (1) the project must be one of the eight enumerated allowable uses; (2) the project must be the least environmentally damaging feasible alternative; and (3) the project must include feasible mitigation measures to minimize adverse environmental impacts. In regards to the first test, the proposed project is an incidental public service and allowable use under Section 30233(a)(5) and is similar to determinations the Commission has made with respect to other Navy communications cable projects. The proposed project includes the installation of communications cables that will initially be placed in two horizontal directional drilled holes bored under the seafloor from an upland site 400 feet from the shoreline to an exit point on the seafloor approximately 3,000 feet offshore and at a depth of 90 feet. The two cables will then enter a junction box to be placed on the seafloor, and cables comprising the SOAR arrays will exit the junction box and be placed on the seafloor out to and beyond the coastal zone boundary.

The second test required by Section 30233(a) centers on project alternatives. The Navy states that there is no alternative to maintaining the existing SOAR range, the only underwater training complex of its kind on the West Coast. As described previously in this report, the Navy has undertaken periodic repairs of damaged and failed components of the SOAR system but these efforts have failed to maintain the needed range capabilities for the Navy's undersea warfare training program. As a result, a back-up tracking and communications system is needed at SOAR. The Navy reports in the consistency determination that it considered alternative locations on San Clemente Island for siting the upland shore electronics system (SES) element of the project, and alternative methods for installing the ocean sensor system (OSS) in the nearshore waters off West Cove. The proposed SES would be located adjacent to existing SOAR cable termination facilities at the West Cove. This location minimizes construction costs, potential conflicts with existing military training activities, and potential biological and cultural resource impacts. The locations of biological and cultural resources are known and avoidable at this location. The use of horizontal directional drilling (HDD) to install the OSS trunk cables from West Cove to the offshore junction box will avoid trenching in and crossing through the intertidal zone and the impacts to sensitive habitats and resources. The use of HDD technology would also eliminate potential damage to the trunk cables and to the immediate area over which they cross that can occur from waves and ocean currents battering the cables in the nearshore zone. Finally, the deployment of cables seaward of the junction box out to and beyond the coastal zone boundary (at water depths between 1,000 to 1,500 feet) would use conventional cable laying machinery, and cables would be directly laid on the seafloor without mechanical excavation. The Commission agrees with the Navy that the proposed cable route for the SOAR refurbishment project is the least environmentally damaging feasible alternative.

The third test required by Section 30233(a) centers on mitigation measures to minimize any adverse impacts on marine resources from the proposed installation and presence of SOAR refurbishment cables and communications hardware on the ocean floor. As noted previously in this report, use of HDD technology to place the first 3,000 feet of cable (from the upland termination site) under the ocean floor directly offshore of San Clemente Island avoids generating adverse effects on biologically rich intertidal and shallow water areas. The cable exit point from the HDD bore and the cable junction box (connecting the trunk cables to the arrays)

would be located on the ocean floor seaward of offshore kelp beds, on sandy substrate, and at water depths between 90 and 100 feet. Seaward of the coastal zone, approximately 330 miles of cable arrays will be laid on the ocean floor on generally parallel paths with the existing SOAR arrays in water depths up to 7,800 feet. As discussed in additional detail below, the proposed project provides adequate avoidance, minimization, and mitigation measures to protect marine resources.

The consistency determination states that kelp beds in the West Cove project area are confined to a zone extending 500 to 2,500 feet from shore. The two HDD bores will exit onto sandy seafloor approximately 3,000 feet from the shoreline, and the cable junction box will likewise be placed on sandy substrate seaward of the kelp beds. Sandy bottom marine habitats would be temporarily affected by sedimentation and turbidity during the two-week construction period at this location. Beyond the outer edge of the kelp bed, the substrate is sand out to a water depth of 240 feet. Continuing seaward and out to SOAR, benthic habitats consist predominately of unconsolidated sediments that vary from sand in shallower water to patches of coarse shelly or gravelly material across the slope, to mostly fine-textured clays and muds in the deeper basin area. No rocky reefs are known to be crossed by the cable routes across the shelf and slope environments to SOAR. The proposed trunk cables, junction box, cable arrays, and communications hardware will not create adverse impacts to marine habitats.

Concerning marine mammals and offshore impacts, no pinniped rookeries or haulout areas occur in the vicinity of West Cove. The consistency determination reports that:

> *The offshore area of SOAR is heavily used by Naval vessels and aircraft, commercial ships and fishing vessels, and the proposed cable activities represent a small fraction of what normally occurs. The surface and underwater activities at West Cove in support of HDD, trunk cables, and J-box installation would be nearly stationary, would involve typical vessel engine and equipment noises and diver support on the seabed, and are not expected to affect the feeding or movement of marine mammals in the vicinity. Once installed, the equipment would constitute small areas of hard bottom habitat that would not have adverse effects.*
>
> *. . . Entanglement of marine species is not likely because the rigidity of the cable that is designed to lay extended on the sea floor.*
>
> *. . . The project vessels* [installing cable and hardware] *would abide by all appropriate Naval regulations regarding marine mammal sighting and reporting.*

The consistency determination also reports that the sandy substrate habitat within the proposed cable corridor from the HDD exit point to the SOAR array does not provide typical habitat for the endangered white abalone, and that this species would not be affected by the project. Federally listed threatened or endangered species known or likely to occur in the coastal zone at West Cove include the Western snowy plover and the California brown pelican. While San Clemente Island is not designated as critical habitat for snowy plovers, the Navy has regularly surveyed the island for the presence of the plovers since 1994. The snowy plover uses the West Cove Beach for winter habitat. However, the HDD drill site and the trench corridor to the CTS

are located on the upland terrace, well above and outside of snowy plover habitat, and construction activity at these sites will not affect the plover. The brown pelican rests along the shore and forages in the offshore waters surrounding all of San Clemente Island. The brown pelican may avoid the immediate areas of onshore and offshore activity, but it is wide-ranging and not likely to be adversely affected by the proposed project. HDD activities would occupy only a small area of the nearshore waters used by the brown pelican and only for a brief period of time.

The Navy has received determinations from the U.S. Fish and Wildlife Service and NOAA Fisheries that the proposed SOAR refurbishment will not adversely affect any listed species, and has concluded that marine habitat and resources within the project area would not be adversely affected by the SOAR refurbishment activities.

In reviewing consistency determinations and coastal development permits for ocean cable installation, the Commission now typically requires federal agencies and permit applicants to remove cables from the ocean floor when they are no longer needed or have reached the end of their operational life. The original SOAR project did not address the issue of removing from the marine environment any cable segments that were damaged or reached the end of their operational life. The recent consistency determination (CD-015-05) for repairs to the SOAR range included provisions for removal of damaged cables in the shallow nearshore waters where cables land on San Clemente Island, but not for removal of damaged cables or hardware in deeper water up to 30 miles west of the island. The marine environment of the coastal zone offshore of San Clemente Island would benefit from removing cables and other communications and tracking hardware that are no longer operational and that will serve no future purpose for the Navy. To address this issue, the Navy states in its consistency determination that:

> *The Navy is investing in a refurbishment that will ensure the long-term communication and tracking capability of the range. If at such time in the future that the Navy no longer has a requirement for ASW operations or no longer utilizes SOAR instrumented deep water range for training operations, then the Navy will comply with environmental planning regulatory requirements under NEPA and other applicable environmental documentation (ESA, CZMA, etc).*

Should the SOAR refurbishment cables and hardware proposed for installation within the coastal zone reach the end of their operational life or are no longer used by the Navy, the Navy will coordinate with the Commission to determine the appropriate level of federal consistency review to address the matter of cable array removal.

2. <u>Water Quality</u>. The ocean waters within one nautical mile of San Clemente Island comprise a State Water Quality Protection Area (formally designated an Area of Special Biological Significance). The primary water quality issue with the project is the potential adverse effect that horizontal directional drilling (HDD) could generate on ocean waters. To avoid installing (either through trenching or anchoring) the SOAR refurbishment trunk cables in the biologically rich intertidal and nearshore waters off West Cove, the Navy proposes to use HDD technology and drill two 8- to 12-inch diameter bore holes at a depth of 25-30 feet underneath the seafloor to

bring the SOAR trunk cables to a point 3,000 feet offshore in 90 feet of water. From here the cables will be laid on the seafloor a short distance before entering the cable junction box, from which the nine cable arrays will be laid on the ocean floor out to and within the 670-square-nautical-mile SOAR range west of the island.

The consistency determination provides information on the HDD process to be used in the SOAR refurbishment project; the details of that process are found on Pages 7 and 8 of this report. The *Bentonite Spill Prevention and Monitoring Plan*, included with the Navy's consistency determination, examines the potential risk to ocean water quality from HDD operations. The *Plan* discusses the use of drilling fluids:

> *Bentonite drilling fluids ("drill mud") are used in HDD to provide lubrication for the drill head, help cut through formations, suspend the cuttings, and carry the cuttings back up the annulus of the pilot hole to a containment pit. The cuttings are separated from the drilling mud by the solids control unit. All of the drilling fluids are re-circulated during the drilling process. These fluids and cuttings will be pumped from the containment pit to the solids control unit, cleaned and re-used; thus, creating a recycled use of drilling mud. Mud volume, pressure, viscosity, sand content and weight will be continuously monitored during all phases of the drilling operation.*
>
> *Occasionally, during normal drilling operations, drill mud can migrate into the formation or travel to the surface (referred to as a "frac-out"). By monitoring the mud system, HDD personnel can determine the correct properties and pressures needed for drilling different types of formations, i.e. maximum cleaning, minimum loss of circulation and maximum frac-out control. Loss of circulation due to fluid migration or frac-outs can be reduced and contained or eliminated by strict monitoring and implementing proper HDD controls and procedures.*

The *Plan* includes calculations of worst-case unavoidable releases of drilling fluids into the surrounding geologic formation from hydrostatic head pressure and from a drill pipe fracture, based on the project's two potential drill pipe diameters (8 inch and 12 inch) and the water depth at the HDD bore punch-out site (90 feet at the proposed site; 140 feet for a comparison site further seaward). For a hydrostatic head release, the worst-case volumes for a single bore (two would be drilled for this project) range between 1,668 and 5,169 gallons. For a pipe fracture, the worst-case volumes for a single bore range between 6,927 and 23,503 gallons. The *Plan* notes that given the nature of the offshore geology along the HDD bore route (volcanic rhyolite rock overlain with unconsolidated seafloor sediments), any released drilling fluids would likely be contained within the subsurface formation and not reach the ocean floor.

The *Plan* additionally states that:

> *Proper drilling procedures will minimize leakage or inadvertent release of drilling mud either to the surface or into the ocean. One of the most important functions is to maintain sufficient depth of the drill path. This will reduce or eliminate the possibility of mud reaching the surface. In sand and silt formations, 25 to 30 feet (8 to 9 m) of cover is*

> *normally a sufficient, safe depth, and in a consolidated rock formation 20 to 25 feet (6 to 8 m) is generally sufficient. However, some rock formations have fissures or fractures that might allow mud to migrate to the surface and even depths of 40 to 50 feet (12 to 15 m) may not prevent leakage. This condition is not expected at San Clemente Island. A depth of 25 to 30 feet (8 to 9 m) should be adequate for San Clemente Island HDD.*

The *Plan* also details the drilling procedures that will be implemented to minimize the release of drilling fluids, and the measures that will be used to monitor for and identify unanticipated fluid releases.

The Navy will provide the Commission (far in advance of the start of construction of the SOAR refurbishment project) with a copy of the more detailed Spill Response Plan and Spill Cleanup Plan that will be jointly prepared by the as-yet-to-be-selected HDD contractor and the Naval Undersea Warfare Center. The Commission staff provided the Navy with a list of response and clean-up plan elements that must be included in the Navy's Spill Response and Spill Cleanup Plans. The Commission staff will have the opportunity to review these plans for their adequacy in protecting coastal water quality in the event of a drilling fluid release into ocean waters and, if necessary, to request improvements to those plans to ensure that they are consistent with recent Commission actions on similar HDD operations in offshore waters. With the incorporation of these plans into the project consistency determination, the Commission agrees with the Navy that the use of HDD technology in the SOAR project would not adversely affect coastal water quality off San Clemente Island.

The proposed project's onshore ground disturbance would occur within previously disturbed areas on San Clemente Island. The project includes a one-acre upland HDD drill site located at West Cove at an elevation of 50 feet on a coastal terrace 400 feet from the shoreline. In addition, an upland cable trench would extend between the drill site and the existing SOAR cable termination shelter (CTS). All upland activity has been sited to avoid or minimize impacts to sensitive habitat and water quality. The consistency determination states that:

> *Onshore construction would incorporate the Navy's requirements and utilize project specific Best Management Practices (BMPs) for erosion and sediment controls, and for site restoration and revegetation measures. BMPs would include measures consistent with the Statewide Storm Water Quality Practice Guidelines (Caltrans 2003) and would provide for: (a) temporary protection of any exposed soil stockpiles from wind or water erosion; (b) containment of sediment or other pollutants within site boundaries; (c) revegetation of previously vegetated areas using native plant materials; and (d) control of noxious weeds. For onshore construction activities that would disturb more than one acre, a Storm Water Pollution Prevention Plan (SWPPP) would be prepared and submitted to the Regional Water Quality Control Board (RWQCB).*

With the aforementioned avoidance and mitigation measures, including Commission staff review of the Spill Response and Spill Cleanup Plans, as well as future Commission review of removal plans for any equipment no longer operational, the Commission agrees with the Navy that the

proposed upland construction activities associated with the SOAR refurbishment project will not adversely affect water quality at and adjacent to construction sites.

In conclusion, the Commission agrees with the Navy that the proposed SOAR refurbishment project is an allowable use, is the least environmentally damaging feasible alternative, and as described above provides adequate avoidance, minimization, and mitigation measures to protect coastal resources. Therefore, the Commission finds that the project is consistent with the applicable marine resource and water quality policies of the CCMP (Coastal Act Sections 30230, 20331, 30233, and 30240).

B. Public Access/Recreation/Fishing. Section 30210 of the Coastal Act provides:

> *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 safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.*

Section 30212 provides in part:

> *(a) Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects except where:*
>
> > *(1) it is inconsistent with public safety, military security needs, or the protection of fragile coastal resources . . . .*

Section 30220 provides:

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

In addition, aside from the commercial fishing protection afforded under Section 30230 (see above, Page 12), Sections 30234 and 30234.5 underscore the need to protect commercial and recreational fishing opportunities:

> ***30234.*** *Facilities serving the commercial fishing and recreational boating industries shall be protected and, where feasible, upgraded. Existing commercial fishing and recreational boating harbor space shall not be reduced unless the demand for those facilities no longer exists or adequate substitute space has been provided. Proposed recreational boating facilities shall, where feasible, be designed and located in such a fashion as not to interfere with the needs of the commercial fishing industry.*
>
> ***30234.5.*** *The economic, commercial, and recreational importance of fishing activities shall be recognized and protected.*

The Navy maintains that the proposed project is consistent with the public access, recreation, and commercial and recreational fishing policies of the Coastal Act. The Navy states that public access on San Clemente Island has historically been restricted due to military security needs, and that most of the offshore areas where cables and equipment could conflict with fishing activities are also restricted for military security and public safety. **Exhibit 2** shows the restricted area offshore of West Cove. The Navy provides in its consistency determination that:

> *. . . the majority of the refurbishment project would occur in areas that currently have restricted public access due to safety and military security concerns. No change in public access to these areas would occur. Portions of the refurbishment project in public waters would not affect public access or recreational opportunities.*
>
> *The refurbishment project would not interfere with the public's right of access to the sea in the coastal zone. SCI is a Navy-owned property where public access is strictly controlled for security reasons and to safeguard against potential hazards associated with military operations. The Navy maintains control over waters within 300 yards (274 m) of the island. Anchorage is prohibited in the Restricted Area off West Cove, and the Danger Zone off of the west side of SCI restricts certain activities when announced by the Navy (U.S. Navy 2002). Commercial and recreational fishing and boating are allowed in the nearshore waters of the coastal zone, subject to the foregoing limitations.*
>
> *The HDD punchout and underwater construction area occur within these special use areas, in which public access is controlled by the Navy. Some refurbishment activities outside of the coastal zone, such as vessel transport and offshore cable deployment, occur in areas that are open to unrestricted public access. Standard SCORE* [Southern California Offshore Range] *protocols, including publishing descriptions of Navy activities in the Notice to Mariners and using marine radio channels for communications with approaching vessels, would continue to be implemented. These measures would ensure that recreational and commercial vessels avoid the cable installation locations while actions are underway. SCORE maintains a public information internet website that allows mariners to research scheduled activities.*
>
> . . .
>
> *Under the refurbishment project, installation of the J-box and cable deployment would require the intermittent presence of marine vessels and divers in the underwater construction site, from which the array cables would be installed seaward. Any limitations on recreational fishing or boating would be intermittent and localized to the area of the activity, and would not affect recreation elsewhere within the coastal zone waters off SCI.*

As it has found in reviewing previous onshore and offshore Navy projects at San Clemente Island, the Commission finds that the existing military restrictions on public access and recreation are necessary and consistent with Coastal Act policies. The proposed SOAR refurbishment project would not require any expansion of the current restrictions. As discussed previously in this report, the Commission further finds that the types of fisheries protection and

compensation requirements imposed on fiber optic cable laying applicants are not warranted in that the area already contains an extensive array of Navy cables, and the areas where cables might snag trawling gear are predominately either too deep for trawling or are located in shallower waters which are currently off-limits to active fishing. The Commission therefore agrees with the Navy and concludes that the proposed SOAR project is consistent with the public access, recreation, and fishing policies of the CCMP (Coastal Act Sections 30210, 30212, 30220, 30234, and 30234.5).

IV. SUBSTANTIAL FILE DOCUMENTS:

1. Consistency Determination CD-015-05, Navy San Clemente Island Cable and Equipment Repair.
2. Consistency Determination CD-020-95, Navy San Clemente Island Cable Repair.
3. Consistency Determination CD-002-01, Navy Point Mugu Sea Range Testing and Training Activities.
4. Consistency Determinations CD-045-89 and CD-050-03, Navy San Nicolas Island FOCUS Cable and Cable Repairs.
5. Consistency Certification CC-111-01/CDP E-01-029, Tyco Fiber Optic Cable, offshore of Los Angeles County.
6. Consistency Certification CC-028-00/CDP E-99-011, MFSGlobenet/MCI WorldCom Fiber Optic Cable, offshore of San Luis Obispo County.
7. Consistency Certification CC-110-00/CDP E-00-008, Global West Fiber Optic Cable, offshore of San Luis Obispo, Los Angeles, and San Diego Counties.

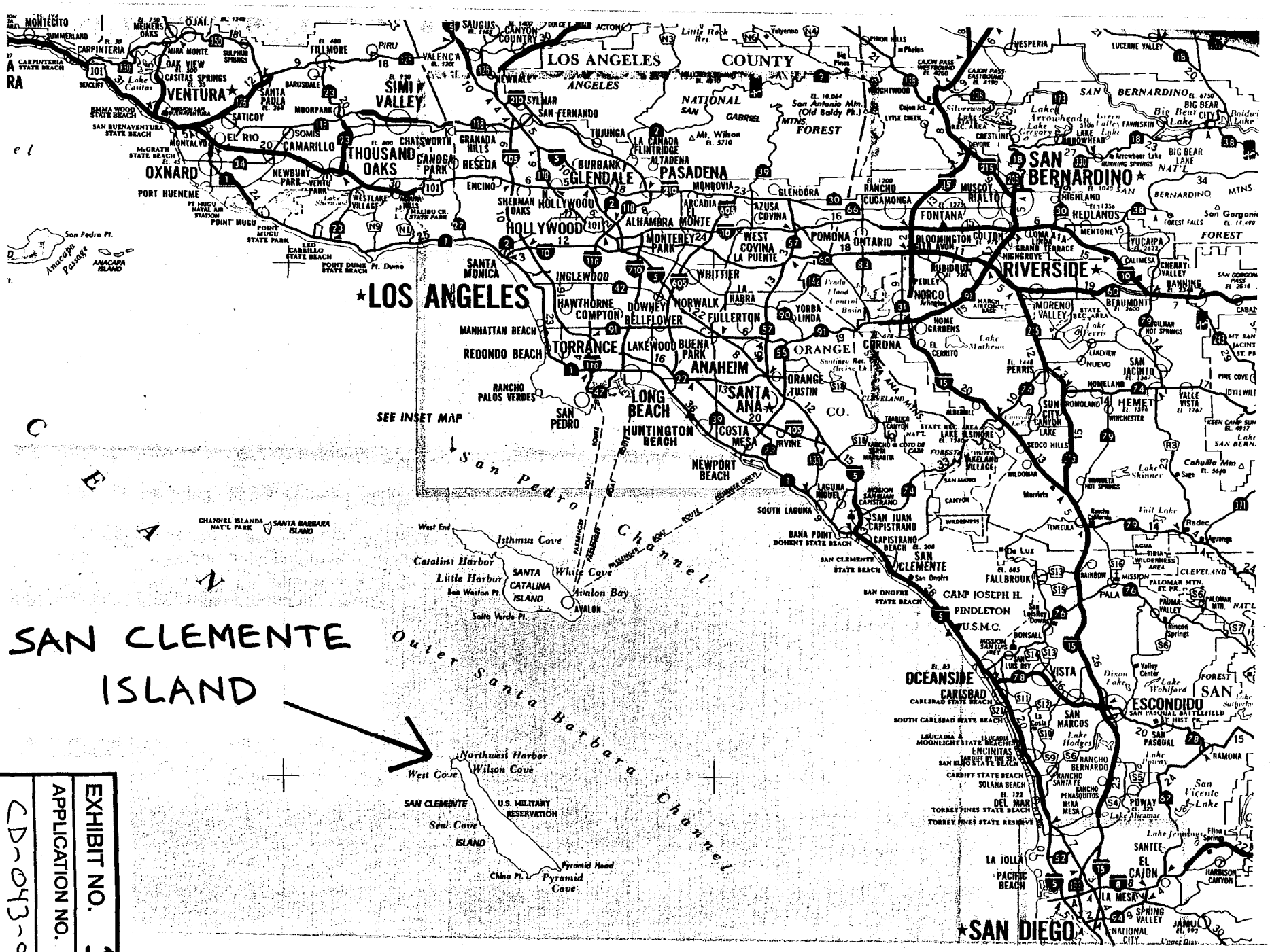

EXHIBIT NO. 1
APPLICATION NO.
CD-043-06

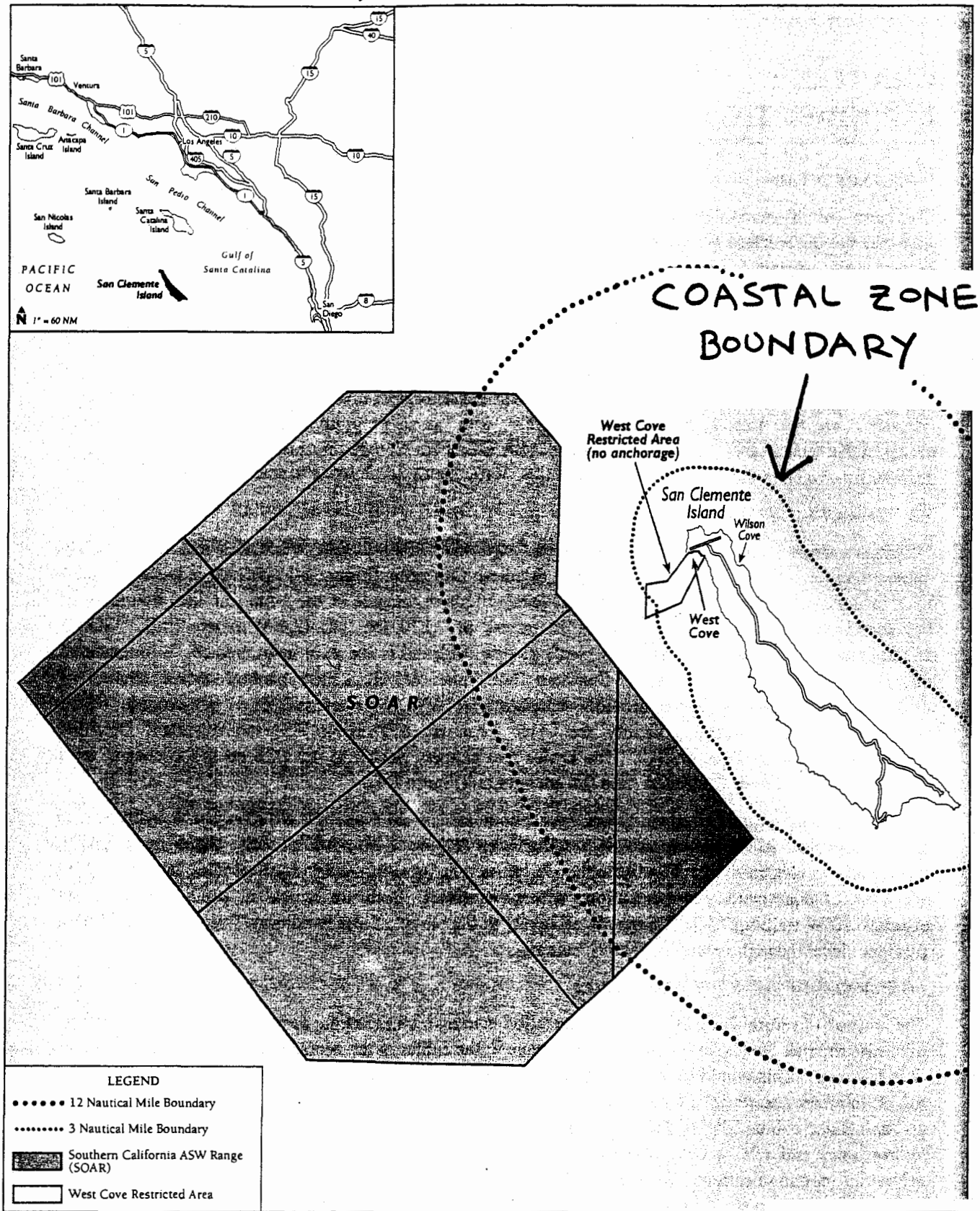

Figure 1-1
Regional Location
SOAR and San Clemente Island

EXHIBIT NO. 2
APPLICATION NO.
CD-043-06

Figure 1-2 Current Status of SOAR and Refurbishment Needs (October 2005)

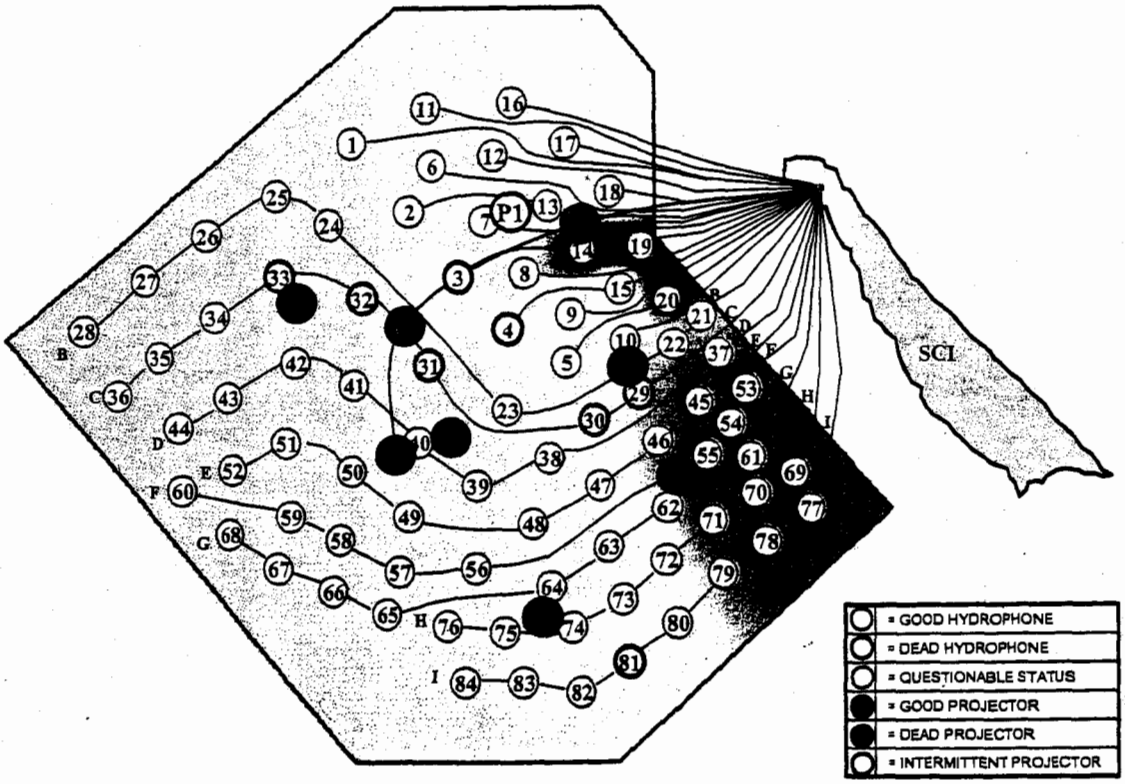

EXHIBIT NO. 3
APPLICATION NO.
CD-043-06

Figure 2-1 Proposed Sensor Layout
(see text for explanation)

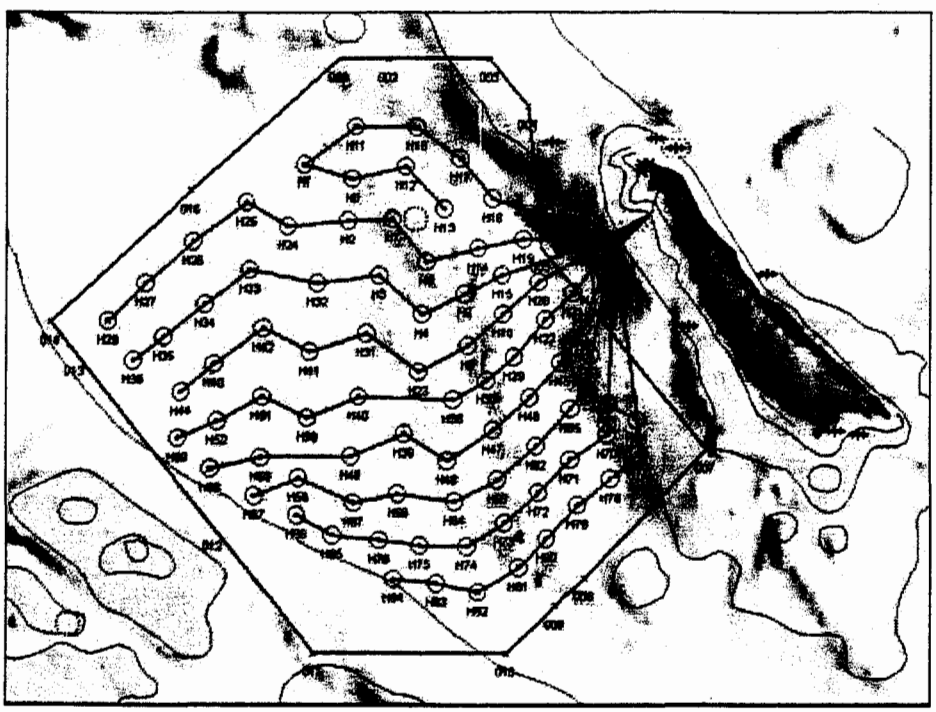

Table 2-1 Proposed Array Configuration

Array #	*Water Depth (m)*	*# Nodes*	*# Bi-Directional Nodes*	*Estimated Total Cable Length (km)*	*Cumulative Internode Cable Length (km)*	*Cumulative # Nodes*
A	1200-1800	8	2	57.32	57.32	8
B	1200-1800	10	2	64.68	122.00	18
C	1200-1800	9	3	60.15	182.15	27
D	1100-1700	9	3	57.49	239.64	36
E	1000-1800	10	2	57.18	295.82	46
F	1000-1700	9	2	59.25	356.07	55
G	1000-1500	10	2	59.33	415.40	65
H	800-1600	10	2	60.88	476.28	75
I	800-1500	9	2	56.98	533.26	84

EXHIBIT NO. 4
APPLICATION NO.
CD-043-06

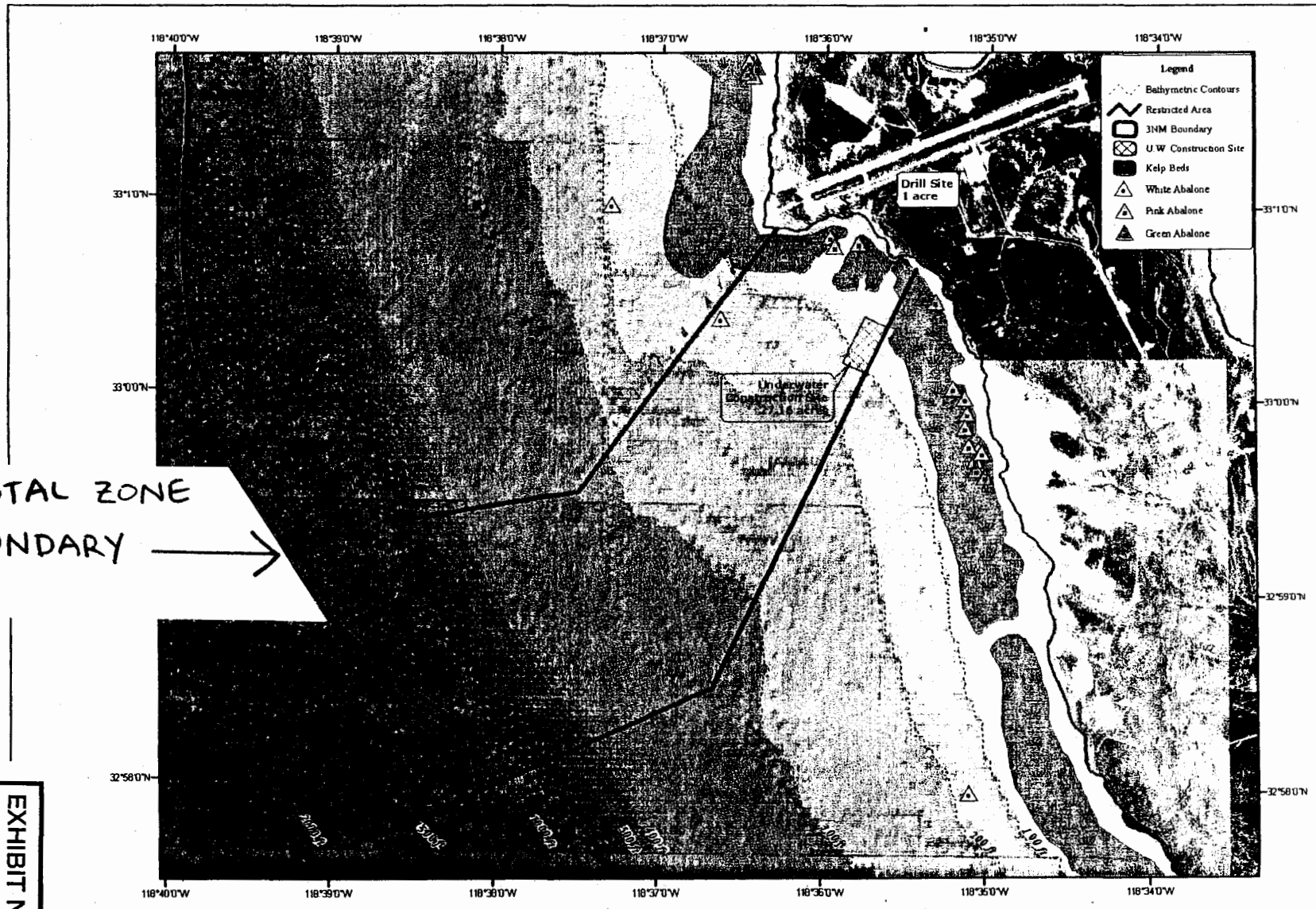

Figure 2-2b
SOAR Refurbishment Project
Offshore to 3 NM Coastal Zone Boundary

EXHIBIT NO. 5
APPLICATION NO.
CD-043-06

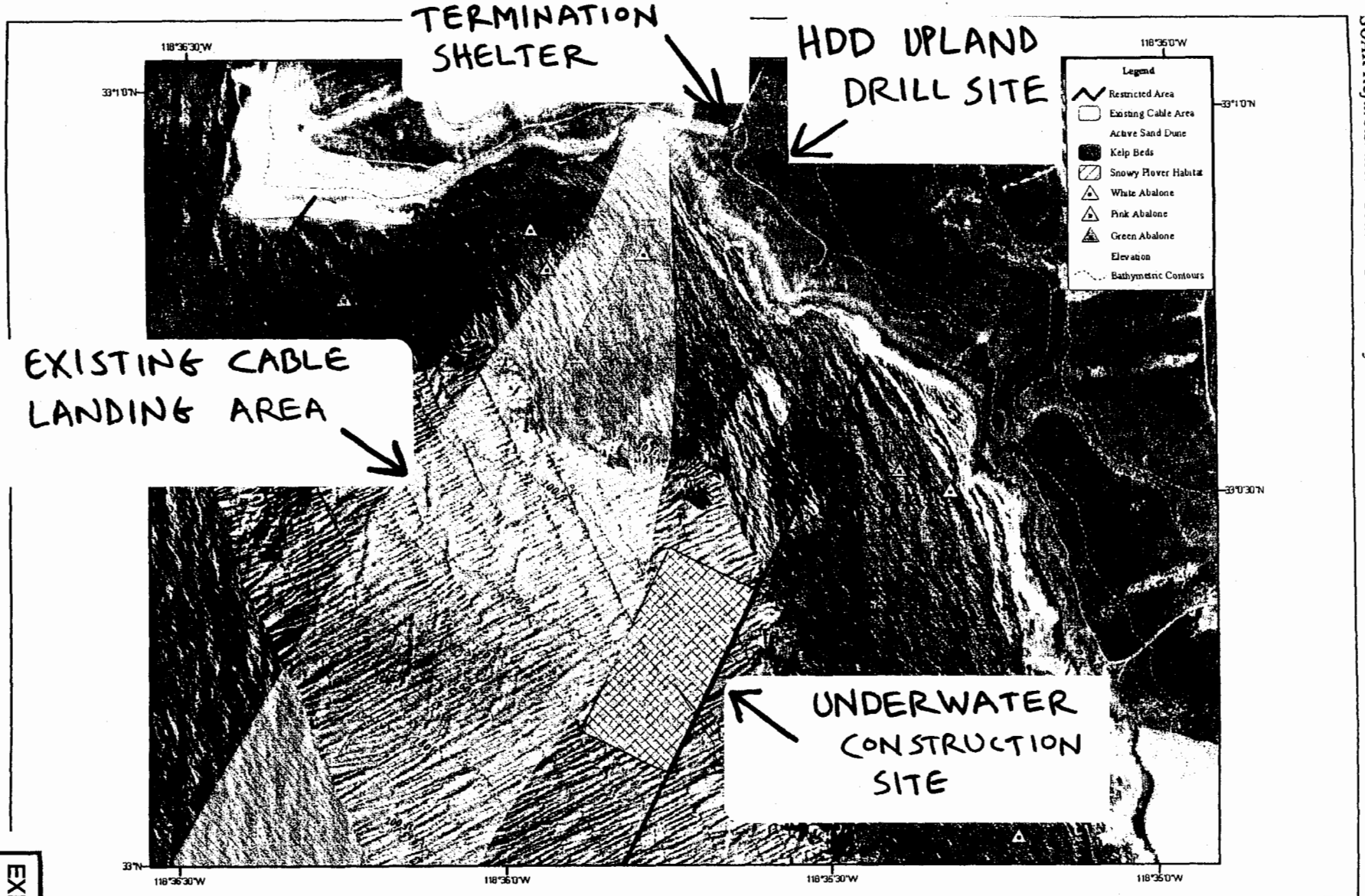

Figure 2-2a
SOAR Refurbishment Project
Nearshore Area

EXHIBIT NO. 6
APPLICATION NO.
CD-043-06