



**US Army Corps
of Engineers®**
Los Angeles District

**Environmental Assessment
and Draft Finding of No Significant Impact
Port of Los Angeles Breakwater
Proposed Section 408 - Breakwater Monitoring Device**

Project EE2013-41

**U.S. Army Corps of Engineers
Los Angeles District
South Pacific Division
P.O. Box 532711
Los Angeles, CA 90053-2325**

with Technical Assistance by

**A2 Consulting, LLC
30 Galeana, Suite 100
Foothill Ranch, CA 92610**

March 2014

LOS ANGELES DISTRICT
Draft FINDING OF NO SIGNIFICANT IMPACT

Table of Contents

Cover Sheet	i
Finding of No Significant Impact	ii
Table of Contents	iii
1.0 Introduction	1
1.1 Section 408 Proposal	1
1.2 Section 408 Proposal Area	1
1.3 Proposed Action Authority	2
1.4 Purpose and Need	2
2.0 Proposed Action	2
2.1 Alternatives	2
2.1.1 No Action Alternative	2
2.1.2 Proponent's Proposed Alternative	3
2.1.2.1 Instruments	4
2.1.2.2 Installation	5
2.1.2.3 Operations and Maintenance	5
2.1.2.4 Decommissioning and Removal	6
2.1.3 Land Installation Alternative	6
2.1.4 Floating Barge Alternative	7
3.0 Environmental Impacts	8
3.1 Aesthetics	8
3.2 Air Quality	9
3.3 Biology	10
3.4 Cultural Resources	13
3.5 Geology	14

3.6 Hydrology and Water Quality	16
3.7 Navigable Waters of the U.S.	17
3.8 Noise	18
3.9 Recreation	19
3.10 Safety	20
3.11 Traffic	21
3.12 Cumulative Impacts	22
3.12.1 Present Action	22
3.12.2 Reasonably Foreseeable Future Actions	23
4.0 Agency Coordination	25
4.1 California Coastal Commission	25
4.2 Port of Los Angeles	26
4.3 Port of Long Beach	26
5.0 Applicable Environmental Laws and Compliance	27
6.0 Summary of Environmental Commitments	33
7.0 List of Preparers and Reviewers	34

1.0 INTRODUCTION

This Environmental Assessment (EA) has been prepared by the United States Army Corps of Engineers (Corps) to comply with the National Environmental Policy Act (NEPA) (42 United States Code 4321 et seq.), Council on Environmental Quality regulations published at 42 Code of Federal Regulations (CFR) part 1500, other environmental laws, Executive Orders, and Corps' regulations. The purpose of the EA is to provide sufficient information on the existing environmental conditions within the area of the proponent's Proposed Action and the potential environmental impacts of the No-Action Alternative and an alternative action so that decision makers can determine the need to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI).

For the purposes of this document and pursuant to guidelines for implementing NEPA, the baseline used for the impact analysis reflects conditions at the time of the preparation of this report. No other Federal agency has been designated as a cooperating agency (40 CFR 1501.6).

1.1 Section 408 Proposal

33 U.S.C. Section 408 (Section 408) authorizes the Secretary of the Army to permit the alteration, modification, permanent occupation or use of completed U.S. Army Corps of Engineers projects if approval of the request will not be injurious to the public interest and will not impair the usefulness of those projects. The Congress of the United States assigned to the Corps the responsibility for regulation of construction and other work in the waters of the United States. The Corps is charged with protecting our nation's harbors and navigation channels from destruction and encroachments, and with restoring and maintaining environmental quality.

The Corps implemented construction of the Middle Breakwater in 1932 as a prolongation of the existing San Pedro Breakwater pursuant to congressional authority to facilitate navigation and protect the ports of Los Angeles and Long Beach. Construction of the Middle Breakwater was completed in 1942.

Pioneer Green Energy, through its affiliate, Pioneer Green Wind Assets, LLC ("Pioneer Green"), has submitted a Section 408 Proposal, or Section 408 Permit Application, to the U.S. Army Corps of Engineers (Corps) for temporary modification of the Middle Breakwater for the purpose of gathering wind and other meteorological data in the vicinity of the Middle Breakwater. To obtain the data, Pioneer Green proposes to install two small electronic measurement systems on the Middle Breakwater for a period of two years ("Proposed Alternative"). Each measurement system would be comprised of one SpiDAR Light Detection and Ranging (SpiDAR) unit, one photovoltaic power supply pack, a concrete foundation, and protective concrete walls. The SpiDAR units utilize laser beam technology to measure wind speed and direction. The measurement devices and appurtenances would be removed upon completion of the Project.

1.2 Section 408 Proposal Area

The San Pedro Bay is home to the Ports of Los Angeles and Long Beach. The Bay and the Ports are protected by three breakwaters - from west to east: the San Pedro Breakwater, the Middle Breakwater, and the Long Beach Breakwater - stretching 8.6 miles across the north end of the San Pedro Bay. The Corps constructed the San Pedro Bay breakwaters in several different phases between 1899 and 1949, and major repairs were done in 1939 and 1983.

The Middle Breakwater is located between the Los Angeles Channel and Long Beach Channel entrances and stretches 3.5 miles in length. It ranges from 15-25 feet in width at the top surface and 45-60 feet in width at the water line. The surface of the breakwater is uneven, consisting mainly of large boulders.

1.4 Purpose and Need

The purpose of this Section 408 proposal is to gather additional atmospheric data at the San Pedro Bay breakwaters. The data gathered, if the Section 408 proposal is approved, would be used to produce a regional model to evaluate regional wind and atmospheric patterns both on and off-shore. Currently, there is little high quality meteorological data available for the Middle Breakwater. Gathering this type of atmospheric data from the Middle Breakwater would allow for compiling unique and valuable information that is not available at other locations in the region. Data collected would be used by Proponent to assess the viability of developing a wind power generation project along the Middle Breakwater that could produce clean electricity in support of State and Federal climate change regulations while meeting consumer demand for such clean electricity. Summaries of the data gathered from the Proposed Action would be provided to both the Port of Los Angeles (POLA) and the Port of Long Beach (POLB).

2.0 PROPOSED ACTION

The Corps has received the Proponent's Section 408 proposal. In accordance with the Corps' authority under 33 U.S.C. Section 408, the Corps is reviewing the Section 408 proposal and all reasonable alternatives which would accomplish the Purpose and Need as well as the No Action Alternative, which would not meet the Proponent's Purpose and Need. The No Action Alternative is carried forward for comparison purposes.

2.1 Alternatives

Alternatives to this Proposal as described below include the "no action" alternative, installing the atmospheric monitoring device on land, and installing the atmospheric monitoring device on a floating barge.

2.1.1 No Action Alternative

NEPA requires analyzing the No Action Alternative when evaluating the potential environmental impacts of a project. In the No Action Alternative, current conditions and trends are projected into the future without another proposed action (40 CFR 1502.14(d)). The No Action

Alternative is often utilized as the baseline against which the potential impacts of other alternatives are compared, and the advantages and disadvantages of the alternatives may be assessed. (32 CFR 651.7).

The No Action Alternative would not result in installation of an atmospheric measurement device on the Middle Breakwater in LA Harbor. There would be no temporary disturbance on the Breakwater. The Middle Breakwater would continue to function in its designed capacity without modification.

2.1.2 Proponent's Proposed Alternative

Approval of Proponent's Section 408 proposal, as currently proposed, would involve the installation of two atmospheric measurement instruments (SpiDAR units) that would be located on the east and west ends of the Middle Breakwater. One SpiDAR unit would be installed on each end. The east end of the Middle Breakwater is located within the jurisdiction of the Port of Long Beach, and the west end is located within the jurisdiction of the Port of Los Angeles. The structures would be on the inshore side of the Middle Breakwater to afford optimum conditions for access by vessel and personnel.

The Section 408 proposal proposes to install two compact, self-contained, remotely controlled devices powered by green battery packs, and that occupy a small surface area on the breakwater. Pioneer Green proposes to install the eastern SpiDAR unit approximately 200 feet from the east end of the Middle Breakwater ($33^{\circ}43'23.74''N$ $118^{\circ}11'14.1''W$). The proposed location of the western SpiDAR unit is approximately 1,450 feet from the west end of the Middle Breakwater ($33^{\circ}42'44.05''N$ $118^{\circ}14'25.04''W$). Figure 1 represents the proposed approximate location units.

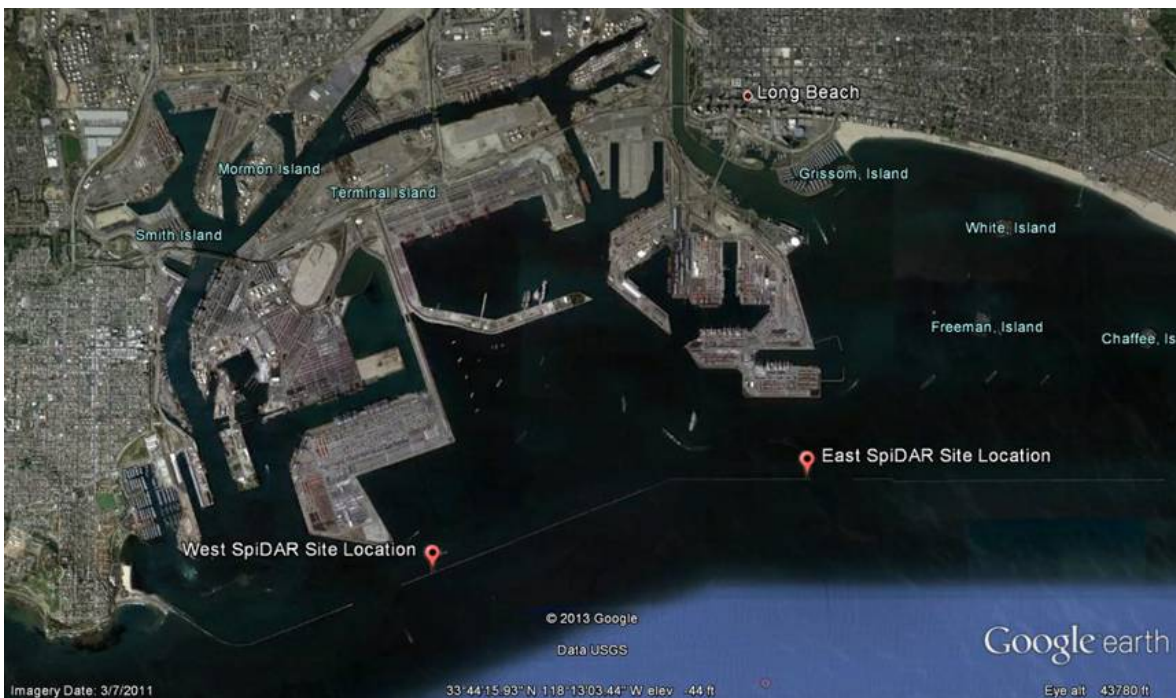


Figure 1 - Proposed Location of SpiDAR units on Middle Breakwater

2.1.2.1 Instruments

The SpiDAR is a ground level, stand-alone unit that measures the frequency of backscattered light from laser beams to determine wind speed. The SpiDAR does not generate noise, and its only movable parts are the flexible legs it stands on that allow it to be placed in a variety of surface conditions. SpiDAR comes with a “Green Power Pack” that has a footprint of approximately 7.5 ft. x 7.5 ft. when deployed. The power pack generates power using solar photovoltaic panels and batteries. A picture of a deployed Green Power Pack is provided below in Figure 2. Note that the windmill in the Power Pack depicted would not be utilized by this Proposed Action; the Power Pack would consist solely of the base and the solar panels.



Figure 2 - Green Power Pack

The SpiDAR system requires only a small concrete pad placed on the surface of the Middle Breakwater. Construction at each site could be completed from a small barge that would be parked adjacent to the breakwater and would require approximately two to three weeks of intermittent construction activity. The concrete pad and all of the meteorology equipment would be on the upper surface of the breakwater above the high water line not touching the water, and no marine habitats would be impacted. Operation is automatic and would require only infrequent visits for maintenance.

2.1.2.2 Installation

Site Preparation

Both SpiDAR units (on the east and west ends of the Middle Breakwater) would be placed on constructed foundations measuring approximately 10' x 13' x 1'. They would be sited on the crest of the Middle Breakwater upon which a protective wall that would be 18" thick and 8' tall would be constructed to shield the instruments from wind and storm wave activity from the ocean side and both lateral sides. Power packs would be placed within the protective walls close to each of the SpiDAR units. The power packs would not require additional foundations.

Construction

Foundations and protective walls would be constructed in advance of the equipment being placed. The total installation effort would take place intermittently over approximately six weeks. Two to three weeks would be required to construct the foundation and protective walls, followed by an additional two to four weeks for the concrete to cure and achieve design strength (depending on the mix design), during which time no significant activity would occur. Once the concrete is cured, it would take approximately three days to install the SpiDAR stations.

All construction would be staged from barges parked next to the Breakwater. In the area of the foundation slab enclosure, voids between breakwater stones would be filled with concrete cast in fabric bags that conform to the void shape. Reinforcing steel and forms would then be set and the foundation slab cast on the prepared top of breakwater surface. The protective walls and foundation are designed to avoid alterations of the breakwater structure. Preliminary investigation indicates that similar concrete structures have been constructed and continue to exist on all three breakwaters, with no apparent adverse impact to the integrity or performance of the breakwaters.

The concrete structure is designed for use in conditions such as present at the Middle Breakwater. Concrete used for the foundation and walls would be Marine Concrete in accordance with the Port of Los Angeles specification Section 03 31 25 with a 28-day strength of 5000 psi. Because the concrete structure would weigh approximately 45,900 pounds, except for a 50 years wave event, gravity and friction would be sufficient to keep the structure in place on the Middle Breakwater. The foundation would be cast on the surface of the existing breakwater stones, so that the structure attaches to the Middle Breakwater by means of surface adhesion and friction between the stones and new concrete.

When the foundation slab has achieved sufficient strength, wall reinforcements and forms would be set and the wall concrete cast. Once the concrete has reached 75% of its design strength, the forms would be stripped and the equipment installation would begin.

2.1.2.3 Operations and Maintenance

Pioneer Green would be the sole operator of the SpiDAR units and would perform maintenance and repairs of the measurement devices and concrete structures as needed. The SpiDAR units and power packs would be monitored remotely via cellular data networks, allowing Pioneer Green to detect and respond to any failures of power generation, data collection, or transmission.

Because the concrete foundations and protective walls are designed to withstand a twenty-five years wave event, degradation of the physical structure surrounding the measurement equipment during the two years the systems are on the Middle Breakwater is not anticipated. However, in order to ensure that wave contact with the concrete structure does not cause minor erosion or breakage of the structure, Pioneer Green would physically inspect the structures and equipment for any physical damage or degradation of the foundation and protective walls after extreme weather or geologic events, and would perform any and all necessary repairs to ensure the physical integrity of concrete structure and measurement devices.

In the case that a green water event occurs, the concrete structure is designed for the water to drain off the foundation onto the breakwater. The system contains no detachable components or displaceable fluids, therefore no adverse impact to the Middle Breakwater or surrounding environment is anticipated. Also, the SpiDAR unit is equipped with wiper blades on the lens to prevent water or the build-up of salt or other substances from affecting performance.

Although green water events are not anticipated to damage or displace the measurement system, Pioneer Green would be remotely monitoring the SpiDAR unit data collection and power supply and would take appropriate remedial action in case of any resulting compromises to the measurement system.

2.1.2.4 Decommissioning & Removal

The measurement equipment (SpiDAR units and power packs) would be removed from the Middle Breakwater after two years of operation. Removal of the SpiDAR systems would take one to two days and would entail simply detaching the LiDAR systems from the foundations and removing them from the Middle Breakwater along with any appurtenances (wires, bolts, screws, etc.). After removing the measurement equipment and appurtenances from the Middle Breakwater, Pioneer Green would clean the foundation and protective walls, then inspect the structure and surrounding Breakwater to ensure no residual components or substances remain after decommissioning. The concrete structure would have no long term adverse impacts, and would serve to reinforce the Middle Breakwater structure. Pioneer Green proposes to leave the concrete foundation and walls in place on the Middle Breakwater after decommissioning.

2.1.3 Land Installation Alternative

A SpiDAR unit could similarly be installed at a location at the Port of Los Angeles and/or the Port of Long beach. The unit and its power pack would be identical to that proposed to be installed on the Middle Breakwater. Data would be similarly gathered by this device's remote sensor. The device installed on land would require the same foundation as that proposed to be installed on the Middle Breakwater, but would not require a protective wall to shield the device from waves.

Installing a SpiDAR unit on land would not require boat or barge to transport the device to its proposed location of installation during construction or from that location during decommissioning, as installing on the breakwater would. Permission would have to be obtained

from the port of Los Angeles and Port of Long Beach respectively for any devices installed on their property. Currently, there is an atmospheric measurement device already placed on the southern tip of Pier 400.

The Middle Breakwater is located between the Los Angeles Channel and Long Beach Channel entrances. Installing a SpiDAR unit on land would enable collection of atmospheric conditions on land. Measurements acquired on land would vary significantly from the conditions on the Breakwater and would therefore, not yield information as to the atmospheric conditions offshore in the harbor. Siting the SpiDAR units on land would not provide the Proponent with the information that they are seeking. This alternative is eliminated from consideration and will not be further analyzed in this document.

2.1.4 Floating Barge Alternative

The atmospheric measurement devices could be placed on floating barges in the LA Harbor. The same SpiDAR unit and power pack as that proposed to be installed on the Middle Breakwater would be used. The unit would be installed on a barge while docked at the harbor. The unit installed on a barge would not require construction a foundation as that installed on the Middle Breakwater. Instead the unit would be affixed to the barge. A protective wall would not be required to be constructed. Once installed on the barge, the barge would be pulled out and parked in a location within the Port's harbor. Special permission would have to be obtained from the Port of Los Angeles and/or Long Beach, as well as from the Coast Guard. For decommissioning, the barge would be pulled into land for the device to be removed.

This approach would enable collection of accurate atmospheric data offshore within the harbor and provide the necessary meteorological data required to determine the feasibility of siting renewable wind facilities on the Middle Breakwater. Permits would have to be obtained from the Ports to allow the barges to remain afloat in the harbor for the two-year period of data gathering. The Coast Guard would likely also have to issue a determination that there would be no impact to navigation. This alternative will be analyzed in this document along with the other alternative. A Section 10 Rivers and Harbors Act permit may also be required to be obtained from the Corps, as this action may affect Navigable Waters of the United States.

3.0 ENVIRONMENTAL IMPACTS

3.1 Aesthetics

Criteria for significant, adverse impacts to aesthetic resources include direct or permanent impacts to the landscape by changing important existing scenic characteristics of a landscape in a manner that permanently and significantly degrades an existing view-shed, or alters the character of a view-shed by adding incompatible structures. Additional considerations for adverse impacts to aesthetic resources include the presence of prominent topographic features, proximity to scenic areas, and whether or not excessive light would result from the proposed action.

The Middle Breakwater is located offshore located between the Los Angeles Channel and Long Beach Channel entrances. It measures 3.5 miles in length. It ranges from 15-25 feet in width at the top surface and 45-60 feet in width at the water line. The surface of the Breakwater is uneven, consisting mainly of large boulders.

PROPONENT'S PROPOSED ALTERNATIVE

The Middle Breakwater is approximately 2.5 to 3 miles from shore. The installed units and protective walls installed on the breakwater would be approximately 8 feet in height. These structures would not be visible by any sensitive receptors or from any sensitive viewpoints. The SpiDAR units are low profile and are not made of reflective materials. They have no moving parts. While the units do use 8 intersecting laser beams to detect changes in atmospheric conditions, such as wind speed, the beams are not visible beyond one meter and would not create any visual impacts.

The units would be powered via a Green Power Pack that generates power using photovoltaic panels and batteries (Figure 1, above). The panels are made of material that is not reflective, and is actually designed to absorb sunlight rather than reflect it. Thus there would be no glare from the panels.

No significant adverse aesthetic impacts would result from the Proponent's Proposed Alternative and no environmental commitments are required.

FLOATING BARGES ALTERNATIVE

The Floating Barges Alternative for installation of the atmospheric monitoring devices would be positioned out by the Middle Breakwater inside the harbor. Although the barges would be additional objects not previously present, they would be 2.5 to 3 miles from shore, one at each end of the breakwater, and would likely not be visible by any sensitive receptors or from any sensitive viewpoints. The Floating Barges Alternative would be unlikely to result in any impacts to aesthetics or visual resources.

NOACTION ALTERNATIVE

The No Action Alternative would not result in atmospheric measurement devices on the breakwater in LA Harbor and would have no impacts on aesthetics or visual resources. The site would continue to be used primarily by the Middle Breakwater for navigation purposes. No sensitive viewpoints would be affected. No significant impacts.

3.2 Air Quality

Air quality compliance at the Middle Breakwater is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). The criteria for significant, adverse impacts to this resource include causing or contributing to new air quality violation of any standard or increasing the frequency/severity of any existing violations; delaying timely attainment of any local standards, reductions, or other air quality milestones; exceeding any of SCAQMD emission criteria.

The ports of Los Angeles and Long Beach are part of the South Coast Air Basin (SCAB). The SCAB is classified as a nonattainment area for fine particulate matter (PM_{2.5}). In addition, the SCAB is one of two areas in the country classified by U.S. Environmental Protection Agency (EPA) as an extreme nonattainment area for ozone.

The Ports of Los Angeles and Long Beach are the single largest fixed source of air pollution in the SCAB. Marine port-related emissions of oxides of nitrogen (NO_x), sulfur oxides (SO_x), and fine particulate matter (PM_{2.5}) represent a significant fraction of NO_x, SO_x, and PM emissions in the SCAB. Port-related sources include marine vessels, locomotives, trucks, commercial harbor craft and cargo handling equipment. As shown in the 2008 emission inventories for the Ports (revised in 2011), port-related sources emitted 3.7 tons/day of PM_{2.5} along with 78.6 tons/day of NO_x and 25.5 tons/day of SO_x, which are PM_{2.5} precursors.

PROPONENT'S PROPOSED ALTERNATIVE

There would be no operations emissions during the operation of the installed units. The units would use Green Power Packs that would generate power using solar panels.

There would be some emissions from the barges and/or boats used reach the Middle Breakwater during construction and operations visits, but those emissions would be limited to the time it takes these vessels to reach the Middle Breakwater from shore. The motors would have proper emissions control equipment and kept in good and proper running order to substantially reduce emissions. The motors would not be left idling while work is being performed at the sites.

No constructions or operations activities would result in emissions that exceed SCAQMD standards, and thus no significant adverse air quality impacts would result from the Proposed Alternative and no environmental commitments are required.

FLOATING BARGE ALTERNATIVE

The Floating Barge Alternative would result in some emissions from the tugboats needed to move the barges to the Middle Breakwater, and from boats used to go out to the barges during construction and operations visits. Those emissions would be limited to the time it takes to reach the Middle Breakwater for barge installation and later for removal of the barges when the meteorological monitoring is completed. Emission controls on the tugboats and other vessels would follow the current requirements of the SCAQMD and require that emissions control equipment and kept in good and proper running order to reduce emissions. The motors would not be left idling while work is being performed at the sites. Using barges as platforms for the atmospheric measurements devices would not result in emissions that exceed SCAQMD standards, and thus no significant adverse air quality impacts would result from the Floating Barge Alternative and no environmental commitments are required.

NO ACTION ALTERNATIVE

The No Action Alternative, that of not installing any atmospheric measurement devices on the breakwater in LA Harbor, would be less than significant as it would have no adverse effect on air quality, but would not meet the Proposed Action objectives and no valuable atmospheric data would be collected offshore in LA Harbor.

ENVIRONMENTAL COMMITMENTS

AQ-1: Boat/barge motors used during construction and maintenance events would have proper emissions control equipment and kept in good and proper running order to substantially reduce emissions. The motors would not be left idling while work is being performed at the sites.

3.3 Biology

Criteria for significant, adverse impacts to biology include significant disruption of wildlife corridors; substantial interferences with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impeding the use of native wildlife nursery sites; and damage to wildlife or their habitat.

POLA and POLB have conducted periodic biological baseline studies to characterize marine communities over a range of representative habitats throughout the harbor complex. Surveys and summary reports have been prepared. During the periodic biological baseline studies conducted by the Ports, the Middle Breakwater was included in a total of 20 surveys conducted from December 14, 2007 to November 23, 2008. (eGIS).

The Middle Breakwater is comprised mainly of riprap habitat that provides foraging, resting, or nesting habitat for birds and marine mammals. The following sections summarize the use of the Middle Breakwater by birds and marine mammals.

3.3.1 Birds

Los Angeles and Long Beach Harbors provide valuable habitat for foraging, resting, and breeding by numerous species and individuals of birds. Over 100 avian species use the various habitats within the Ports seasonally, year-round, or during migration. A total of 96 species representing 30 families were observed within the Ports during the most recent study. Of these species, 68 are dependent on marine habitats. Open water, along with riprap and dock/pilings, supports the greatest numbers of birds in the Ports. On average, several thousand birds were counted per survey during the most recent studies conducted by the Ports.

Thirty-one bird species were observed using the Middle Breakwater and nearby waters during the 2008 surveys. Black oystercatcher was the only species reported in the 2008 surveys to be nesting on the Middle Breakwater; other species were foraging, resting, or roosting. The most common species reported on the Middle Breakwater were: Brandt's cormorant, brown pelican, Heerman's gull, and western gull.

A nesting colony of black oystercatchers was observed on riprap along the entire length of the outer breakwaters within both Ports, including the Middle Breakwater. The breeding season of black oystercatchers is normally from May to August. Individuals were observed on all survey dates, with the highest number during July and August 2008, likely reflecting the presence of fledged chicks. Lower numbers of individuals were observed from October through December, but individuals remained concentrated along the breakwater. Black oystercatchers typically nest along rocky shores and islands along the Pacific coast of North America and the nesting colony within the Ports is considered unusual.

3.3.2 Marine Mammals

Marine mammals that are known to occur occasionally in waters of the Ports include pinnipeds such as California sea lion and harbor seal, and cetaceans such as Pacific bottlenose dolphin and common dolphin. In 2008, California sea lions were the most commonly documented marine mammal species in the Ports and were generally observed on buoys and swimming throughout harbor waters. California sea lions were observed more frequently in outer as compared to inner harbor stations. Harbor seals were observed in low numbers throughout the Ports, but occurred most frequently at outer harbor stations.

California sea lion and harbor seal were observed in low numbers on the Middle Breakwater, either resting on the rocks or foraging nearby.

PROPONENT'S PROPOSED ALTERNATIVE

The concrete pad and all of the meteorology equipment would be on the upper surface of the breakwater. It is anticipated that there would be no significant affect on marine habitats given that construction, operation and maintenance would occur outside of marine habitats. Operation is automatic and would require only infrequent visits .

Migratory birds are protected under the Migratory Bird Treaty Act and some birds are also covered by the California and/or Federal Endangered Species Acts. Brown pelican was for many years listed as Endangered but was recently delisted. None of the other birds reported to be roosting or foraging on the Middle Breakwater are listed species. The construction activities are short term and the completed concrete base for installation of SpiDAR system is only approximately 100 sq ft in area, so the potential impacts to birds using the Middle Breakwater for foraging, resting, or roosting are likely to be insignificant.

The Middle Breakwater is approximately 3.5 miles in length, and birds using the breakwater in the vicinity of the two proposed locations for the SpiDAR systems would likely temporarily relocate to similar riprap habitat a few hundred feet away from the construction disturbance. Nesting birds, however, are less mobile and may not be able to relocate and could be directly impacted if construction activities disrupt nesting behavior. Black oystercatchers are the only bird species that nest on the breakwater, and thus are the only species likely to be impacted if construction activities occur during the breeding season.

All marine mammals are protected under the Marine Mammal Protection Act (MMPA) of 1972. Similar to the birds discussed above, sea lions and harbor seals are mobile and could move away from temporary construction disturbance, however it is unlawful to disturb marine mammals that are resting or “sheltering”. Disruption of behavioral patterns is most likely during the start of construction if marine mammals may be located at or near the proposed construction sites. If marine mammals do not frequent the SpiDAR system sites and are not present at the start of construction, then construction and operation of the Proposed Alternative is unlikely to cause a significant impact to these species.

ENVIRONMENTAL COMMITMENTS

BIO-1: Based on the description of construction and operational activities, impacts to nesting black oystercatcher are likely if Proposed Alternative construction occurs during the breeding season. Construction and installation of the SpiDAR system would be scheduled for the months of September to April, the non-breeding season for black oystercatcher.

BIO-2: If construction activities must occur during the breeding season for black oystercatcher (May 1 to August 31), a qualified biological monitor should conduct pre-construction nesting surveys to determine if black oystercatchers are nesting or exhibiting breeding behavior within 500 feet of the Proposed Alternative sites. One of the surveys would be within three days prior to the start of construction. If nesting activity or breeding behavior is observed, the biological monitor would monitor the responses of the nesting birds to the site activities. The biological monitor would have the authority to stop work and/or expand the buffer zones as necessary if the behavior of the nesting birds indicates disturbance because of the construction activities.

BIO-3: Marine mammals may rest or shelter at locations offering ease of haul-out, favorable sun exposure, or other attributes. If any marine mammals are present within 500 feet of the pad sites, they could be disturbed by construction activities. If marine mammals are present, construction would not commence until the marine mammals have left the site or the site should be relocated to avoid disturbing the marine mammals.

BIO-4: When conducting construction activities in any season, construction personnel should avoid disturbing roosting birds or resting marine mammals and should not walk along the breakwater surface beyond 150 feet from the SpiDAR system pad site.

Implementing the mitigation and avoidance measures noted above would reduce potential impacts to biological resources so that the Proposed Alternative would have no significant impact.

FLOATING BARGE ALTERNATIVE

The Floating Barge Alternative could have a potential impact on nesting birds and resting marine mammals, similar to the Proposed Alternative. Birds and marine mammals are likely to nest/roost and rest on the floating barges parked near each end of the Breakwater, similar to the breakwater itself. With the Floating Barge Alternative it would be much more difficult to avoid birds or marine mammals on a barge, because there is no room for a buffer on the barge surface.

NO ACTION ALTERNATIVE

The No Action Alternative would not result in installing any new atmospheric measurement devices on the Breakwater in LA Harbor. Marine animals would continue to utilize the waters in the vicinity of the Breakwater. This alternative would not result in any significant impacts to biological resources.

3.4 Cultural Resources

The criteria for significant, adverse impacts to cultural resources include disturbance, alteration or otherwise diminishing of the integrity of a property's location, design, setting, materials, workmanship, feeling or association, from original context, or introduction of culturally incompatible elements to a property considered eligible for the National Register of Historic Places. Consideration of "important historic, cultural, and natural aspects of our natural heritage" is required through NEPA and principally regulated by the National Historic Preservation Act (NHPA) of 1966, as amended (16 USC Section 470).

Under Section 110 of the NHPA, Federal agencies are required to fully integrate the management of cultural resources in ongoing programs and to proactively identify, evaluate, nominate and protect historic properties. Historic properties are cultural resources that meet specific criteria for listing on the National Register of Historic Places (NRHP). Agencies are not required to preserve all historic properties, but agencies must follow a process to ensure that their decisions concerning the treatment of these places result from meaningful consideration of cultural and historic values and the options available to protect the properties.

Section 106 of the NHPA describes the procedures for identifying and evaluating historic properties, for assessing the impacts of Federal actions on historic properties, and for project proponents consulting with appropriate agencies, including the State Historic Preservation Officer (SHPO), to avoid, reduce, or minimize adverse impacts.

The San Pedro Bay and the Ports of Los Angeles and Long Beach are protected by three breakwaters: the San Pedro Breakwater, the Middle Breakwater, and the Long Beach Breakwater - stretching 8.6 miles across the southern edge of San Pedro Bay. The Corps constructed the San Pedro Bay breakwaters in several different phases between 1899 and 1949, and major repairs were done in 1939 and 1983. The Los Angeles Harbor/San Pedro Breakwater is Designated Historical Resources under the National Register of Historical Places (NRHP).

The Middle Breakwater is located between the Los Angeles Channel and Long Beach Channel entrances to the San Pedro Bay, and stretches 3.5 miles in length. It ranges from 15-25 feet in width at the top surface and 45-60 feet in width at the water line. The surface of the Breakwater is uneven, consisting mainly of large boulders. The Middle Breakwater is not a designated historical resource under NRHP.

PROPONENT'S PROPOSED ALTERNATIVE

There would be two atmospheric measurement instruments that would be located on the east and west ends of the Middle Breakwater. One SpiDAR unit would be installed on each end. The east end of the Middle Breakwater is located within the jurisdiction of the Port of Long Beach, and the west end is located within the jurisdiction of the Port of Los Angeles.

The atmospheric measurement units would only be on the Middle Breakwater and would not impact the historical resources of the Los Angeles Harbor not the San Pedro Breakwater. Based on review of the Proposed Alternative's anticipated construction and operations activities, it is determined that the Proposed Alternative would have no significant impact on cultural resources.

FLOATING BARGE ALTERNATIVE

Under this Alternative, there would be no impact to cultural resources because the barges would be floating off the Middle Breakwater, which is not a designated historical resource.

NO ACTION ALTERNATIVE

The No Action Alternative would not install any atmospheric measurement devices on the Middle Breakwater would have no impacts on cultural resources.

3.5 Geology

The criteria for significant adverse impacts to geology include substantial impacts to people or structures from geologic conditions, including expansive soils, liquefaction, earthquakes, landslides, substantial erosion, depletion of groundwater supplies or interference with groundwater recharge; loss in farmland; direct or indirect destruction of unique geologic features; unique geologic or mineral resources rendered inaccessible; significantly alters the physical or chemical quality of sediments or soils; triggers or accelerates erosion or sedimentation; or otherwise adversely affected; triggering of landslides or erosion or other substantial alteration of topography.

The Middle Breakwater is composed of a sand core on the harbor floor, covered with a clay core. Successive layers of Class “B” stone were placed on top of the core to raise the Middle Breakwater to an elevation of -10 Mean Lower Low Water (MLLW), followed by layers of Class “A” stone from -10 MLLW to the maximum crest elevation of +14 MLLW. On the harbor side, the Middle Breakwater has a 1 Vertical (V):1.25 Horizontal (H) side slope below -10 MLLW, and a 1V:1.5H side slope above -10 MLLW. The ocean side has a 1V:2H side slope, and a 16 foot crest width.

PROPONENT’S PROPOSED ALTERNATIVE

If the Middle Breakwater stones beneath the foundation slab were to settle differentially under wave loads, the structure could tilt. In the event such differential settlement occurs, Pioneer Green would either cast a leveling slab inside the structure or build a level platform in order to restore the equipment’s vertical alignment. However, in order to ensure stability under the design wave loads, the structure is designed to be very solid and rigid and should not suffer damage from differential settlement.

The design wave force (25 year) is equivalent to 1.12g, which is much greater than any potential seismic load on the structure. Therefore, structure failure under seismic loads is highly unlikely. However, if the Middle Breakwater fails due to a seismic event, the structure and equipment could be dislodged and tumble into the water, depending on the severity of damage to the breakwater. The system would be physically inspected after any extreme weather or geologic event. If such seismic event were to occur leading to breakwater failure, the measurement devices and appurtenances would be retrieved, and the Corps would be consulted regarding the physical integrity of the Middle Breakwater. Remedial actions necessary to repair the structure and place the SpiDAR units and power packs back in service for the remainder of the Proposed Action would be taken in collaboration with the Corps.

The Proponent’s Proposed Alternative would have no significant adverse effect on geology and soils, and no mitigation measures are required.

FLOATING BARGE ALTERNATIVE

Under the Floating Barge Alternative, there would be no impact to geology as the barges would be floating off the breakwater.

NO ACTION ALTERNATIVE

The No Action Alternative would not install atmospheric measurement devices on the breakwater in LA Harbor would mean that no valuable atmospheric data would be collected offshore in LA Harbor, but would have no impacts on geology.

3.6 Hydrology and Water Quality

The criteria for significant, adverse impacts to hydrology include damage to existing water resources including to water quality, streamflow, wetlands, groundwater recharge, or other floodplain-related management issues; violations to any water quality standard or waste discharge requirement, or otherwise substantially degrades water quality; changes in streambed scour or long-term channel degradation; causes an impairment of beneficial uses of any inland waters; or substantially alters existing drainage pattern of the site/area.

The rip-rap construction of the Middle Breakwater does not offer suitable topography for the development of any hydrologic features or water bodies on its surface. Existing conditions preclude development of streambeds, wetlands, groundwater, flood control, or other features related to management issues.

As for the water within the Harbor next to the Breakwater, the ports of Los Angeles and Long Beach are cooperating on a Water Resources Action Plan (WRAP) with the mission to promote sustainable port operations by protecting and improving water and sediment quality in the harbors while allowing port development to continue. The plan integrates the ports' existing water and sediment quality programs as well as identifying and utilizing approaches to ensure the Ports' continue control of water pollution and sediment contamination. Ultimately, the Ports' plans are to attain full beneficial use, non-impairment and non-degradation of the harbor waters.

The Port Los Angeles monitors water quality at 31 established stations in San Pedro Bay. Samples are tested on a monthly basis for dissolved oxygen, biological oxygen demand and temperature. Other observations are noted, such as odor and color, as well as the presence of oil, grease and floating solids. The overall results of this long-term monitoring initiative show the tremendous improvement in harbor water quality that has occurred over the last four decades. To further enhance the Port's knowledge of harbor water quality, the Port has also recently embarked on a Port-wide Water Quality Study to identify the current state of the harbor, highlight any problem areas, and develop short and long-term solutions to improve harbor water quality.

PROPONENT'S PROPOSED ALTERNATIVE

Two atmospheric measurement instruments are proposed to be located on the east and west ends of the Middle Breakwater. One SpiDAR unit would be installed on each end. The east end of the Middle Breakwater is located within the jurisdiction of the Port of Long Beach, and the west end is located within the jurisdiction of the Port of Los Angeles. The structures are on the inshore side of the Middle Breakwater to afford optimum conditions for access by vessel and personnel. The Middle Breakwater is located between the Los Angeles Channel and Long Beach Channel entrances and stretches 3.5 miles in length. It ranges from 15-25 feet in width at the top surface and 45-60 feet in width at the water line. The surface of the breakwater is uneven, consisting mainly of large boulders.

Construction would primarily involve the use of concrete and rebar. Construction materials and equipment would be brought to the site by boat. Minimal waste and debris associated with

construction would be removed by the installation crew and disposed of according to applicable regulations).

ENVIRONMENTAL COMMITMENTS

HYDRO-1: During construction, the contractor would put down an impermeable “visqueen” fabric on the surface of the breakwater to prevent concrete spillage into the water. It is the same method that is used in building foundations for navigational lights on the breakwater. The structure would be built on top of the fabric, and the fabric remains after construction is complete.

No significant adverse effect to hydrology and water quality would occur and no mitigation measures are required.

FLOATING BARGE ALTERNATIVE

Installing the atmospheric monitoring devices in the Floating Barge Alternative could impact water quality in the LA Harbor if the barges develop any fluid leaks. However with proper maintenance and regular inspections, such leaks could be prevented and the impacts could be mitigated to less than significant with implementing mitigations.

NO ACTION ALTERNATIVE

The No Action Alternative, that of not installing any atmospheric measurement devices on the breakwater in LA Harbor, would mean that no valuable atmospheric data would be collected offshore in LA Harbor, but would have no impacts on hydrology.

3.7 Navigable Waters of the U.S.

Criteria for determining significant, adverse impacts to Navigable Waters of the U.S. include substantial impediments to the navigation or beneficial uses of the water; or activities that degrade water quality.

Navigable Waters of the United States are those presently used, have been used in the past or may be susceptible to use for transport of interstate or foreign commerce. The Middle Breakwater is located between the Los Angeles Channel and Long Beach Channel entrances and stretches 3.5 miles in length. It ranges from 15-25 feet in width at the top surface and 45-60 feet in width at the water line. The surface of the breakwater is uneven, consisting mainly of large boulders. The Middle Breakwater is illustrated on all marine navigation maps that include the LA Harbor/Long Beach Harbor areas. Waters within the Los Angeles Harbor side of the Breakwater are considered Navigable Waters of the United States. Coast Guard maintained navigation lighting is provided at both ends of the Middle Breakwater.

PROPONENT'S PROPOSED ALTERNATIVE

This alternative proposes to install two compact, self-contained, remotely controlled devices powered by green battery packs, and that occupy a small surface area on each end of the breakwater. The concrete pad and all of the meteorology equipment would be installed at the crest of the breakwater. All construction and operations related activities would be on the upper surface of the breakwater and there would be no impacts or impediments to navigation or beneficial uses of the water around the breakwater.

The Proposed Alternative would not obstruct navigation lighting on the Middle Breakwater or add to navigation hazards in the area. The equipment would be installed above the high water line, and would not touch the waters of the LA Harbor. No significant adverse impact on Navigable Waters of the US would occur and no mitigation measures are required.

ENVIRONMENTAL COMMITMENTS

NAV-1: During construction, the contractor would put down an impermeable “visqueen” fabric on the surface of the breakwater to prevent concrete spillage into the water.

FLOATING BARGE ALTERNATIVE

The Floating Barge Alternative would have barges at each end of the Middle Breakwater inside the LA Harbor. The barges could cause impediments to navigation for vessels within the Harbor. Coordinating with the Ports of Los Angeles and Long Beach, as well as with the Coast Guard could help provide for safe navigation, although it would not altogether eliminate impediments.

NO ACTION ALTERNATIVE

The No Action Alternative would not install atmospheric measurement devices on the breakwater in LA Harbor would mean that no valuable atmospheric data would be collected offshore in LA Harbor. There would be no impacts or impediments to navigation or beneficial uses of the water caused by construction and operations related activities.

3.8 Noise

The criteria to evaluate significant adverse impacts to ambient noise include an increase of 10 dBA above background levels during the daytime or nighttime increase of 5 dBA. Thus, a perceived daytime doubling of noise levels is considered significant, while a lower threshold is used for nighttime noise analysis to reflect people’s increased sensitivity to nighttime noise impacts.

PROPONENT'S PROPOSED ALTERNATIVE

The Middle Breakwater is located 2.5 to 3 miles from shore and there are no sensitive receptors that might be affected by noise. Common sources of noise at the breakwater are from commercial and recreational vessel traffic including motors, engines, and safety alert systems.

All activity related to installing the measurement units would occur at the Breakwater. While there might be noise during construction, it would not be more than the background noise of the waves at that location. There would be no noise during operations as the instruments have no moving parts and emit no sound.

No significant adverse effect to noise would occur and no mitigation measures are required.

FLOATING BARGE ALTERNATIVE

This Alternative would result in installing the atmospheric monitoring devices on a floating barge would be parked off each end of the breakwater. The atmospheric monitoring devices themselves would have no moving parts and would make no noise, nor would the barges as the engines would be turned off when they are put in place. Furthermore, at 2.5 to 3 miles from shore, the barges would not be close enough to have any impact on sensitive receptors; therefore placing the units on barges would not result in any significant impacts to noise.

NO ACTION ALTERNATIVE

The No Action Alternative would not install any atmospheric measurement devices on the breakwater in LA Harbor would mean that no valuable atmospheric data would be collected offshore in LA Harbor, but would have no impacts on noise.

3.9 Recreation

Criteria for significant, adverse impacts to recreational activities include a significant disruption to access of recreational facilities or areas and/or construction or operational activities that substantially conflict with recreational uses.

PROPONENT'S PROPOSED ALTERNATIVE

There are recreational boating and fishing activities that take place within the Los Angeles Harbor and by the Middle Breakwater. There are no recreational activities that take place on the Middle Breakwater itself, however, where the units would be installed. Therefore, there would be no significant adverse impact to recreation and no mitigation measures are required.

FLOATING BARGE ALTERNATIVE

While there are some recreational boating activities that originate at the Port of Los Angeles, there are few other recreational activities that take place inside the Breakwater and within the harbor. The barges could become obstacles to recreational boating, however coordinating with the Ports of Los Angeles and Long Beach, as well as with the Coast Guard could help provide for safe navigation, although it would not altogether eliminate impediments.

NO ACTION ALTERNATIVE

The No Action Alternative would not install atmospheric measurement devices on the breakwater in LA Harbor. Waters around the breakwater would continue to be used for recreation purposes and the breakwater would facilitate navigation. This alternative would have no impact on recreation.

3.10 Safety

Criteria for significant, adverse impacts to human health and safety include any existing criteria or established thresholds for human health and safety. The safety criteria have to do with project impacts on Hazardous Materials, Fire Hazards, or Flood Hazards. The Middle Breakwater is located 2.5 to 3 miles from shore, is unoccupied, and is “off limits” to unauthorized personnel. Other than navigation lighting equipment, there are no improvements or installations that could adversely impact human health and safety. Port security vessels regularly patrol the Middle Breakwater.

PROPONENT’S PROPOSED ALTERNATIVE

This Alternative proposes to install two compact, self-contained, remotely controlled devices powered by green battery packs, and that occupy a small surface area on the Middle Breakwater. The breakwater stretches 3.5 miles in length, and ranges from 15-25 feet in width at the top surface and 45-60 feet in width at the water line. The surface of the breakwater is uneven, consisting mainly of large boulders. The east end of the Middle Breakwater is located within the jurisdiction of the Port of Long Beach, and the west end is located within the jurisdiction of the Port of Los Angeles. The structures would be on the inshore side of the Middle Breakwater to afford optimum conditions for access by vessel and personnel.

The SpiDAR unit housing and power pack are constructed with corrosion-resistant IP65 stainless steel. The unit and power pack would be upgraded to include system legs constructed using 316 marine-grade stainless steel in order to ensure the physical integrity of the measurement devices over the duration of the Proposed Action. Then SpiDAR unit has been used in other marine environment applications and has not experienced failure due to corrosion that might negatively impact human health or safety. Except for remote monitoring and periodic maintenance checks conducted, the instruments operate autonomously.

ENVIRONMENTAL COMMITMENTS

SAF-1: All installation activities would be performed by an experienced contractor that has worked in the LA Harbor, and all precautions to protect human health and safety would be taken.

No significant adverse effect to health and safety would occur and no mitigation measures are required.

FLOATING BARGE ALTERNATIVE

The Floating Barge Alternative would not likely cause an adverse impact to health and safety. However, working on a moving platform such as the barges during construction and operation of this alternative may require additional attention to training.

NO ACTION ALTERNATIVE

The No Action Alternative would not install atmospheric measurement devices on the breakwater in LA Harbor. The Middle Breakwater does not currently pose a threat to health or safety and does not facilitate dangerous activities. Its continued existence would have no impacts on safety.

3.11 Traffic

The criteria for significant, adverse impacts to this resource include closures to major roadways (arterial or collector classification) without suitable alternative routes; restricting access to or from adjacent land uses without suitable alternative access; increases in roadway wear as a result of heavy truck or equipment movements, resulting in noticeable deterioration of roadway surfaces; decreases in roadway capacity caused by approval/granting of the Proposal; vehicle trips associated with additional commuter and truck trips would result in an unacceptable reduction in level of service of local jurisdictions on roadways in the vicinity of construction or would result in safety problems for vehicular traffic, transit operations, or trains; conflicts with planned transportation improvements in the area; results in safety problems for vehicular traffic, transit operations, or trains; or results in an unacceptable reduction in the level of service standards of local jurisdictions. reduction in level of service of local jurisdictions on roadways in the vicinity of construction or would result in safety problems for vehicular traffic, transit operations, or trains; conflicts with planned transportation improvements in the area; results in safety problems for vehicular traffic, transit operations, or trains; or results in an unacceptable reduction in the level of service standards of local jurisdictions.

The Middle Breakwater is located between the Los Angeles Channel and Long Beach Channel entrances and stretches 3.5 miles in length. The site for the Proposed Alternative does not contain any vehicle traffic-related improvements. The east end of the Middle Breakwater is located within the jurisdiction of the Port of Long Beach, and the west end is located within the jurisdiction of the Port of Los Angeles.

PROPONENT'S PROPOSED ALTERNATIVE

Under this Alternative, the structures would be on the inshore side of the Middle Breakwater to afford optimum conditions for access by vessel and personnel. Pioneer Green proposes to install the eastern SpiDAR unit approximately 200 feet from the east end of the Middle Breakwater. The proposed location of the western SpiDAR unit is approximately 1,450 feet from the west end of the Middle Breakwater.

The Proponent's Proposed Alternative would temporarily add a few vessel trips in the forms of boats or barges per day during construction and, following construction, monthly data collection and maintenance trips to the overall vessel movements in the two ports. These vessel trips represent an insignificant and temporary potential cumulative impact to vessel traffic in the ports.

During construction, there would be only one or two round trips for both trucks and workers on most days. Construction traffic is temporary and would cease once construction is completed. There would be no significant impacts on traffic from construction or operations activities.

FLOATING BARGE ALTERNATIVE

This Alternative would include floating barges that would be parked in LA Harbor at both ends of the Middle Breakwater. There would be only one or two on-shore round trips for both trucks and workers on most days during the installation of the devices on the barges, thus on-shore traffic would be minor and temporary and would cease once construction is completed. There would be no significant impacts to on-shore traffic from the Alternative's installation on the floating barges. This alternative would also temporarily add a few vessel trips in the forms of boats or barges per day during construction and, following construction, monthly data collection and maintenance trips to the overall vessel movements in the two ports. These vessel trips represent an insignificant and temporary potential cumulative impact to vessel traffic in the ports.

NO ACTION ALTERNATIVE

The No Action Alternative, that of not installing any atmospheric measurement devices on the breakwater in LA Harbor would mean that no valuable atmospheric data would be collected offshore in LA Harbor, but would have no impacts to on-shore traffic.

3.12 Cumulative Impacts

Cumulative impacts of a Proposed Action must be assessed according to Council on Environmental Quality (CEQ) regulations for implementing NEPA (40 CFR Parts 1500-1508). A cumulative impact is an "impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions" (40 CFR Section 1508.7). Cumulative impacts could result from individually minor, but collectively significant, actions taking place over time (40 CFR Section 1508.7). CEQ's guidance for considering cumulative impacts states that NEPA documents "should compare the cumulative impacts of multiple actions with appropriate national, regional, state, or community goals to determine whether the total effect is significant" (CEQ 1997).

3.12.1 Present Actions

Currently there is continuous commercial, recreational, and maritime activities portside at the Ports of Los Angeles and Long Beach, and in the waters of the San Pedro Bay. These port activities result in hundreds of vessel movements each day within the ports and the waters outside of the breakwater. The Proposed Alternative would temporarily add a few vessel trips per day during construction and, following construction, monthly data collection and maintenance

trips to the overall vessel movements in the two ports. These vessel trips represent an insignificant and temporary potential cumulative impact to vessel traffic in the ports.

The Middle Breakwater is unoccupied and, aside from the two navigational lights, does not have any other improvements or activities that might contribute to a cumulative impact. The equipment installation for the Proposed Alternative on the Middle Breakwater would not cause or contribute to a cumulative impact to any resource or other current use of the Middle Breakwater.

Pioneer Green recently placed an atmospheric measurement device similar to those proposed in this Proposed Action described in this Proposal on the southern tip of Pier 400. The data gathered under the Proposed Action described in this proposal along with data from the Pier 400 device and publicly available data for the Los Angeles area, would be used to produce a regional model that allows for study of the regional wind and atmospheric patterns both on and off-shore.

The only related project related to the Middle Breakwater in the Los Angeles District is the East San Pedro Bay Ecosystem Restoration project. The Proposed Action is a study located offshore the City of Long Beach in the easternmost part of San Pedro Bay, and includes the area between the Long Beach shoreline and the Middle and Long Beach Breakwaters. The study's purpose is to evaluate opportunities for ecosystem restoration, increased recreational opportunities, and other improvement in the San Pedro Bay off the Long Beach shore. The study has not commenced yet, and is expected to take three years to complete. Because the Study would only make recommendations and implementation is dependent upon Congressional authorization, the effects of the Study are considered minimal. Temporary and minimal effects could occur as a result of testing, sampling or surveys, but cumulatively or individually they are not considered significant.

3.12.2 Reasonably Foreseeable Future Actions

No other future Actions are known for the Middle Breakwater and the equipment installation for the Proposed Alternative on the Middle Breakwater would not cause or contribute to a cumulative impact to any resource or other current use of the Middle Breakwater. The Long Beach breakwater is the target of controversy within the harbor's surrounding communities and Greater Los Angeles conservationists community; with various environmental groups, including the Long Beach chapter of the Surfrider Foundation, proposing modifying or removing the breakwater to promote better water flows and a more natural coastal environment at the mouth of the Los Angeles River. This restoration ecology-based removal is opposed by waterfront property owners and shippers, who believe that the breakwater provides needed protection from storm damage. The Long Beach City Council voted to conduct a \$3 million feasibility study on how to get rid of the breakwater or at least reconfigure it to allow waves and better water circulation. The City is waiting for approval of the study from the Corps, as the breakwater is a Federal asset. If agreed to, the study is to start the first quarter of 2014.

Installing and operating the atmospheric measurement devices would not interfere with the onshore and offshore activities within the San Pedro Bay, nor affect the Los Angeles Harbor. Any activities related to the potential modification of the Long Beach Breakwater would not be

affected by the Proposed Action, and should such activities take place they would be after the devices are removed two years after installation.

Based on review of the Proposed Alternative construction and operations activities, it is determined that the Proponent's Proposed Alternative would not result in incremental cumulative impacts.

4.0 AGENCY COORDINATION

4.1 California Coastal Commission

The California Coastal Commission was established through adoption of the California Coastal Act of 1976 (Coastal Act). The Coastal Commission, in partnership with coastal cities and counties, plans and regulates the use of land and water in the coastal zone. Development activities, which are broadly defined by the Coastal Act to include (among others) construction of buildings, divisions of land, and activities that change the intensity of use of land or public access to coastal waters, generally require a coastal permit from either the Coastal Commission or the local government.

The Federal Consistency Unit of the California Coastal Commission implements the Federal Coastal Zone Management Act (CZMA) of 1972 as it applies to federal activities, development projects, permits and licenses, and support to state and local governments. In the CZMA, Congress created a federal and state partnership for management of coastal resources. The CZMA encourages states to develop coastal management programs, through, among other means, the federal consistency procedures of the CZMA. Upon certification of a state's coastal management program, a federal agency must conduct its activities (including federal development projects, permits and licenses, and assistance to state and local governments) in a manner consistent with the state's certified program. The processes established to implement this requirement is called a consistency determination for federal activities and development projects and a consistency certification for federal permits and licenses and federal support to state and local agencies.

The Federal government certified the California Coastal Management Program (CCMP) in 1977. The enforceable policies of that document are Chapter 3 of the California Coastal Act of 1976. All consistency documents are reviewed for consistency with these policies. The Commission's goal is to use the federal consistency process to provide open communication and coordination with Federal agencies and applicants and provide the public with an opportunity to participate in the process. The Commission believes that this process allows it to authorize federal activities in manner that minimizes impacts to coastal resources and is consistent with the CCMP.

The Corps needs evidence of compliance with the CCMP in the form of a CCC-issued coastal development permit for a "private activity on federal land". Once a Coastal Commission-reviewed coastal development permit has been issued, that permit automatically satisfies federal consistency, and no further submittal is needed per Section 30719 of the Coastal Act which states: "Any development project or activity authorized or approved pursuant to the provisions of this chapter [Chapter 8 – Ports] shall be deemed certified by the commission as being in conformity with the coastal zone management program insofar as any such certification is requested by any federal agency pursuant to the Federal Coastal Zone Management Act of 1972 (16 U.S.C. 1451, et seq.), National Oceanic and Atmospheric Administration, and memoranda of understanding between the state and federal governments relative thereto."

On October 2, 2013, correspondence from the Federal Consistency Coordinator Energy, Ocean Resources and Federal Consistency Division of the California Coastal Commission confirmed that the applicant met its responsibility under the CZMA by obtaining permits from the Ports of

Los Angeles and Long Beach as described below, and no further Federal consistency review is required. In addition, it confirmed that no coastal development permits from the Commission are required.

4.2 Port of Los Angeles

Development activities at the Port of Los Angeles are subject to discretionary review and approval by the Port of Los Angeles (Port) pursuant to the California Environmental Quality Act (CEQA) and the Port Master Plan (PMP) certified by the California Coastal Commission. A Level I permit is one of three levels of permits that the Port could issue. Level I permits are issued for developments that involve minimal changes in land/water use, and minor changes in density and intensity of use.

The unit proposed to be placed on the westerly portion of the Middle Breakwater lies within the Port's PMP jurisdiction within Master Planning Area 1.

On September 11, 2013 the Los Angeles Board of Harbor Commissioners found the Proposed Alternative to be consistent with the Port Master Plan and Chapter 8 policies of the California Coastal Act of 1976, as amended. Specifically, the Proposed Alternative is consistent with Section 30708 that requires port-related development to give highest priority to the use of existing land space within harbors for port purposes. A Level I Coastal Development Permit (CDP) number 13-11 was issued and the Director of Environmental Management has determined that the Proposed Alternative is exempt from the requirements of CEQA in accordance with Article III Class 6 of the Los Angeles City CEQA Guidelines.

4.3 Port of Long Beach

In 1978, the California Coastal Commission (CCC) certified the Port of Long Beach Master Plan (PMP) and found that the document conformed to the policies of either Chapter 8 (Ports) or 3 (Coastal Resources Planning Management Policies), of the California Coastal Act of 1976. According to the PMP, a Harbor Development Permit (HDP) is required for all developments, including maintenance and repair, within the Long Beach Harbor District. A Level I HDP is required for minor projects involving minimal development and costing less than \$400,000. The device to be placed on the east end of the Middle Breakwater falls within the jurisdiction of the Port of Long Beach.

On July 1, 2013, the Port of Long Beach issued a Harbor Development Permit number HDP-13-045. It also found the Proposed Alternative to be Categorically Exempt according to definitions set forth in the State CEQA Guidelines, Article 8 under a Class 6 exemption (for project that consist of basic data collection, research, experimental management, and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource).

5.0 APPLICABLE ENVIRONMENTAL LAWS AND COMPLIANCE

5.1 Rivers and Harbors Act of 1899

Section 10 of the Rivers and Harbors Act prohibits the unauthorized obstruction or alteration of any navigable waters of the United States, and authorizes the Corps to regulate all activities that affect the course, capacity, or coordination of waters of the U.S. Navigable waters of the U.S. are defined in 33 CFR Part 329 as those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.

This Proposed Action proposes to install two compact, self-contained, remotely controlled devices powered by green battery packs at the crest of the Middle Breakwater above the high water mark, and no portion would be in the water. All construction and operations related activities would be on the upper surface of the breakwater and there would be no impacts or impediments to navigation or beneficial uses of the water around the breakwater. A Section 10 permit is not required for the Proposed Action.

5.2 National Environmental Policy Act (NEPA) of 1969 (Public Law 91-190), as amended

NEPA is the nation's primary charter for protection of the environment. It establishes national environmental policy which provides a framework for Federal agencies to minimize environmental damage and requires Federal agencies to evaluate the potential environmental impacts of their proposed actions. CEQ Regulations for implementing NEPA establish the requirements and procedures by which Federal agencies fulfill their obligations under NEPA. The regulations also define such key terms as “cumulative impact”, “mitigation”, and “significant” (as it relates to impacts) to ensure consistent application of the terms in environmental documents.

Corps guidance for implementing NEPA is provided in ER-200-2-2, March 1988. This regulation provides guidance for implementation of the procedural provisions of the NEPA for the Civil Works Program of the Corps. It supplements CEQ regulations 40 CFR 1500-1508, November 29, 1978, in accordance with the CEQ regulations.

Under NEPA, a Federal agency must prepare an EA describing the environmental effects of any proposed action having a significant impact on the environment. The EA identifies measures necessary to avoid or minimize adverse impacts resulting from the Proposed Action or determine if further analysis is required and prepare an EIS. This EA was prepared to comply with the NEPA.

5.3 California Toxics Rule

The California Toxics Rule (CTR) is within the Code of Federal Regulations (40 CFR 131.38) and was issued by the EPA in May 2000 to provide water quality criteria for potentially toxic constituents in receiving waters with human health or aquatic life designated uses in California.

It includes criteria for constituents based on human health, and constituents based on the health of aquatic life. The EA identifies Environmental Commitments to avoid or minimize adverse impacts to the San Pedro Bay resulting from the Proposed Action.

5.4 California Water Code/Porter Cologne Act

California's primary statute governing water quality and water pollution issues is the Porter-Cologne Water Quality Control Act of 1970 with numerous amendments and additions since initial adoption. The Act is contained in Section 13000 ("Division 7 Water Quality") et. seq. of the California Water Code.

The Act grants the California State Water Resources Control Board (SWRCB) and nine California Regional Water Quality Control Boards (RWQCBs) broad powers to protect water quality and is the primary vehicle for implementation of California's responsibilities under the Federal Clean Water Act. The Act grants the SWRCB and the RWQCBs authority and responsibility to adopt plans and policies, to regulate discharges to surface and groundwater, to regulate waste disposal sites and to require cleanup of discharges of hazardous materials and other pollutants. The Act also establishes reporting requirements for unintended discharges of any hazardous substance, sewage, or oil and petroleum product.

The Proposed Action would be on the Middle Breakwater located within Los Angeles Harbor, and therefore would not impact any surface water or groundwater.

5.5 Clean Water Act - Section 404

The Clean Water Act (CWA) is a 1977 amendment to the Federal Water Pollution Control Act of 1972, which set the basic structure for regulating discharges of pollutants to waters of the United States. Section 404 establishes a program to regulate the discharge of dredged and fill material into waters of the United States, including wetlands. CWA regulates activities in waters of the United States including fill for development, water resource projects (such as dams and levees), infrastructure development (such as highways and airports) and mining projects. Section 404 requires a permit before dredged or fill material may be discharged into waters of the United State.

The Proposed Action and the Environmental Commitments herein described would result in no discharge of dredged or fill material into waters of the United States, including wetlands, therefore neither a CWA Section 404 or 401 Permit is required.

5.6 Coastal Zone Management Act of 1972

The Coastal Zone Management Act was passed in 1972 to encourage coastal states to develop and implement coastal zone management plans. The Coastal Zone Management Act (CZMA) creates a broad program based on land development controls within coastal zones, incorporating State involvement through the development of programs for comprehensive State management. The CZMA also requires Federal agencies or licensees to carry out their activities in such a way that they conform to the maximum extent practicable with a state's coastal zone management

program. The Federal Consistency Unit of the California Coastal Commission implements the CZMA as it applies to federal activities, development projects, permits and licenses, and support to state and local governments. The Proposed Action must comply with CZMA, and a Federal consistency letter obtained from the California Coastal Commission.

The California Coastal Commission (CCC) has responsibility for Federal Consistency Determination under the Coastal Zone Management Act (CZMA). A CCC-issued coastal development permit is required for a "private activity on Federal land". The CCC has granted authority to POLA and POLB to each issue its own coastal development since both have a master plan certified by the Coastal Commission.

The Proponent has discussed the Proposed Action with staff at the CCC, the POLB and the POLA, and has submitted applications and obtained the requisite coastal development permits and determinations required by the respective agencies.

5.7 Endangered Species Act of 1972, Section 7(c)

Based on the information available from the periodic biological baseline studies conducted by the Port of Los Angeles and the Port of Long Beach, the Proposed Action would not have an effect upon the continued existence of any species proposed or listed as threatened or endangered by the United States Fish and Wildlife Service (FWS) or the National Marine Fisheries Service (NMFS), and therefore formal consultation pursuant to Section 7 (c) of this act is not required.

5.8 National Historic Preservation Act

The Proposed Action as planned would not involve properties that are listed in or are eligible for the National Register of Historic Places. Because there are no identified historic resources in the area of potential actions, the Proposed Action is in compliance with Section 106 (36 CFR 800).

5.9 Magnuson-Stevens Fishery Management and Conservation Act

The Proposed Action would not be within an Essential Fish Habitat (EFH) as defined in the Magnuson Stevens Act, therefore an EFH Assessment is not required under the Magnuson-Stevens Act. The Proposed Action would be in compliance with the Act.

5.10 Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act was passed to protect, rear, stock, and increase the supply of game and fur-bearing animals, as well as to study the effects of domestic sewage, trade wastes, and other polluting substances on wildlife. Specifically, the Act is intended to protect fish and wildlife when federal actions result in the control or modification of a natural stream or body of water. Since the Proposed Action would involve the installation of devices on top of the Middle Breakwater above the high water line, it would not result in the control or modification of a natural stream or a body of water, and this Act does not apply.

5.11 Marine Protection, Research and Sanctuaries Act

The Marine Protection, Research and Sanctuaries Act was passed to regulate intentional ocean disposal of materials. No activity in the Proposed Action would result in disposal of materials in the ocean beyond the territorial limit. This Act does not apply as the Proposed Action is within the territorial limit on the Middle Breakwater at the opening of the San Pedro Bay. Moreover, Environmental Commitments call for precautions to be taken during construction to avoid any accidental release of materials into the water

5.12 Executive Order (EO) 11514, Protection and Enhancement of Environmental Quality, amended by Executive Order 11991, Relating to Protection and Enhancement of Environmental Quality

This EO mandates that the Federal government provide leadership in protecting and enhancing the quality of the nation's environment to sustain and enrich human life. Federal agencies must initiate measures needed to direct their policies, plans and programs so as to meet national environmental goals. Corps regulations advocate early NEPA preparation and require impact statements to be concise, clear, and supported by evidence that agencies have made the necessary analyses. This EA has been prepared to evaluate the Proposed Action and, therefore, is in compliance with the mandates of this EO.

5.13 Executive Order 12088, Federal Compliance with Pollution Control Standards

Under Executive Order 12088 of 1978, Federal agencies are required to ensure compliance of agency decisions with all applicable pollution control standards, laws, and regulations, including but not limited to the following: Toxic Substances Control Act; Federal Water Pollution Control Act; Public Health Service Act; Clean Air Act; Noise Control Act of 1972; Solid Waste Disposal Act; Radiation guidance pursuant to Section 274(h) of the Atomic Energy Act of 1954; Marine Protection, Research, and Sanctuaries Act of 1972; and Federal Insecticide, Fungicide, and Rodenticide Act. The head of each Executive agency is responsible for ensuring that all necessary actions are taken for the prevention, control, and abatement of environmental pollution with respect to Federal facilities and activities under control of the agency. The Proposed Action includes Environmental Commitments to avoid significant adverse effects, including environmental pollution; therefore, the proposed action complies with the Act.

5.14 Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations

Executive Order 12898 was signed on February 11, 1994, directing Federal agencies to “...make achieving environmental justice part of its mission by identifying and addressing... disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the [U.S.]...”

The Proposed Alternative is to install two controlled meteorological measurement devices powered by green battery packs at each end of the Middle Breakwater in the Los Angeles Harbor by the Ports of Los Angeles and Long Beach. There are no human inhabitants on the Middle Breakwater or at the Ports, therefore no minority or low-income populations would be affected by the Proposed Action.

5.15 Executive Order 13045 Protection of Children From Environmental Health Risks and Safety Risks

Executive Order 13045 requires Federal agencies to the extent permitted by law and within its mission shall make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children and shall ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks. Children may suffer disproportionately from environmental health risks and safety risks. These risks arise because: children’s neurological, immunological, digestive, and other bodily systems are still developing; children eat more food, drink more fluids, and breathe more air in proportion to their body weight than adults; children’s size and weight may diminish their protection from standard safety features; and children’s behavior patterns may make them more susceptible to accidents because they are less able to protect themselves.

The Proposed Alternative is to install two controlled meteorological measurement devices powered by green battery packs at each end of the Middle Breakwater in the Los Angeles Harbor by the Ports of Los Angeles and Long Beach. There are no human inhabitants on the Middle Breakwater or at the Ports, therefore no children would be affected by the Proposed Action.

5.16 Executive Order 13653, Preparing the United States for the Impacts of Climate Change

The impacts of climate change—including an increase in prolonged periods of excessively high temperatures, more heavy downpours, an increase in wildfires, more severe droughts, permafrost thawing, ocean acidification, and sea-level rise—are already affecting communities, natural resources, ecosystems, economies, and public health across the Nation. These impacts are often most significant for communities that already face economic or health-related challenges, and for species and habitats that are already facing other pressures. Managing these risks requires deliberate preparation, close cooperation, and coordinated planning by the Federal Government, as well as by stakeholders, to facilitate Federal, State, local, tribal, private-sector, and nonprofit-sector efforts to improve climate preparedness and resilience; help safeguard our economy,

infrastructure, environment, and natural resources; and provide for the continuity of agency operations, services, and programs. The Proposed Action does not involve Federal Agencies directly, but the data collected by the meteorological measurement devices can be used to assess the feasibility of wind generation at the Middle Breakwater, and Federal Agencies can potentially benefit from this renewable power source to comply with Executive Order 13653 requirements.

6.0 SUMMARY OF ENVIRONMENTAL COMMITMENTS

AQ-1: Boat/barge motors would have proper emissions control equipment and kept in good and proper running order to substantially reduce emissions. The motors would not be left idling while work is being performed at the sites.

BIO-1: Based on the description of construction and operational activities, impacts to nesting Black Oystercatcher are likely if Proposed Alternative construction occurs during the breeding season. Construction and installation of the SpiDAR system would be scheduled for the months of September to April, the non-breeding season for black oystercatcher.

BIO-2: If construction activities must occur during the breeding season for Black Oystercatcher (May 1 to August 31), a qualified biological monitor should conduct pre-construction nesting surveys to determine if Black Oystercatchers are nesting or exhibiting breeding behavior within 500 feet of the Proposed Alternative sites. One of the surveys should not be more than three days before the start of construction. If nesting activity or breeding behavior is observed, the biological monitor would monitor the responses of the nesting birds to the site activities. The biological monitor would have the authority to stop work and/or expand the buffer zones as necessary if the behavior of the nesting birds indicates disturbance because of the construction activities.

BIO-3: If marine mammals are present, construction should not commence until the marine mammals have left the site or the site should be relocated to avoid disturbing the marine mammals.

BIO-4: When conducting construction activities in any season, construction personnel should avoid disturbing roosting birds or resting marine mammals and should not walk along the breakwater surface beyond 150 feet from the SpiDAR system pad site.

HYDRO-1: During construction, the contractor would put down an impermeable “visqueen” fabric on the surface of the breakwater to prevent concrete spillage into the water. It is the same method that is used in building foundations for navigational lights on the breakwater. The structure would be built on top of the fabric, and the fabric remains after construction is complete.

NAV-1: During construction, the contractor would put down an impermeable “visqueen” fabric on the surface of the breakwater to prevent concrete spillage into the water.

SAF-1: All installation activities would be performed by an experienced contractor that has worked in the LA Harbor, and all precautions to protect human health and safety would be taken.

7.0 LIST OF PREPARERS AND REVIEWERS

Prepared by:

Andy Atiyeh, MS, JD
A2 Consulting, LLC
30 Galeana
Foothill Ranch, CA 92610

Reviewed by:

Phil Serpa
Asset Management Division
USACE, Los Angeles District
915 Wilshire Blvd.
Los Angeles, CA 90017