Sea-Based X-Band (SBX) Radar Vessel Maintenance and Repair

Final Environmental Assessment

April 2011

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The Missile Defense Agency prepared this Environmental Assessment (EA) to evaluate the environmental consequences of mooring the SBX Radar Vessel at one of the two contingency locations for maintenance activities.

The Proposed Action of the EA is to perform required maintenance of the SBX Radar Vessel thrusters and other scheduled general maintenance activities at a deep-water naval facility capable of providing support. The facility must have a minimum water depth of 50 feet. The Proposed Action is needed as a contingency in the event that Todd Pacific Shipyards is not available to perform required maintenance activities. The two contingency locations are Naval Station Everett, Everett, Washington and Naval Air Station North Island, San Diego, California.

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Executive Summary

EXECUTIVE SUMMARY

Introduction

The National Environmental Policy Act (NEPA) of 1969 as amended (42 United States Code 4321, et seq.), the Council on Environmental Quality Regulations for Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] 1500-1508), Department of Defense (DoD) Instruction 4715.9, *Environmental Planning and Analysis*, Chief of Naval Operations Instruction (OPNAVINST) 5090.1C, *Environmental Readiness Program* (Environmental and Natural Resources), Department of the Navy Procedures for Implementing NEPA (32 CFR § 775[2005]), and the applicable Service environmental instructions that implement these laws and regulations, direct DoD officials to consider environmental consequences when authorizing and approving Federal actions.

Within the DoD, the Missile Defense Agency (MDA) is responsible for developing, testing, and deploying the Ballistic Missile Defense System (BMDS). The BMDS is designed to intercept threat missiles during all phases of their flight: boost, midcourse, and terminal. The Sea-Based X-Band (SBX) Radar Vessel is an integrated, layered system to defend the United States, its deployed forces and allies, against all ranges of enemy ballistic missiles. The SBX Radar may also be used for related missions such as space surveillance.

The SBX Radar Vessel became operational in 2005, and as with any vessel, requires routine maintenance as well as mandatory recertification of structural and propulsion components. The vessel's hull and four thrusters require a 5-year maintenance cycle and certification in order to continue operation. The thruster maintenance was due in 2010; however, MDA received an extension until 31 May 2011. The hull certification, as well as some additional scheduled maintenance, was performed at Joint Base Pearl Harbor–Hickam, HI in July and August 2010. Thruster maintenance must be performed at a deep-water (a minimum of 50 feet) facility. Some additional maintenance would be performed concurrent with the thruster work. Non-completion of the maintenance of the thrusters would lead to the eventual decertification of this SBX Radar Vessel and prevent its vital use as part of the BMDS.

MDA is currently planning for the maintenance work to be done at Todd Pacific Shipyards, a commercial shipyard in Seattle, WA, beginning in May of 2011. MDA must conduct this maintenance around the SBX Radar Vessel's scheduled participation in BMDS flight testing planned throughout the year. Therefore, MDA is also developing contingency plans to go to other locations should the current flight test schedule change or other unforeseen circumstances occur that would affect the ability to obtain the required maintenance at Todd Pacific Shipyards. MDA is proposing to perform necessary maintenance activities on the SBX Radar Vessel at one of two proposed contingency locations (Naval Station Everett (NSE), WA or Naval Base Coronado–Naval Air Station North Island (NASNI), CA). This work could commence in May 2011 and take approximately 3 months to complete. However, due to the operational requirements of the SBX Radar Vessel and shifting world events, the commencement date could change. NSE and NASNI are not typically used as maintenance and repair facilities. Although minor maintenance and repair activities are currently performed at NSE and NASNI, they are not functioning shipyards and do not perform shipyard-type work. Therefore, this Environmental Assessment (EA) is being prepared to examine the potential for impacts to the environment as a result of the proposed maintenance activities associated with the SBX Radar Vessel at NSE and NASNI only.

Background

The Ground-Based Midcourse Defense (GMD) is an element of the BMDS; the purpose of the GMD element is to intercept and destroy long-range missiles in the ballistic (midcourse) phase of flight before their reentry into the Earth's atmosphere. The BMDS SBX radar operations testing and the establishment of a Primary Support Base (PSB) were analyzed in the 2003 *Ground-Based Midcourse Defense* (*GMD) Extended Test Range Environmental Impact Statement (EIS*). The locations analyzed as a PSB for the SBX Radar Vessel during operations testing were Pearl Harbor, HI (now Joint Base Pearl Harbor–Hickam); Naval Base Ventura County–Port Hueneme, CA; NSE, WA; Port Adak, AK; and Port of Valdez, AK. The subsequent Record of Decision for the GMD Extended Test Range EIS selected Port Adak, Alaska as the location to establish a PSB for the SBX Radar Vessel. Currently, Adak is not used as the PSB since the SBX Radar Vessel is at sea for approximately 300 days a year. Adak was not intended to be used as a location for maintenance of the SBX Radar Vessel.

The mission of the SBX Radar, a component of the BMDS, is two-fold. It supports BMDS testing in order to improve the system. In addition, the SBX Radar serves as a component of the BMDS, which is an integrated, layered system to defend the United States, its deployed forces, and allies against all ranges of enemy ballistic missiles. The SBX Radar may also be used for related missions such as space surveillance.

The SBX Radar Vessel consists of a converted semi-submersible, mobile, twin-hulled platform on which an X-Band Radar (XBR) and other BMDS system components have been mounted. The SBX Radar is able to track, discriminate, and assess incoming missiles. The SBX Radar greatly increases MDA's ability to conduct more robust and operationally realistic testing of the BMDS, and enhances the BMDS's operational ability to intercept incoming missiles. Because of its mobility, the SBX Radar Vessel can be repositioned to provide operational forward-based coverage or relocated for optimum coverage of various scenarios in the BMDS test program. The SBX Radar Vessel is capable of traveling approximately 8 knots under its own power.

The self-propelled SBX Radar Vessel is 240 feet wide, 390 feet long, and 280 feet tall from its keel to the top of the radar dome. At transit draft, the vessel has a height of approximately 250 feet above the water surface. When conducting mission activities, the SBX Radar Vessel ballasts down to an operational draft and has a height of approximately 200 feet above the water surface. The SBX Radar Vessel is one-third the length of *USS Abraham Lincoln*. The dome of the SBX Radar Vessel extends 73.5 feet higher than the top of *USS Abraham Lincoln* and is approximately 61 feet wider at mast. The dome of the SBX Radar Vessel extends 36 feet higher than the top of *USS Nimitz* and is approximately 22 feet wider at mast. The main deck of the SBX Radar Vessel houses living quarters, workspaces, storage, power generation, bridge and control rooms, and the floor space and infrastructure necessary to support the 2,000-ton XBR antenna array; command, control, and communications suites; and an In-flight Interceptor Communication System Data Terminal. The vessel is Government owned (MDA) and contractor operated (Boeing).

Purpose and Need

The purpose of the Proposed Action is to conduct maintenance activities at one of the contingency locations (NSE or NASNI), with a deep-water port capable of providing the required maintenance activities. Thruster maintenance requires an in-port depth of 50 feet.

The SBX Radar Vessel became operational in 2005, and both the hull and the thrusters require a 5-year maintenance and repair cycle and certification in order to continue operation. If maintenance and repairs for the SBX Radar Vessel thrusters are not completed within the 5-year cycle, the vessel would not be allowed to operate. The vessel would not meet its operational qualifications, as required to operate as a seaworthy vessel, and would thus be decertified. The Proposed Action is needed to maintain certification of the SBX Radar Vessel and continue to provide a full BMDS suite of radars for anti-ballistic missile testing and an operational capability for the combatant commands. Non-completion of the maintenance and repair of the thrusters would lead to the eventual invalidation of the American Bureau of Shipping (ABS) Classification and the United States Coast Guard (USCG) Certificate of Inspection of this SBX Radar Vessel and prevent its vital use as part of the BMDS.

Proposed Action

The Proposed Action of this EA is to perform required maintenance of the SBX Radar Vessel thrusters and other scheduled general maintenance activities at a deep-water naval facility capable of providing support and with an adequate water depth. The Proposed Action is needed as a contingency in the event that Todd Pacific Shipyards is not available to perform required maintenance activities. After a review of the operational and maintenance schedule of the SBX Radar Vessel and the availability of deep-water maintenance facilities, MDA determined the west coast locations of NSE—Alternative 1; and NASNI—Alternative 2 were viable contingency locations to accommodate the proposed Spring/Summer 2011 maintenance and repair activities.

No-Action Alternative

The No-action Alternative is evaluated in this document because it provides a baseline against which to measure the impacts of the Proposed Action. Under the No-action Alternative, the inspections, maintenance, and repair work on the SBX Radar Vessel would not be performed at NSE or NASNI, and there would be no disruption to the current operations at either of these locations. Under this alternative, the SBX Radar Vessel would not require a contingency location for deep water maintenance.

Alternatives Eliminated From Further Consideration

East Coast Locations—The SBX Radar Vessel is too wide to navigate through the Panama Canal, thus making east coast locations not viable due to arrival time constraints.

Bremerton Naval Shipyard, Bremerton, WA (Puget Sound Naval Shipyard and Intermediate Maintenance Facility)—The channel at this location is too narrow to navigate the SBX Radar Vessel with the thruster wells extended into the shipyard. Additionally, the water depths at the pier are too shallow to allow for the thruster work to be performed.

Joint Base Pearl Harbor–Hickam, HI—The water depths are too shallow to allow for the thruster work to be performed.

MV Blue Marlin (semi-submersible heavy lift ship)—If the SBX Radar Vessel is placed onto the MV Blue Marlin, the SBX Radar Vessel would need to be raised 15 feet to provide clearance for the thruster maintenance. This additional height would make the MV Blue Marlin unstable.

Dry Docks—No U.S.-controlled dry docks are available for use during the required maintenance time period (work would commence in Spring/Summer 2011).

Adak Island, AK—Due to the weather conditions (low temperatures and sea state) and the logistics of transporting personnel and equipment to and from the site, the inspection, maintenance, and repair activities cannot be performed at this location.

Government-to-Government Consultation and Coordination with Native American Tribes

Naval Station Everett

Government-to-Government consultation and coordination was conducted with federally recognized Tribal governments (Lummi, Stillaguamish, Suquamish, Swinomish, and Tulalip Tribes) that could potentially be impacted by activities at NSE.

Naval Air Station North Island

There were no federally recognized Tribes identified in the NASNI study area; therefore, no Government-to-Government coordination was conducted at this location.

Environmental Compliance Actions Taken

Naval Station Everett

A Coastal Consistency Determination (CCD) was submitted for NSE to the Washington Department of Ecology. MDA determined that the Proposed Action would be consistent to the maximum extent practicable with the enforceable polices of the Shoreline Management Act, State Environmental Policy Act, Clean Water Act, Clean Air Act, Energy Facility Site Evaluation Council, the Ocean Resource Management Act, and with the Washington State-approved coastal zone management program. Additionally, a Biological Assessment (BA) was conducted and submitted to the National Marine Fisheries Service and U.S. Fish and Wildlife Service. The BA concluded that the Proposed Action may affect, but is not likely to adversely affect Puget Sound Chinook salmon, Puget Sound steelhead, or Coastal/Puget Sound bull trout, Endangered Species Act (ESA)-listed killer whales and listed marbled murrelets and would not adversely affect essential fish habitat for Pacific salmon or Pacific ground species. Both agencies provided a letter of concurrence with the findings of the BA.

Naval Air Station North Island

A CCD and Essential Fish Habitat Assessment (EFHA) were completed for NASNI. The CCD was submitted to the California Coastal Zone Commission. MDA determined that the Proposed Action would be consistent to the maximum extent practicable with the enforceable polices of the California Coastal Act (Sections 30230, 30231, 30232, and 30251) policies pursuant to the requirements of the Coastal Zone Management Act. The California Coastal Commission approved the Navy's determination at its scheduled hearing on 15 October 2010. The EFHA was submitted to the National Marine Fisheries Service. The EFHA concluded that based on the temporary time the SBX Radar Vessel would be at NASNI, the scope of anticipated repair and maintenance activities, and the required implementation of Best Management Practices, the

Proposed Action is not expected to degrade water quality or decrease or substantially alter prey species abundance or affect other EFHA features. The National Marine Fisheries Service provided documentation of concurrence with the findings of the EFHA.

Impact Assessment Methodology

Fourteen broad areas of environmental analysis were originally considered to provide a context for understanding the potential effects of the Proposed Action and to provide a basis for assessing the severity of potential impacts. These areas included air quality, airspace, biological resources, cultural resources, geology and soils, hazardous materials and waste, health and safety, land use, noise, socioeconomics, transportation, utilities, visual and aesthetics, and water resources. These areas were analyzed as applicable for each proposed location or activity.

Results

The analysis did not reveal any significant impacts to relevant environmental resources at any of the proposed locations.

Of the 14 broad areas considered for environmental analysis, 5 resource areas (cultural resources, geology and soils, health and safety, land use, and utilities) were not analyzed further due to no potential for impacts from the Proposed Action. However, Table ES-1 summarizes the conclusions of the impact analyses made for each of the areas of environmental consideration, as well as Environmental Justice.

Table ES-2 summarizes the specific environmental concern determined during preliminary analysis for each resource analyzed and the proposed mitigation measures to prevent or reduce impact to air quality, airspace, biological resources, hazardous materials and waste, noise, socioeconomics, transportation, visual and aesthetics, and water resources. Additionally, Environmental Justice and Government-to-Government Consultations are included in Table ES-2.

There are no environmental concerns for cultural resources, geology and soils, health and safety, land use, and utilities; therefore, further analysis of these resources was eliminated, and no mitigation measures are proposed. Table ES-3 summarizes assumptions used to eliminate the need for further analysis of these resources.

Table ES-1. Summary of Environmental Impacts

Resource Category	Alternative 1 - Naval Station Everett (NSE)	Alternative 2 - Naval Air Station North Island (NASNI)	No-action Alternative
Air Quality	Proposed Action: Maintenance and repair emissions would not exceed the General Conformity *de minimis* levels in the air shed. The requirements imposed by the Puget Sound Clean Air Agency (PSCAA) through its orders will limit volatile organic compounds in paint to amounts listed in the Clean Air Act regulations, Table 2 of 40 CFR 63.783. This and the implementation of Best Management Practices (BMPs) listed in Chapter 2.0 will ensure that the project would have no significant impact.	Proposed Action: Maintenance and repair emissions would not exceed General Conformity *de minimis* levels in the San Diego air shed. If the air shed is newly designated to serious nonattainment and the maintenance is not completed within the 1-year grace period following the nonattainment designation, the Missile Defense Agency (MDA) would need to mitigate the nitrogen oxide (NOx) air emissions from the on-board generators to meet the NOx emissions requirements. The requirements imposed by the San Diego Air Pollution Control District (APCD) through its procedures and the permit process for Marine Coating will ensure that the project would have no significant impact on air quality.	No-action: No impact; continuation of current and previously analyzed and approved activities at NSE and NASNI. The Proposed Action would not occur.
Airspace	Proposed Action: No impacts to controlled and uncontrolled or special use airspace are anticipated. No impacts are anticipated to the two low altitude air routes. MDA would not be required to submit an Obstruction Notification to the Federal Aviation Administration (FAA) since there are no airfields within 20,000 feet of the proposed Sea-Based X-Band (SBX) Radar Vessel location.	Proposed Action: No impacts to controlled and uncontrolled or special use airspace are anticipated. No impacts are anticipated to the visual flight rule corridor overlying San Diego International Airport. MDA may be required to submit an Obstruction Notification to the FAA for the height of the SBX Radar Vessel and the potential for it to be a height obstruction for flights into and out of the San Diego airport.	No-action: No impact; continuation of current and previously analyzed and approved activities at NSE and NASNI. The Proposed Action would not occur.
Biological Resources	Proposed Action: No significant long-term adverse impacts are anticipated to marine vegetation or regional fish. Noise associated with maintenance and repair activities under the Proposed Action is not likely to significantly impact Endangered Species Act (ESA)-listed salmonids. Physical and visual barriers associated with the presence of the SBX Radar Vessel and expended materials from sanding, painting, or underwater welding activities are not expected to significantly impact ESA-listed salmonids. Proposed activities would not impact Essential Fish Habitat (EFH) since marine pollution control BMPs would be incorporated into the Proposed Action. Implementation of BMPs such as keeping decks clear of debris, cleaning spills and residues, and engaging in spill and pollution prevention practices for discharge incidental to the normal operation of Armed Forces' vessels in accordance with the Clean Water Act would preclude significant long-term adverse impacts to area marine mammals.	Proposed Action: No significant long-term adverse impacts are anticipated to marine vegetation or regional fish. No threatened or endangered fish species have been identified in San Diego Bay. Proposed activities would not impact EFH since marine pollution control BMPs would be incorporated into the Proposed Action. The Navy would continue to mitigate for eelgrass impacts consistent with South California Eelgrass Mitigation Policy and Navy mitigation bank agreements with the National Marine Fisheries Service. Implementation of BMPs such as keeping decks clear of debris, cleaning spills and residues, and engaging in spill and pollution prevention practices for discharge incidental to the normal operation of Armed Forces' vessels in accordance with the Clean Water Act would preclude significant long-term adverse impacts to area sea turtles and marine mammals. Impacts resulting from painting, outside welding, sanding, and plasma cutting would be below thresholds that could result in long-term degradation of water resources or affect water quality at the potential location.	No-action: No impact; continuation of current and previously analyzed and approved activities at NSE and NASNI. The Proposed Action would not occur.

Table ES-1. Summary of Environmental Impacts (Continued)

Resource Category	Alternative 1-Naval Station Everett (NSE)	Alternative 2 - Naval Air Station North Island (NASNI)	No-action
Biological Resources (Continued)	Impacts resulting from painting, outside welding, sanding, and plasma cutting would be below thresholds that could result in long-term degradation of water resources or affect water quality at the potential location. The presence of the moored SBX Radar Vessel would not impact ESA-listed killer whales. No significant long-term adverse impacts are anticipated to seabirds due to implementation of BMPs. The presence of the SBX Radar Vessel is not likely to significantly impact threatened marbled murrelets. Repair and maintenance activities will not destroy or adversely modify critical habitat for the bull trout, Chinook salmon, or southern resident killer whale.	Collisions between sea turtles and the SBX Radar Vessel are unlikely since it would be slow moving and mobile forms of wildlife should be able to avoid it. Noise from the maintenance and repair activities is not expected to adversely affect the green sea turtle since the noise would be similar to that of maintenance on other vessels to which the turtles have become acclimated. No significant long-term adverse impacts are anticipated to area marine mammals. None of the four marine mammal species that inhabit or regularly transit the area are listed as threatened or endangered. No significant long-term adverse impacts are anticipated to seabirds. The presence of the SBX Radar Vessel is not likely to significantly impact threatened or endangered birds at NASNI.	
Cultural Resources	Proposed Action: No potential for impacts.	Proposed Action: No potential for impacts.	No-action. No impact; continuation of current and previously analyzed and approved activities at NSE and NASNI. The Proposed Action would not occur.
Geology and Soils	Proposed Action: No potential for impacts.	Proposed Action: No potential for impacts.	No-action. No impact; continuation of current and previously analyzed and approved activities at NSE and NASNI. The Proposed Action would not occur.
Hazardous Materials and Waste	Proposed Action: Hazardous materials and waste management would be performed in accordance with standard construction management procedures as well as applicable Federal, State, and local regulations. Significant impacts to the environment are not expected from the proper handling of large quantities of petroleum products, hazardous materials, or wastes during the maintenance and repair of the SBX Radar Vessel. Hazardous substance release to the environment shall be minimized by following the BMPs and following the instructions in the *Environment and Safety Requirements for Puget Sound Naval Shipyard and Intermediate Maintenance Facility Contractors, Naval Station Everett*, 2007.	Proposed Action: Hazardous materials and waste management would be performed in accordance with standard construction management procedures as well as applicable Federal, State, and local regulations. With the implementation of the procedures discussed above, significant impacts to the environment are not expected from the proper handling of large quantities of petroleum products, hazardous materials, or wastes during the maintenance and repair of the SBX Radar Vessel. Hazardous substance release to the environment shall be minimized by following the BMPs listed in Table 2-4 and following the instructions in the Commander Navy Region Southwest "Afloat Environmental Quick Response Guide."	No-action. No impact; continuation of current and previously analyzed and approved activities at NSE and NASNI. The Proposed Action would not occur.

Table ES-1. Summary of Environmental Impacts (Continued)

Resource Category	Alternative 1 - Naval Station Everett (NSE)	Alternative 2 - Naval Air Station North Island (NASNI)	No-action
Health and Safety	Proposed Action: No potential for impacts.	Proposed Action: No potential for impacts.	No-action. No impact; continuation of current and previously analyzed and approved activities at NSE and NASNI. The Proposed Action would not occur.
Land Use	Proposed Action: No potential for impacts.	Proposed Action: No potential for impacts.	No-action. No impact; continuation of current and previously analyzed and approved activities at NSE and NASNI. The Proposed Action would not occur.
Noise	Proposed Action: Given the distance of the residences from the pier, it is unlikely that noise from the two generators would significantly impact the ambient sound levels in the surrounding community. At a received level of 63.3 Day-Night Level (DNL) (Orientation 1) and 57.8 DNL (Orientation 2), the SBX Radar vessel would be audible at night in the closest neighborhood (Tulalip and 33rd Street). However, both orientations would be within the standard that DoD has adopted (DNL of 65) as a criterion that still protects those most impacted by noise. The equipment noise impact would be minimized by scheduling any work done after 7:00 p.m. to be inside the vessel. The testing of the Radiate Warning System's additional speakers will be intermittently during the day. The additional speakers will not be tested at night. There would be no significant noise impact due to increased traffic.	Proposed Action: The potential noise from the Proposed Action would not significantly alter the ambient noise environment in the city of Coronado if moored in either orientation at Pier N. There would be effects to the noise environment from the shipboard generators if moored in Orientation 2 at Pier P. Alignment of the generators' exhaust away from residences (Orientation 1) would mitigate this impact. Equipment noise would be below the City of Coronado's construction noise ordinance within NASNI property limits. The equipment noise impact would be minimized by scheduling any work done after 7:00 p.m. to be inside the vessel. Additionally, noise-producing construction activities between early morning hours (5:30 a.m. to 7:00 a.m.) and evening hours (between 7:00 p.m. to 10:00 p.m.) would be limited to those internal to the vessel. The testing of the Radiate Warning System's additional speakers will be limited to one day, several hours between 7:00 a.m. and 7:00 p.m., and only intermittently. The additional speakers will not be tested at night. There would be no significant noise impact due to increased traffic.	No-action: No impact; continuation of current and previously analyzed and approved activities at NSE and NASNI. The Proposed Action would not occur.
Socio-economics	Proposed Action: The socioeconomic impact from the Proposed Action would be positive, but negligible.	Proposed Action: The socioeconomic impact from the Proposed Action would be positive, but negligible.	No-action. No impact; continuation of current and previously analyzed and approved activities at NSE and NASNI. The Proposed Action would not occur.
Transportation	Proposed Action: No potential for impacts.	Proposed Action: There would be a negligible impact on the ground transportation on city of Coronado roadways leading to and from NASNI during the temporary mooring of the SBX Radar Vessel. With consideration of established mitigation measures, the already negligible impacts would lessen.	No-action: No impact; continuation of current and previously analyzed and approved activities at NSE and NASNI. The Proposed Action would not occur.

Table ES-1. Summary of Environmental Impacts (Continued)

Resource Category	Alternative 1 - Naval Station Everett (NSE)	Alternative 2 - Naval Air Station North Island (NASNI)	No-action
Utilities	Proposed Action: No potential for impacts.	Proposed Action: No potential for impacts.	No-action. No impact; continuation of current and previously analyzed and approved activities at NSE and NASNI. The Proposed Action would not occur.
Visual and Aesthetics	Proposed Action: The Proposed Action would not a have long-term impact on the visual and aesthetic resources in the Study Area. For the short-term, although the overall appearance of the SBX Radar Vessel is unique and may be perceived as intrusive, the visual impact of mooring of the SBX Radar Vessel at Pier A would temporary and comparable to the visual impact of other Navy vessels at this berthing location.	Proposed Action: The Proposed Action would not have a long-term impact on the visual and aesthetic resources in the Study Area. For the short-term, although the overall appearance of the SBX Radar Vessel is unique and may be perceived as intrusive, the visual impact of mooring of the SBX Radar Vessel at Pier P or Pier N would be temporary and comparable to the visual impact of other Navy vessels at these berthing locations.	No-action: No impact; continuation of current and previously analyzed and approved activities at NSE and NASNI. The Proposed Action would not occur.
Water Resources	Proposed Action: The Proposed Action would not have long-term impacts on marine water resources in the Study Area. Short-term effects on marine waters from this activity would be negligible given the BMPs and mitigation measures in place to prevent any adverse affect on water resources.	Proposed Action: The Proposed Action would not have long-term impacts on marine water resources in the Study Area. Short-term effects on marine waters from this activity would be negligible given the BMPs and mitigation measures in place to prevent any adverse affect on water resources.	No-action: No impact; continuation of current and previously analyzed and approved activities at NSE and NASNI. The Proposed Action would not occur.
Environmental Justice	The Proposed Action would not result in disproportionately high and adverse human health or environmental effects on minority populations and low-income populations.	The Proposed Action would not result in disproportionately high and adverse human health or environmental effects on minority populations and low-income populations.	No-action: No impact; continuation of current and previously analyzed and approved activities at NSE and NASNI. The Proposed Action would not occur.
Government-to-Government Consultation	Government-to-Government consultation and coordination was conducted with the federally recognized tribal governments of the Lummi, Stillaguamish, Suquamish, Swinomish, and Tulalip Tribes.	There were no federally recognized Tribes identified in the NASNI study area; therefore, no Government-to-Government coordination was conducted at this location.	No-action: No impact; continuation of current and previously analyzed and approved activities at NSE and NASNI. The Proposed Action would not occur.

Table ES-2. Summary of Environmental Concern and Mitigation Measures

Resource Category	Naval Station Everett (NSE)-Alternative 1		Naval Air Station North Island (NASNI)-Alternative 2	
	Environmental Resource Concern	Mitigation Measures	Environmental Resource Concern	Mitigation Measures
Air Quality	The nitrogen oxides (NOx) air emissions from the onboard generators.	Impacts to air quality are not significant; therefore, no mitigation measures are proposed.	The NOx air emissions from the onboard generators.	Impacts to air quality are not significant; therefore, no mitigation measures are proposed. However, by early in 2011, San Diego Air Basin (SDAB) will likely be newly designated as a serious nonattainment area for 8-hour ozone. After a 1-year grace period, the thresholds for general conformity determinations will be lowered to 50 tons/year for volatile organic compounds and NOx emissions. If the SDAB is newly designated as a serious nonattainment area for 8-hour ozone and emissions compliance is required prior to the Proposed Action, the Missile Defense Agency (MDA) would need to mitigate the NOx air emission from the shipboard generators to meet the NOx emissions requirements.
Airspace	There is a potential for the Sea-Based X-Band (SBX) Radar Vessel to be an aircraft obstruction to Paine Field.	The appropriate lighting would be on the vessel as required by the Federal Aviation Administration (FAA) to illuminate the height of the structure. MDA would submit an Obstruction Notification to the FAA if required due to the height of the SBX Radar Vessel and the proximity of several runways.	There is a potential for the SBX Radar Vessel to be an aircraft obstruction to San Diego Lindbergh Field.	The appropriate lighting would be on the vessel as required by FAA to illuminate the height of the structure. MDA would submit an Obstruction Notification to the FAA if required due to the height of the SBX Radar Vessel and the proximity of several runways.
Biological Resources	The potential for impacts to biological species from temporarily mooring the SBX Radar Vessel at NSE for maintenance and repair activities include: increased noise, increased presence of personnel, lighting on the vessel required 24/7, the potential for water quality degradation, and expended materials, including those from welding, painting, or paint-chipping.	No additional mitigation measures would be needed to protect vegetative or wildlife species.	The potential for impacts to biological species from temporarily mooring the SBX Radar Vessel at NASNI for maintenance and repair activities include: increased noise, increased presence of personnel, lighting on the vessel required 24/7, the potential for water quality degradation, and expended materials, including those from welding, painting, or paint-chipping.	No additional mitigation measures would be needed to protect vegetative or wildlife species.

Table ES-2. Summary of Environmental Concern and Mitigation Measures (Continued)

Resource Category	Naval Station Everett (NSE)-Alternative 1		Naval Air Station North Island (NASNI)-Alternative 2	
	Environmental Resource Concern	Mitigation Measures	Environmental Resource Concern	Mitigation Measures
Hazardous Materials and Waste	The effects of the significant quantities of oil and fuel onboard the SBX Radar Vessel and significant quantities of hazardous waste generation.	No additional mitigation measures would be needed.	The effects of the significant quantities of oil and fuel onboard the SBX Radar Vessel and significant quantities of hazardous waste generation.	No additional mitigation measures would be needed.
Noise	The effects of on-board generators noise on nearby residential areas. The effects of testing the additional speakers for the Radiate Warning System (Siren System/Loud Speakers).	Although the vessel may be turned about (orientation of the bow and stern may vary) to best access thrusters (one half of the ≈ 45 days) and pier side equipment, consideration of the alignments of the SBX Radar Vessel would mitigate the noise levels produced by the Proposed Action. As a means of reducing the noise (during the 3-month maintenance period) from the two diesel generators, the use of the existing noise baffles and the alignment of the generators' exhaust away from residences (i.e., towards NSE) would provide a greater buffering of the noise-sensitive areas. Prior to conducting tests of the Radiate Warning System's additional speakers, the community would receive advance notice. The testing of the speakers will be intermittently during the day. The additional speakers will not be tested at night.	The effects of on-board generators noise on nearby residential areas. The effects of testing the additional speakers for the Radiate Warning System (Siren System/Loud Speakers).	Although the vessel may be turned about (orientation of the bow and stern may vary) to best access thrusters (one half of the ≈ 45 days) and pier side equipment, consideration of the alignments of the SBX Radar Vessel would mitigate the noise levels produced by the Proposed Action. As a means of reducing the noise (during the 3-month maintenance period) from the two diesel generators, the use of the existing noise baffles and the alignment of the generators' exhaust away from residences (i.e., towards NASNI) would provide a greater buffering of the noise-sensitive areas. If moored at Pier P, the shipboard generators would be aligned away from residences, as practicable, as a means of reducing the noise from the two diesel generators. Noise-producing construction activities between early morning hours (5:30 a.m. to 7:00 a.m.) and evening hours between (7:00 p.m. to 10:00 p.m.) would be limited to those internal to the vessel. Prior to conducting tests of the Radiate Warning System's additional speakers, the community would receive advance notice. The testing of the speakers will be limited to one day, several hours between 7:00 a.m. and 7:00 p.m., and only intermittently. The additional speakers will not be tested at night.

Table ES-2. Summary of Environmental Concern and Mitigation Measures (Continued)

Resource Category	Naval Station Everett (NSE)-Alternative 1		Naval Air Station North Island (NASNI)-Alternative 2	
	Environmental Resource Concern	Mitigation Measures	Environmental Resource Concern	Mitigation Measures
Socioeconomics	Effects on the human environment, particularly population, and economic activity for the city of Everett, WA.	Impacts to the socioeconomic characteristics are negligible; no mitigation measures are proposed.	Effects on the human environment, particularly population, and economic activity for the cities of Coronado and San Diego, CA.	Impacts to the socioeconomic characteristic are negligible, no mitigation measures are proposed.
Transportation	None. Proposed Action not applicable to this resource for the proposed location. Any additional vehicle traffic related to the 307 potential temporary personnel associated with the Proposed Action is not anticipated to negatively impact the level of service of roadways leading to NSE. Mooring the SBX Radar Vessel would not require the use of water or air transportation.	No mitigation measures are proposed.	The effect to principal and minor arterial and local roadways leading to NASNI via the city of Coronado.	In the 2000 Record of Decision (ROD) for the Final Environmental Impact Statement for Developing Homeporting Facilities for Three NIMITZ-Class Aircraft Carriers in Support of the U.S. Pacific Fleet, the Navy agreed to provide staggered work shift timing when three carriers are in port simultaneously. In addition to the staggered work times, the 2000 ROD also committed the Navy to encourage carpools and vanpools and subsidize the use of public transportation by military personnel and civilian employees in an effort to reduce traffic congestion on local roads (i.e., bus and ferry service). In compliance with the ROD requirement, the Navy provides a transit subsidy program to help offset some of the costs for employees commuting with the use of mass transit and vanpools.
Transportation (Continued)				This level of participation is the equivalent of approximately 700 vehicles per day not traveling the roadways of San Diego County and Coronado. In the 2009 ROD the Navy identified potential traffic improvements both internal (on-base) and external (off-base) to NASNI. All mitigation measures established in the 2009 ROD will continue to be considered, and no further mitigation measures would be needed in the Study Area.

Table ES-2. Summary of Environmental Concern and Mitigation Measures (Continued)

Resource Category	Naval Station Everett (NSE)-Alternative 1		Naval Air Station North Island (NASNI)-Alternative 2	
	Environmental Resource Concern	Mitigation Measures	Environmental Resource Concern	Mitigation Measures
Visual and Aesthetics	View corridors from roadways, parks, or buildings (public or private) from the waterfront area for NSE.	Impacts on aesthetics resources would be negligible and temporary. The lighting system on the vessel is in accordance with navigational rules, the Occupational Safety and Health Administration (OSHA), and the FAA regulations; therefore, no mitigation measures are proposed. No mitigation measures are proposed for visual and aesthetic resources in the Study Area.	View corridors from roadways, parks, or buildings (public or private) from the waterfront area for NASNI.	Impacts on aesthetics resources would be negligible and temporary. The lighting system on the vessel is in accordance with navigational rules, the OSHA, and the FAA regulations; therefore, no mitigation measures are proposed. No mitigation measures are proposed for visual and aesthetic resources in the Study Area.
Water	Impacts on East Waterway (Everett harbor) from underwater welding and seawater overboard discharge.	Impacts to water resources resulting from the Proposed Action would have a low potential for causing an adverse environmental effect. To mitigate potential of lost welding rods/electrodes from entering and accumulating on the floor of the Everett Harbor, underwater welders are required to log and track the number of rods used during the underwater process. Contractors and personnel working at NSE during the maintenance and repair period must obtain a copy of all environmental requirements and BMPs established for the NSE (e.g., Environmental Safety Requirements for Contractors at NSE, 20 August 2007).	Impacts to San Diego Bay from underwater welding and seawater overboard discharge.	Impacts to water resources resulting from the Proposed Action would have a low potential for causing an adverse environmental effect. To mitigate potential of lost welding rods/electrodes from entering and accumulating on the floor of the San Diego Bay, underwater welders are required to log and track the number of rods used during the underwater process. Contractors and personnel working at NASNI during the maintenance and repair period must obtain a copy of all environmental equipments and BMPs established for NASNI (e.g., Afloat Environmental Quick Response Guide, 2009; Senior Officer Present Afloat (SOPA) COMNAVREGSW Instruction 5400.2, 2005; Stormwater Pollution Prevention Plan).

Table ES-2. Summary of Environmental Concern and Mitigation Measures (Continued)

Resource Category	Naval Station Everett (NSE)-Alternative 1		Naval Air Station North Island (NASNI)-Alternative 2	
	Environmental Resource Concern	Mitigation Measures	Environmental Resource Concern	Mitigation Measures
Environmental Justice	Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, focuses on identification and analysis of disproportionately high and adverse human health or environmental effects of actions on minority and low-income populations in the United States.	No mitigation measures are proposed. The Proposed Action would not result in disproportionately high and adverse human health or environmental effects on minority populations and low-income populations. Traditional minority populations comprise a small percentage of the total population for the city of Everett. American Indian and Alaskan Native persons comprise 1.6% of the population for the city of Everett.	Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, focuses on identification and analysis of disproportionately high and adverse human health or environmental effects of actions on minority and low-income populations in the United States.	No mitigation measures are proposed. The Proposed Action would not result in disproportionately high and adverse human health or environmental effects on minority populations and low-income populations. Traditional minority populations comprise a small percentage of the total population for the cities of Coronado and San Diego.
Government–to-Government	Government-to-Government coordination was executed with federally recognized Tribal governments (Lummi, Stillaguamish, Suquamish, Swinomish, and Tulalip Tribes) with the potential to be impacted by activities at NSE.	No mitigation measures are proposed.	There were no federally recognized Tribes identified in the NASNI study area; therefore, no Government-to-Government coordination was done at this location.	No mitigation measures are proposed.

Table ES-3. Summary of Resources Not Requiring Environmental Analysis and Mitigation Measures

Resource Category	Naval Station Everett (NSE)-Alternative 1, and Naval Air Station North Island (NASNI)-Alternative 2
	Environmental Resource Concern and Mitigation Measures
Cultural Resources	None. There are no known underwater archaeological sites or features within the deep water terminal area. In addition, there are no activities associated with the Proposed Action that could potentially affect either terrestrial archaeological sites or aboveground properties (e.g., buildings, structures) that are eligible for listing on the National Register of Historic Places.
Geology and Soils	None. There are no planned disturbances to soil or landforms (e.g., dredging), or installation of pier pilings.
Health and Safety	None. The radar would not be in use while the Sea-Based X-Band (SBX) Radar Vessel is in port. Any risk to divers performing underwater welding activities is covered by the established policy and procedures of the company providing the service. There are no other anticipated effects to public health and safety.
Land Use	None. There are no planned changes in the current facility designated land use patterns. The use of the facility (i.e., entrance of vessels into port, maintenance activities) is a normal facility operation.
Utilities	None. It is normal operating procedure for vessels (e.g., Aircraft Carriers, Oilers) to moor at these locations and use pier-side hook-up to potable water, waste water, or shore power. The current electrical capacity provided by these locations is sufficient for the temporary use of these services by the SBX Radar Vessel.

Acronyms and Abbreviations

ACRONYMS AND ABBREVIATIONS

ABS	American Bureau of Shipping
ACAM	Air Conformity Applicability Model
ADT	Average Daily Traffic
AGL	Above Ground Level
AMSL	Above Mean Sea Level
APCD	Air Pollution Control District
ARTCC	Air Route Traffic Control Center
BA	Biological Assessment
BMDS	Ballistic Missile Defense System
BMP	Best Management Practice
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CALTRANS	California Department of Transportation
CCD	Coastal Consistency Determination
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CNEL	Community Noise Equivalent Level
CO	Carbon Monoxide
CO_2	Carbon Dioxide
COMNAVREGSW	Commander, Naval Region Southwest
CVN	Nuclear-powered Aircraft Carrier
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
CZMP	Coastal Zone Management Program
DAR	Defense Access Roads
dB	Decibels
dBA	A-weighted Decibels
DNL	Day/Night Levels
DoD	Department of Defense
DOPAA	Description of Proposed Action and Alternatives

DP	Dynamic Positioning
DPS	Distinct Population Segment
EA	Environmental Assessment
EFH	Essential Fish Habitat
EFHA	Essential Fish Habitat Assessment
EIFS	Economic Impact Forecasting System
EIS	Environmental Impact Statement
ERL	Effects-Range Low
ERM	Effects-Range Medium
ESA	Endangered Species Act
ESU	Evolutionarily Significant Unit
°F	Degrees Fahrenheit
FAA	Federal Aviation Administration
FEIS	Final Environmental Impact Statement
FONSI	Finding of No Significant Impact
GHG	Greenhouse Gas
GMD	Ground-Based Midcourse Defense
HAP	Hazardous Air Pollutant
HVAC	Heating, Ventilation, and Air Conditioning
IDT	In-Flight Interceptor Communication System Data Terminal
IFR	Instrument Flight Rules
INRMP	Integrated Natural Resources Management Plan
kV	Kilovolt
kW	Kilowatt
L_{eq}	Hourly Equivalent Noise Level
LOS	Level of Service
LPC	Light Pollution Code
LRU	Line Replaceable Unit
MBTA	Migratory Bird Treaty Act
MDA	Missile Defense Agency
Mg/L	Milligram(s) per Liter
µg/m^3	Microgram per Cubic Meter

MLLW	Mean Lower Low Water
MSL	Mean Sea Level
MW	Megawatt
N/A	Not Applicable
NAAQS	National Ambient Air Quality Standards
NASNI	Naval Air Station North Island
NAVSEA	Naval Sea Systems Command
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NOTAM	Notice to Airmen
NOx	Oxides of Nitrogen
NPDES	National Pollutant Discharge Elimination System
NSA	National Security Areas
NSE	Naval Station Everett
NSR	New Source Review
OPNAVINST	Chief of Naval Operations Instruction
OSHA	Occupational Safety and Health Administration
Pb	Lead
PCB	Polychlorinated Biphenyl
PL	Public Law
PM	Particulate Matter
PM2.5	Particulate Matter with a Mean Aerodynamic Diameter of 2.5 Microns or Less
PM10	Particulate Matter with a Mean Aerodynamic Diameter of 10 Microns or Less
PSB	Primary Support Base
PSCAA	Puget Sound Clean Air Agency
PSD	Prevention of Significant Deterioration
PSNS-IMF	Puget Sound Naval Shipyard—Intermediate Maintenance Facility
RCW	Revised Code of Washington
RONA	Record of Non-Applicability

RWQCB	Regional Water Quality Control Board
SBX	Sea-Based X-Band
SDAB	San Diego Air Basin
SEIS	Supplemental Environmental Impact Statement
SIP	State Implementation Plan
SLM	Sound Level Meters
SMS	Sediment Management Standards
SO2	Sulfur Dioxide
SOPA	Senior Officer Present Afloat
SO_X	Oxides of Sulfur
SPCC	Spill Prevention, Control, and Countermeasures
SRKW	Southern Resident Killer Whale
SSDG	Ship Service Diesel Generator
SWPPP	Storm Water Pollution Prevention Plan
TFR	Temporary Flight Restriction
TWE	Thruster Well Extension
UNDS	Uniform National Discharge Standards
UPS	Uninterruptible Power Supply
USC	United States Code
USCG	United States Coast Guard
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
VFR	Visual Flight Rules
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compound
VTS	Vessel Traffic Service
W	Watt
WAC	Washington Administrative Code
WDOE	Washington State Department of Ecology
XBR	X-Band Radar

Table of Contents

TABLE OF CONTENTS

APPENDICES

FIGURES

TABLES

1.0 Purpose and Need for Proposed Action

1.0 PURPOSE AND NEED FOR PROPOSED ACTION

1.1 INTRODUCTION

The National Environmental Policy Act (NEPA) of 1969 as amended (42 United States Code 4321, et seq.), the Council on Environmental Quality Regulations for Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] 1500-1508), Department of Defense (DoD) Instruction 4715.9, Environmental Planning and Analysis, Chief of Naval Operations Instruction (OPNAVINST) 5090.1C, Environmental Readiness Program (Environmental and Natural Resources), Department of the Navy Procedures for Implementing NEPA (32 CFR § 775[2005]), and the applicable Service environmental instructions that implement these laws and regulations, direct DoD officials to consider environmental consequences when authorizing and approving Federal actions.

Within the DoD, the Missile Defense Agency (MDA) is responsible for developing, testing, and deploying the Ballistic Missile Defense System (BMDS). The BMDS is designed to intercept threat missiles during all phases of their flight: boost, midcourse, and terminal. The mission of the Sea-Based X-Band (SBX) Radar Vessel is two-fold. It supports BMDS testing in order to improve the system. In addition, the SBX Radar serves as a component of the BMDS, which is an integrated, layered system to defend the United States, its deployed forces and allies, against all ranges of enemy ballistic missiles. The SBX Radar may also be used for related missions such as space surveillance.

The SBX Radar Vessel became operational in 2005. As with any vessel, it requires routine maintenance and repair as well as mandatory recertification of structural and propulsion components. Both the hull and the thrusters require a 5-year maintenance cycle and certification in order to continue operation. The thruster maintenance was due in 2010; however, MDA received an extension until 31 May 2011. The work to accomplish hull certification, as well as some additional scheduled maintenance, was performed at Joint Base Pearl Harbor–Hickam, HI, in July and August 2010. Thruster maintenance work must be performed at a deep-water facility. Some additional maintenance work would be performed concurrent with the thruster work. MDA is currently planning for the repair and maintenance work to be done at Todd Pacific Shipyards, a commercial shipyard in Seattle, WA beginning in May of 2011.

MDA must conduct this maintenance around the SBX Radar Vessel's scheduled participation in BMDS flight testing planned throughout the year. Therefore, MDA is also developing contingency plans to potentially utilize other locations should current flight test schedules change or other unforeseen circumstances occur that would affect the ability to obtain the required maintenance at Todd Pacific Shipyards. MDA is proposing to perform necessary inspection, maintenance, and repair actions on the SBX Radar Vessel at one of two proposed contingency locations: Naval Station Everett (NSE), WA or Naval Base Coronado-Naval Air Station North Island (NASNI), CA. If performed at one of the contingency locations, this work could commence in Spring/Summer 2011 and take approximately 3 months to complete. However, due to the operational requirements of the SBX Radar Vessel and shifting world events, the commence date may change. NSE and NASNI are not typically used as

maintenance and repair facilities. Although minor maintenance and repair activities are currently performed at NSE and NASNI, they are not functioning shipyards and do not perform shipyard-type work. Therefore, this Environmental Assessment (EA) is being prepared to examine the potential for impacts to the environment as a result of the proposed maintenance activities associated with the SBX Radar Vessel at NSE and NASNI only. The X-Band Radar (XBR) and the weather radar would not be operated while in port. No radar tracking, testing, or calibration would occur during maintenance activities in port.

1.2 BACKGROUND

SBX Radar operations testing and the establishment of a Primary Support Base (PSB) were analyzed in the *Ground-Based Midcourse Defense* (*GMD) Extended Test Range Environmental Impact Statement (EIS)* (Missile Defense Agency, 2003). The locations analyzed as a PSB for the SBX Radar Vessel were Pearl Harbor, HI (which joined with Hickam Air Force Base in January 2010 to form Joint Base Pearl Harbor–Hickam); Naval Base Ventura County–Port Hueneme, CA; NSE, WA; Port Adak, AK; and Port of Valdez, AK. The subsequent Record of Decision for the GMD Extended Test Range EIS selected Port Adak, Alaska as the location to establish a PSB for the SBX Radar Vessel. Currently, Adak is not used as the PSB since the SBX Radar Vessel is at sea for approximately 300 days a year. Adak was not intended to be used as a location for maintenance of the SBX Radar Vessel.

The SBX Radar Vessel consists of a converted semi-submersible, mobile, twin-hulled platform on which an XBR and other system components have been mounted (Figure 1-1). The SBX Radar is able to track, discriminate, and assess incoming missiles. The SBX Radar greatly increases MDA's ability to conduct more robust and operationally realistic testing of the BMDS, and enhances the BMDS's operational ability to intercept incoming missiles. Because of its mobility, the SBX Radar Vessel can be repositioned to provide operational forward-based coverage or relocated for optimum coverage of various scenarios in the BMDS test program. The SBX Radar Vessel is capable of traveling approximately 8 knots under its own power.

The self-propelled SBX Radar Vessel is 240 feet wide and 390 feet long. At transit draft, the vessel has a height of approximately 250 feet above the water surface. The SBX Radar Vessel is one-third the length of *USS Abraham Lincoln*. The dome of the SBX Radar Vessel extends 73.5 feet higher than the top of *USS Abraham Lincoln,* and the dome is approximately 61 feet wider at mast. The dome is 36 feet higher than the top of *USS Nimitz,* and the dome is approximately 22 feet wider at mast. When conducting mission activities, the SBX Radar Vessel ballasts down to an operational draft and has a height of approximately 200 feet above the water surface. The main deck of the SBX Radar Vessel houses living quarters, workspaces, storage, power generation, bridge and control rooms, and the floor space and infrastructure necessary to support the 2,000-ton XBR antenna array; command, control, and communications suites; and an In-flight Interceptor Communication System Data Terminal (IDT). The vessel is Government owned (MDA) and contractor operated (Boeing).

Details of the maintenance and repair requirements for the thrusters are discussed in Chapter 2.0, and a detailed analysis of the two deep-water facilities is discussed in Chapter 3.0. Non-completion of the maintenance and repair of the thrusters would lead to the eventual decertification of this SBX Radar Vessel.

Sea-Based X-Band Radar Vessel

Figure 1-1

1.3 POTENTIAL LOCATIONS FOR DEEP-WATER MAINTENANCE

In accordance with the developing contingency plans noted in Section 1.1, other potential locations need to be analyzed should the test schedule change or other unforeseen circumstance occur that would affect the ability to complete the required maintenance and repair activities.

Due to the accessibility requirements of the SBX Radar Vessel thrusters, the maintenance and repair work must be performed at a deep-water facility. After a review of the operational and maintenance schedule of the SBX Radar Vessel and the availability of deep-water naval facilities, MDA determined the west coast locations of NSE and NASNI to be viable locations to accommodate the Spring/Summer 2011 maintenance and repair period.

1.3.1 NAVAL STATION EVERETT, WA

NSE is located next to the marina area of the city of Everett, Washington, about 25 miles north of Seattle on the northeast side of Possession Sound (Figure 1-2). NSE consists of two related installations: the Everett Waterfront Site and the Navy Support Complex in Marysville, Washington. The scope of the EA pertains only to the Everett Waterfront Site. NSE serves as the homeport site for one Nuclear-Powered Aircraft Carrier (CVN)-class aircraft carrier (USS Abraham Lincoln [CVN 72]) and six other combat ships, providing operational services to support Navy forces in the Pacific Northwest and administrative support to tenant activities. The site consists of 117 acres along the Everett waterfront and is bordered by the Snohomish River to the west, Port Gardner Bay to the south, and the East Waterway to the east (Naval Station Everett, 2008). Access to and from Puget Sound berthing sites—including those for NSE—is by the charted major ship travel channel, and all marine vessel traffic therein is regulated by the U.S. Coast Guard. A U.S. Coast Guard buoy tender and cutter are located at NSE. Strict control of all shipping is maintained through a common radio channel. Ship traffic to NSE requires sailing around the southern end of Whidbey Island and up the island's eastern side to the NSE berthing piers. (U.S. Department of the Navy, 1999) Additionally, NSE is located within a geographical area that is within the adjudicated usual and accustomed (U&A) fishing grounds and stations of the Lummi, Stillaguamish, Suquamish, Swinomish, and Tulalip. Mutually respectful government-to-government relationships between the Navy and Tribal Governments are essential.

1.3.2 NAVAL AIR STATION NORTH ISLAND, NAVAL BASE CORONADO, CA

Naval Base Coronado is a 5,000-acre complex in San Diego consisting of five installations that stretch from the entrance of the San Diego Bay to the City of Imperial Beach to the South. NASNI is one of the five installations which is located in the City of San Diego and occupies approximately 2,000 acres of the complex at the north end of the Coronado Peninsula (Figure 1-3). NASNI is headquarters for 4 major military Flag Officer staffs including Commander Naval Air Forces, and supports 21 squadrons and more than 220 aircraft. USS Nimitz (CVN 68) and USS Ronald Reagan (CVN 76) are homeported at its piers. The base is also home to the Navy's Deep Submergence Unit. When all ships are in port, the population of the station swells

EXPLANATION

Interstate

Seattle Urban Area

County Boundary

NORTH

0 5 10 20 Miles

Naval Station Everett

Washington

Figure 1-2

EXPLANATION

- Major Road
- Country Boundary
- San Diego Urban Area

NORTH

0 5 10 20 Miles

Naval Air Station North Island

California

Figure 1-3

to more than 25,000 active duty, reserve, and civilian workers from 140 tenant commands. North Island itself is host to 23 squadrons and 75 additional tenant commands. NASNI occupies approximately 2,000 acres of the complex at the north end of the Coronado Peninsula (Naval Facilities Engineering Command, 2008)

NASNI is bordered by San Diego Bay on the north and west, the Pacific Ocean on the south, and by the city of Coronado on the east. NASNI was established as a CVN home port through the Defense Base Closure and Realignment Act and a subsequent NEPA decision (U.S. Department of the Navy, 1995).

1.4 PURPOSE AND NEED

1.4.1 PURPOSE

The purpose of the Proposed Action is to conduct maintenance activities at one of the contingency locations (NSE or NASNI), with a deep-water port capable of providing the required maintenance activities. Thruster maintenance requires an in-port depth of 50 feet.

1.4.2 NEED

If maintenance and repairs for the SBX Radar Vessel thrusters are not completed within the 5-year cycle, the vessel would not be allowed to operate. The vessel would not meet its operational qualifications, as required to operate as a seaworthy vessel, and would thus be decertified. Thruster maintenance requires a deep-water port (at least 50 feet deep). The Proposed Action is needed as a contingency in the event that Todd Pacific Shipyards is not available to perform required maintenance activities of the thrusters in order to maintain a full suite of radars for anti-ballistic missile testing and an operational capability for the combatant commands.

1.5 DECISION(S) TO BE MADE

Following the public review period (as specified in newspaper notices and letters to agencies and the general public, if requested), the MDA will consider public and agency comments received as well as operational and test schedules and availability of port facilities in deciding (1) where to complete the required maintenance and repairs in the event that Todd Pacific Shipyards is not available; (2) whether to sign a Finding of No Significant Impact (FONSI), which would allow the Proposed Action to proceed; (3) whether to conduct additional environmental analysis (if needed); or (4) to select the No-action Alternative.

1.6 SCOPE OF ENVIRONMENTAL ASSESSMENT

In accordance with Council on Environmental Quality Regulations (40 CFR 1502.14(d)), this EA analyzes the Proposed Action, which includes two alternative locations, and the No-action Alternative. The No-action Alternative serves as the baseline from which to measure the impacts of the alternatives for the Proposed Action. Under the MDA No-action Alternative, the inspection, maintenance, and repairs of the SBX Radar Vessel would not occur at one of the two alternate locations described above, but would be performed at Todd Pacific Shipyards as planned. However, since the SBX Radar is a critical test asset as well as an integral operational

component of the BMDS, both missile defense test and operational capabilities would be severely degraded if the SBX Radar Vessel is not able to continue to operate due to required maintenance being performed.

1.7 RELATED ENVIRONMENTAL DOCUMENTATION

As appropriate, the conclusions of these NEPA studies are summarized and included in this document:

- *Silver Strand Training Complex Draft Environmental Impact Statement,* January 2010
- *Final Supplemental Environmental Impact Statement for Developing Homeporting Facilities for Three NIMITZ-Class Aircraft Carriers in Support of the U.S. Pacific Fleet*, December 2008
- *Draft Northwest Training Range Complex Environmental Impact Statement/Overseas Environmental Impact Statement*, December 2008
- *Final Missile Defense Agency Ballistic Missile Defense System (BMDS) Programmatic Environmental Impact Statement*, January 2007
- *Ground-Based Midcourse Defense (GMD) Sea-Based X-Band Radar (SBX) Placement and Operation Adak, Alaska Environmental Assessment,* October 2005
- *Environmental Assessment for Construction of Support Facilities for Coastal Patrol Boat "Blue Shark" at Naval Station Everett, Everett Washington*, December 2004
- *Ground-Based Midcourse Defense* (*GMD) Extended Test Range Final Environmental Impact Statement (EIS)*, July 2003
- *Naval Base Coronado Environmental Assessment*, February 2002
- *Environmental Assessment for Installation of a Log Boom Security Barrier around Piers Alpha and Bravo at Naval Station Everett, WA*, October 2001
- *Final Environmental Impact Statement for Developing Home Port Facilities for Three NIMITZ-Class Aircraft Carriers in Support of the U.S. Pacific Fleet*, July 1999
- *Supplemental Final Environmental Impact Statement Element II Breakwater Pier Naval Station Everett, WA,* November 1993
- *Environmental Assessment Element 1 Carrier Battle Group Homeporting in the Puget Sound Area, Washington State*, June 1989
- *Final Environmental Impact Statement Carrier Battle Group Puget Sound Region Ship Homeporting Project*, June 1985

2.0 Description of the Proposed Action and Alternatives

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

This chapter describes the Proposed Action, the No-action Alternative, Alternatives 1 and 2, and alternatives considered but eliminated from further study.

2.1 DESCRIPTION OF SEA-BASED X-BAND RADAR VESSEL

The Sea-Based X-Band (SBX) Radar Vessel is made up of a seagoing platform on which an X-Band Radar (XBR) has been mounted. This section describes the SBX Radar Vessel and its components (the Sea-Based Platform and XBR). Figure 1-1 shows the XBR and Sea-Based Platform.

2.1.1 SBX RADAR VESSEL

The SBX Radar Vessel supports Ballistic Missile Defense System (BMDS) integrated flight testing. It exercises all midcourse sensor functions including weapon task plans, in-flight target updates, target object maps, and kill assessments. The SBX Radar supports most extended range test scenarios.

The SBX Radar also has a real-world missile defense mission. It is part of an integrated, layered system to defend the United States, its deployed forces, allies, and friends against all ranges of enemy ballistic missiles.

The SBX Radar Vessel is self-propelled by four steerable 3.4-megawatt (MW) electrically driven thrusters, which extend below the bottom surface of the platform's pontoons. While in open water, two thrusters effectively propel and maneuver the SBX Radar Vessel without assistance.

The thrusters of the vessel are retractable. While the thrusters are extended, the draft of the SBX Radar Vessel is approximately 50 feet. The retractable thrusters can be lifted into the pontoons to reduce the draft of the vessel to approximately 35 feet, allowing it to enter shallower ports.

The SBX Radar Vessel has a permanent crew of approximately 83 personnel, which includes approximately 16 Boeing employees, 65 subcontractors (mariners, security, communications, and radar personnel) and 2 government employees. In addition, there is sufficient berthing, accommodations, and lifesaving equipment to support an additional 50 people onboard on a temporary basis to support testing.

When the vessel is operational in the open ocean, the electrical power requirement for the SBX Radar Vessel and its various payloads is approximately 20.76 MW. This is supplied in a varying combination by six 3.46-MW Ship Service Diesel Generators (SSDG). The SBX Radar Vessel has a fuel capacity of approximately 1.88 million gallons; however, the fuel is normally

maintained at approximately 80 percent of capacity or 1.4 million gallons. Approximate fuel consumption for transit and radar operation is 14,500 gallons per day.

2.1.2 COMPONENTS OF THE SEA-BASED RADAR VESSEL

2.1.2.1 Sea-Based Platform

The Sea-Based Platform is a commercial platform manufactured by Moss Maritime of Oslo, Norway. The platform is a column-stabilized semi-submersible platform, with two pontoons and six stabilizing columns supporting the upper hull. The structure has sufficient strength to support a deck load of 20,000 tons. Table 2-1 provides the dimensions of the platform. The Sea-Based Platform is semi-submersible, meaning that it has large ballast tanks that are evacuated to raise the vessel and reduce draft for transit or pier-side use. The helicopter pad is not anticipated to be in use during the maintenance and repair period.

Table 2-1. Platform Dimensions

Platform Characteristics	Dimensions
Upper Hull	
Length of deck	272 feet
Width of deck	240 feet
Height to upper deck	133 feet
Draft during operation with thrusters installed	91.8 feet
Draft during transit with thrusters installed	50 feet
Pontoons	
Length	390 feet
Width	47 feet
Depth	33.3 feet
Pontoon spacing	190 feet
Displacement during operation	50,340 tons
Displacement in transit	32,800 tons

Source: U.S. Army Space and Missile Defense Command, 2003

2.1.2.2 X-Band Radar Component

The XBR is a multifunction radar that performs tracking, discrimination, and kill assessments of overflying missiles for both missile defense testing and for missile defense contingencies in the case of an actual missile attack against the United States. The XBR is mounted on a 90-foot diameter antenna mount track support cylinder housed in a 103-foot base diameter radome. Total height of the SBX Radar Vessel above the water line including the XBR radome is approximately 250 feet at transit draft.

2.2 PROPOSED ACTION AND ALTERNATIVES

2.2.1 PROPOSED ACTION

The Proposed Action of this Environmental Assessment (EA) is to conduct maintenance activities at one of the contingency locations (Naval Station Everett [NSE], Washington or Naval Air Station North Island [NASNI], California), with a deep-water port capable of providing the required maintenance and repair of the SBX Radar Vessel thrusters and other scheduled general maintenance activities (detailed in Table 2-2). The facility must have a minimum water-depth of 50 feet.

Inspection, maintenance, and repair activities on the SBX Radar Vessel are similar to activities that are performed on all U.S. Navy ships. These activities include thruster maintenance, painting, welding, blasting, sanding, plasma cutting, inspections, installation of new equipment, removal of broken and obsolete equipment, equipment calibration, washing of equipment and vessel, and purging of systems (i.e., cooling, sewage, water, etc). These activities will occur inside the vessel, outside the vessel (topside and below the waterline), and pier-side, and can be broken down into standardized work categories as shown in Table 2-2. Activities that would occur under each of these maintenance categories are described in the table. Associated equipment that would be used in support of maintenance and repair are described in Table 2-3. Additionally, the XBR and the weather radar would not be operated while at pier-side. The SBX vessel does not have or operate any C Band radar systems, nor does it operate radar for launch and recovery operations. The SBX Radar Vessel utilizes commercial satellite communications service operating in the C Band. However the antennas are directional and are not expected to interfere with other communication systems or signals. No radar tracking, testing, or calibration would occur during maintenance activities.

Table 2-4 lists standard industry Best Management Practices (BMPs) that apply to the pertinent sub-tasks (e.g., painting, welding, plasma cutting, paint removal, and sanding) that have the potential to impact the environment when the SBX Radar Vessel is in-port for maintenance and repairs. BMPs are a series of maintenance, housekeeping, and materials management practices that minimize wastes from activities such as paint stripping and surface preparations, painting, non-dry dock maintenance, welding, cutting, engine maintenance, and materials handling. These BMPs are drawn from the established management practices from the Washington Department of Ecology Pollution Prevention Center, Shipbuilders.org, Environmental and Safety Requirements for Puget Sound Naval Shipyard and Intermediate Facility Contracts, and the Afloat Environmental Quick Response Guide. However, BMPs are not limited to those listed in Table 2-4; the contractor or personnel performing the sub-tasks must obtain and follow established BMPs and/or mitigation measures for the sub-task for the appropriate location (NSE or NASNI). Potential impacts to the environment are analyzed in Chapter 3.0.

Generators

The vessel would be in-port for maintenance and repair for approximately 3 months. The SBX Radar Vessel would operate on two 3.46-MW generators functioning at 40 percent capacity while in-port and use approximately 1.8 MW (summer months) to 2.6 MW (winter months) of power. Diesel fuel consumption while connected to a pier would be approximately 3,200 gallons per day. Two generators would be required 24/7 for lights, air conditioning, computers, etc. because personnel would still live on the vessel during its time in-port. The operation of the two generators would result in approximately 0.72 of a ton of oxides of nitrogen emissions per day to

the air. The generators are located in the stern (back) of the vessel. The SBX Radar Vessel is not equipped to connect to shore power; but, this capability would be installed while in-port during the inspection, maintenance, and repair period. However, due to the complexity of the installation of the shore power connection, it is not anticipated that the vessel would connect to shore power during the approximately 3-month inspection, maintenance, and repair period.

Table 2-2. Proposed Inspection, Maintenance, and Repair Activities

Standardized Work Category	Proposed Activity	Resultant Sub-Tasks Potentially Affecting the Environment *	Inside/ Outside of Vessel
Hull/ Structural	**Armory Viewing Window**: Install viewing window as required by OPNAVINST 5530.13D.	• Plasma cutting • Welding • Painting	Inside
	Hull Preservation: Prepare, prime, and paint all zone, columns, K-bracing, topside weather deck, and underside of the wet deck as determined based on actual conditions. Prepare, prime, and paint pontoon tops with a durable high-profile epoxy slip resistant coating.	• Sanding • Painting • Solvent cleaning **NOTE:** The Contractor shall provide all necessary environmental enclosures as required by the manufacturer of the product being installed and by the shipyard where the product is being installed.	Outside
	MDA Welds Inspection: Conduct MDA welds inspection.	• Welding • Painting	Outside
	Pontoon Deck Chafing Plates: Install a chafing plate on the forward deck top of each pontoon beneath each tow bridle chain.	• Welding • Painting	Outside
	Tow Bridle & Mooring Winch Wires: Remove and replace tow bridle with new bridle. Inspect, clean, replace if required, lubricate, and reinstall mooring in-haul (winch) wires.	• Solvent cleaning • Lubrication	Outside
Machinery Propulsion	**Direct Acting Governors:** Install direct acting governor on all Ship Service Diesel Generators (SSDGs).	• Potentially a limited amount of diesel fuel exposure	Inside
	Dynamic Positioning (DP) Enhancements: Install DP enhancements per design.	• Welding • Painting	Inside
	Main Engine Oil Sump Heaters: Install sump heaters in SSDG oil pans.	**Note:** Use existing sump valve.	Inside
	SSDG Sea Water Cooling: Modify SSDG Jacket Water/Sea Water system to install a back flush capability.	• Sea water drain • Welding	Inside
	Propulsion Thrusters: Perform in-water inspection of thrusters. Replace lower thruster seals and inspect upper gear boxes.	• Underwater welding	Under-water
Electrical	**24 Volts, Direct Current Engine Power System:** Modify the 24 Volts, Direct Current system to the SSDG control panels from the two existing, independent, non-redundant power panels to multiple, redundant sources of power per the results of the approved concept study.	• Welding • Painting	Outside
	Classified Video Tele-Conferencing System: Install second Classified Video Tele-Conferencing on board the SBX Radar Vessel.	• N/A	Inside
	Drive Platform Control System **Redundant Power:** Install Drive Platform Control System redundant power via the Port 11 kV High Voltage Switchboard.	• Welding • Painting	Inside

Table 2-2. Proposed Inspection, Maintenance, and Repair Activities (Continued)

Standardized Work Category	Proposed Activity	Resultant Sub-Tasks Potentially Affecting the Environment *	Inside/ Outside of Vessel
Electrical (Continued)	**Integrated Electronic Security System Volumetric Sensor:** Update Integrated Electronic Security System to (1) install volumetric sensors in the airlocks at each of the three entrances to the XBR, and (2) disable and remove the three existing volumetric sensors in the IDT Radome.	• N/A	Inside
	Security Base Station Install: Install base Station radio and connect to leaky wire system.	• N/A	Inside
	Shore Power 480V Electrical Services: Install connection boxes and provide cables for Shore Power Electrical Services compatible with Navy standard connections.	• Welding **Note:** Access to some locations for installation will require marine chemist to verify all tanks opened will be "safe for entry."	Inside
	XBR 208 V Receptacle: Install one additional 208 V receptacle to the network rack in the Electronics Equipment Room for the upgraded CISCO switch.	• N/A	Inside
Auxiliary Machinery	**Crane Turret Modification:** Modify port and starboard turret structures to strengthen backing plates per manufacturer's recommendations.	• Welding • Painting • Paint removal (including scraping, sandblasting and chipping)	Inside
Outfit, Furnishings and Habitability	**Repair Potable Water System:** Renew corroded fittings in the potable water system. Perform Phase 1 of a five phase program to renew corroded fittings.	• Welding • Painting • Possible chlorination while sanitizing for United States Public Health Service	Inside
	Clean/Repair Sewage System: Clean entire sewage system.	**NOTE:** Acid Cleaning (Contract includes cleanup) Cleaning chemical is an acidic cleaning solution that will dissolve scale from sewage system piping. Cleaning is accomplished with the piping in place and with minimal disruption. Contractor–furnished acid resistant mixing tank and recirculating pump (with associated flexible hoses and vales) are hooked up to the piping to be cleaned. Cleaning chemicals are circulated through the unit until all deposits have been dissolved. When piping is clean, cleaning chemical is pumped to a large tank located on the pier and piping is flushed with fresh water (also pumped to the tank on the pier).	Inside

Table 2-2. Proposed Inspection, Maintenance, and Repair Activities (Continued)

Standardized Work Category	Proposed Activity	Resultant Sub-Tasks Potentially Affecting the Environment *	Inside/ Outside of Vessel
Ship's Mission	**Fire Detection XBR Power:** Install additional power source for XBR fire detection on antenna mount per design, in order to increase redundancy.	• Limited welding	Inside
	Radiate Warning System Improvement: Improve Radiate Warning System by installing additional weather deck loud speakers.	• Testing of the loud speakers	Outside
	Ready Service Locker: Relocate Ready Service Locker for ammunition on the port side on the main deck next to gun mount.	• Welding • Painting	Inside
	XBR SPDE: Re-cable mission critical Signal Processing Data Equipment per XBR-updated Power Panel Schedule.	• N/A	Inside

***NOTE:** Procedures for performing these sub-tasks that could potentially affect the environment (i.e., Best Management Practices [BMPs], mitigation measures) are discussed in Chapter 3.0.

Table 2-3. Equipment Potentially Used in Support of Maintenance and Repair

Potential Equipment	Resources Potentially Affected
Saws and Tools (hand held) Yard Air Compressors (general service) Pumps Welding Units Track Blaster Units Portable Lighting, Ventilation Weight Handling Equipment (cranes) Travel Lift (crane) Work Floats (barges)	• Air Quality-Air Emissions • Hazardous Waste, Fuels, Oily Waste Disposal • Noise-Ambient Terrestrial • Visual and Aesthetic

Table 2-4. In-port Best Management Practices

Activity	Standard Industry Best Management Practices
Surface Preparation, Paint Removal, Sanding Areas	• Enclose, cover, or contain blasting and sanding areas to the maximum extent practical to prevent abrasives, dust, and paint chips from reaching storm sewers or receiving water • Use shrouded or vacuum-assisted tools that prevent abrasives, dust, and paint chips from leaving immediate area being worked on (dustless sanders, vacuum blasting robots) • Use blast media that does not contain pollutants (examples: garnet, steel, ultra-high-pressure water) • Cover drains, trenches, and drainage channels to prevent entry of blasting debris to the system • Prohibit uncontained blasting or sanding activities over open water • Prohibit blasting or sanding activities during windy conditions that render containment ineffective • Inspect and clean sediment traps to ensure the interception and retention of solids before entering the drainage system • Segregate water that has come into contact with abrasives and paint chips from water that has not; treat separately • Collect spent abrasives frequently and store in an enclosed, covered area from which it cannot escape or be rained upon • Consider testing paint before removal to establish potential pollutant levels. • In no event shall waste or any other material be disposed of, or be allowed to enter, the adjacent waters or the storm sewer system
Painting	• Every practical effort shall be employed to prevent paint, paint chips, dust, and other debris from entering the water. • Enclose, cover, or contain painting activities to the maximum extent practical to prevent overspray from reaching the receiving water. • Prohibit uncontained spray painting activities over open water. • Prohibit spray painting activities during windy conditions that render containment ineffective. • Mix paints and solvents in designated areas away from drains, ditches, piers, and surface waters, preferably indoors or under a shed. Paints and solvents shall not be mixed on floats. • When painting from floats, paint should be in cans 5 gallons or smaller, with drip pans and drop cloths underneath. Paint float must have tarp or suitable drop cloth at the bottom grating. • Have absorbent and other cleanup items readily available for immediate cleanup of spills. Paint and solvent spills should be treated as oil spills and shall be prevented from reaching storm drains and subsequent discharge into the surrounding body of water. • Allow empty paint cans to dry before disposal. • Keep paint and paint thinner away from traffic areas to avoid spills. • Recycle paint, paint thinner, and solvents. • Train employees on proper painting and spraying techniques, and use effective spray equipment that delivers more paint to the target and less overspray. • Investigate and use non-pollutant bearing paints (hard epoxies, fluorinated polyurethanes, isothiazolone-containing). • In no event shall waste or any other material be disposed of, or be allowed to enter, the adjacent waters or the storm sewer system. • Educate personnel about the environmental consequences of paint choice.

Table 2-4. In-port Best Management Practices (Continued)

Activity	Standard Industry Best Management Practices
Pressure Washing Areas	• Perform pressure washing only in designated areas where wash water containment can be effectively achieved. • Do not use detergents or additives in the pressure wash water. • Direct deck drainage to a collection system sump for settling and/or additional treatment. • Use solid decking, gutters, and sumps at lift platforms to contain and collect wash water. • Segregate storm water from process water.
Non-Dry Dock Activities *	• Hang tarpaulin from the boat, and/or from fixed or floating platforms, to reduce pollutants transported by wind. • Place plastic sheeting or tarpaulin underneath boats to contain and collect waste and spent materials, and clean and sweep regularly to remove debris. • Use appropriate plastic or tarpaulin barriers for containment when work is performed on a vessel in the water to prevent paint overspray from contacting storm water or the receiving water. • Vacuum or sweep rather than hose debris from the dock.
Engine Maintenance and Repairs	• Maintain an organized inventory of materials used in the maintenance shop. • Dispose of greasy rags, oil filters, air filters, batteries, spent coolant, and degreasers properly. • Label and track the recycling of waste material (e.g., used oil, spent solvents, batteries). • Drain oil filters before disposal or recycling. • Store cracked batteries in a non-leaking secondary container. • Promptly transfer used fluids to the proper container; do not leave full drip pans or other open containers around the shop. Empty and clean drip pans and containers. • Do not pour liquid waste down floor drains, sinks, or outdoor storm drain inlets. • Plug floor drains that are connected to the storm or sanitary sewer; if necessary, install a sump that is pumped regularly. • Inspect the maintenance area regularly for proper implementation of control measures. • Train employees on proper waste control and disposal procedures.
Shipboard Water Handling	• Keep cooling water used aboard ships separate from sanitary wastes to minimize disposal costs for the sanitary wastes. • Keep cooling water from contact with spent abrasives and paint to avoid pollution of the receiving water. • Inspect connecting hoses for leaks. • Discharge sanitary wastes from the ship being repaired to the yard's sanitary system or dispose of by a commercial waste disposal company.
Materials Storage and Handling	• Maintain good integrity of all storage tanks. Above ground storage tanks shall incorporate appropriate containment and protection to prevent contamination of surface and groundwater. • Inspect storage tanks to detect potential leaks and perform preventive maintenance. The tank shall include an overfill protection system to minimize the risk of spillage during loading. • Inspect piping systems (pipes, pumps, flanges, couplings, hoses, valves) for failures or leaks. • Train employees on proper filling and transfer procedures. • Store containerized materials (fuels, paints, solvents) in a protected, secure location and away from drains. The area shall be paved, free of cracks and gaps, and sufficiently impervious to contain leaks and spills or be over a drip pan large enough to hold contents of the container. The designated area shall be covered.

Table 2-4. In-port Best Management Practices (Continued)

Activity	Standard Industry Best Management Practices
Materials Storage and Handling (Continued)	• Store reactive, ignitable, or flammable liquids in compliance with the local fire code. • Identify potentially hazardous materials, characteristics and use. • Control excessive purchasing, storage, and handling of potentially hazardous materials. • Keep records to identify quantity, receipt date, service life, users, and disposal routes. • Secure and carefully monitor hazardous materials to prevent theft, vandalism, and misuse of materials. • Train employees on proper storage, use, cleanup, and disposal of materials. • Provide sufficient containment for outdoor storage areas for the larger of either 10 percent of the volume of all containers or 110 percent of the volume of the largest tank. • Use temporary containment, where required, by portable drip pans. • Use spill troughs for drums with taps. • Mix paints and solvents in designated areas away from drains, ditches, piers, and surface waters. • Protect containers storing liquid wastes or other liquids, which have the potential of adding pollutants to water (e.g., fuels, paints, and solvents), from the weather in a protected, secure location, and away from drains. • Do not store parts, materials, and containers directly on the pavement, or ground. When possible, store parts, materials, and containers indoors. • Store both spent and virgin sandblast grit under cover. Eliminate contact between process or storm water and sandblast grit. Waste grit must also be managed as a waste following the appropriate state and Federal regulations and this document. • Permanently installed tanks and designed areas for liquid waste are to be surrounded by a dike system. The dike shall be of sufficient height to provide a volume within the dike area equal to 10 percent of the total tank storage or 110 percent of the largest tank, whichever is greater.
Topside Welding, Burning, and Cutting	• Use control measures of some type of capture and collection system that prevents the fumes from escaping the work area. • Cutting fume and dust that may be exposed to rain fall should be cleaned from the work area on a regular and frequent basis. Cleaning should never be accomplished by air blowing, which would only re-suspend the fume particles, where they may be transported to other areas that are exposed to rainfall. Cleaning should be accomplished using vacuums equipped with appropriate filters and/or wet cleaning methods that prevent the escape of the fume to the environment. • All Occupational, Safety, and Health Administration (OSHA) standard welding practices must be followed. • Fire guards and protective measures must be in place during all welding and cutting activities.
Yard Cleanup	• Clean the project site on a regular basis to minimize loss of accumulated debris into water or the storm drainage system. Do not hose down areas and allow the runoff to enter into storm drains. • Conduct weekly cleanliness inspections of outdoor work and storage areas, including storm drain catch basins. Provide cleaning of work areas as necessary to maintain control of potential pollutants. • If trash containers are equipped with drain fixtures, plugs will be installed.
Containment and Control of Dust and Overspray	• Carry out any activity that generates pollutants, (e.g., blasting, painting, metal finishing, welding, grinding) in enclosed, covered areas. • Take applicable measures to adequately contain spent blast grit, paint chips, and paint overspray to prevent the discharge of these materials into water. • Perform spray paint operations in a manner to contain overspray and spillage, and minimize emission of particulates. • Perform all dry-blasting (i.e., sand, grit, abrasive) operations within an enclosure with adequate dust collection.

Table 2-4. In-port Best Management Practices (Continued)

Activity	Standard Industry Best Management Practices
Drip Pans	• Use drip pans or other protective devices at hose connections when transferring oil, fuel, solvent, industrial wastewater, and paint. Where design constraints, vertical connections, or interferences do not allow placement of drip pans, use other measures, such as chemical resistant drapes. Where a spill would likely occur, use drip pans or other protective devices when making and breaking connections, or during component removal operations. • Immediately repair, replace, or isolate leaking connections, valves, pipes, and hoses, carrying wastewater, fuel, oil, or other hazardous fluids. As a temporary measure, place drip pans under leaking connections, equipment, or vehicles to collect any leaking fluid.
Vehicle and Equipment Cleaning and Equipment Preventive Maintenance	• Cleaning/washing of vehicles and equipment is prohibited except at designated wash rack areas and with prior approval. • Inspect vehicles and equipment for leaks before use. Maintain them in good condition at all times. Inspect infrequently used vehicles and equipment monthly for leaks. Inspect all equipment and vehicles for fluid leaks before placing them on piers. • If equipment is found to be leaking, take immediate action to stop the leak and remove it from the naval base or commercial site. Initiate spill response and clean up, as appropriate. • Immediately stop all leaks. As a temporary measure, use drip pans to contain leaking fluids.
Over-Water Work	• For over-water work, provide and position floats, tarps, or other suitable protection adjacent to and under work area to contain debris. Work that has a potential for pollution may include, but is not limited to, painting, paint chipping, blasting, welding, grinding, cutting, chipping, and sanding. No paint or paint residue shall enter water. If windy conditions prevent adequate containment of pollutants, stop work until conditions allow.
Outdoor Work Operations	• When loading and unloading liquids and fine granulated materials from trucks and trailers at outdoor loading areas, prevent potential spills to storm drains by placing or installing a door skirt, door seal, and valved storm drain line. • Place mats over the storm drains. • Do not dump pollutants on the ground. • When performing outdoor work operations, have equipment and supplies on-hand to control and clean up debris. Many outdoor work operations can produce debris, which if not controlled can wash into storm drains and into local waters. • When performing welding operations on the pier, work shall be performed in an enclosed area with fire retardant plywood on the deck to protect the pier. Clean up after each welding operation and recycle the welding rods into the metal recycle bins.
Spray Coating	• The operator shall use best management practices in its spray coating operation, including the collection of organic solvent used for cleanup of equipment into normally closed containers to minimize evaporation to the atmosphere, and keeping containers used for the storage and disposal of organic solvent closed except when these containers are being cleaned or when materials are being added.
Discharges into Storm Drains	• Do not discharge anything into the storm drains.

Table 2-4. In-port Best Management Practices (Continued)

Activity	Standard Industry Best Management Practices
Diving Operations	• A current supply switch to interrupt the current flow to the welding or burning electrode shall be tended by a dive team member in voice communication with the diver performing the welding and burning; and kept in the open position except when the diver is welding or burning. • The welding machine frame shall be grounded. • Welding and burning cables, electrodes holders, and connections shall be capable of carrying the maximum current required by the work, and shall be properly insulated. • Dielectrically insulated gloves shall be provided to divers performing welding and burning operations. • Prior to welding or burning on closed compartments, structures or pipes, which contain a flammable vapor or in which a flammable vapor may be generated by the work, they shall be vented, flooded, or purged with a mixture of gases which will not support combustion.
Fueling/Defueling	• If in-port fueling is required, it shall be conducted during daylight and normal working day with fully qualified watch team aboard to include key engineering supervisory personnel.

Source: Pacific Northwest Pollution Prevention Research Center and Washington Department of Ecology, 1999; Shipbuilders.org, 2005; Puget Sound Naval Shipyard, 2007; Commander Navy Region Southwest, 2009; Chapter 296-37 of the Washington Administration Code, 2010; Title 8 §6057 of the California Code of Regulations, 2010

* Note: The SBX Radar Vessel will not have any maintenance activities performed in dry dock due to size limitation.

Painting and Solvents

Maintenance would include preparing, priming, and painting all zones, columns, K-bracing, topside weather deck, underside of the wet deck, and the pontoon tops on the SBX Radar Vessel. This would require approximately 1,500 gallons of paint and 330 gallons of solvents. All painting would be roller or brush application to reduce air emissions and would follow standard best management practices listed in Table 2-4.

Equipment

Equipment like that listed in Table 2-3 (e.g., hand held saws, air compressors, welding units, abrasive blasting units) would run intermittently on the deck of the SBX Radar Vessel or on the dock.

Vessel Orientation

Due to the position of pier side equipment (i.e., pier side crane) at the potential locations (NSE and NASNI) the orientation of the SBX Radar Vessel may vary. The vessel may be turned about, (orientation of the bow and stern may vary) to best access thrusters and pier side equipment.

Temporary Added Personnel

During the maintenance and repair period, there could be up to 307 personnel working onsite (83 SBX Radar Vessel permanent personnel, 24 shore support, and 200 shipyard workers). Permanent personnel would live on the vessel during the maintenance and repair period. Therefore, an additional 224 personnel would be commuting to the site for up to 3 months with a one-way commute assumed to be 10 miles. Travel in Government-owned vehicles during the

Proposed Action was assumed to be 50 miles for the 83 SBX Radar Vessel permanent personnel. The majority of high-level noise maintenance activities will be done during the day. There would be two work shifts scheduled from 5:30 am to 10:00 pm, 6 days per week. No in-water repairs (i.e., divers working on thrusters) would be performed at night.

Lighting System

The lighting system on the vessel is operational 24 hours per day. Lights are in accordance with navigational rules, the Occupational Safety and Health Administration (OSHA), and the Federal Aviation Administration (FAA) regulations. There are four incandescent floodlights around the inside perimeter of the radar dome, and red safety-lights on the top of the radar dome. Additionally, low-wattage compact fluorescent lamps for safe passage, trainable 500-watt (W) incandescent floodlights at lifeboat and raft launching stations, 300-W incandescent floodlights at each of the four mooring stations, and a number of conventional low-wattage 60-W fluorescent lamps are located along inside and outside walkways. Lights are shielded to the maximum degree possible or pointed downward to minimize the attraction to birds and impacts on area residents. However, the trainable 500-W incandescent floodlights at each of the four mooring stations, and a number of conventional 60-W fluorescent lamps are not operated while in-port. See Figure 2-1 for a night-time view of the SBX Radar Vessel.

Radiate Warning System (Siren System/Loud Speaker)

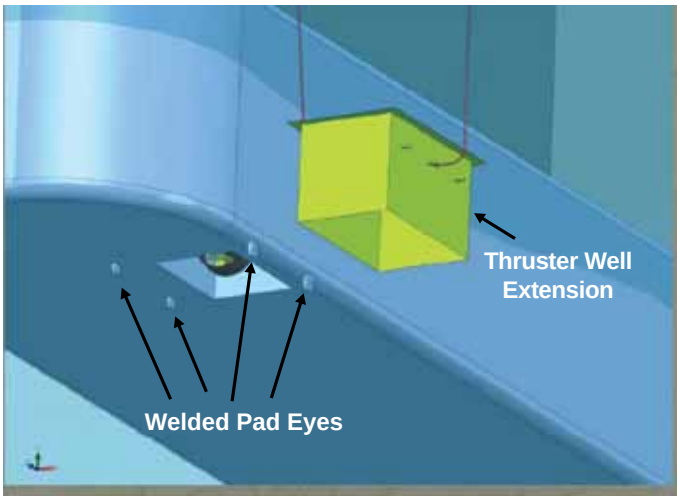
Prior to operating the radar at sea a warning siren is transmitted so that personnel within the radar safety zone of the deck of the SBX Radar Vessel are notified to clear the area. Additional speakers would be added and to the Radiate Warning System (siren system/loud speaker) during the maintenance period. These additional speakers will be tested by operating the radiate warning system. Prior to conducting tests of the system's additional speakers the community would receive advance notice. The speakers would be tested intermittently during the day-time hours. The additional speakers will not be tested at night.

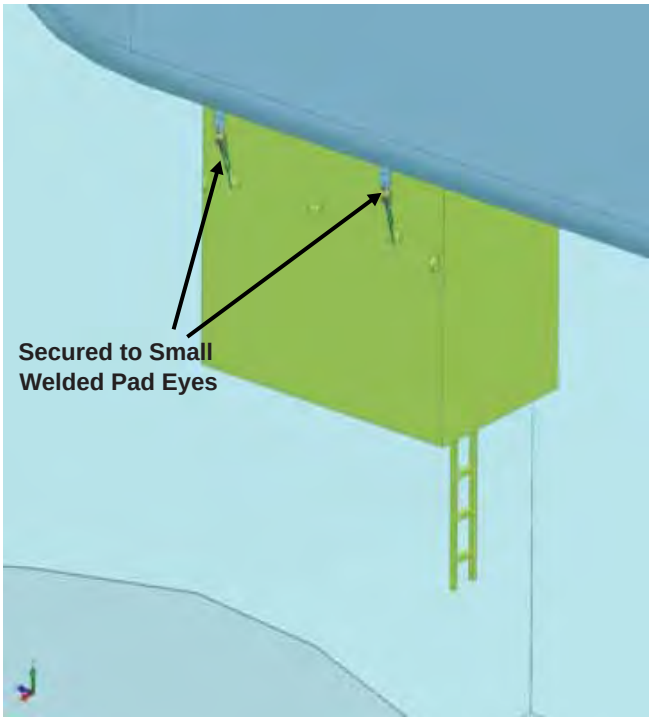
Underwater Welding

Underwater wet welding activities would be performed to install small pad eyes on the thruster areas of the vessel where the thruster well extension unit would be attached (Figures 2-2 and 2-3). The American Welding Society describes the wet-welding process as one in which the diver and the welding arc are exposed to water with no physical barrier between them (Underwater, 2009). A 6 inch x 6 inch area where the small pad eyes are to be installed would be cleaned by scraping away any rust or paint. According to the Uniform National Discharge Standards (UNDS), underwater ship husbandry includes activities such as underwater welding. From operational experience, it is estimated that approximately 5 pounds of slag or spent welding rod are discharged during each underwater welding operation, and approximately 12 of these operations are performed fleet-wide each year on Navy ships, with a total of 60 pounds annually (U.S. Environmental Protection Agency, 1999). It is anticipated that less than 5 pounds of spent material would be discharged during each underwater welding activity associated with the maintenance and repair of the SBX Radar Vessel.

Night-time View of the SBX Radar Vessel

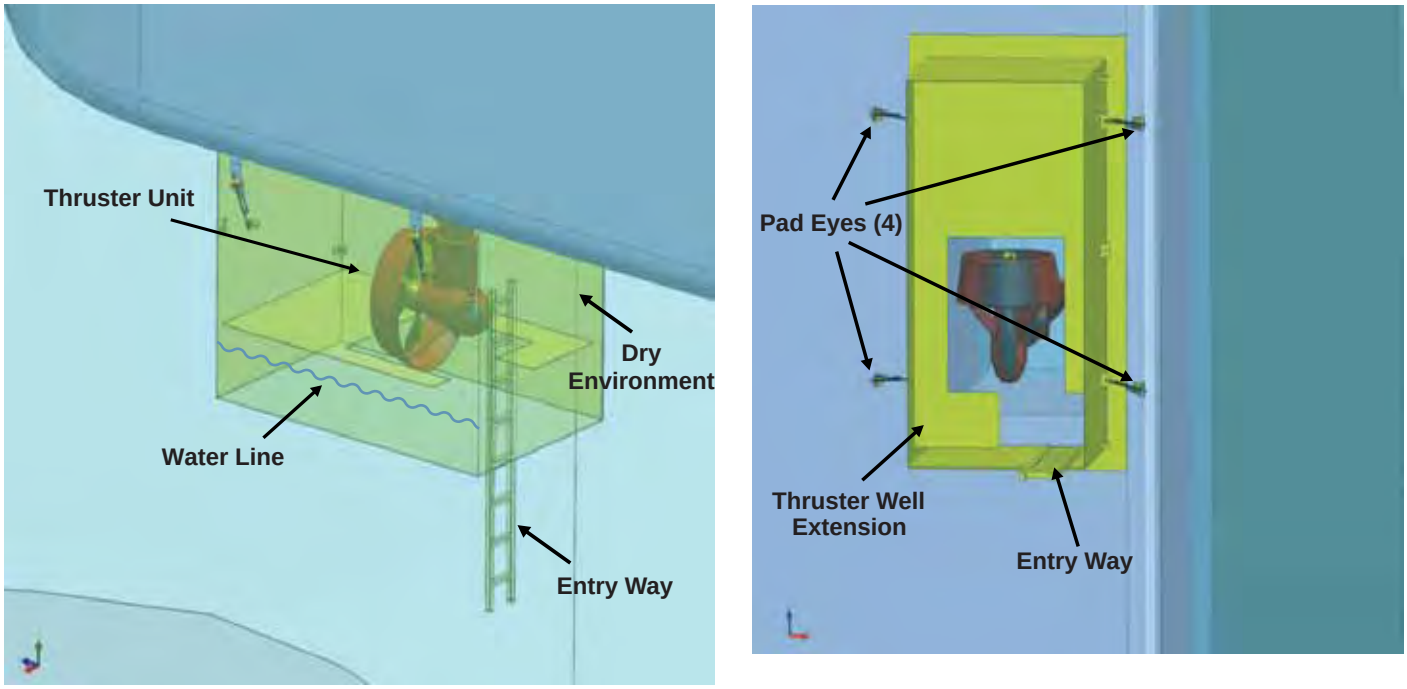
Figure 2-1





Thruster Well Extension Being Lowered, Installed Pad Eyes, and Secured Thruster Well Extension

Figure 2-2



Thruster Unit, Entry Way, and Controlled Dry Environment

Figure 2-3

Seawater Cooling System

The SBX Radar Vessel would use seawater from the bay in the heat exchange of the heating, ventilation, and air conditioning (HVAC) system, which would be discharged back into the bay. The cooling system has a typical flow of 7,400 gallons per minute and would be expected to incur a temperature rise of approximately 6 degrees Fahrenheit, with a maximum temperature rise of 10 degrees Fahrenheit. The SBX Radar Vessel seawater cooling discharge would contain some heavy metals; the quantity would be less than on typical armed forces vessels which utilize nickel-copper piping. While the SBX Radar Vessel uses some copper-nickel piping, it also uses a composite piping that does not contribute heavy metals. The cooling water discharge has four points of discharge at pontoon-level locations below the waterline and two points of discharge at upper hull locations. Any water discharged from the vessel's cooling system while in-port would have originated directly from the water at one of the two proposed locations (Everett Harbor and San Diego Bay). Strainers or screens are used to prevent and mitigate the intake of debris and aquatic organisms. Each strainer plate is slotted with holes measuring a maximum of 0.79 inch by 8.1 inches.

Refueling

Additionally, the SBX Radar Vessel would refuel at the maintenance and repair location after repairs are complete, prior to its departure. Fuel transfers would fully comply with U.S. Coast Guard (USCG) regulations. Additionally, no fuel will be off-loaded from the SBX Radar Vessel while in-port.

Oil Spill Response

The SBX Radar Vessel is a USCG documented and ABS classed marine vessel. Interocean American Shipping is the commercial marine operator that has an approved SBX Shipboard Oil Pollution Prevention Plan and a Corporate Spill response plan that is approved by the USCG. There is an Oil Spill Response Organization on stand-by at all times for the SBX.

Arrival and Departure of the SBX Radar Vessel

The SBX Radar Vessel is operated and maneuvered safely in areas under her own power in significant winds and seas. During transit into the East Waterway (Everett Harbor) and the San Diego Bay, the vessel would be at transit draft in a self propelled condition. The vessel would establish vessel traffic service (VTS) contact as required of all maritime vessels. The vessel would be provided with one or possibly two escort tug vessels based on the prevailing weather conditions capable of maintaining traffic separation lanes as required and under the direction of the VTS. The vessel is under USCG security escort within 12 nautical miles of an approach to a port. The SBX Radar Vessel has an approved emergency and normal tow procedure established and in use. It is not the intention of the SBX Radar Vessel to significantly impact the traffic of any waterways leading in or out of a potential port, but rather to safely and securely make a passage through the area. The SBX Radar Vessel has the capability to follow the traffic separation scheme.

Thruster Maintenance

Included in the maintenance and repair activities for the SBX Radar Vessel described in Table 2-2 is work to be performed on the thrusters. The SBX Radar Vessel is propelled by four 3.4 MW thrusters that are used to move the vessel. The vessel became operational in 2005, and thruster maintenance, a critical part of its required 5-year maintenance cycle, is planned to

commence in Spring/Summer 2011. The thruster maintenance was due in 2010; however, the Missile Defense Agency received an extension for this work until 31 May 2011. Maintenance and repair for the thrusters require approximately 45 days to complete. This could include, but not be limited to, propeller blade seal replacement or blade repair, propeller blade straightening and repair, propeller cleaning and polishing, gear lash and gear inspections, shaft seal repair and replacement.

The four SBX Radar Vessel thrusters would be accessed using a Thruster Well Extension (TWE). The TWE is lowered into the water with a small shore side crane and is designed to be floated from thruster to thruster once underwater. The TWE is positioned in place with the thruster retracted and secured to the hull bottom by four small welded pad eyes at each thruster. The small welded pad eyes are not currently installed on the hull, but must be installed prior to the TWE being attached. The installation of the small pad eyes would require underwater welding. Once floated into position, the TWE is secured with chain blocks to the welded pad eyes. See Figure 2-2 for an illustration of the lowering of the TWE, welded pad eyes, and secured TWE to hull bottom.

The thruster unit is lowered into the well extension, and an air bubble is created (the thruster well is de-watered), then maintenance and repair begins in a controlled dry environment. The TWE has a working platform with entry-way, and a working level. See Figure 2-3 for an illustration of the TWE with the thruster unit, entry way, and controlled dry environment. The majority of the oil (lubricant) contained in the thruster wells would be removed at the pier prior to maintenance; however, a small excess amount would remain in the thruster wells (less than 5 gallons). The excess oil would be pumped out via a hose leading up to a surface tank. BMPs and mitigation measures to be used with the maintenance and repair of the thrusters are discussed in Chapter 3.0 of this EA.

2.2.2 ALTERNATIVES

2.2.2.1 No-action Alternative

The No-action Alternative is evaluated in this document because it provides a baseline against which to measure the impacts of the Proposed Action. Under the No-action Alternative, the inspections, maintenance, and repair work on the SBX Radar Vessel would not be performed at NSE or NASNI, and there would be no disruption to the current operations at either of these locations. Under this alternative, the SBX Radar Vessel would not require a contingency location for deep water maintenance.

2.2.2.2 Alternative 1—Maintenance Requirements Performed at Naval Station Everett, WA

As part of Alternative 1, all activities listed in Table 2-2 would be performed at NSE. Figure 2-4 indicates the location where the SBX Radar Vessel would be moored at NSE (Pier A).

2.2.2.3 Alternative 2—Maintenance Requirements Performed at Naval Air Station North Island, CA

As part of Alternative 2, all activities listed in Table 2-2 would be performed at NASNI. Figure 2-5 indicates the location where the SBX Radar Vessel would be moored at NASNI (Pier N or Pier P).

EXPLANATION

- Street
- Protective Barrier
- Potential Mooring Location
- Naval Station Everett Boundary

NORTH

0 500 1,000 2,000 Feet

Naval Station Everett

Washington

Figure 2-4

Source: Environmental Systems Research Institute, Inc. (ESRI), 2010

EXPLANATION

- Street
- Protective Barrier
- Potential Mooring Location
- Naval Air Station North Island Boundary

NORTH

0 1,000 2,000 4,000 Feet

Naval Air Station North Island, Naval Base Coronado

California

Figure 2-5

2.3 ALTERNATIVES ELIMINATED FROM FURTHER CONSIDERATION

The following six additional facilities were considered as alternative sites to perform the inspection, maintenance, and repair work, but were eliminated from further consideration for the following reasons:

- East Coast Locations—The SBX Radar Vessel is too wide to navigate through the Panama Canal, thus making East Coast locations not viable due to arrival time constraints. Additionally, due to cost it is not feasible to carry the SBX Radar Vessel to an east coast location by ship.
- Bremerton Naval Shipyard, Bremerton, WA (Puget Sound Naval Shipyard and Intermediate Maintenance Facility)—The channel at this location is too narrow to navigate the SBX Radar Vessel with the thruster wells extended into the shipyard. Additionally, the pier water depths are too shallow to allow for the thruster work to be performed at Bremerton Naval Shipyard, Bremerton, WA.
- Joint Base Pearl Harbor–Hickam, HI—The water depths are too shallow to allow for the thruster work to be performed at Joint Base Pearl Harbor–Hickam, HI.
- MV Blue Marlin (semi-submersible heavy lift ship)—As it relates to thruster maintenance, if the SBX Radar Vessel is placed onto the MV Blue Marlin, the SBX Radar Vessel would need to be raised 15 feet to provide clearance for the thrusters. This additional height would make the MV Blue Marlin unstable.
- Dry Docks—No U.S.-controlled dry docks are available for use during the required maintenance time period (work would commence in Spring/Summer 2011).
- Adak Island, AK—Due to the weather conditions (low temperatures and sea state) and the logistics of transporting personnel and equipment to and from the site, the inspection, maintenance, and repair activities cannot be performed at this location.

3.0 Affected Environment and Environmental Consequences

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section describes the natural and human environment that may be affected by the Proposed Action, including the No-action Alternative, Naval Station Everett (NSE), and Naval Air Station North Island (NASNI), and provides a baseline point for understanding any potential impacts. Available reference materials, including Environmental Assessments (EAs), Environmental Impact Statements (EISs), installation plans, and scientific articles were reviewed. Questions were directed to installation and facility personnel and private individuals. Site visits were conducted where necessary to gather the baseline data presented below. Appendix C describes the primary statutes, regulations, and ordinances that provide guidance for avoiding or minimizing impacts on the resources analyzed within this EA.

Fourteen broad areas of environmental consideration were originally considered to provide a context for understanding the potential effects of the Proposed Action and to provide a basis for assessing the severity of potential impacts. These areas included air quality, airspace, biological resources, cultural resources, geology and soils, hazardous materials and waste, health and safety, land use, noise, socioeconomics, transportation, utilities, visual and aesthetic resources, and water resources.

3.1 NO-ACTION ALTERNATIVE

Under the No-action Alternative, inspections, maintenance, or repair work would not be performed on the Sea-Based X-Band (SBX) Radar Vessel at NSE or NASNI. There would be no change to regional air quality, airspace, biological resources, cultural resources, geology and soils, hazardous material and waste production or collection, health and safety, land use, noise, socioeconomics, transportation modes (i.e., ground, air, or water), utilities, visual and aesthetics, or marine water resources. The existing operations at both contingency locations would continue as normal.

3.2 NAVAL STATION EVERETT (ALTERNATIVE 1)

Environmental Resources

Of the 14 broad areas of environmental consideration, the proposed maintenance and repair activities could have an effect on air quality, airspace, biological resources, hazardous materials and waste, noise, socioeconomics, visual and aesthetic resources, and water resources at NSE. These resource areas are analyzed in the following sections.

The remaining resource areas were not analyzed for the following reasons:

- Cultural—There are no known underwater archaeological sites or features within the deep water terminal area. In addition, there are no activities associated with the Proposed Action that could potentially affect either terrestrial archaeological sites or aboveground properties (e.g., buildings, structures) that are eligible for listing on the National Register of Historic Places.
- Geology and Soils—There are no planned soil disturbances of terrestrial or underwater soils or landforms (e.g., dredging) or installation of pier pilings.
- Health and Safety—The radar would not be in use while the SBX Radar Vessel is in port. Any risk to divers performing underwater welding activities is covered by the established policy and procedures of the company providing the service. There are no other anticipated effects to public health and safety.
- Land Use—There are no planned changes in the current facility designated land use patterns. The use of the facility (i.e., entrance of vessels into port, maintenance activities) is a normal facility operation.
- Transportation—Any additional vehicle traffic related to the 307 potential temporary personnel associated with the Proposed Action is not anticipated to negatively impact the level of service (LOS) of roadways leading to NSE. Mooring the SBX Radar Vessel would not require the use of water or air transportation.
- Utilities—It is normal operating procedure for vessels (e.g., Aircraft Carriers, Oilers) to moor at NSE and use pier-side hook-up to potable water, waste water, or shore power. The current electrical capacity provided by NSE for Nuclear-powered Aircraft Carriers (CVNs) would be sufficient to operate the SBX Radar Vessel while moored at NSE when it becomes capable of connecting to shore power.

3.2.1 AIR QUALITY

The primary air quality concerns at NSE are the exhaust from the onboard generators and the emissions from painting operations.

3.2.1.1 Affected Environment

Existing Conditions

Climate

Climate at Puget Sound can be described as cool marine. Average annual rainfall is about 35 inches. July and August are the driest months, whereas December and January are the wettest. Temperatures typically range from 59 degrees Fahrenheit (°F) to 44°F. Summer is the sunniest season, and July is the hottest month with an average high of 75°F. January tends to be the coldest month, with lows averaging 34°F. Prevailing winds during the summer are typically from the north, whereas winter winds generally come from the south.

Regional Air Quality

NSE falls under the Puget Sound Clean Air Agency's (PSCAA's) jurisdiction, encompassing King, Kitsap, Pierce, and Snohomish Counties, WA. The Puget Sound airshed is currently in a maintenance area for ozone (measured as volatile organic compounds [VOCs] and nitrogen oxides [NOx]), carbon monoxide (CO), and particulate matter with a mean aerodynamic diameter of 10 microns or less (PM10). The Puget Sound airshed is in attainment for all other criteria pollutants—sulfur dioxide (SO2) and particulate matter with a mean aerodynamic diameter of 2.5 microns or less (PM2.5).

The Washington Department of Ecology (WDOE) maintains a network of air quality and meteorological monitoring stations throughout the Puget Sound region; the closest station to NSE is in Marysville, WA. The air quality for the Puget Sound area has steadily improved over the last decade. Levels of fine particles (PM2.5) at the Marysville and Darrington monitors, both in Snohomish County, remain in attainment with the Federal standard, but exceed the PSCAA's more stringent local health goal (Puget Sound Clean Air Agency, 2009).

Existing Emissions Sources

The 2004 air emissions inventory at NSE concluded that NSE is not required to obtain a Title V operating permit. The 2004 inventory shows that natural gas-fired boilers, diesel-powered emergency generators, and the steam plant are the main stationary sources of combustive emissions at NSE. The steam plant, boilers, and abrasive blasting contributed equally as sources with potential to emit PM10. VOC emissions are generated from a combination of point sources—tanks, the oily wastewater pretreatment facility, and area sources—use of janitorial supplies, paints, and solvent. Actual emissions of criteria pollutants in the 2004 inventory were as follows: PM10 (1 ton/year), NOx (2 tons/year), VOCs (16 tons/year), CO (3 tons/year), and sulfur dioxide (SO2) and lead (Pb) (0 tons/yr) (Naval Facilities Engineering Command Northwest, 2005). The 2004 actual emissions inventory would be used for comparative purposes to evaluate the magnitude of emissions that would occur from the project alternatives.

Current Requirements and Practices

Equipment used by military, Navy civilians, and contractors, including ships and aircraft, is properly maintained in accordance with applicable Navy requirements and industrial standards, thus reducing potential impacts to air quality. Operating equipment meets Federal and State emission standards, where applicable.

NSE does not hold a Title V air permit because it is not a major source permit holder under Prevention of Significant Deterioration (PSD) or New Source Review (NSR); not an affected source under acid rain rules; not a solid waste incineration unit owner under Sec. 129; not a major source subject to National Emissions Standards for Hazardous Air Pollutants (NESHAP); not a synthetic minor source subject to NESHAP; and not a major source subject to Maximum Achievable Control Technology standards and New Source Performance Standard (See Appendix C for more details). The proposed level of activity on the SBX Radar Vessel and pier-side would not cause NSE to exceed the thresholds triggering a requirement for a Title V permit.

National emission standards for shipbuilding and ship repair (surface coating), listed in the Clean Air Act (CAA) regulations, Subpart II of Part 63, NESHAPs, apply to major sources of hazardous air pollutant (HAP) emissions. Major sources are shipbuilding and repair facilities/coating operations emitting over 10 tons per year of an individual HAP or over 25 tons per year of total HAP are regulated. The Proposed Action is not expected to be a major source of HAP (VOC) emissions.

Pier-side use of abrasive blasting units and spray coating of vessels is restricted at NSE in orders issued by the PSCAA. All contractors hired to perform the SBX Radar Vessel maintenance must follow the restrictions and conditions in these orders, which include the containment or filtering of toxic air pollutants and a limit of VOCs in paint to amounts listed in the CAA regulations, *Table 2 to Subpart II of Part 63, Volatile Organic HAP (VOHAP) Limits for Marine Coatings* (Puget Sound Clean Air Agency, 2005). Table 2 limits volatile organic HAP, or VOCs, to 340 grams per liter coating for general use and to higher limits (between 340 and 780 grams per liter) for specialty coatings (U.S. Environmental Protection Agency, 1995).

General Conformity Applicability

The U.S. Environmental Protection Agency (USEPA) has published *Revisions to the General Conformity Regulations; Final Rule*, in the 5 April 2010 Federal Register (40 CFR Parts 51 and 93). The U.S. Navy published *Clean Air Act (CAA) General Conformity Guidance* in Appendix F, Chief of Naval Operations Instruction (OPNAVINST) 5090.1C, dated 30 October 2007. These publications provide implementing guidance to document CAA Conformity Determination requirements.

USEPA's general air conformity rule applies to Federal actions occurring in nonattainment or maintenance areas when the total indirect and direct emissions of the subject air pollutant exceed specific thresholds. Because of maintenance plans in place for ozone, CO, and PM10 in the Puget Sound airshed, the general conformity *de minimis* level of 100 tons per year applies for these pollutants. See Appendix C for more details. Table 3.2.1-1 shows the *de minimis* levels that apply to the Proposed Action at NSE.

See Appendix C for more details of the current requirements and practices listed above.

Table 3.2.1-1. *De minimis* Levels for Determination of Applicability of General Conformity Rule, Naval Station Everett

Air Quality Jurisdiction	Criteria Pollutant Emission, tons/year					
	VOC	NOx	CO	PM10	PM2.5	SO2
Puget Sound Clean Air Agency (PSCAA)	100	100	100	100	N/A	N/A

Source: 40 CFR 93.153

3.2.1.2 Environmental Consequences

Approach to Analysis

The evaluation of potential air quality impacts includes the effects of air pollutant emissions from the proposed maintenance and repair activities occurring within the PSCAA area and in coastal waters within 3 nautical miles of a shoreline. These coastal waters are part of the same air quality jurisdiction as the contiguous land area.

The National Environmental Policy Act (NEPA) analysis involves estimating emissions generated from the proposed activities and assessing potential impacts on air quality, including an evaluation of potential exposures to toxic air pollutant emissions. The proposed activities as described in Chapter 2.0 that would change air emissions in the region could include:

- Shipboard generators—For purposes of this air quality section, 2½ months, or 75 days, of operation was used because the duration of the activity is estimated to be up to 3 months. After the installation of the equipment to supply power to the vessel from a shore connection, shore power could be used to reduce the use of diesel generators, but it is unknown when the installation will be complete. Therefore, those reductions could not be included in the emissions impact.
- Paints and solvents
- Equipment—For purposes of this air quality section, the equipment listed in Chapter 2.0, Table 2-3, is reflective of maximum equipment requirements, but is not necessarily reflective of equipment needed on any given day. Each of the items was estimated to operate a total of 975 hours (75 days operating 13 hours per day). The length of time any particular piece of equipment is required is ultimately a function of the final maintenance schedule. For example, it is estimated that one welder will be necessary for 75 days; this could be accomplished through the use of one welder for 75 days, or two welders for 37.5 days. For the purposes of calculated emissions, the precise scheduling is not a critical factor; rather, the total operating hours for each piece of equipment is the relevant metric.
- Added personnel—Includes temporary commuting from the 224 shipyard workers; includes additional 50 miles of miscellaneous travel (mix of car, truck) by each of the 83 personnel living on the vessel while in port for 3 months.

Estimated emissions associated with these actions will be compared to *de minimis threshold* to screen for the need (if any) for a formal conformity determination, and will be compared to the current requirements and practices listed above to evaluate the magnitude of emissions that could occur from the proposed activities.

Results of Analysis

Appendix D contains the complete results for the screening level air quality modeling that was used to estimate net increases in air pollution. The results are summarized below.

General Air Conformity Applicability

Total air emissions for the SBX Radar Vessel maintenance and repair are assumed to occur within 1 year, which accurately represents the temporary nature of the Proposed Action. Table 3.2.1-2 shows the estimated air emissions of the subject pollutants resulting from the Proposed Action.

Table 3.2.1-2. Estimated Air Emissions from SBX Radar Vessel Maintenance and Repair, Naval Station Everett

Emission Source Category	Emissions, Tons/Year			
	VOC	NOx	CO	PM10
Two diesel generators operations	5.93	53.76	14.28	0.83
Equipment	0.15	0.41	1.28	0.01
Shipyard worker commute	0.01	0.01	0.08	0
Government-owned vehicle miles traveled	0.00	0.01	0.07	0
TOTAL Emissions	**6.09**	**54.19**	**15.71**	**0.84**
PSCAA *de minimis* threshold[(1)]	100	100	100	100
Proposed Action exceeds *de minimis threshold?*	No	No	No	No

Source: derived from USEPA, 1996; Air Force Center for Engineering and the Environment, 2010

Notes:

[(1)] Puget Sound Clean Air Agency (PSCAA) is a maintenance area for carbon monoxide (CO), particulate matter less than or equal to 10 microns (PM10), and the 8-hour Federal ozone standard; volatile organic compounds (VOCs) and nitrogen oxides (NOx) are precursors to the formation of ozone. The PSCAA is in attainment of the Federal sulfur dioxide (SO2) and particulate matter less than or equal to 2.5 microns (PM2.5) standards; therefore, emissions estimates and *de minimis* thresholds are not shown.

The estimated air emissions from these sources associated with the maintenance and repair of the SBX Radar Vessel would be below the *de minimis* threshold levels for conformity; i.e., VOC, NOx, CO, and PM10 emissions are below 100 tons per year as shown on Table 3.2.1-2. Therefore, the Proposed Action would conform to the PSCAA State Implementation Plan (SIP) and would not trigger a conformity determination under Section 176(c) of the CAA. A Record of Non-Applicability (RONA) for CAA conformity in accordance with Navy CAA Conformity Guidance, OPNAVINST 5090.1C, is provided in Appendix H.

Shipboard Generators Emissions

Air emissions will increase as a result of the limited use of shipboard generators. As shown in Table 3.2.1-2, the NOx emission from two diesel generators operations would be approximately 53.76 tons/year; or an additional 0.72 ton/day of NOx emissions to the air. CO emissions are predicted to be 14.28 tons/year and VOC emissions 5.93 tons/year. The shipboard generators are estimated to result in 0.83 ton/year of PM10 emissions and greenhouse gas emissions (CO_2) of 2,772 tons/year as shown in Table D-2.

For perspective, actual emissions of criteria pollutants in the NSE 2004 Air Inventory were as follows: PM10 (1 ton/year), NOx (2 tons/year), VOCs (16 tons/year), CO (3 tons/year), and SO2 and lead (Pb) (0 tons/yr) (Naval Facilities Engineering Command Northwest, 2005). Compared to the level of NOx emissions the NSE currently produces, the anticipated level of NOx

emissions from the limited use of the shipboard generators is high but compliant with the region's limits. The magnitude of generator use during the SBX Radar Vessel maintenance and repair is different from homeported vessels at NSE because Navy vessels have the ability to connect to shore power. The PM emissions are not significant, and the CO2 emissions are not "meaningful" greenhouse gas emissions as defined by draft guidance of the Council on Environmental Quality (see Appendix C for more details).

The use of onboard generators may cause emissions of visible matter, or nuisance emissions (such as odors or dust), and particulates. This may impact air quality in the immediate vicinity of the project site, but these emissions are not anticipated to be noticeable by residents in downwind communities.

No significant long-term air quality impacts to the region from the shipboard generators are anticipated.

Painting and Solvents Emissions

Over 250,000 square feet of the vessel would be prepared and painted, which would require the use of approximately 1,500 gallons of paint and 330 gallons of solvents. VOC emissions will occur as solvents volatilize from the product. Implementation of Best Management Practices (BMPs) for containment and filtering of emissions that are listed in Chapter 2.0 will minimize the impact to air quality.

As indicated previously, at NSE, the PSCAA has issued an order for pier-side use of abrasive blasting units and spray coating of vessels. All contractors hired to perform the SBX Radar Vessel maintenance must follow the restrictions and conditions in these orders, which include the containment or filtering of toxic air pollutants and a limit of VOCs in paint to amounts listed in the CAA regulations, Table 2 of 40 CFR 63.783. To comply, the MDA/contractor would use low VOC content paint, as specified on the MSDSs from the paint manufacturer and as shown on Table D-4. There will be no significant air impact from paint and solvent use.

Because the painting and solvent activities are part of existing orders from the PSCAA, the emissions are exempt from conformity per 40 CFR 93.153(d) (1), and emissions from painting are not estimated in this analysis. See Appendix D, Section D.1.4 for this discussion.

Other Emissions

Equipment is listed in Chapter 2.0, Table 2-3. Estimates of emissions were based on estimated hours of usage as discussed in Appendix D. As shown in Table 3.2.1-2, potential CO, particulate matter (PM10), and NOx emissions from diesel-powered equipment are not expected to significantly impact air quality. The traffic-related air emissions resulting from the temporary shipyard worker commutes and Government-owned vehicle miles traveled (VMT) would have no significant impact on air quality because of the low number of trips proposed and their temporary nature.

3.2.1.3 Mitigation Measures

Based on the analysis above, no long-term or significant impacts to air quality would occur because of the SBX Radar Vessel maintenance and repair. Therefore, no mitigation is proposed.

3.2.1.4 Summary of Effects

The analysis determined that the mooring of the SBX Radar Vessel for 75 days and the maintenance and repair would cause short-term impacts to air quality, but will not exceed General Conformity *de minimis* levels in the PSCAA regulations, or National Ambient Air Quality Standards (NAAQS). The major ozone (measured by NOx and VOCs) and CO air pollutant emissions sources include shipboard diesel generators, employee commuting, diesel equipment (NOx and CO), and surface coating (VOCs). The estimated air emissions from these sources associated with the maintenance and repair of the SBX Radar Vessel for NOx would be 54.19 tons per year, for VOC would be 6.09 tons per year, for CO would be 15.71 tons per year and for PM10 would be 0.84 ton per year. These emissions will be temporary and will not significantly impact the Puget Sound Air Basin. The requirements imposed by the PSCAA through its orders will limit VOCs in paint to amounts listed in the CAA regulations, Table 2 of 40 CFR 63.783. This and the implementation of BMPs listed in Chapter 2.0 will ensure that the project would have no significant impact on air quality.

3.2.2 AIRSPACE

Airspace surrounding NSE is analyzed in this EA because there is a potential for the SBX Radar Vessel to be an aircraft obstruction.

3.2.2.1 Affected Environment

Airspace, or that space which lies above a nation and comes under its jurisdiction, is generally viewed as being unlimited. However, it is a finite resource that can be defined vertically and horizontally, as well as temporally, when describing its use for aviation purposes. The time dimension is a very important factor in airspace management and air traffic control. Under Public Law (PL) 85-725, *Federal Aviation Act of 1958*, the Federal Aviation Administration (FAA) is charged with the safe and efficient use of our nation's airspace and has established certain criteria and limits to its use.

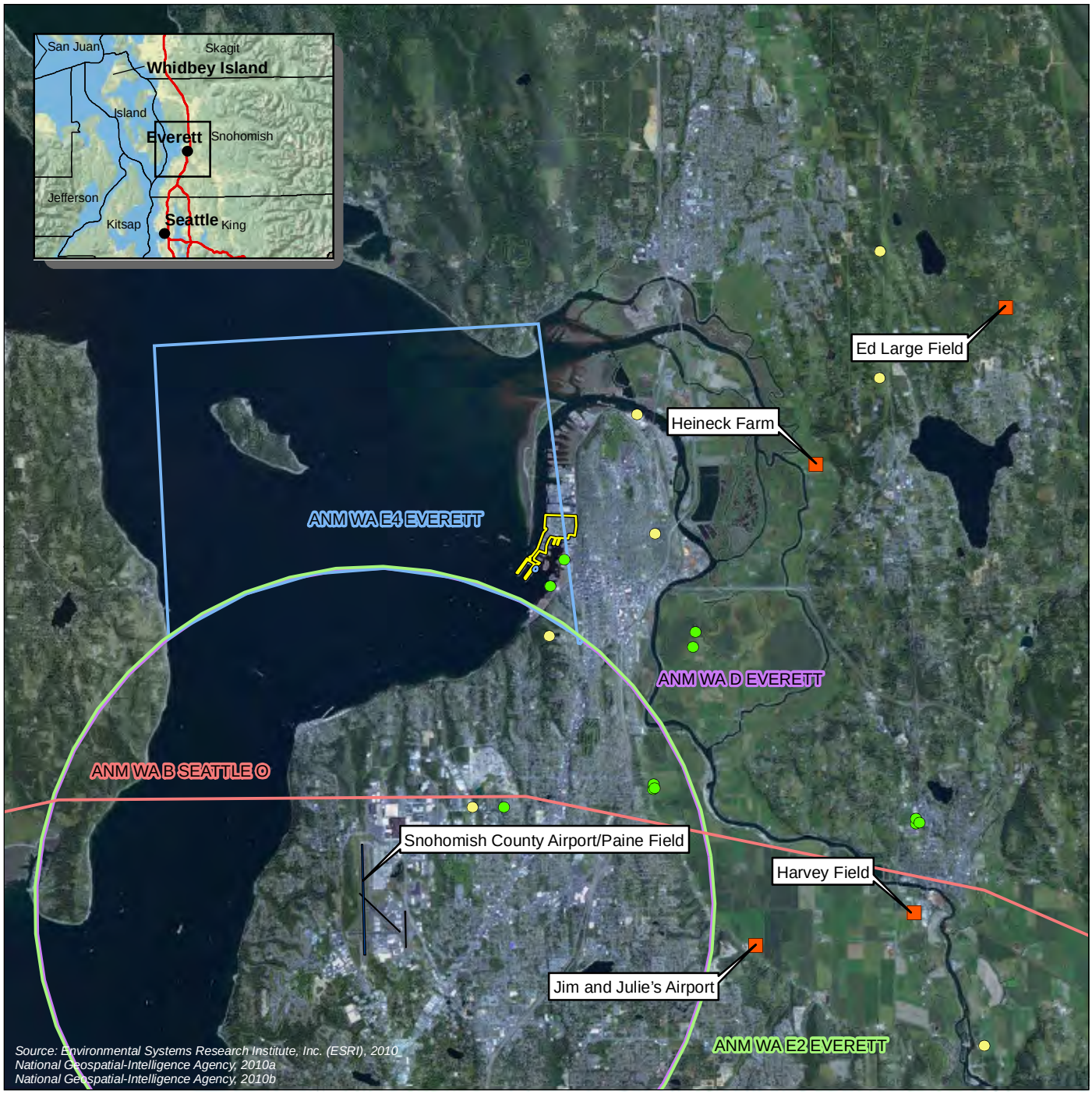
The method used to provide this service is the National Airspace System. This system is "…a common network of U.S. airspace; air navigation facilities, equipment and services, airports or landing areas; aeronautical charts, information and services; rules, regulations and procedures, technical information and manpower and material" (Federal Aviation Administration, 2007).

Existing Conditions

Appendix C provides descriptions of airspace classes and other general information related to airspace issues.

Controlled and Uncontrolled Airspace

The Seattle Air Route Traffic Control Center (ARTCC) regulates air traffic in the region. As shown on Figure 3.2.2-1, the proposed location for the SBX Radar Vessel is within Class E airspace ANM WA E4 EVERETT for Snohomish County Airport/Paine Field, which is in effect from surface to 3,100 feet above mean sea level (AMSL). This airspace adjoins Class E airspace ANM WA E2 EVERETT, which is also in effect from surface to 3,100 feet. Seattle International Airport Class B airspace ANM WA B SEATTLE O is located approximately 4 miles



EXPLANATION

- Other Airfield
- Aerial Obstruction (200' to 249')
- Aerial Obstruction (Greater than 250')
- Airfield Runway
- Potential Mooring Location
- ANM WA D EVERETT (Surface to 3,100')
- ANM WA E4 EVERETT (Surface to 3,100')
- ANM WA E2 EVERETT (Surface to 3,100')
- ANM WA B SEATTLE O (6,000' to 10,000')
- Naval Station Everett Boundary

NORTH

0 1 2 4 Miles

Aircraft Obstructions in the Region of Naval Station Everett

Washington

Figure 3.2.2-1

south of the proposed SBX Radar Vessel location and is in effect from 6,000 to 10,000 feet AMSL. (National Geospatial Intelligence Agency, 2010a)

Special Use Airspace

There is no special use airspace within the Study Area. The nearest special use airspace is located approximately 25 miles west of NSE and includes the Chinook and B Military Operating Areas, and the Admiralty Inlet Military Operating Area.

Aerial Obstructions

Generally, only man-made structures extending more than 200 feet above ground level (AGL) are depicted on aeronautical charts. Some objects less than 200 feet AGL, such as antennas, tanks, and lookout towers, are also included if very near an airport. There are a number of aerial obstructions to aircraft as identified in the Digital Vertical Obstruction files (National Geospatial-Intelligence Agency, 2010b). Figure 3.2.2-1 shows the aerial obstructions that are 200–249 feet AGL, similar to the SBX Radar Vessel, and those that are greater than 250 feet AGL. When navigating through this area, pilots must be aware of these obstructions. The FAA requires an Obstruction Notification submittal for all objects that intersect a 100:1 slope up from the surface of a runway out to 20,000 feet from the runway. For example, on flat ground a 100-foot structure would require a notification submittal if located within 10,000 feet of an airport.

Airports/Airfields

Seattle–Tacoma International Airport is located approximately 37 miles south of NSE. Snohomish County (Paine Field) Airport is about 5 miles southwest of NSE. Several other small airfields are located within the area, including Harvey, Heineck, Ed Large, and Jim and Julie's as shown on Figure 3.2.2-1.

Current Requirements and Practices

NSE follows all applicable Navy and FAA rules and regulations that control and regulate area airspace. The following Temporary Flight Restriction was placed in effect after 11 September 2001 above NSE due to national security:

> "2/0451 - WA. Flight restrictions Everett, WA. Effective immediately until further notice. Pursuant to 14 CFR Section 91.137a (1) temporary flight restrictions are in effect due to national security. Only relief aircraft operations under the direction of Department of Defense are authorized in the airspace at and below 2000 feet msl within a 3 nautical miles radius of (47 59 N/122 13 W) the Paine (PAE) VOR/DME 014 degree radial at 4.53 nautical miles. Excluding that airspace west of the Paine FLD Runway 16R ILS localizer. Unless authorized by ATC for purposes of conducting arrival/departure operations. "

The military had wanted to turn 13 Temporary Flight Restrictions (TFRs), including the above, into prohibited areas. The Aircraft Owners and Pilots Association opposed that and suggested that airspace over military installations be designated national security areas (NSA). For 11 of the 13 TFRs, the FAA agreed. TFRs in Washington (Bremerton, Everett, and Port Townsend) became NSAs on 23 December 2004 with the publication of the latest sectional chart. NSAs are marked on aeronautical charts with a broken magenta line and an advisory message to pilots to avoid the area. If needed during times of heightened security, the FAA can issue a Notice to Airmen (NOTAM) restricting flight in an NSA. (Aircraft Owners and Pilots Association, 2004)

3.2.2.2 Environmental Consequences

Approach to Analysis

To complete the analysis of effects to airspace in the Study Area, a systematic review of relevant literature was conducted, including scientific articles, technical reports published by Government agencies, work conducted by private businesses and consulting firms, Department of Defense (DoD) reports, operational manuals, and current and prior environmental documents for facilities and activities. The literature and other information sources cited are identified in Chapter 5.0, References.

Results of Analysis

Controlled and Uncontrolled Airspace

No impacts to controlled and uncontrolled airspace are anticipated since the X-Band Radar (XBR) would not be radiating.

Special Use Airspace

There is no special use airspace within the region of influence. Consequently, there would be no impacts to special use airspace.

Aerial Obstructions

Based on an initial analysis, the Missile Defense Agency (MDA) would not be required to submit an Obstruction Notification to the FAA. There are no airfields within 20,000 feet of the proposed SBX Radar Vessel location.

Although the top of the SBX Radar Vessel would be approximately 250 feet AGL, it includes appropriate warning lights to help pilots identify it when transiting through the area. During the day in clear weather the SBX Radar Vessel is of sufficient size to easily identify and avoid. When navigating through this area pilots must already be aware of the existing aerial obstructions shown on Figure 3.2.2-1, and the addition of the SBX Radar Vessel would not result in an impact.

Airports and Airfields

The SBX Radar Vessel would not be located within the approach of any airport and would not impact aircraft transiting the area. Seattle–Tacoma International Airport is located approximately 37 miles south of NSE, and Snohomish County (Paine) Airport is 5 miles southwest of NSE. There would be no impacts to airspace at the small airfields such as Harvey, Heineck, Large, Frontier, and Arlington. There would be no radiofrequency interference/ electromagnetic interference issues with communication or radar at the airports and airfields since the XBR would not be used while the SBX Radar Vessel is in port.

3.2.2.3 Mitigation Measures

The appropriate lighting would be on the vessel as required by FAA to illuminate the height of the structure. Although not anticipated, if required the MDA would submit an Obstruction Notification to the FAA due to the height of the SBX Radar Vessel.

3.2.2.4 Summary of Effects

No impacts are anticipated to controlled and uncontrolled airspace or special use airspace since the XBR would not be radiating. No impacts are expected to area airports and airfields as a result of the SBX Radar Vessel potentially being an aerial obstruction since it includes FAA approved lighting and is located more than 20,000 feet from any airports.

3.2.3 BIOLOGICAL RESOURCES

Biological resources are analyzed in this EA because of the potential for impacts to biological species from temporarily mooring the SBX Radar Vessel at NSE for maintenance and repair activities. These activities would result in increased noise, increased presence of personnel, lighting on the vessel required 24/7, the potential for water quality degradation, and expended materials, including those from welding, painting, or paint-chipping.

Native or naturalized vegetation, wildlife, and the habitats in which they occur are collectively referred to as biological resources. For the purpose of discussion, biological resources have been divided into the areas of marine vegetation, invertebrates, fish, marine mammals, and seabirds, with threatened and endangered species and environmentally sensitive habitat located as subsections. A Biological Assessment (BA) was prepared concurrent with this EA and submitted to the National Marine Fisheries Service (NMFS) and U.S. Fish and Wildlife Service (USFWS) to evaluate effects to species listed as threatened or endangered under the Endangered Species Act (ESA) at NSE. The BA concluded that the Proposed Action may affect, but is not likely to adversely affect Puget Sound Chinook salmon or steelhead, Coastal/Puget Sound bull trout, ESA-listed killer whales, or listed marbled murrelets. The Proposed Action would not adversely affect essential fish habitat (EFH) for Pacific salmon or Pacific ground species. Each agency provided a letter of concurrence with the findings of the BA.

3.2.3.1 Affected Environment

The region of influence for biological resources includes areas that may potentially be affected by the use of NSE for the SBX Radar Vessel maintenance and repair. NSE is located within the Puget Trough Ecoregion, an area that includes the marine waters of Puget Sound and the lowlands generally up to about 1,000 feet above sea level. There are no traditional natural resource land uses such as forestry or agriculture at NSE; all open areas that are not paved over are covered in maintained lawns and landscaped shrubs and trees. NSE is an irregularly shaped, man-made land parcel constructed by numerous individual landfills over the past several decades. The NSE Waterfront Site has no wetlands. (Naval Station Everett, 2008)

Existing Conditions

Marine Vegetation

Macrophyte algae are common in the Everett Harbor area on riprap and along intertidal rocks near river mouths. Representative species are *Fucus* sp., *Ulva* sp., *Enteromorpha* sp., and *Bryopsis* sp. Eelgrass beds occur in the general area of Port Gardner Bay and Possession Sound and provide important habitat for juvenile fish, fish eggs, benthic invertebrates, and foraging waterfowl, but there are no known eelgrass beds within the water boundary of NSE. Underwater plants provide food, breeding areas, nurseries, and resting places for wildlife in the Sound. Twenty-six species of kelp provide habitat for young rockfish, sea otters and birds, and food for sea urchins and other species (National Wildlife Federation, 2010). The shoreline

adjacent to the proposed mooring location is armored and does not provide habitat features such as eelgrass, kelp beds, and natural, unmodified shorelines associated with salmon presence. Eelgrass is the primary vegetation in the intertidal areas of the Strait of Juan de Fuca and Puget Sound and covers more than 40 percent of the intertidal area (Commander, U.S. Pacific Fleet, 2008). (Naval Station Everett, 2008; 2009)

Marine Invertebrates

As part of the baseline year sampling for the Everett Waterfront Site water and sediment quality certification monitoring effort in 1993, 10 sediment quality stations and 1 reference station inside the East Waterway and in the near vicinity were sampled for benthic infauna as well as for sediment quality. The inner East Waterway (Figure 2-5) stations have a lower abundance of benthic invertebrates than found in the outer waterway stations; proportionately more polychaetes and crustaceans than the outer waterway stations and fewer bivalves, indicating greater disturbance; and show a decrease in species richness and diversity compared to those found in the outer waterway stations (Naval Station Everett, 2008).

The most diverse groups of invertebrates include decapod crustaceans (crabs, lobsters, and shrimp), amphipods (small shrimp-like creatures), bivalves, barnacles, and gastropods (snails and slugs). Less common groups include other shrimp-like creatures such as isopods, mysids, and euphausids (krill), and segmented bristleworms (polychaetes). (Commander, U.S. Pacific Fleet, 2008)

The nearshore areas of the East Waterway and other areas of the Everett Harbor are used as habitat by epibenthic (living immediately above the bottom) invertebrates. These organisms are preyed upon by juvenile salmon during their outward migration from the Snohomish River in the spring and early summer of each year. (Naval Station Everett, 2008)

No significant populations of commercial or recreational species of mollusks are found in the East Waterway except for low numbers of softshell, littleneck, and butter clams. The Everett Harbor area is unclassified and therefore considered a prohibited zone for the harvest of shellfish. The shoreline along the western side of the East Waterway has been found to support large numbers of juvenile Dungeness crab, the one significant commercial and recreational species found in the East Waterway. (Naval Station Everett, 2008)

Fish

The Snohomish River (Figure 2-5) is the second largest drainage basin in Puget Sound and supports populations of several salmon and trout species (Snohomish County, 2001). It has a number of tributaries, including the Snoqualmie and Skykomish rivers. The lower river's estuary and adjacent marine areas provide vital transit habitat for adults migrating up-river to spawn and for their offspring migrating through to their marine phase of life. The four species of salmon found in this system are chinook (spring and summer/fall races), coho, pink, and chum. These naturally reproducing species are augmented with hatchery fish (winter and summer steelhead). Of the fish species with distributions overlapping the NSE action area for which hearing sensitivities are known, most are hearing generalists, including salmonid species. The hearing capability of Atlantic salmon, a hearing generalist, indicates that salmon are unlikely to detect sounds originating in air, but are sensitive to substrate-borne sounds; and compared with the carp and cod salmon hearing is poor (Hawkins and Johnstone, 1978). (Snohomish County, 2001; Naval Station Everett, 2008)

Other anadromous (migrating from the sea to fresh water to spawn) game fish are found in lower numbers than the salmon and are caught primarily in nearshore locations. Juvenile sea-run cutthroat juveniles have been caught in greater numbers than steelhead and bull trout/Dolly Varden char. Dolly Varden char are the least numerous of the anadromous game fish in the vicinity of the Waterfront Site. (Naval Station Everett, 2008)

The near shore waters of Puget Sound contain an abundance and wide variety of fish species. The most abundant demersal or bottom-dwelling fish (reported to be less diverse and numerous than pelagic species) in the project area is the Pacific staghorn sculpin followed by English sole, sand sole, and Pacific sanddab. The most common pelagic or off-bottom species of fish that have been noted throughout the year in the vicinity of the Waterfront Site are Pacific hake, walleye pollock, Pacific cod, Pacific herring, Pacific tomcod, and spiny dogfish. (Washington Department of Fish and Wildlife, undated; Naval Station Everett, 2008)

Threatened and Endangered Fish Species

Several fish species are listed by the Federal Government as threatened or endangered (Table 3.2.3-1). Species excluded from analysis in this EA (Table 3.2.3-1) are described in Appendix E.

Chinook Salmon. The federally threatened Chinook salmon (*Oncorhynchus tshawytscha*) is found in the Puget Sound. Threats to the Chinook salmon include over-fishing, increased sedimentation, and decrease in water quality. Puget Sound Chinook salmon were listed as threatened by NMFS in 1999, and the listing was reaffirmed in 2005. The Proposed Action is located within the geographic area of the Puget Sound Chinook evolutionarily significant unit (ESU). These Chinook salmon occur in the rivers that drain into Puget Sound, and in marine waters. (Naval Station Everett, 2009) Because of the proximity of the Snohomish River and associated estuary, both migrating adults and outmigrating juvenile salmon could occur in the vicinity of the Proposed Action. (Naval Station Everett, 2009)

Both summer and fall-run Chinook salmon occur in the Snohomish River. The summer stock spawns primarily during September. Returning adults are often seen in the river as early as late May, with most fish likely entering the river in late June and July. The fall stock begins spawning in late September and spawns through October, with the individuals from the Snoqualmie River portion of the population observed spawning until mid-November or later. (Naval Station Everett, 2009)

Critical Habitat for Chinook Salmon. The critical habitat designation for Chinook salmon excludes DoD lands subject to an approved Integrated Natural Resource Management Plan (INRMP). NSE has an approved INRMP, so the waters surrounding NSE are not designated critical habitat for Chinook salmon. The INRMP is periodically reviewed and re-approved in consultation with NMFS to ensure the plan is being implemented and the conservation efforts are effective. (Naval Station Everett, 2009)

Table 3.2.3-1. Federally Threatened and Endangered Species Potentially Present within the Action Area

Common Name *Scientific Name*	Status	Critical Habitat	Basis for Exclusion from Analysis
Fish			
Bocaccio Rockfish* *Sebastes paucispinis*	E	NA	Unsuitable habitat in action area
Canary Rockfish* *S.pinniger*	T	NA	Unsuitable habitat in action area
Eulachon* *Thaleichthys pacificus*	T	NA	Rare occurrence in action area
N. American Green Sturgeon* Southern DPS *Acipenser medirostris*	T	Proposed to include Strait of San Juan de Fuca	Rare occurrence in action area
Puget Sound Bull Trout Coastal-DPS *Salvelinus confluentus*	T	Designated, marine shorelines	NA
Puget Sound Chinook Salmon ESU *Oncorhynchus tshawytscha*	T	Designated, narrow nearshore zone (from MLLW out to a depth of 98 feet)	NA
Puget Sound Steelhead DPS *O. mykiss*	T	Under development	NA
Yelloweye Rockfish* *Sebastes ruberrimus*	T	NA	Unsuitable habitat in action area
Birds			
Marbled Murrelet *Brachyrhamphus marmoratus*	T	Designated, none in aquatic habitat and none in Terrestrial Portion of action area	NA
Short-tailed Albatross* *Phoebastria albatrus*	E	None	Extremely rare occurrence in action area
Western Snowy Plover* *Charadrius alexandrinus nivosus*	T	Designated, portions of Washington marine shoreline, not in action area	Occurs mostly along coast
Marine Mammals			
Southern Resident Killer Whale DPS *Orcinus orca*	E	Greater than 20 feet deep	NA
North Pacific Humpback Whale* *Megaptera novaeangliae*	E	None designated	Rare occurrence in action area
Eastern Steller Sea Lion* DPS *Eumetopias jubatus*	T	Designated, but none in Washington	Rare occurrence in action area

Source: (Naval Station Everett, 2008; National Marine Fisheries Service, 2009; 2010a; b; c; d; U.S. Fish and Wildlife Service, 2007; 2010a

ESU=Evolutionarily Significant Unit; MLLW=Mean Lower Low Water; DPS=Distinct Population Segment; E=Endangered; T=Threatened; NA=Not Applicable (species is analyzed in EA)
* = Species described in Appendix E

Steelhead Trout. Puget Sound steelhead trout *(Oncorhynchus mykiss)* were listed as threatened by the NMFS in 2007 and occur in the rivers that drain into Puget Sound, and in marine waters. The Proposed Action is located within the geographic range of the Puget Sound steelhead ESU. Because of the proximity of the Snohomish River and estuary, both migrating adults and outmigrating juveniles could occur in the vicinity of the Proposed Action. (Naval Station Everett, 2009)

Both summer and winter steelhead stocks use the Snohomish River system. Adult winter steelhead freshwater entry begins in early November and continues through April. Spawning can occur from March through June (Hard et al., 2007). Native summer stocks are small runs of fish, and data on run timing are not available. Adult migrating steelhead could be in the project vicinity in the months prior to their freshwater spawning period. (Naval Station Everett, 2009)

Wild steelhead juveniles typically spend 2 full years in freshwater before outmigrating to marine water during spring. Because of their large size at outmigration, steelhead trout typically do not spend a large amount of time in the nearshore and tend to move quickly out to open water. (Naval Station Everett, 2009)

Critical Habitat for Puget Sound Steelhead. Critical habitat has not yet been designated for Puget Sound steelhead. (Naval Station Everett, 2009)

Bull Trout. The Puget Sound distinct population segment (DPS) of bull trout (*Salvelinus confluentus)* was listed as federally threatened in November 1999. Bull trout are threatened by habitat degradation and fragmentation. Because of the proximity of the Snohomish River and estuary, both migrating adults and juveniles could occur in the vicinity of the Proposed Action. (Naval Station Everett, 2009)

The Snohomish watershed (Snohomish–Skykomish core area) is one of eight core areas within the Puget Sound management unit identified in the 2004 bull trout recovery plan. This core area contains anadromous, fluvial (pertaining to living in rivers), and resident bull trout. A large portion of the migratory segment of the Snohomish–Skykomish core area population is anadromous (U.S. Fish and Wildlife Service, 2004). (Naval Station Everett, 2009)

Three of the four populations of bull trout in the Snohomish River migrate to the estuary and nearshore areas for the spring and summer, and immature fish use the lower reaches of the Snohomish River from Ebey Slough to Thomas' Eddy during the winter months. Bull trout use lower estuaries and nearshore marine areas extensively for extended rearing and subadult and adult foraging. Although foraging bull trout may tend to concentrate in forage fish spawning areas, they are found throughout accessible estuarine and nearshore habitats (U.S. Fish and Wildlife Service, 2004). (Naval Station Everett, 2009)

Critical Habitat for Bull Trout. Critical habitat has been designated for the Coastal–Puget Sound population of bull trout. NSE property includes land on or near the shores of Puget Sound that contain important foraging and migration habitat for the bull trout. The installation includes approximately 5 miles of marine nearshore habitat. NSE's INRMP benefits bull trout by providing (1) protection of nearshore marine waters adjacent to the station from oil spills around berthing naval vessels; (2) bioswales to prevent the release of toxins, contaminants, and oils generated on station from reaching the water column through storm drains; (3) timing

restrictions on all proposed routine construction or repair activities that will take place below the mean higher high water line; and (4) the restoration of riparian habitat on Navy lands located along the Middle Fork Quilceda Creek. Based on the above considerations and in accordance with section 4(a)(3)(B)(i) of the ESA, USFWS determined that the identified lands are subject to the NSE INRMP and that conservation efforts identified in the INRMP provide a benefit to bull trout occurring in habitats within or adjacent to NSE. Therefore, lands within NSE were determined exempt from critical habitat designation. The INRMP is periodically reviewed and re-approved in consultation with the USFWS to ensure the plan is being implemented and the conservation efforts are effective. (U.S. Fish and Wildlife Service, 2010b; (Naval Station Everett, 2009)

Essential Fish Habitat

The Magnuson-Stevens Fishery Conservation and Management Act, as amended, requires that Federal agencies consult with NMFS on actions authorized, funded, or undertaken that may adversely affect EFH. EFH refers to "those waters and substrate (sediment, hard bottom) necessary to fish for spawning, breeding, feeding or growth to maturity."

The project location is within the geographic range and definition of Pacific salmon EFH for various life stages of Chinook, pink, and coho salmon (Pacific Fishery Management Council, 1999), and EFH for various life stages of species of Pacific groundfish. This includes nearshore and tidal submerged environments and habitat features.

Marine Mammals

As the population of California sea lions has grown, they have expanded their range to include Puget Sound. Their prey in the Everett area is, from most to least common: hake, herring dogfish, salmon, codfish, pollock, and cod. California sea lions in Washington feed in the waters near NSE and haul out on logs stored in the water and on floating portions of NSE's security barrier (U.S. Coast Guard, 2004). Harbor seals also haul out on these log rafts, but apparently do not breed in the area. Their summer numbers are low, but winter numbers (October–January) peak at 100–300 animals. One or more gray whales and a few killer whales pass within about 0.5 mile of the base, near the mouth of the Snohomish River, once or twice a year. (Naval Station Everett, 2008)

Threatened and Endangered Marine Mammal Species

Several threatened and endangered marine species occur in areas off the coast of Washington State (Table 3.2.3-1). Killer whales (*Orcinus orca*) occur in Puget Sound; the humpback whale (*Megaptera novaeangliae*) and steller sea lion (*Eumetopias jubatus*) may also occur there, but only as a rare or infrequent occurrence.

Killer Whale. Killer whales are probably the most instantly-recognizable of all the cetaceans. They have a striking black-and-white color pattern, and the adult male has a tall, erect dorsal fin (3.3 to 5.9 feet in height). The white oval eye patch and variably-shaped saddle patch, in conjunction with the shape and notches in the dorsal fin, help in identifying individuals. Killer whales are the largest member of the dolphin family. (National Marine Fisheries Service, 2008)

The Southern Resident Killer Whale (SRKW) stock (or population segment) is listed as endangered under the ESA (National Marine Fisheries Service, 2005); it is also designated as

depleted under the Marine Mammal Protection Act. The SRKW occurs in the Pacific Northwest and Puget Sound Study Area. Since 2001 the population has increased, with 87 whales in the Southern Resident DPS in 2007 (National Marine Fisheries Service, 2008).

Residents are most often seen during May through October when they are found in inland waters around the San Juan Islands, including Haro Strait, Boundary Passage, and the eastern portion of the Strait of Juan de Fuca. During summer (the peak feeding time), the pods tend to make a circuit between the mouth of the Fraser River and the Strait of Juan de Fuca, traveling up to a hundred miles a day and swimming through the San Juan Islands to feed on migrating salmon. SRKW are common throughout the summer and congregate at particular coastal locations at this time of year in association with high densities of migrating salmon. (National Marine Fisheries Service, 2008)

Salmon are the principal prey for resident killer whales during spring, summer, and fall. Current data suggest that Chinook salmon (the area's largest salmonid) are the most commonly targeted species. Other salmonids appear to be eaten less frequently, as are rockfish, halibut, lingcod, and herring. (National Marine Fisheries Service, 2008)

Critical Habitat for Killer Whales. Designated critical habitat was recently proposed for three specific areas: the Summer Core Area in Haro Strait and waters around the San Juan Islands; Puget Sound; and the Strait of Juan de Fuca, which comprise approximately 2,564 square miles of marine habitat. Eighteen military sites (including NSE) were excluded because they were determined to have national security impacts that outweighed the benefit of designation. (National Marine Fisheries Service, 2008)

Seabirds

Examples of seabirds that occur in northern Puget Sound are glaucous-winged gulls, cormorants, pigeon guillemots, and tufted puffins. A variety of shorebirds and the bald eagle have also been observed in the vicinity. Seventy percent of seabirds in Puget Sound nest on Protection Island located at the mouth of Discovery Bay in the Strait of Juan de Fuca outside the region of influence. (Washington Department of Natural Resources, 2006)

The Puget Sound region has hundreds of species of seabirds, shorebirds and waterfowl, including the tufted puffin, bufflehead, western sandpiper, bald eagle, pigeon guillemot, common loon, harlequin duck, rhinoceros auklet, cormorants, scoters, and grebes. (National Wildlife Federation, 2010) Port Gardner Bay and the Snohomish River floodplain provide important habitat for waterbirds. Jetty Island provides nesting habitat for Arctic terns and glaucous-winged gulls. Large numbers of wigeons and mallards are found in the Snohomish River delta, north of Port Gardner Bay, and east of Jetty Island. The primary waterbirds observed in the Port Gardner Bay vicinity include various gulls, wigeons, mallards, western grebes, cormorants, and scoters. Military readiness activities, such as the maintenance of the SBX Radar Vessel, are exempt from the take prohibitions of the Migratory Bird Treaty Act (MBTA) provided they do not result in a significant adverse effect on the population of a migratory bird species. While individual birds may be startled by intermittent noise (generators, welding, and sandblasting), proposed maintenance and repair activities are not expected to significantly impact a population of any of the migratory species that occur in the NSE area and thus would be exempt from the MBTA take prohibitions. (U.S. Department of the Navy, 1999)

Threatened and Endangered Bird Species

Threatened and endangered birds that have the potential to occur at NSE are provided in Table 3.2.3-1. Species that are only rarely seen at NSE are described in Appendix E. The marbled murrelet (*Brachyramphus marmoratus*) is the species most likely to be seen there.

Marbled Murrelet. The marbled murrelet was listed as threatened in 1992. It is a small member of the Alcidae family, which includes puffins, murres, and auklets (Naval Facilities Engineering Command, 2001). Most marbled murrelets live in Alaska where the population is estimated at between 200,000 and 800,000. Population estimates for Washington State are between 5,000 to 6,500 and California 6,450. Marbled murrelets use Port Gardner Bay and Possession Sound for foraging. (U.S. Department of the Navy, 2006; Washington Department of Ecology, 2009b

Marbled murrelets occur year-round in all inland marine waters of the Strait of Juan de Fuca, Puget Sound, and Georgia Strait. During summer aerial surveys conducted between 1992 and 1999, marbled murrelets were distributed throughout the inland marine waters of Washington State (with notable gaps between Everett and Tacoma) during the summer, with concentrations in the San Juan Islands, north Hood Canal, and along the south coast of the Strait of Juan de Fuca. By winter, there was a definite shift towards the more protective waters embayments of the San Juan Islands, Hood Canal, Discovery Bay, Saratoga Passage, and Port Townsend, although some murrelets could be found throughout the summer range. (U.S. Department of the Navy, 2006)

Critical Habitat for the Marbled Murrelet. Marbled murrelet populations have suffered significant population declines in the Pacific Northwest due primarily to the removal of essential habitat by logging and coastal development. All critical habitat is located onshore and outside of the Action Area. The designation of critical habitat contributes to the species conservation by identifying areas that contain trees with potential nesting platforms and forested areas within 0.5 mile of potential nest trees with a canopy height of at least half of the site potential tree height or other areas that may require protection or special management. (U.S. Fish and Wildlife Service, Washington Fish and Wildlife Office, 2009; U.S. Department of the Navy, 2006)

Current Requirements and Practices

Certain species and habitats are protected by several Federal laws: ESA, Marine Mammal Protection Act, MBTA, and Magnuson-Stevens Fishery Conservation and Management Act. Federal agencies are required to assess the effect of any project on threatened and endangered species under Section 7 of the ESA and consult with the regulatory agency if the action may adversely affect a threatened or endangered species.

Appendix C contains a synopsis of laws, rules, and regulations that provide guidance to avoid or minimize impacts to biological resources.

3.2.3.2 Environmental Consequences

Approach to Analysis

Washington State law identifies saltwater habitat of concern, such as eelgrass beds and intertidal wetlands and restricts times when work can be conducted to accommodate fish migration and breeding.

To complete the analysis of marine plants and wildlife in the Study Area, a systematic review of relevant literature was conducted, including scientific articles, technical reports published by Government agencies, work conducted by private businesses and consulting firms, DoD reports, operational manuals, and current and prior environmental documents for facilities and activities. The literature and other information sources cited are identified in Chapter 5.0, References.

Potential stressors to marine communities in the area that would result from the Proposed Action are limited to: (1) direct impacts to bottom-dwelling communities from materials expended during maintenance, or the accumulation of those materials; and (2) destruction of bottom habitat, partial or complete burial of bottom habitat, or detrimental effects to Federal and State species of concern or their habitats.

The analysis considered effects on biological species from:

- Noise, including sound transmission from activities within the SBX Radar Vessel during maintenance and repair activities;
- Presence of SBX Radar Vessel in port; and
- Expended materials, including those from welding, painting, or paint-chipping.

Results of Analysis

The BA prepared concurrent with this EA concluded that the Proposed Action may affect, but is not likely to adversely affect Puget Sound Chinook salmon or steelhead, Coastal/Puget Sound bull trout, ESA-listed killer whales, or listed marbled murrelets. The Proposed Action would not adversely affect EFH for Pacific salmon or Pacific ground species. Contractors and personnel working at NSE during the maintenance and repair period must obtain a copy of all environmental requirements and BMPs established for NSE (e.g., Environmental Safety Requirements for Contractors at NSE, 20 August 2007), which are included in Table 2-4.

Marine Vegetation

There are no known eelgrass beds within the water boundary of NSE. No effects to any vegetation from the shadow of the vessel are expected during its temporary stay at NSE. The SBX Radar Vessel would implement the BMPs discussed in Chapter 2.0 that would incorporate marine pollution control devices such as keeping decks clear of debris, cleaning spills and residues, and engaging in spill and pollution prevention practices. Pollutant concentration amounts released from underwater welding are infrequent and in small quantities and are not estimated/analyzed (U.S. Environmental Protection Agency, 1999). Mooring the SBX Radar Vessel would temporarily stir up silt/sediments that could result in short-term impacts to marine vegetation; however, no significant long-term adverse impacts are anticipated to marine vegetation.

Marine Invertebrates

Mooring the SBX Radar Vessel would temporarily stir up silt/sediments that could result in short-term impacts to marine invertebrates, especially to less mobile species.

Fish

U.S. Navy aircraft carriers, with a typical cooling water temperature rise of 10 to 15 degrees, generate thermal plumes that, under conditions of low harbor flushing, low wind velocities, and maximum cooling water flow rates (120,000 gallons per minute), exceed the regulatory thermal mixing zone limits of Washington. Thermal plume models from destroyers did not exceed regulatory limits. (U.S. Environmental Protection Agency and U.S. Department of the Navy, 1999) In contrast, the SBX Radar Vessel cooling water would have a much lower flow rate (7,400 gallons per minute), when using both seawater cooling pumps, and a lower typical temperature rise of 6 to 10 degrees (The Glosten Associates, 2010). The discharged water is considered clean because it is recirculated from the bay and no contaminants are added to the pumped water as part of the heat exchange process. Intake of water from and discharge to the East Waterway and Port Gardner Bay for the vessel's cooling system while in port is not anticipated to impact fish in the harbor since each strainer plate is slotted with holes measuring a maximum of 0.79 inches x 8.1 inches (The Glosten Associates, 2010).

The SBX Radar Vessel would incorporate marine pollution control BMPs (Table 2-4) such as keeping decks clear of debris, cleaning spills and residues, and engaging in spill and pollution prevention practices. Pollutant concentrations from underwater welding are released infrequently and in small quantities and are not estimated/analyzed (U.S. Environmental Protection Agency, 1999). As noted in the Phase I Final Rule and Technical Development Document of the Uniform National Discharge Standards (UNDS), metals from the underwater welding operation (may contain chromium, iron, nickel, beryllium, manganese, and trace quantities of other metals) will not be readily dissolved in the surrounding waters and will fall to the harbor floor (U.S. Environmental Protection Agency, 1999; 2003). No significant long-term adverse impacts are anticipated to regional fish.

Essential Fish Habitat

Since the SBX Radar Vessel would incorporate marine pollution control BMPs (Table 2-4) such as keeping decks clear of debris, cleaning spills and residues, and engaging in spill and pollution prevention practices for discharge incidental to the normal operation of Armed Forces' vessels in accordance with the Clean Water Act, no significant long-term adverse impacts are anticipated to the waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity. Intake of water from and discharge to the East Waterway and Port Gardner Bay for the vessel's cooling system while in port is not anticipated to impact fish in the harbor as described above. Welding slag materials quickly sink to the bottom, and present little to no ingestion hazard. No significant long-term adverse impacts are anticipated to regional EFH.

Threatened and Endangered Fish Species

Natural mortality mainly results from marine mammal and bird predation, which is considered a minor factor in the overall abundance and distribution of salmonids. Additionally, water contaminants including pesticides, industrial pollutants, and sedimentation are also of concern for listed fish species.

Direct impacts from noise associated with maintenance and repair activities are possible, but are unlikely threats to ESA-listed salmonids. Effects would be possible, but have a low potential for occurrence given the size of the action area, limited time of sound producing events, and overall lack of responsiveness to underwater sounds. Noise associated with maintenance and repair activities under the Proposed Action is not expected to significantly impact ESA-listed salmonids.

While the SBX Radar Vessel would undoubtedly cast a shadow and therefore could potentially be a visual barrier or predator refuge, it is immediately adjacent to an area that is previously disturbed and shaded by the established piers, which cover a far larger area than the SBX platform. The presence of the SBX Radar Vessel would likely present only an incremental increase in shaded areas that could potentially interrupt salmonid migration. Additionally, the SBX Radar Vessel is a floating vessel, which would further reduce any physical barriers to migration paths. Physical and visual barriers associated with the presence of the SBX Radar Vessel under the Proposed Action are not expected to significantly impact ESA-listed salmonids.

Normal prohibited time for in-water construction to minimize effects to salmon and bull trout is from 15 February to 15 July. This "fish window" protects juvenile salmon and trout during their migration. (U.S. Coast Guard, 2004) Before welding, the area is cleaned with scrapers, chipping hammers, or hand-held brushes. Small amounts of welding consumables can enter the marine environment through the dry habitat or directly when wet welding is performed. Slag and spent welding rods may also be released. With implementation of BMPs for welding as listed in Chapter 2.0, the estimated metal release amounts are expected to be infrequent and in small quantities. In addition, these discharges are mostly insoluble and are unlikely to remain suspended in the water column or be dissolved.

While no studies have been conducted to evaluate the effects of welding slag ingestion by animals, the effects are expected to be insignificant and discountable based on the initial small quantity released, the rapid sinking of materials to depths, and low concentrations when dispersed. The materials quickly sink to the bottom, and present little to no ingestion hazard. Expended materials from sanding, painting, or underwater welding activities under the Proposed Action are not expected to significantly impact ESA-listed species.

Marine Mammals

Marine mammals are not expected to approach the vessel; it is not anticipated that they would be close enough to the SBX Radar Vessel to react to any visual or physical cues. Additionally, since the SBX Radar Vessel is a floating platform, the presence of this vessel does not present a physical barrier to marine mammal movements in the NSE action area. The SBX Radar Vessel would incorporate marine pollution control BMPs (Table 2-4) such as keeping decks clear of debris, cleaning spills and residues, and engaging in spill and pollution prevention practices; thus, no significant long-term adverse impacts are anticipated to area marine mammals.

Threatened and Endangered Marine Mammal Species

Killer whales are not anticipated to approach the vessel; it is not anticipated that they would be close enough to the SBX Radar Vessel to react to any visual or physical cues. Additionally, since the SBX Radar Vessel is a floating platform, the presence of this vessel does not present

a physical barrier to killer whale movements in the NSE action area. The presence of the moored SBX Radar Vessel would not impact ESA-listed killer whales.

Seabirds

Since the SBX Radar Vessel would incorporate marine pollution control devices such as keeping decks clear of debris, cleaning spills and residues, and engaging in spill and pollution prevention practices, no significant long-term adverse impacts are anticipated to seabirds.

Military readiness activities are exempt from the take prohibitions of the MBTA provided they do not result in a significant adverse effect on the population of a migratory bird species. While individual birds may be startled by intermittent noise (welding and sandblasting), proposed maintenance and repair activities are not expected to significantly impact a population of any of the migratory species that occur in the NSE area and thus would be exempt from the MBTA take prohibitions.

Threatened and Endangered Bird Species

Non-nesting murrelets typically spend most of their time at sea, with the exception of a few hours around sunrise, when they may fly inland. Adults tending chicks fly inland with food during the morning and evening twilight hours, and only rarely during daylight hours. During the non-breeding season, marbled murrelets spend most of their time at sea, but may fly inland to visit nesting areas during the early morning hours. This reduces the probability of collision with the SBX Radar Vessel.

Based on the high mobility of marbled murrelets and the static nature of the SBX Radar Vessel while in port, the probability of collisions is low. Direct collisions with vessels or a vessel's rigging could result in injury or mortality, but is unlikely based on the typical flight movements of marbled murrelets. Therefore, the presence of the SBX Radar Vessel is not expected to significantly impact marbled murrelets.

The SBX Radar Vessel operates its lighting systems 24/7. The vessel would use its external lights on the platform, the perimeter of the dome, and on top of the dome in the evening or nighttime hours. The lights are required for the operation of the ship and are in accordance to Occupational Safety and Health Administration (OSHA) and FAA requirements. The light and glare produced from the external lights are not anticipated to have a significant impact on area birds, including the marbled murrelet.

Surveys have shown that few murrelets forage in the NSE area, and a very small portion of their foraging habitat would be affected by the proposed maintenance and repair activities. Thus, it is concluded that no impacts on nesting, feeding, or survivability of the marbled murrelet would result from the activities being proposed.

Critical Habitat

There is no designated critical habitat present in the NSE action area. Critical habitat for the marbled murrelet is located onshore and outside of the Action Area. There is critical habitat in the NSE vicinity for bull trout, Chinook salmon, and killer whales. Based on anticipated repair and maintenance activities of the SBX Radar Vessel and the implementation of BMPs, none of

the activities are expected to substantially change water quality conditions sufficiently to degrade existing water quality conditions; decrease or substantially alter prey species abundance sufficiently to significantly impact ESA-listed individuals or populations; or create barriers that would prevent or impede ESA-listed species passage through the critical habitat. Therefore, in accordance with ESA provisions to assess potential effects of proposed actions to critical habitat, it is concluded that repair and maintenance activities would not destroy or adversely modify critical habitat for the bull trout, Chinook salmon, marbled murrelet, or SRKW.

3.2.3.3 Mitigation Measures

Impacts to biological resources resulting from painting, outside and underwater welding, sanding, and plasma cutting would be below thresholds that could result in long-term degradation of water resources or affect water quality at the potential location. BMPs listed in Table 2-4 would be implemented; therefore, no additional mitigation measures would be needed to protect vegetative or wildlife species.

3.2.3.4 Summary of Effects

The SBX Radar Vessel would incorporate marine pollution control BMPs (Table 2-4) such as keeping decks clear of debris, cleaning spills and residues, and engaging in spill and pollution prevention practices. The presence of the SBX Radar Vessel is not expected to significantly impact biological resources including threatened or endangered species in the vicinity of NSE.

3.2.4 HAZARDOUS MATERIALS AND WASTE

3.2.4.1 Affected Environment

Existing Conditions

Existing conditions for hazardous materials and waste are related to activities onboard the SBX Radar Vessel. Significant quantities of oil and fuel are onboard when the SBX Radar Vessel comes into port, including:

- SBX Radar Vessel has a fuel capacity of 1.88 million gallons of diesel fuel
- Diesel fuel tanks (fuel oil, lube oil, and oily waste tanks that overflow through their vent lines) have a 42-gallon capacity catch basin on the deck beneath the vent
- Lubricating oils
- Hydraulic fluids
- Galley grease or cooking oils
- Waste oil from machinery rooms
- Fuel and lube oil purifying rooms
- Paint locker
- Hazardous material storage

The batteries used in the Uninterruptible Power Supply (UPS) systems onboard the SBX Radar Vessel are non-lead acid sealed-type batteries. There are four tanks associated with the sewage handling system, which discharges overboard through the wet deck. While in port, the sewage handling system would be connected to shore utilities. R22 is used as a coolant for equipment onboard the SBX Radar Vessel. The system includes two large capacity R22 compressors holding a total of 2,600 pounds of liquid R22. Carbon dioxide (CO_2) flooding systems are installed adjacent to both main machinery spaces, both fuel oil pump rooms and the emergency diesel generator space. There is no asbestos containing material or lead-based paint on the SBX Radar Vessel (Boeing, 2009).

All consumable hazardous materials are stored in the manufacturer's approved containers or repackaged into manageable containers and properly labeled. The SBX Radar Vessel has two hazardous materials flammable storage spaces and one paint storage space, each with installed fire detectors, installed CO_2 flooding systems, bracketed shelving, and weather deck access.

Current Requirements and Practices

To protect habitat and people from inadvertent and potentially harmful release of hazardous materials, hazardous material use, storage, and disposal would be managed in adherence with the NSE's *Spill Prevention, Control, and Countermeasures (SPCC) Plan* and *Hazardous Waste Management Plan* (Naval Facilities Engineering Command Northwest, 2008 2009). Contractors follow NSE's *Environmental and Safety Requirements for Puget Sound Naval Shipyard & Intermediate Maintenance Facility Contractors Plan* (Naval Facilities Engineering Command Northwest, 2007). These plans provide a "safety net" intended to protect the ecosystems on which most living organisms depend.

Boeing, the SBX Radar Vessel management company, has developed procedures that address the following:

- Permitting required for topside welding, cutting, and soldering ensures appropriate safety precautions such as necessary fire watches are in place before welding operations involving fixed structures begin.
- Use and disposal of hazardous materials and painting supplies.
- Fire Fighting Plan, subject to Boeing review and approval, which includes specific assignments for the crew and all embarked personnel. In accordance with U.S. Coast Guard (USCG) regulation 46 CFR 109.213, the fire fighting procedure is exercised, and records are kept for audit by Boeing and ABS recertification inspectors.
- Verification of the proper operation of dynamic positioning equipment prior to underway refueling operations.
- A bunkering and transfer plan for bulk flammable liquids, which includes:
    - Smoking lamp extinguished and all hot work and grinding cease.
    - Voice communications among the bunking barge pump station, the main deck bunkering manifold and the fuel oil control station within the vessel.
    - Establishing a spill containment area on the vessel main deck in case of a spill.
    - In port—deployment of a spill containment boom.

3.2.4.2 Environmental Consequences

Approach to Analysis

To determine the hazardous materials and waste impacts of the maintenance and repair of the SBX Radar Vessel, site personnel were interviewed and documents were reviewed.

Results of Analysis

The maintenance and repair of the SBX Radar Vessel would use hazardous material and would generate hazardous wastes that are common to maintenance activities. Hazardous materials may include diesel fuel, anti-freeze, hydraulic fluid, lubricating oils, and coating systems. Hazardous waste would include solvent soaked rags, paint chips, dust fines, paint waste, and blast track residual (steel grit, paint chips, dust fines). Table 3.2.4-1 shows estimated hazardous material use and hazardous waste generation.

Table 3.2.4-1. Hazardous Materials and Waste Estimate, SBX Radar Vessel Maintenance and Repair

Materials	Quantity
Paint	1,500 gallons
Solvent	330 gallons
Diesel Fuel	1.4 million gallons (80% of tank capacity)
Waste (for disposal)	**Quantity**
Solvent Soaked Rags	17 drums
Paint Chips	2 drums
Dust Fines	3 drums
Paint Waste	3 drums
Blast Track residual (steel grit, paint chips, dust fines)	4 drums
Waste Petroleum product from thruster work	20 gallons

Note: Drum quantity = 55 gallons

The contractor hired to perform the SBX Radar Vessel maintenance would become responsible for the proper disposal of the hazardous waste generated from repairs. Waste disposal would be conducted in accordance with the installation's *Hazardous Waste Management Plan* and applicable Federal, State, and local regulations, resulting in no adverse impacts. NSE personnel would be on site during vessel maintenance on a regular basis and would ensure compliance with hazardous materials and waste management regulations.

3.2.4.3 Mitigation Measures

There are no mitigation measures.

3.2.4.4 Summary of Effects

Hazardous materials and waste management would be performed in accordance with standard construction management procedures as well as applicable Federal, State, and local regulations. With the implementation of the procedures discussed above, substantial impacts to

the environment are not expected from the proper handling of large quantities of petroleum products, hazardous materials, or wastes during the maintenance and repair of the SBX Radar Vessel. Hazardous substance release to the environment shall be minimized by following the BMPs listed in Table 2-4 and following the instructions in the *Environment and Safety Requirements for PSNS and IMF Contractors, Naval Station Everett*, 2007 (Naval Facilities Engineering Command Northwest, 2007).

3.2.5 NOISE

This section describes existing noise conditions and potential effects on the human terrestrial environment associated with the Proposed Action. The primary noise concerns at NSE are the onboard generator and ship equipment noise and the close proximity of the project site to residential areas. The potential impacts of noise on marine biological resources are addressed in the Section 3.2.3, Biological Resources.

Noise is defined as unwanted or annoying sound that interferes with or disrupts normal human activities. Although exposure to very high noise levels can cause hearing loss, the principal human response to noise is annoyance.

Noise measurements assessed relative to human exposure are usually expressed using an "A-weighted" scale that filters out very low and very high frequencies in order to replicate human hearing sensitivities. Human hearing ranges from approximately 20 A-weighted decibels (dB) or dBA (the threshold of hearing) to 120 dBA (the threshold of pain). Sound levels of typical noise sources and environments are presented in Table D-6.

Because noise levels vary widely during the day, they are commonly averaged over a period of time. The term Day-Night Level, or DNL, is used to describe the average noise level during a 24-hour day with a penalty of 10 dBA added to nighttime sound levels (10:00 p.m. to 7:00 a.m.). The Community Noise Equivalent Level (CNEL) adds a 5 dBA penalty for noise events that occur in the evenings (7:00 p.m. to 10:00 p.m.), as well as a 10 dBA penalty for noise events at night (10:00 p.m. to 7:00 a.m.). DNL and CNEL are often used as the basis for land use compatibility guidelines. Shorter measurement durations (typically 1 hour) are described as equivalent noise level, or L_{eq}, indicating the total energy contained by the sound over a given sample period.

3.2.5.1 Affected Environment

Existing Conditions

The SBX Radar Vessel maintenance and repair project would be located at Pier A at the southern end of NSE. NSE is an existing military-industrial environment characterized by noise from trucks and automobile traffic along Marine View Drive, ship-loading cranes, diesel-powered equipment, compressors, and construction activity. Pier A is already used for homeporting. Access onto NSE is provided by Marine View Drive via NSE's two access gates, the Main Gate and the Service Gate. NSE generates some 8,520 inbound and outbound vehicle trips per day, and an estimated 400 truck trips per day (U.S. Department of the Navy, 1999). Other sources of noise in the vicinity include the Kimberly-Clark Paper Company and the Burlington Northern Railroad tracks. There is no air traffic or related noise.

Noise sensitive receptors are defined as existing land uses associated with indoor or outdoor activities that may be subject to significant interference from noise. Sensitive receptors are shown on Figure 3.2.5-1 and include residential, hospitals, educational facilities, and sensitive biological species, and public parks. Pigeon Creek Beach is the closest public park to the project site, approximately 4,500 feet south of the project site (Pier A). Approximately 4,000 feet east of the Pier A is the business district, and 3,500 feet south from the project site is the closest single-family residential area.

To establish the ambient sound level in the area, a *Naval Station Everett Baseline Noise Assessment* (ManTech, 2010a) was completed for this EA in June 2010 while the aircraft carrier *USS Abraham Lincoln* was homeported at NSE. Three sound level meters were set up for long-term monitoring, 6 meters for hourly L_{eq} monitoring, and 8 meters for point monitoring, measuring 5-minute levels. Sites were selected around the Proposed Action location as shown on Figure 3.2.5-1.

The Noise Assessment concluded that the NSE in-port activities are not significant contributors to the noise environment outside the NSE boundary as shown by relatively low short-term recordings (hourly L_{eq} values) and DNLs. Noise levels from the exhaust fans on *USS Abraham Lincoln* were measured to be 72 dBA at 125 feet from the source. At a measured distance of 2,750 feet, this stimulus recorded between 47 and 51 dBA. Overall DNLs collected at the closest point to the in port carrier were 58.3 DNL at the edge of Port of Everett property (2,300 feet from the vessel) and 56.9 DNL at the closest residential area (Tulalip and 33rd Street—3,500 feet from the vessel).

The highest overall DNL, 72.6 DNL, was recorded at another residential area 1.5 miles north of the Pier, at Grand and 21st Street. Noise from the Kimberly-Clark paper plant, which operates on a 24-hour schedule, rail yard noise, and intermittent noise from the transportation corridor of Marine View Drive were contributors. These continuous non-Navy noise sources, especially those occurring during nighttime hours, contributed largely to community sound levels. Moving away from these continuous noise sources results in sites measuring lower DNL values (see Figure 3.2.5-2). The report concluded that ambient sound levels in the Everett area are highly dependent on their location. Ambient sound levels are primarily driven by vehicular and rail traffic; however, louder sound levels can be found near commercial plant areas. Sites farther to the south and farther away from commercial plant areas were more influenced by the presence of the in-port carrier, though not at levels exceeding community noise standards of Everett.

Current Requirements and Practices

Sound analysis at military installations follows the procedures outlined in the following documents:

- OPNAVINST 5090.1C contains guidance for considering time-averaged community sound levels in environmental evaluations, Chapter 17, *Noise Prevention Ashore*, contains guidance for sound control and abatement of Navy shore activities. (U.S. Department of the Navy 2007).
- *Planning in the Noise Environment* (Department of Defense, 1978) provides compatibility criteria for various land uses. Separate evaluation criteria apply to impulsive sound events.
- The U.S. Army Public Health Command, formerly the Center for Health Promotion and

EXPLANATION

- Average Noise Levels (dBA)
- Naval Station Everett Boundary
- Hourly Recording Site
- Short-Term Recording Site
- Long-Term Recording Site

N

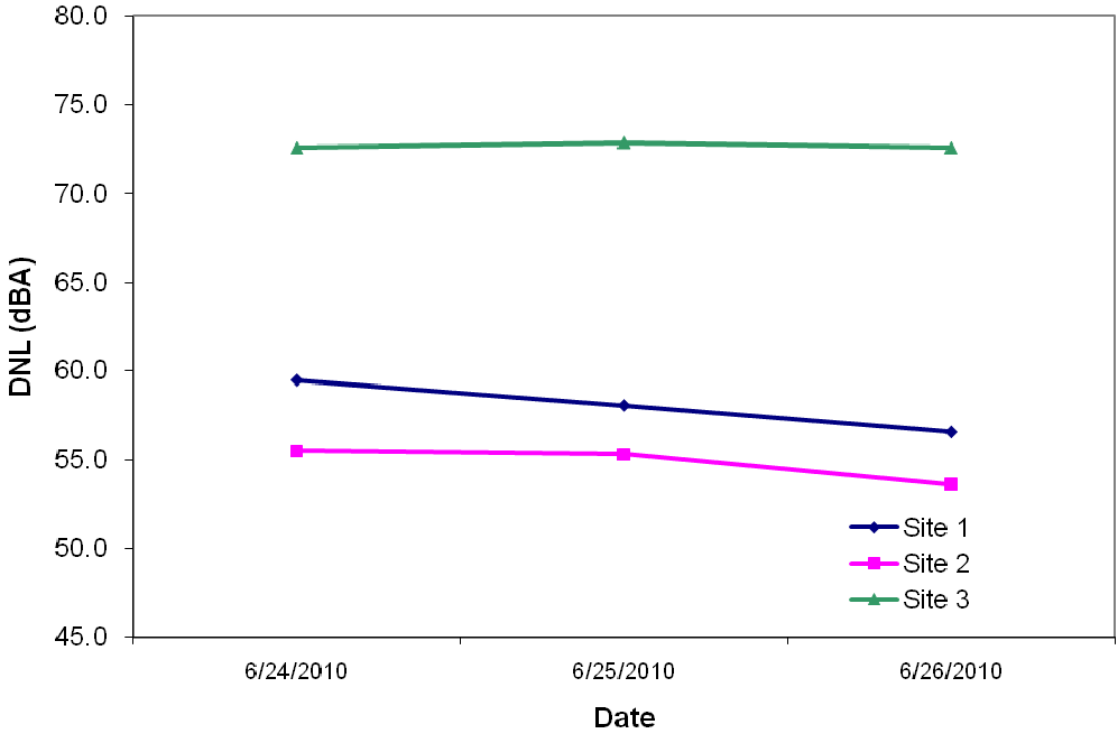
0 750 1,500 3,000 4,500 Feet

Ambient Noise Levels and Sensitive Sound Receptors

Everett, Washington

Figure 3.2.5-1

Preventive Medicine, has also developed DoD guidance for military operational noise, including Environmental Noise Management, An Orientation Handbook for Army Facilities (US Department of the Army, 2001).



Site 1= Edge of Port of Everett property
Site 2= Tulalip and 33rd Street
Site 3= Grand and 21st Street
Source: ManTech, 2010a

Figure 3.2.5-2. Ambient Noise (DNL) Measurements for Base Operations, Naval Station Everett

Sound standards for land use compatibility established by DoD and civilian jurisdictions are expressed in terms of the DNL or CNEL. Based on numerous sociological surveys and recommendations of Federal interagency councils, the most common benchmark for assessing environmental sound impacts is a CNEL of 65 dBA (DNL is normally within 1 dB of CNEL using the same 24-hour data). Sound levels up to 65 dBA CNEL are considered to be compatible with land uses such as residences, transient lodging, and medical facilities. Appropriate sound mitigation is recommended for new development in areas where the CNEL exceeds 65 dBA. A sound level of 75 dBA CNEL is a threshold above which individuals in the community may experience annoyance and minor health effects.

Many agencies, including the DoD, have adopted a DNL of 65 dBA as a criterion that still protects those most impacted by noise. In general, residential land uses are not compatible with an outdoor DNL above 65 dBA, and the extent of land areas and populations exposed to a DNL of 65 dBA or higher provides one of the means for assessing and comparing the noise impacts of proposed actions.

See Appendix C for more details of the current requirements and practices listed above.

3.2.5.2 Environmental Consequences

Approach to Analysis

To assess the potential impacts of noise from the SBX Radar Vessel's onboard generators, a technical study, *SBX Radar Vessel In-Port Noise Assessment at Joint Base Pearl Harbor–Hickam In Port at Joint Base Pearl Harbor–Hickam, Hawaii* (ManTech, 2010b), was prepared for this EA. The results of the sound levels collected in Hawaii are presented in Appendix D, Section D.2. The entire report is provided in Appendix G.

The goal of the Hawaii study was to determine the general overlay of sound from the SBX Radar Vessel that could be placed on alternate locations. Sound levels from shipboard generators as well as sound levels from typical shipyard maintenance activity were overlaid onto the existing environment in Everett, WA and compared to sound standards for land use compatibility established by DoD and other governmental agencies discussed above.

Results of Analysis

Shipboard Diesel Generators

Noise levels from the 24-hour per day use of two shipboard diesel generators would be constant over the approximately 3 month project period. The SBX Radar Vessel In-Port Noise Assessment at Joint Base Pearl Harbor–Hickam showed that beyond a measured distance of 2,750 feet from the stern, the sounds from the SBX platform (56.8 dBA) were not audible above the ambient noise environment during data collection periods, which in Hawaii was between 51.2 and 51.6 dBA. Likewise, beyond a measured distance of 1,000 feet from the bow, the sounds from the SBX platform (52.2 dBA) were not audible above ambient.

The data collected in Hawaii were overlain onto the NSE project site in order to see the equivalent noise levels at the sensitive noise receptors (residences and public parks) in Everett. The potential audible noise levels of the SBX Radar Vessel at NSE are identified in Figure 3.2.5-3.

As stated in Appendix D, consideration must be given to the directional characteristics of the noise from the diesel generators. The noise is louder and propagates further along the exhaust axis. Figure 3.2.5-3 shows the audible noise levels of the shipboard diesel generators. "Orientation 1" and "Orientation 2" are provided to illustrate the difference in the noise exposure when the SBX Radar Vessel is turned around in port.

As stated above, the closest residential neighborhood to the Proposed Action (Tulalip and 33rd Street) is approximately 3,500 feet from the project site. The maximum audible noise exposure to this neighborhood would be from Orientation 1: the noise level 3,500 feet from the stern of the vessel would be 63.3 DNL. The ambient noise environment at Tulalip and 33rd Street was 56.9

EXPLANATION

Orientation 1

- SBX Stern
- DNL Measurement (Long-Term)
- dBA Measurement (Short-Term)
- SBX Radar Vessel Audible Noise

Orientation 2

- SBX Stern
- DNL Measurement (Long-Term)
- dBA Measurement (Short-Term)
- SBX Radar Vessel Audible Noise

NORTH

0 500 1,000 2,000 Feet

Naval Station Everett with SBX Radar Vessel Audible Noise Overlay

Washington

Figure 3.2.5-3

overall DNL (ManTech, 2010a). At the same location, the minimum L_{eq} ambient measure was 41.5, which is usually associated with nighttime levels. Therefore, a received level of 63.3 DNL from the SBX Radar Vessel would be readily audible at night in the neighborhood for Orientation 1. Turning the orientation of the vessel would limit this impact. Orientation 2 would reduce the noise exposure of the shipboard generators to 57.8 DNL in the neighborhood, and the SBX Radar Vessel would barely be audible above ambient.

An overall DNL of 63.3 for shipboard generator noise in the nearby neighborhoods is within the standard that DoD has adopted (DNL of 65 dBA) as a criterion that still protects those most impacted by noise. In general, residential land uses are not compatible with a DNL above 65 dBA. A DNL of 63.3 is also in the range of low risk of complaints from the public (see Appendix D, Figure D-2).

Equipment

A variety of noise generating equipment would be used— such as those listed in Chapter 2.0, Table 2-3—all of which would create temporary impulse noise. Noise levels from point sources such as these typically attenuate at a rate of about 6 dBA per doubling of distance. Table 3.2.5-1 shows the peak noise level of the equipment used for the Proposed Action. Based on these noise levels, the noise levels from the operation of equipment are below the 65 dBA DoD threshold within NSE property limits, and would also meet local noise ordinance Maximum Permissible Daytime Sound Levels of 60 dBA in surrounding single-family residential areas.

Table 3.2.5-1. Typical Noise Levels for Common Equipment

Source	Peak Noise Level (dBA)	Distance from Source						
		100 feet	200 feet	500 feet	1,000 feet	2,000 feet	2,640 feet (0.5 mile)	5,280 feet (1 mile)
Portable or standby generators	96	86	80	72	66	60	58	52
Crane	90	80	74	66	60	54	52	46
Deck Grinding Units	86	76	70	62	56	50	48	42
Loud Speaker	97.2	87	81	73	67	61	59	53

Source: Golden et al., 1980; Occupational Safety and Health Administration, 2003; ManTech, 2010b; Noise Control Engineering 2010)

Sound levels were also collected from deck grinding activities as part of the SBX Radar Vessel In-Port Noise Assessment at Joint Base Pearl Harbor–Hickam in Hawaii (ManTech, 2010b). The results are in Appendix D and are as follows:

- 300 feet south of the vessel, perpendicular to the moored position and directly in line of sight of the deck grinding activity, the received levels of the deck grinding were between 67 and 72 dBA.
- 350 feet southwest of the vessel, approximately 45 degrees off the stern of the vessel, the received levels of the deck grinding were between 62 and 68 dBA.
- 800 feet southwest of the vessel, approximately in line with the position at the dock, the received levels of the deck grinding were between 56 and 58 dBA. At this location, the

noise associated with the deck grinding was only marginally above the Hawaiian ambient levels recorded at the site.

Therefore, only areas within a few hundred feet of the project site would be expected to be exposed to unacceptable noise levels. Impacts would be temporary, but potentially significant. The equipment would have a less than significant adverse impact on residents of Everett because of the brevity of the maintenance sounds generated at the SBX Radar Vessel mooring site and the long distance to these sensitive receptors. The equipment noise will be minimized by scheduling any work done after 7:00 p.m. to be inside the vessel.

Radiate Warning System (Siren System/Loud Speaker)

One of the maintenance activities to the SBX Radar Vessel while in port will be to add additional speakers to the Radiate Warning System. The system has to be audible in topside areas where high levels of noise occur when the vessel is underway. MDA conducted a survey to determine how loud the upgrade to the warning system had to be. The maximum noise level on the topside area was 97.2 dBA while the SBX Radar Vessel was at sea with all systems running (Noise Control Engineering, 2010). The system would be tested at 97.2 dBA at peak level. Data from the survey was extrapolated in Table 3.2.5-1 to show that at a distance of 0.5 mile, the sound level would be 59 dBA, an insignificant impact on surrounding residential areas. Prior to conducting tests of the system's additional speakers, MDA, working with the local installation would provide notification to the local community of the system testing prior to conducting the test. The testing of the speakers will be intermittently during the day. The additional speakers will not be tested at night.

Traffic-related Noise

The temporary increase in personnel may increase vehicles and traffic noise temporarily. The shipyard workers will be onsite 6 days a week, from 5:30 a.m. until 10:00 p.m., for 2 to 3 months, with a work shift change expected to be twice per day, approximately 8 hours apart. A total of 224 shipyard workers would be commuting (83 on board the vessel are not counted in the commute), which means the average trips per shift (arrivals and departures) would be 112 workers.

Shipyard worker commute is a source of additional noise. Currently, the NSE generates 8,520 inbound and outbound vehicle trips per day onto West Marine View Drive in addition to truck traffic. Based on these levels, the sound levels for a residence 100 feet from Marine View Drive would be relatively high. The additional 224 trips per day on Marine View Drive from the Proposed Action would not significantly increase the level of noise already occurring on Marine View Drive. In addition, if the SBX Radar Vessel is moored at NSE, the aircraft carrier would not be in port; therefore, there would be less vehicle traffic overall.

3.2.5.3 Mitigation Measures

Noise impacts of the Proposed Action on nearby neighborhoods are negligible. Although the vessel may be turned about (orientation of the bow and stern may vary) to best access thrusters (one half of the ≈ 45 days) and pier side equipment, consideration of the alignments of the SBX Radar Vessel would mitigate the noise levels produced by the Proposed Action. As a means of reducing the noise (during the 3-month maintenance period) from the two diesel

generators, the use of the existing noise baffles and the alignment of the generators' exhaust away from residences (i.e., towards NSE) would provide a greater buffering of the noise-sensitive areas. Prior to conducting tests of the system's additional speakers, the community would receive advance notice. The testing of the speakers will be intermittently during the day. The additional speakers will not be tested at night.

3.2.5.4 Summary of Effects

Proximity of the vessel to off-base sensitive noise receptors and alignment of the SBX Radar Vessel can have a major impact on noise exposure. Given the distance of the residences from the pier, it is unlikely that noise from the two generators would significantly impact the ambient sound levels in the surrounding community. At a received level of 63.3 DNL (Orientation 1) and 57.8 DNL (Orientation 2), the SBX Radar vessel would be audible at night in the closest neighborhood (Tulalip and 33rd Street). However, both orientations would be within the standard that DoD has adopted (DNL of 65) as a criterion that still protects those most impacted by noise. The equipment noise would be minimized by scheduling any work done after 7:00 p.m. to be inside the vessel. Because of the low number of added vehicle trips proposed and their temporary nature, there would be no significant noise impact due to increased traffic.

3.2.6 SOCIOECONOMICS

This section describes existing socioeconomic conditions and potential effects associated with the Proposed Action. Socioeconomics includes an evaluation of the basic attributes and resources associated with the human environment, particularly population, and economic activity. Economic activity encompasses employment, personal income, and industrial growth. Impacts on these fundamental socioeconomic components influence other issues such as housing availability and provision of public services.

3.2.6.1 Affected Environment

The socioeconomic environment potentially affected by the Proposed Action extends to the city of Everett, WA.

Existing Conditions

NSE is located within the city of Everett in Snohomish County, WA. Everett, located approximately 30 miles north of the city of Seattle, had a population of 91,488 with a medium household income of $40,100 in 2000. In 2006/2008 the population was estimated at 102,050, with a medium household income of $49,392. (U.S. Census Bureau 2000a; 2006/2008a)

Local Economy

The major component of Snohomish County's economy is the aerospace industry. Boeing began operations in Everett in the 1960s, helping to stabilize and grow the city's economy. Economic forecasts presented in February 2010 for Snohomish County and its two largest cities, Everett and Marysville, include some positive aspects. Major employers for the city of Everett include Boeing, NSE, Esterline Control System, Fluke Electronics, Verizon, and Providence Regional Medical Center. (City of Everett, 2008)

NSE is one of Snohomish County's top 10 employers and second to Boeing, with well over 6,000 military and civilian personnel. Permanent military personnel at NSE number around 5,500. There may be approximately 1,000–5,500 military personnel serving at any given time on base, plus about 650 civilians. About 14,600 additional family members live and work in the surrounding communities. Payroll totals $230 million, with $200 million to military and $30 million to civilian employees. (Naval Station Everett, 2010)

Housing

In 2000 there were 38,512 total housing units in the city of Everett, and of those units 16,701 were owner-occupied housing units, 19,624 were renter-occupied housing units and 2,187 were vacant housing units. In 2000 a single-family owner-occupied home had a median dollar value of $168,300. In 2006–2008 the U.S. Census Bureau estimated that the total number of housing units available in the city of Everett was 44,109, of which 18,973 were owner-occupied housing units, 21,800 were renter-occupied housing units, and 3,336 were vacant housing units. In 2006–2008 a single-family owner-occupied home had a median dollar value of $289,500. See Table 3.2.6-1 for the 2000 and 2006–2008 housing characteristics for the city of Everett.

Table 3.2.6-1. Housing Characteristics for the City of Everett in 2000 and 2006–2008

Housing Characteristics	2000	2006-2008	Percent Change from 2000
Owner-occupied	16,703	18,973	13.9% increase
Renter-occupied	19,624	21,800	11.0% increase
Vacant	2,187	3,336	52.5% increase
Total Units	38,512	44,109	14.5% increase
Median Dollar Value	168,300	289,500	72.0% increase

U.S. Census Bureau, 2000a; 2006-2008a

Schools

The school board is composed of five citizens elected by district voters for 6-year terms. Their authority is established by the Washington Legislature, and they act under the direction and restrictions of State law. The city of Everett operates 4 High Schools, 5 Middle Schools, and 17 Elementary Schools with more than 1,800 staff members and 18,000 students who, among them, speak more than 53 different languages. (Everett Public Schools, 2010)

Recreation and Tourism

The city of Everett is situated in the heart of Puget Sound and looks out onto a rich landscape of islands, mountains, and ocean. It has the largest public marina on the West Coast and nearly 50 miles of freshwater and saltwater shorelines. Everett offers hiking, kayaking, sailing, skiing, golfing, bicycling, bird watching, and whale watching. Downtown Everett offers a variety of boutiques, specialty shops, and local galleries. A short drive out of the city is a ferry to San Juan Islands or crossing to snow-capped mountains. See Section 3.2.7.1, Figure 3.2.7-1 for an overview of the tourist and recreational venues available in the Study Area.

Population Demographics

NSE and neighboring communities are located in the east and northeast portion of Snohomish County WA. Table 3.2.6-2 provides the racial and ethnic composition for the city, state, and nation using the 2000 census and the 2006-2008 Census FactFinder.

Table 3.2.6-2. Racial and Ethnic Composition for the City, State, and Nation

Race / Ethnicity	City of Everett%		Washington%		United States%	
	2000	2006/2008	2000	2006/2008	2000	2006/2008
Population	91,488	102,050	5,894,121	6,453,083	281,421,906	301,237,703
White persons (%)	81.1	78.6	81.8	80.5	75.1	74.3
Black or African American persons (%	3.3	3.3	3.2	3.4	12.3	12.3
American Indian and Alaskan Native persons (%)	1.6	0.77	1.6	1.4	0.9	0.8
Asian persons (%)	6.3	7.8	5.5	6.5	3.6	4.4
Native Hawaiian and Pacific Islander (%)	0.4	1.0	0.4	0.4	0.1	0.15
Other race (%)	3.1	4.1	3.9	4.1	5.5	5.8
Two or more races (%)	4.2	4.4	3.6	3.6	2.4	2.18
Hispanic or Latino	7.1	12.3	7.5	9.5	12.5	15.1

Source: U.S. Census Bureau 2000a; 2006/2008a

Low-Income Populations

Table 3.2.6-3 lists median household income and poverty levels for the city of Everett, county, state, and nation using the 2000 census and the 2006-2008 Census FactFinder. In general the city of Everett has a greater percentage of persons below the poverty level than the State of Washington and the United States.

Table 3.2.6-3. Low-Income Population for the Study Area, State, and Nation

Metrics	City of Everett		Washington		United States	
	2000	2006/2008	2000	2006/2008	2000	2006/2008
Population	91,488	102,050	5,894,121	6,453,083	281,421,906	301,237,703
Median household income	$40,100	$49,392	$45,766	$57,234	$41,994	$52,175
Persons below poverty (%)	12.9	16.6	10.6	11.6	12.4	13.2

Source: U.S. Census Bureau, 2000a; 2006/2008a

3.2.6.2 Environmental Consequences

Approach to Analysis

The socioeconomic analysis addresses the potential for MDA activities to affect, either positively or negatively, the basic attributes and resources associated with the human environment, particularly population and economic activity. This analysis investigates the potential for

activities associated with the Proposed Action to noticeably affect (either adversely or beneficially) socioeconomic activity in the public waterfront area near Pier A and the city of Everett.

Study Area

In terms of socioeconomics, relevant portions of the Study Areas that the temporary mooring of the SBX Radar Vessel could potentially affect include the public waterfront area near Pier A and the city of Everett.

Source of Information

A systematic review of relevant literature was conducted to complete this analysis of socioeconomics in the potential location, including the 2000 census, the 2006-2008 Census FactFinder and current and prior environmental documents. The literature and other information sources cited are identified in Chapter 5.0, References.

Result of Analysis

All 307 potential personnel associated with the Proposed Action would have a temporary presence in the Study Area. Additionally, during this temporary time period *USS Abraham Lincoln* would not be in port, which represents a decrease of 1,000 personnel in the Study Area. The permanent personnel and shipyard workers assigned to the SBX Radar Vessel would only be in the area for approximately 3 months; therefore, it is not anticipated to have a direct or indirect impact on the housing characteristics, school enrollment, population demographics, roads, or infrastructure improvements for the city of Everett. The Proposed Action does not include an increase in personnel stationed at NSE. The potential for a positive impact may be had on the some aspects of the local economy (e.g. restaurants, hotels, recreation, and tourism).

The Proposed Action has a contractual potential of providing $9.4 million to awardees. Based on an economic impact forecasting system (EIFS) the Proposed Action would have a negligible impact on the Study Area. There would a 0.2 percent increase for sales, income, and employment and a 0 percent increase in population. Although a temporary security barrier (see Figure 3.2.7-1) would be in place during the short-term mooring period (approximately 3 months) of the SBX Radar Vessel, no impacts are anticipated on commercial and private use of the waterways adjacent to Pier A. Therefore, the socioeconomic impact from the Proposed Action would be positive, but impact would be considered negligible. Appendix F includes the outputs for the EIFS II Model.

3.2.6.3 Mitigation Measures

Impacts to the socioeconomic characteristic are negligible, no mitigation measures are proposed.

3.2.6.4 Summary of Effects

The Proposed Action would not have a long-term effect on the socioeconomic characteristics of the city of Everett. Short-term effects would be negligible.

3.2.7 VISUAL AND AESTHETIC RESOURCES

This section addresses the visual and aesthetic resources of the waterfront area of NSE as discussed in Section 1.3.2. Visual resources consist of topographic features such as landforms and bodies of water, and man-made features as buildings, bridges, and recreational areas. The aesthetic quality of an area is evaluated by the extent that important visual resources are seen from view corridors (vantage points), or experienced from roadways, parks, or buildings (public or private).

3.2.7.1 Affected Environment

Existing Conditions

The NSE waterfront location is a very compact, functionally oriented base. The potential temporary mooring site for the SBX Radar Vessel is located along Pier A, which is the homeport location of *USS Abraham Lincoln*. Employees of NSE and other industrial sites, visitors to NSE and surrounding areas, visitors to the park, and homeowners overlooking the site may be affected by current visual and aesthetics features. (See Figure 3.2.7-1 for a view of the Everett waterfront.) (PortofEverett.com, 2010)

This potential temporary mooring site for the SBX Radar Vessel location is in close proximity to recreational, residential, and industrial areas. Approximately 0.75 mile south of the location (Pier A) is the Pigeon Creek Beach and Viewpoint and approximately 0.75 to 2 miles north of the site are other recreational areas. Private views of the NSE waterfront area are seen from residential neighborhoods on the surrounding bluffs above the east end of the proposed mooring location. Approximately 0.5 mile east of the location are single-family residential areas, and approximately 0.5 mile southeast to 1 mile northeast are core residential and multifamily homes. Views from Marine View Drive are blocked by industrial structures. Approximately 0.5 mile southeast of the proposed location is the Port of Everett Working Waterfront, 0.5 mile northeast is the Kimberly-Clark paper mill, and community business locations are located approximately 0.5 mile east of the proposed location. The Burlington Northern Santa Fe Railway railroad operates approximately 0.75 mile south of Pier A and continues more than 2 miles east of the proposed location. See Figure 3.2.7-1 for a view of the Everett waterfront.) (PortofEverett.com, 2010)

Current Requirements and Practices

The City of Everett's Municipal General Provisions 39.140.A (Performance Regulations-General: Light and Glare Regulation) states that "any artificial surface which produces light or glare which annoys, injures, endangers the health or safety of persons, or interferes with the use of property is a violation of this title" (City of Everett, 2009b).

The City of Everett has established regulations for control of noise in residentially zoned property (Chapter 20.08—Noise Control). See Section 3.2.5 for current requirements and practices for Noise.

EXPLANATION

- Mile Marker
- Railroads
- Street
- Walkway
- Protective Barrier
- Potential Mooring Location
- Kimberly-Clark
- Naval Station Everett
- Port of Everett Working Waterfront

NORTH 0 1,000 2,000 4,000 Feet

Visual and Aesthetics, Naval Station Everett

Washington

Figure 3.2.7-1

3.2.7.2 Environmental Consequences

Approach to Analysis

Study Area

In terms of visual and aesthetics, relevant portions of each Study Area are those in which the temporary mooring of the SBX Radar Vessel could potentially affect the topographic features such as landforms and bodies of water, and man-made features as buildings, bridges, and recreational areas. The Study Areas include NSE and the public waterfront area near Pier A. See Figure 3.2.7-1 for a view of the Everett waterfront.

Source of Information

A systematic review of relevant literature was conducted to complete this analysis of visual and aesthetics in the potential location, including maps, technical reports published by Government agencies, work conducted by private businesses and consulting firms, and DoD reports, operational manuals, natural resource management plans, and current and prior environmental documents for facilities and activities in the Study Area. The literature and other information sources cited are identified in Chapter 5.0, References.

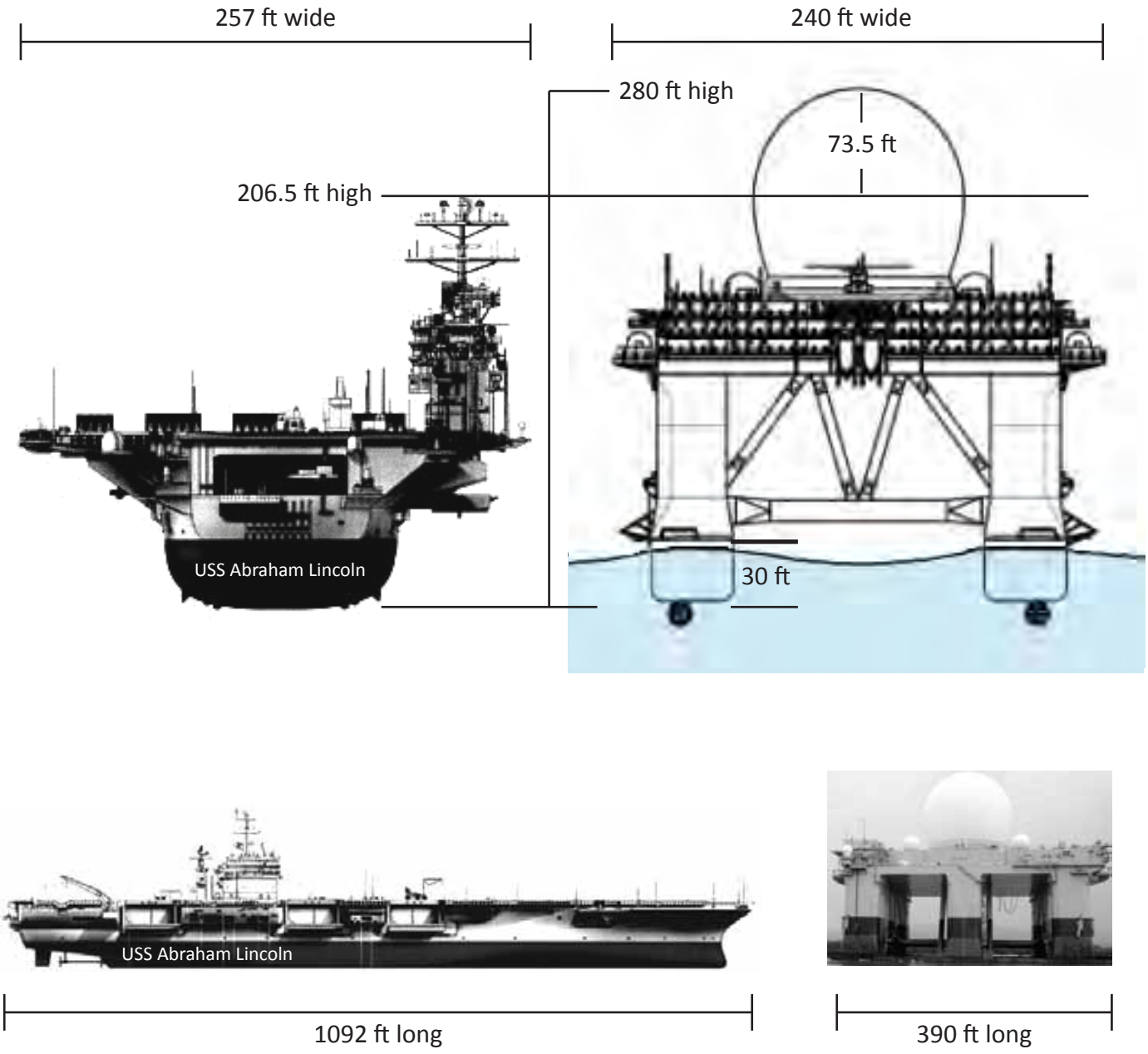
Results of Analysis

The SBX Radar Vessel would have a temporary effect (for approximately 3 months) on those areas not visually blocked by the industrial structures of the Kimberly-Clark paper mill. The vessel would be moored at the homeport site of *USS Abraham Lincoln*. The temporary mooring of the SBX Radar Vessel would be visually consistent with the Department of the Navy (homeporting of an aircraft carrier and visiting vessels) and marine-industrial activities of the Everett waterfront area (e.g., cargo ships, ferry). The SBX Radar Vessel is one-third the length of *USS Abraham Lincoln*. The dome of the SBX Radar Vessel extends 73.5 feet higher than the top of *USS Abraham Lincoln,* and the dome is approximately 61 feet wider at mast (see Figure 3.2.7-2). The overall appearance of the SBX Radar Vessel is unique and may be perceived as intrusive. However, the nature of the seascape consistently changes with vessels arriving and leaving the area. Therefore, since the SBX Radar Vessel is similar in size (although not shape) and character to the other naval vessels transiting the base, impact to the visual and aesthetics of the waterfront area would be temporary and comparable to the visual impact of other Navy vessels at this berthing location.

Lighting System

The SBX Radar Vessel operates its lighting systems 24/7. The vessel would use its external lights on the platform, the perimeter of the dome, and on top of the dome in the evening or nighttime hours. The lights are required for the operation of the ship and are in accordance to OSHA and FAA requirements. The lights on the dome are considered as “incandescent floodlights” and the trainable 500-watt (W) and 300-W incandescent floodlights are not operated while in-port” (see Figure 2-1). Lights are shielded to the maximum degree possible or pointed downward to minimize the impacts to area residents. Therefore, the light and glare produced from the external lights are anticipated to have a negligible effect on the visual and aesthetic resources of the area.

Any effects on the Study Area from noise are discussed in Section 3.2.5, Table 3.2.5-1.



Sea-Based X-Band Radar Size Compared to the USS Abraham Lincoln Aircraft Carrier

Figure 3.2.7-2

3.2.7.3 Mitigation Measures

Impacts from the SBX Radar Vessel on visual and aesthetics resources would be negligible and temporary. The lighting system on the vessel is in accordance with navigational rules, OSHA, and FAA regulations; therefore, no mitigation measures are proposed.

3.2.7.4 Summary of Effects

The Proposed Action would not have a long-term impact on the visual and aesthetic resources in the Study Area. Short-term effects on visual and aesthetic resources would be negligible, temporary, and visually consistent with the Department of the Navy and marine-industrial activities of the Study Area. There are no long-term affects anticipated.

3.2.8 WATER RESOURCES

This section describes the marine waters of NSE that could be affected by the Proposed Action.

3.2.8.1 Affected Environment

Existing Conditions

Water quality in the vicinity of the potential temporary mooring location (Pier A) is influenced mainly by Port Gardner Bay to the south and the East Waterway (Inner Everett Harbor) to the northwest. Possession Sound is to the west, and the Snohomish River is to the east of the proposed mooring area (Figure 2-5). The Snohomish River is formed by the confluence of the Skykomish and Snoqualmie rivers near Monroe. It flows southwest entering Port Gardner Bay, part of Puget Sound between Everett and Marysville. The Pilchuck River is its main tributary and joins the river at Snohomish. The river system drains the west side of the Cascade Mountains from Snoqualmie Pass to north of Stevens Pass. The Snohomish River system is important to anadromous fish, supporting salmonid species (Chinook and Coho) as well as bull trout and non-anadromous fish species. The Snohomish River enters Puget Sound through an estuarine system that was once much greater in area than at present. The estuary was reduced in size for agricultural purposes in the late 1800s into the early twentieth century (Naval Station Everett, 2008). Waterways surrounding NSE are classified as Category 1, which are waters that meet tested standards for clean water; however, placement in this category does not necessarily mean that a water body is free from pollutants; Category 2, which are waters of concern where there is some evidence of water quality problems, but not enough to require production of a water quality improvement project; and Category 5, which are waters whose quality standards have been violated for one or more by pollutants. Additionally, NSE is at the end of a watershed and abuts the Kimberly-Clark Paper Mill and other industrial users (see Figure 3.2.7-1). See Table 3.2.8-1 for the 2008 water quality assessment for the Port Gardner Bay and East Waterway (Inner Everett Harbor).

Water Currents and Circulation

Circulation in the East Waterway and its vicinity depends on fresh water discharge from the Snohomish River, tidal currents in Possession Sound, salinity wedge density currents, and configuration of the harbor. Average currents in the water column from the East Waterway are low, typically in the range of 0.8 to 2 inches/second at the inner waterway, and 1 to 5 inches/second at the harbor entrance. (U.S. Department of the Navy, 1999)

Table 3.2.8-1. 2008 Water Quality Assessment for Port Gardner Bay and Inner Everett Harbor

WDOE Location ID	Parameter	Medium	Category
10150	Ammonia-N	Water	1
10151	Dissolved Oxygen	Water	2
10153	Temperature	Water	1
15705	Fecal Coliform	Water	2
504342	Sediment Bioassay	Sediment	2
504390	Sediment Bioassay	Sediment	5
504391	Sediment Bioassay	Sediment	2

Source: Washington Department of Ecology (WDOE), 2008.

Notes:

Category 1: meets tested standards for clean water, however placement in this category does not necessarily mean that a water body is free from pollutants.

Category 2: waters of concern where there is some evidence of water quality problems, but not enough to require production of a water quality improvement project.

Category 5: polluted waters that require a Total Maximum Daily Load (TMDL). Water quality standards have been violated for one or more pollutants, and there is no TMDL or pollution control plan. TMDLs are required for the water bodies in this category.

Temperature

Temperature and salinity of site waters fluctuate due to periods of high fresh water outflow from the Snohomish River. Water quality analysis in Port Gardner Bay indicated a temperature range of 47.5°F to 63.5°F. (U.S. Department of the Navy, 1999)

Chemical Contaminants

Since the early 1900s, Port Gardner Bay and the lower Snohomish River have been used for commercial and industrial purposes, often related to timber and maritime industries (saw mills, paper production, and boat building). The southern Port Gardner Bay is a part of the Puget Sound Initiative, which is designed to clean up and restore Puget Sound (Washington Department of Ecology, 2010).

In the last 25 years, several sediment investigations have detected metals, semivolatile organic compounds, pesticides, and polychlorinated biphenyls (PCBs) at levels exceeding the Sediment Management Standards (SMS) at numerous locations throughout Port Gardner Bay. The most extensive contamination has been identified within the East Waterway. The East Waterway appears to be most impacted due to chemical contamination and impacts from wood debris accumulation. (Washington Department of Ecology, 2010) Port Gardner Bay and inner Everett Harbor are included on the 2008 303(d) list of impaired waterbodies, based on sediment for sediment bioassay (Washington Department of Ecology, 2008). Table 3.2.8-1 lists parameters from the 2008 Water Quality Assessment for Port Gardner Bay and East Waterway (Inner Everett Harbor).

Based on the 2009 Port Gardner Bay Sediment Characterization Study, the East Waterway (Inner Everett Harbor) sediments have the highest degree of impact from biological toxicity and chemicals in general. East Waterway is impacted by concentrations of mercury, zinc, and 4-methyl phenol above the Sediment Management Standards. The concentration of metals was generally low. Table 3.2.8-2 shows average metal concentrations from the flesh of the Port Gardner Bay Dungeness crab and the East Waterway English sole. Biological toxicity also exists in specific areas potentially due to organic enrichment from the accumulation of wood waste. Kimberly-Clark Paper Mill is located 0.5-mile northeast of the proposed location. Dioxin was detected in all four areas of the Bay with the highest concentration in the East Waterway area. Results from the 2009 study complement and support Ecology's decision to focus cleanup and restoration efforts in Port Gardner Bay; specifically, the East Waterway. It is expected that Ecology's cleanup efforts in this area would greatly contribute to an overall reduction in the risk these contaminants and impacts may pose (Washington Department of Ecology, 2009a).

Table 3.2.8-2. Average Metal Concentrations from the Flesh of the Port Gardner Bay Dungeness Crab and the East Waterway English Sole

Metal in mg/kg ww	Dungeness Crab Tissue	English Sole	Contaminant of Concern
Arsenic	5	2	No
Cadmium	0.08	0.004	No
Chromium	0.05	0.3	No
Copper	12.4	1.02	No
Lead	0.04	0.04	No
Mercury	0.044	0.01	Yes
Selenium	N/A	N/A	No
Silver	0.11	0.022	No
Zinc	45.3	14.9	Yes

Source: Washington Department of Ecology, 2009a
ww wet weight
mg milligram
kg kilogram
N/A Not Applicable

Current Requirements and Practices

Environmental compliance policies and procedures related to ocean and nearshore water quality are regulated by Federal and State programs including the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) which prohibits certain discharges of oil, garbage, and other substances from vessels. The MARPOL convention is implemented by national legislation, including the Act to Prevent Pollution from Ships (33 United States Code [USC] 1901, et seq.); the Federal Water Pollution Control Act ("CWA"; 33 USC 1251, et seq.) with measures that reduce potential impacts to water resources which include creation and adherence to storm water management plans, erosion control, maintaining vegetative buffers adjacent to waterways, and enforcement of pollution permit requirements under the National Pollution Discharge Elimination System (NPDES; 33 USC 1342); and the Oil Pollution Act (33 USC 40 §2701 et seq.) which streamlined and strengthened USEPA's ability to prevent and respond to catastrophic oil spills. In addition, provisions in Executive Order 12856, *Federal Compliance With Right-To-Know Laws and Pollution Prevention Requirements*, and Executive

Order 13101, *Greening the Government through Waste Prevention, Recycling, and Federal Acquisition*, reinforce the CWA's prohibition against discharge of harmful quantities of hazardous substances into U.S. waters out to 200 nautical miles, and mandate stringent hazardous waste discharge, storage, dumping, and pollution prevention requirements. For the Navy, these and other requirements are implemented by the *Navy Environmental and Natural Resources Program Manual* (OPNAVINST 5090.1C, 2007), and related Navy guidance documents governing waste management, pollution prevention, and recycling.

Shipboard waste-handling procedures governing the discharge of non-hazardous waste streams have been established for seagoing vessels. These categories of wastes include solids (garbage) and liquids such as "black water" (sewage), "grey water" (water from deck drains, showers, dishwashers, laundries, etc.), and oily wastes (oil-water mixtures).

Regulatory Requirements—Federal

The principal Federal laws protecting water quality are the Federal Water Pollution Control Act, more commonly known as the CWA (33 USC 1251, et seq.) and the Safe Drinking Water Act (42 USC 300f, et seq.). Both are enforced by the USEPA and various State Government agencies. In addition, the National Oceanic and Atmospheric Administration (NOAA; U.S. Department of Commerce) oversee coastal and marine water resources under CWA, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Coastal Zone Management Act, and the Oil Pollution Act (marine oil spills). NOAA also has responsibilities in managing and protecting coastal and marine habitats (and species) through the NMFS.

Discharges Incidental to Normal Operation of a Vessel of the Armed Forces

The CWA was amended in 1996 to allow for the Secretary of the Defense and Administrator of the USEPA to work in consultation with the U.S. Coast Guard and interested States to determine discharges incidental to the normal operation of a vessel of the Armed Forces for which it is reasonable and practicable to require use of a marine pollution control device. This amendment allowed for a comprehensive system for regulating discharges incidental to the normal operation of an Armed Forces' vessel operating in inland waters and the ocean out to 12 nautical miles. On 10 May 1999, USEPA and DoD published the final rule establishing regulations for undertaking to establish the Uniform National Discharge Standards for Vessels of the Armed Forces. This rule completed the first phase of a three-phase process to set the Uniform National Discharge standards. This Phase I rule determined the type of vessel discharges that require control by Marine Pollution Control Devices and those that do not, based on anticipated environmental effects of the discharge as well as factors listed in the CWA. A total of 25 vessel discharges that have the potential to cause an adverse impact on the environment requiring control standards have been identified under Phase I of the program (Uniform National Discharge Standards, 2008). Phase II involves developing performance standards and control procedures for those discharges. The Navy and USEPA have agreed to promulgate Phase II standards in batches. The batch rulemaking approach allows the Navy and USEPA to conduct technical analyses and develop discharge standards in batches (approximately five discharges per batch) rather than conducting analyses and developing standards for all 25 discharges at one time. To date, this Phase II process is ongoing.

Background

The Ground-Based Midcourse Defense (GMD) is an element of the BMDS; the purpose of the GMD element is to intercept and destroy long-range missiles in the ballistic (midcourse) phase of flight before their reentry into the Earth's atmosphere. The BMDS SBX radar operations testing and the establishment of a Primary Support Base (PSB) were analyzed in the 2003 *Ground-Based Midcourse Defense* (*GMD) Extended Test Range Environmental Impact Statement (EIS*). The locations analyzed as a PSB for the SBX Radar Vessel during operations testing were Pearl Harbor, HI (now Joint Base Pearl Harbor–Hickam); Naval Base Ventura County–Port Hueneme, CA; NSE, WA; Port Adak, AK; and Port of Valdez, AK. The subsequent Record of Decision for the GMD Extended Test Range EIS selected Port Adak, Alaska as the location to establish a PSB for the SBX Radar Vessel. Currently, Adak is not used as the PSB since the SBX Radar Vessel is at sea for approximately 260 days a year. Adak was not intended to be used as a location for maintenance of the SBX Radar Vessel.

The mission of the SBX Radar, a component of the BMDS, is two-fold. It supports BMDS testing in order to improve the system. In addition, the SBX Radar serves as a component of the BMDS, which is an integrated, layered system to defend the United States, its deployed forces, and allies against all ranges of enemy ballistic missiles. The SBX Radar may also be used for related missions such as space surveillance.

The SBX Radar Vessel consists of a converted semi-submersible, mobile, twin-hulled platform on which an X-Band Radar (XBR) and other BMDS system components have been mounted. The SBX Radar is able to track, discriminate, and assess incoming missiles. The SBX Radar greatly increases MDA's ability to conduct more robust and operationally realistic testing of the BMDS, and enhances the BMDS's operational ability to intercept incoming missiles. Because of its mobility, the SBX Radar Vessel can be repositioned to provide operational forward-based coverage or relocated for optimum coverage of various scenarios in the BMDS test program. The SBX Radar Vessel is capable of traveling approximately 8 knots under its own power.

The self-propelled SBX Radar Vessel is 240 feet wide, 390 feet long, and 280 feet tall from its keel to the top of the radar dome. At transit draft, the vessel has a height of approximately 250 feet above the water surface. When conducting mission activities, the SBX Radar Vessel ballasts down to an operational draft and has a height of approximately 200 feet above the water surface. The SBX Radar Vessel is one-third the length of *USS Abraham Lincoln*. The dome of the SBX Radar Vessel extends 73.5 feet higher than the top of *USS Abraham Lincoln* and is approximately 61 feet wider at mast. The dome of the SBX Radar Vessel extends 36 feet higher than the top of *USS Nimitz* and is approximately 22 feet wider at mast. The main deck of the SBX Radar Vessel houses living quarters, workspaces, storage, power generation, bridge and control rooms, and the floor space and infrastructure necessary to support the 2,000-ton XBR antenna array; command, control, and communications suites; and an In-flight Interceptor Communication System Data Terminal. The vessel is Government owned (MDA) and contractor operated (Boeing).

Coastal Zone Management

Washington Department of Ecology also administers the State's coastal zone management program under the Coastal Zone Management Act (CZMA). Washington's program applies to the 15 coastal counties that front on saltwater. These counties include a significant portion of the land in the Study Area. Six laws comprise the State's program: (1) Shoreline Management Act of 1971 (Chapter 90.58, Revised Code of Washington [RCW]), including local government shoreline master programs; (2) the State Environmental Policy Act (Chapter 43.21c, RCW); (3) State responsibilities under the Federal Clean Air Act; (4) State responsibilities under CWA; (5) the Energy Facility Site Evaluation Council Law (Chapter 80.50, RCW); and (6) the Ocean Resource Management Act (Chapter 43.143, RCW). Much of the enforcement of these coastal management activities is delegated to local governments.

MDA separately submitted a Consistency Determination based on a review of the Washington Coastal Zone Management Program (CZMP) that determined which enforceable policies within six laws identified in the CZMP are applicable to the proposed Federal activity. MDA reviewed the proposed maintenance and repair actions to determine whether they would have reasonably foreseeable direct and/or indirect effects on a coastal use or resource within the coastal zone.

The SBX Radar Vessel maintenance and repair activity would occur in Snohomish County; one of 15 counties where the CZMP applies. However, only some of the enforceable policies within the six laws identified in the CZMP are applicable to the activity with some of the elements of the activity having reasonably foreseeable coastal effects. Accordingly, in compliance with CZMA, a Coastal Consistency Determination was prepared and submitted to the Coastal Zone management program. MDA found that the proposed project is consistent to the maximum extent practicable with the CZMP.

3.2.8.2 Environmental Consequences

Approach to Analysis

Study Area

In terms of water (marine, surface, ground, flood hazard area), relevant portions of the Study Area are those in which the temporary mooring of the SBX Radar Vessel could potentially affect bodies of water. The Study Area includes the marine waters associated with the proposed location (Pier A) at NSE, Everett, WA.

Source of Information

A systematic review of relevant literature was conducted to complete this analysis of water resources in the potential location, including maps, technical reports published by Government agencies, work conducted by private businesses and consulting firms, and DoD reports, operational manuals, natural resource management plans, and current and prior environmental documents for facilities and activities in the Study Area. The literature and other information sources cited are identified in Chapter 5.0, References.

Results of Analysis

Painting, Outside Welding, Sanding, and Plasma Cutting

The SBX Radar Vessel would have a temporary effect (approximately 3 months) on the marine waters associated with Pier A at NSE. During the vessel's temporary mooring period, activities such as painting, outside welding, sanding, and plasma cutting would be performed. Standard BMPs listed in Table 2-4 would prevent any debris from entering the waterway and from being circulated in the bay. The standard BMPs would be applied to mitigate impacts to marine waters from such activities (i.e., enclose, cover, or contain work areas to prevent debris from reaching water). Therefore, the impacts on marine waters from these activities would be negligible.

Seawater Cooling Discharge Overboard

A Nature of Discharge Report was produced as part of the *Technical Development Document for Phase I Uniform National Discharge Standards for Vessels of the Armed Forces* (U.S. Environmental Protection Agency and U.S. Department of the Navy, 1999). The thermal effects of seawater cooling water overboard discharge were modeled using the Cornell Mixing Zone Expert System. This system was used to estimate the plume size and temperature rises in the water body receiving the discharge. Modeling included the cooling water discharge of three vessels in three harbors. Of the five States having a significant presence of Armed Forces' vessels, only Virginia and Washington have established thermal mixing zone dimensions. The models predicted that U.S. Navy aircraft carriers, with a typical cooling water temperature rise of 10 to 15 degrees, would generate thermal plumes that, under conditions of low harbor flushing, low wind velocities, and maximum cooling water flow rates (120,000 gallons per minute), would only exceed the regulatory thermal mixing zone limits of Washington. Thermal plume models from destroyers did not exceed regulatory limits (U.S. Environmental Protection Agency and U.S. Department of the Navy, 1999). In contrast, the SBX Radar Vessel cooling water would have a much lower flow rate (7,400 gallons per minute), and a lower typical temperature rise of 6 to 10 degrees (Missile Defense Agency, 2005).

The Nature of Discharge Report also evaluated metals that enter the cooling water as it moves through the components of the cooling system. These metals include copper, nickel, lead, aluminum, tin, silver, iron, titanium, chromium, and zinc. The Nature of Discharge Report concluded that seawater cooling discharge from armed forces vessels has a potential to cause an adverse environmental effect due to exceedences of Federal water quality criteria for heavy metals and significant heavy metal mass loading (U.S. Environmental Protection Agency and U.S. Department of the Navy 1999). Although the SBX Radar Vessel seawater cooling discharge would contain some heavy metals, the quantity would be less than on typical armed forces vessels which utilize nickel-copper piping. While the SBX Radar Vessel uses some copper-nickel piping, it also uses a composite piping that does not contribute heavy metals. (Missile Defense Agency, 2005)

Any water discharged from the vessel's Seawater Cooling System while in-port would have originated directly from the East Waterway. The review of the average metal concentrations from the flesh of the Port Gardner Bay Dungeness Crab and the East Waterway English Sole indicates that the heavy metals associated with the Seawater Cooling Discharge are not contaminants of concern (see Table 3.2.8-2). There is no thermal pollution anticipated due to any increase in temperature of the receiving ambient water (potentially 6-10 °F higher at point of entry). Additionally, the tidal influences on water flow in the SBX Radar Vessel area would aid

in minimizing the area of elevated water temperature by promoting rapid mixing of water return to ambient water temperature within a short distance of the outflow. It is anticipated that the change in temperature will not affect water quality or biological productivity. Therefore, impacts to current marine water quality from this activity are anticipated to be negligible.

Underwater Welding

Pollutant concentration amounts released from underwater welding are infrequent and in small quantities and are not estimated/analyzed (U.S. Environmental Protection Agency, 1999). As noted in the Phase I Final Rule and Technical Development Document of UNDS, metals from the underwater welding operation (which may contain chromium, iron, nickel, beryllium, manganese, and trace quantities of other metals) would not readily dissolve in the surrounding waters and would fall to the harbor floor (U.S. Environmental Protection Agency, 1999; 2003).

A review of the water quality for Port Gardner Bay and the East Waterway (Inner Everett Harbor) indicates that chromium is the only potential metal from underwater welding operations found in crustacean and fish flesh within the East Waterway (Inner Everett Harbor; see Table 3.2.8-2). Chromium is not listed as a contaminant of concern by the Washington Department of Ecology (Washington Department of Ecology, 2009a). Currently the level of chromium (0.05 milligram(s) per liter [mg/L]) is below the recommended limit set by USEPA, FDA, and OSHA of 1.0 mg/L. The remaining metals (nickel, iron, beryllium, manganese, and trace quantities of other metal) are not listed as contaminants detected within Port Gardner Bay and the East Waterway (Inner Everett Harbor). Although these metal constituents have the potential to oxidize and enter the water stream over time, the mooring of the SBX Radar Vessel is temporary at the proposed site and there is a low potential for the metal constituents to cause an adverse environmental effect. The underwater welding activities are temporary and a short performance time is anticipated therefore the level of the metals would continue to be negligible. Therefore, the impacts on marine waters from underwater welding activities would be negligible.

Oil

The small amount of oil remaining in the thruster wells (less than 5 gallons) would be removed from the thruster via a hose leading up to a surface tank. BMPs would be followed to prevent the spill of oil into the water during the transfer of the excess oil. Therefore, the impacts on marine waters from this activity would be negligible.

Storm Water Discharge

Storm water discharge activities being performed during the maintenance and repair period associated with pier side laydown equipment would adhere to the BMPs listed in Table 2-4 (e.g., Material Storage and Handing, Discharge to Storm Drain, Outdoor Work Operations) and the NSE's Storm Water Pollution Prevention Plan (SWPPP). Gray and black water would be prevented from entering the East Waterway; all gray and black water lines of the moored SBX Radar Vessel would be connected to the sewer risers on Pier A and diverted to the city of Everett's sewage system for treatment. Additionally, the SBX Radar Vessel would manage the discharge of all gray and black water by connecting to sewage risers and in accordance with any requirements of NSE and Navy Region Northwest. Adherence to the BMPs, any requirements of NSE and Navy Region Northwest, and the SWPPP would prevent the discharge of stormwater and gray and black into the East Waterway. Therefore, any impacts from storm water discharge and gray and black water would be negligible.

3.2.8.3 Mitigation Measures

Impacts to water resources resulting from painting, outside welding, sanding, and plasma cutting would not result in long-term degradation of water resources or affect water quality at the potential location. Current requirements and practices described in Section 3.2.8.1 would be considered, and all applicable BMPs listed in Table 2-4 would be implemented.

Although specific performance standards and potential pollution control device requirements have not been determined for seawater discharge, and specific requirements for the SBX Radar Vessel, have not been developed at this time, the continuing use of the composite piping on the SBX Radar Vessel is considered a pollution control device; therefore no mitigation measures are proposed.

Although chromium is the only potential metal from underwater welding operations found in crustacean and fish flesh within the East Waterway, impacts to water resources resulting from underwater wet welding activities have a low potential for causing an adverse environmental effect. To mitigate the potential of welding rods/electrodes from entering and accumulating on the floor of the Everett Harbor, underwater welders are required to log and track the number of rods used during the underwater process.

Contractors and personnel working at NSE during the maintenance and repair period must obtain a copy of all environmental requirements and BMPs established for the NSE (e.g., Environmental Safety Requirements for Contractors at NSE, 20 August 2007).

3.2.8.4 Summary of Effects

The Proposed Action would not have long-term impacts on marine water resources in the Study Area. Although underwater welding activities have the potential to introduce additional chromium into the East Waterway as well as metal constituents not currently tested (iron, nickel, beryllium, manganese, and trace quantities of other metals), these metal constituents are not readily dissolved in the surrounding waters and would fall to the harbor floor. Additionally, some heavy metals could be introduced though the seawater cooling discharge. Although these metal constituents have the potential to oxidize and enter the water stream over time, the temporary mooring of the SBX Radar Vessel in conjunction with the low potential for the metal constituents to cause an adverse environmental effect, a long-term effect is not likely. No long-term accumulations are expected, and therefore no impact is anticipated.

Short-term effects on water quality from the SBX Radar Vessel have the potential to introduce metals (underwater welding slag and rod may contain chromium, iron, nickel, beryllium, manganese, and trace quantities of other metals and seawater cooling discharge contains copper, iron, aluminum, zinc, nickel, tin, titanium, arsenic, manganese, chromium, lead, and possibly oil and grease from valves and pumps) into Port Gardner Bay and the East Waterway. These metals have a low potential for environmental effect in the surrounding water. Therefore, the Proposed Action is anticipated to have a negligible short-term impact on the water quality of Port Gardner Bay and the East Waterway.

3.3 NAVAL AIR STATION NORTH ISLAND (ALTERNATIVE 2)

Environmental Resources

Of the 14 broad areas of environmental consideration, the proposed maintenance and repair activities could have an effect on air quality, airspace, biological resources, hazardous materials and waste, noise, socioeconomics, transportation, visual and aesthetic resources, and water resources at NASNI. These resource areas are analyzed in the following sections.

The remaining resource areas were not analyzed for the following reasons:

1. Cultural—There are no known underwater archaeological sites or features within the deep water terminal area. In addition, there are no activities associated with the Proposed Action that could potentially affect either terrestrial archaeological sites or aboveground historic properties (e.g., buildings, structures).
2. Geology and Soils—There are no planned soil disturbances (i.e., dredging), land forms, or pier pilings. The erosional conditions that currently exist along First Street are a result of natural conditions and historical alterations to the bay. Although there is some debate about the effect of ship wakes on shoreline erosion, aircraft carrier and associated tug boat movements represent a negligible percentage of marine vessel traffic through the bay, such movement does not occur south of the turning basin, and they do not create substantial wakes. Therefore, the temporary presence of the SBX Radar Vessel is not anticipated to affect erosion rates along First Street.
3. Health and Safety—The radar would not be in use while the SBX Radar Vessel is in port. Any risk to divers performing underwater welding activities is covered by the established policy and procedures of the company providing the service. There are no other anticipated effects to public health and safety.
4. Land Use—There are no planned changes in the current facility designated land use patterns. The use of the facility (i.e., entrance of vessels into port, maintenance activities) is a normal facility operation.
5. Utilities—It is normal operational procedure for vessels (e.g., Aircraft Carriers, Oilers) to moor at NASNI and use pier side hook-up for potable water, waste water, and shore power. The current electrical capacity provided by NASNI for CVNs would be sufficient to operate the SBX Radar Vessel while moored at NASNI when it becomes capable of connecting to shore power.

3.3.1 AIR QUALITY

The primary air quality concerns at NASNI are the exhaust from the onboard generators and the emissions from painting operations.

3.3.1.1 Affected Environment

Existing Conditions

Climate

The climate of Southern California is characterized by warm, dry summers and mild, wet winters. One of the main determinants of the climatology is a semi-permanent high-pressure area (the Pacific High) in the eastern Pacific Ocean. In the summer, this pressure center is located well to the north, causing storm tracks to be directed north of California. This high-pressure cell maintains clear skies in Southern California for much of the year. When the Pacific High moves southward during the winter, this pattern changes, and low-pressure centers migrate into the region, causing widespread precipitation.

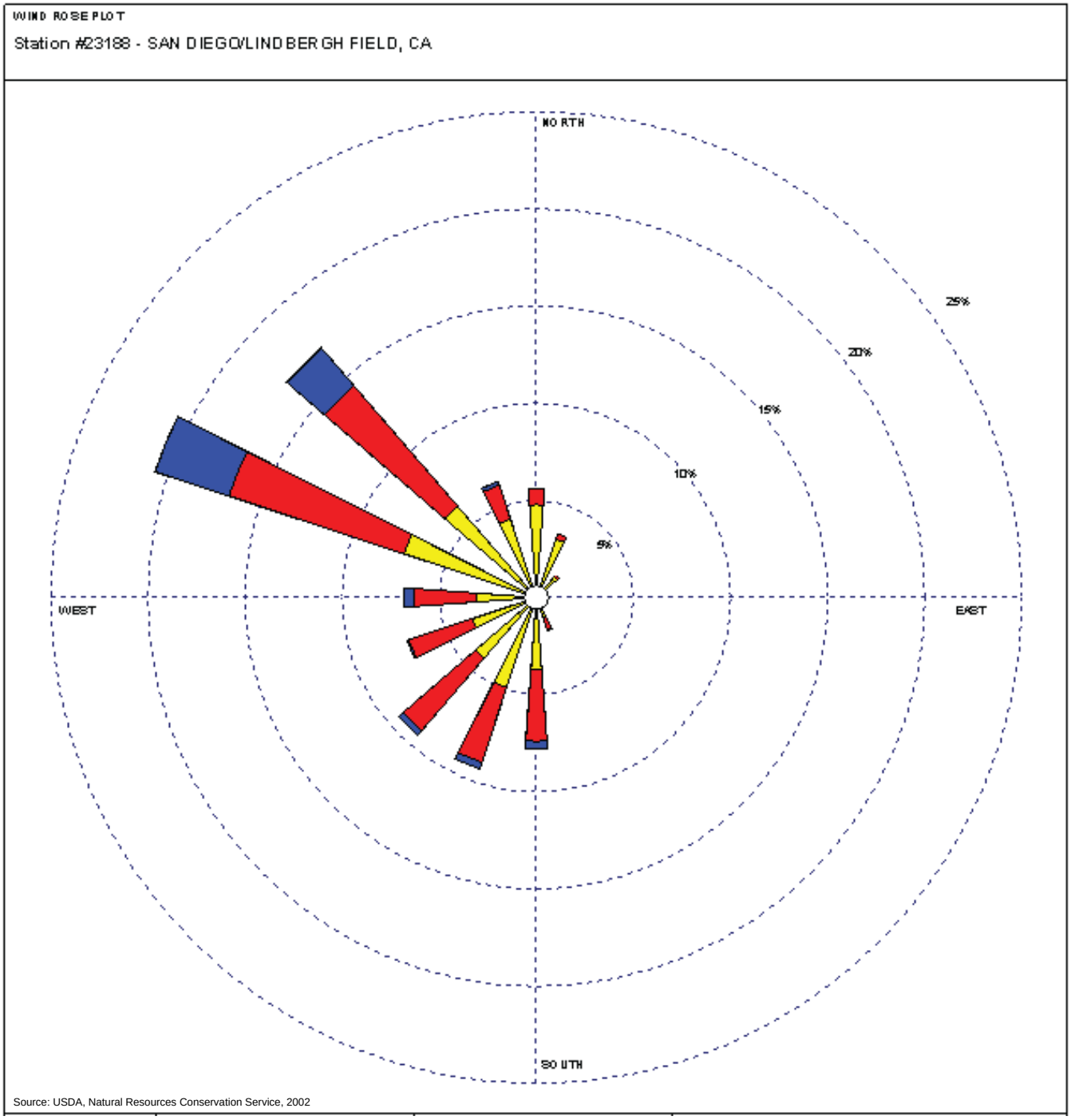
The Pacific High also influences the wind patterns of California. The predominant wind direction (blowing from) is northwest in San Diego during all four seasons. Dry easterly winds sometimes blow in the vicinity for several days at a time, bringing temperatures in the 90s and at times even in the 100s in the eastern sections of the city and outlying suburbs. These hot winds are predominant in the fall. Strong winds and gales associated with Pacific, or tropical storms, are infrequent due to this latitude (National Oceanic and Atmospheric Administration, 1990). The average wind speed is 8 miles per hour. The wind rose in Figure 3.3.1-1 also provides details on speeds from different directions.

A common atmospheric condition known as a temperature inversion affects air quality in Southern California. During an inversion, air temperatures become warmer with increasing height. Subsidence inversions occur during the warmer months (May through October) as descending air associated with the Pacific high-pressure cell comes into contact with cool marine air. The boundary between the layers of air represents a temperature inversion that traps pollutants below it. Inversion layers are important elements of local air quality because they inhibit the dispersion of pollutants, thus resulting in a temporary degradation of air quality.

Regional Air Quality

NASNI is located within San Diego County and is under the jurisdiction of the San Diego Air Pollution Control District (APCD). The San Diego APCD is the agency responsible for the administration of Federal and State air quality laws, regulations, and policies in the San Diego Air Basin (SDAB), which encompasses San Diego County.

San Diego's air quality is relatively poor. The SDAB is in "unclassified" nonattainment for the Federal 8-hour ozone standard (measured as VOC and NOx). June 15, 2010 was the deadline for SDAB to attain the new 8-hour ozone NAAQS, and it did not meet that deadline. Therefore, SDAB is expected to be newly designated as a serious nonattainment by early 2011. The SDAB is considered a maintenance area for the CO Federal standard and is currently in attainment for all other criteria pollutants. For California Ambient Air Quality Standards (CAAQS), the SDAB is classified as a nonattainment area for ozone, PM10, and PM2.5.



EXPLANATION

Wind Speed (mph)

- > 24.74
- 18.99 - 24.74
- 12.08 - 18.99
- 7.47 - 12.08
- 4.03 - 7.47
- 1.14 - 4.03

Wind Rose San Diego/ Lindbergh Field, California

Figure 3.3.1-1

The San Diego APCD operates a network of ambient air quality monitoring stations throughout San Diego County. The purpose of the monitoring stations is to measure ambient concentrations of the pollutants and determine whether the ambient air quality meets CAAQS and NAAQS.

The nearest air quality monitoring station to the project site is located in Downtown San Diego. Table 3.3.1-1 presents the ambient concentrations of pollutants in 2009, as recorded at the Downtown San Diego monitoring station, as well as the Federal and State air quality standards. These standards are at times exceeded for PM10.

Table 3.3.1-1. Background Ambient Air Quality 2009— Downtown San Diego, CA Monitoring Station

Pollutant	Averaging Time	Maximum Concentration (ppm) Downtown San Diego	CAAQS	NAAQS
Ozone (Smog)	8 hour	0.063 ppm	0.070 ppm	0.075 ppm
	1 hour	0.08 ppm	0.09 ppm	-
PM2.5	Annual Arithmetic Mean	11.78 µg/m^3	12 µg/m^3	15 µg/m^3
	24 hour	52.1 µg/m^3	35 µg/m^3	35 µg/m^3
PM10	Annual Arithmetic Mean	28.7 µg/m^3	20 µg/m^3	-
	24 hour	59 µg/m^3	50 µg/m^3	150 µg/m^3
Nitrogen Dioxide	Annual	0.017 ppm	0.030 ppm	0.053 ppm
	1 hour	0.078 ppm	0.18 ppm	-
Carbon Monoxide	8 hour	2.8 ppm	9.0 ppm	9.0 ppm
	1 hour	4.0 ppm	20 ppm	35 ppm
Sulfur Dioxide	Annual	0.002 ppm	-	0.030 ppm
	24 hour	0.006 ppm	0.04 ppm	0.14 ppm
	3 hour	0.01 ppm	-	0.5 ppm
	1 hour	0.02 ppm	0.25 ppm	-

Source: San Diego Air Pollution Control District, 2009

CAAQS = California Ambient Air Quality Standards
NAAQS= National Ambient Air Quality Standards
"-" = Standard revoked or does not exist
ppm = parts per million
µg/m^3 = micrograms per cubic meter

Current Requirements and Practices

Equipment used by military, Navy civilians, and contractors, including ships and aircraft, are properly maintained in accordance with applicable Navy requirements and industrial standards, thus reducing potential impacts to air quality. Operating equipment meets Federal and State emission standards, where applicable.

NASNI holds a Title V air permit for aerospace operations only. There are no restrictions or conditions for pier activity in their Title V. The SBX Radar Vessel would not be considered a stationary source at NASNI; therefore, neither a PSD review nor a Title V permit would be

required, and the California Airborne Toxic Control Measures for Stationary Compression Ignition Engines do not apply.

General Conformity Applicability

USEPA has published *Revisions to the General Conformity Regulations; Final Rule*, in the 5 April 2010 Federal Register (40 CFR Parts 51 and 93). The U.S. Navy published *Clean Air Act (CAA) General Conformity Guidance* in Appendix F, OPNAVINST 5090.1C, dated 30 October 2007. These publications provide implementing guidance to document CAA Conformity Determination requirements.

USEPA's general conformity rule and corresponding San Diego APCD Rule 1501 apply to Federal actions occurring in nonattainment or maintenance areas when the total indirect and direct emissions of the subject air pollutant exceed specific thresholds. The SDAB is moderate nonattainment for the 8-hour ozone standard. SDAB is also considered a maintenance area for the CO standard. Therefore, the general conformity *de minimis* level of 100 tons per year applies for VOCs, NOx, and CO. By early in 2011, SDAB will likely be newly designated as a serious nonattainment area for 8-hour ozone. One year after the effective date of the final nonattainment designation, the *de minimis* thresholds for General Conformity determinations will be reduced to 50 tons/year for VOC and NOx emissions. Table 3.3.1-2 shows the *de minimis* levels (in tons/year) for the air basin potentially affected by the Proposed Action at NASNI.

Table 3.3.1-2. *De minimis* Levels for Determination of Applicability of General Conformity Rule, Naval Air Station North Island, CA

Air Quality Jurisdiction	De Minimis Emission, tons/year					
	VOC	NOx	CO	PM10	PM2.5	SO2
San Diego APCD	100*	100*	100	N/A	N/A	N/A

Source: 40 CFR 93.153

* By early in 2011, SDAB will likely be newly designated as a serious nonattainment area for 8-hour ozone and the *de minimis* for applicability analysis will be at 50 tons/year for VOC and NOx emissions.

Shipboard Generators

San Diego APCD's rules and regulations include procedures and requirements to control the emission of pollutants and to prevent adverse impacts (see Appendix C for details). San Diego APCD requires all ships to record any engine or boiler light-off (Commander Navy Region Southwest, 2005). The Commander, Navy Region Southwest (COMNAVREGSW) *Afloat Environmental Quick Response Guide* (Commander Navy Region Southwest, 2009) as well as a Compliance Advisory from San Diego APCD (San Diego APCD, 2000) further specifies that:

- All ships must record (log) any engine or boiler light-off. Ship's log shall indicate the start time, estimated duration, and reason for the light-off. Failure to maintain this log may result in issuance of a Notice of Violation. Ship's log is subject for review by San Diego APCD in the event of excess emissions from a ship's stack or when a complaint is received by San Diego APCD.

- No emissions shall exceed Ringelmann 2 (San Diego APCD Visible Emissions Rule 50 (d) (1) and California Health and Safety Code, Section 41701) and there shall be no nuisance emissions (such as odors or dust), and particulates (San Diego APCD,

Nuisance Rule 51). Therefore, during engine or boiler light-off, a column of black or white smoke may not be discharged that limits visibility by more than 40 percent for more than 3 minutes in any consecutive 60-minute period (Commander Navy Region Southwest, 2009). Operational testing is exempt from this rule.

In addition to local regulation, Senior Officer Present Afloat (SOPA), COMNAVREGSW, Instruction 5400.2 states that, "Navy ships at pier side shall implement operation and maintenance procedures to prevent stack emission in violation of State and local regulations." Navy Instruction 5090.1c, Chapter 20 also requires the emissions from major maintenance activities to be tracked and provided to NASNI to include as part of the base emissions inventory (Commander Navy Region Southwest, 2005).

Painting and Solvents

National emission standards for shipbuilding and ship repair (surface coating), listed in the CAA regulations, Subpart II of Part 63, NESHAPs, apply to major sources of HAP emissions. Major sources are shipbuilding and repair facilities/coating operations emitting over 10 tons per year of an individual HAP or over 25 tons per year of total HAP are regulated. The Proposed Action is not expected to be a major source of HAP (VOC) emissions.

San Diego APCD's Marine Coating Operations requirements, Rules 10, 11, and 67-18, will apply to painting proposed on the SBX Radar Vessel because of the volume of paint-use proposed. The contractor hired to perform the SBX Radar Vessel maintenance or MDA would have to apply for a permit with the San Diego APCD for Coating and Adhesive Application Equipment and Operations because of the amount of paint being used. SOPA COMNAVREGSW Instruction 5090.1b as well as the *Afloat Environmental Quick Response Guide* specifies other San Diego APCD marine coating requirements:

- VOC limits for marine-coating paint may not exceed 340 grams/liter or 2.8 pounds/gallon. VOC limits for specialty coatings are higher (between 340 and 780 grams per liter).
- Thinning of marine coatings/paints is prohibited.
- All coatings obtained overseas must comply with APCD requirements.
- Keep lids on paint cans or paint rag buckets when not in use (Commander Navy Region Southwest, 2009).

See Appendix C for more details of the current requirements and practices listed above.

3.3.1.2 Environmental Consequences

Approach to Analysis

The evaluation of potential air quality impacts includes the effects of air pollutant emissions from the proposed maintenance and repair activities occurring within the San Diego APCD area and in coastal waters within 3 nautical miles of a shoreline. These coastal waters are part of the same air quality jurisdiction as the contiguous land area.

The NEPA analysis involves estimating emissions generated from the proposed activities and assessing potential impacts on air quality, including an evaluation of potential exposures to toxic air pollutant emissions. The proposed activities as described in Chapter 2.0 that would change air emissions in the region could include:

- Shipboard generators—For purposes of this air quality section, 2½ months, or 75 days, of operation was used because the duration of the activity is estimated to be up to 3 months. After the installation of the equipment to supply power to the vessel from a shore connection, shore power could be used to reduce the use of diesel generators, but it is unknown when the installation will be complete. Therefore, those reductions could not be included in the emissions impact.
- Equipment—For purposes of this air quality section, the equipment listed in Chapter 2.0, Table 2-3, is reflective of maximum equipment requirements, but is not necessarily reflective of equipment needed on any given day. Each of the items was estimated to operate a total of 975 hours (75 days operating 13 hours per day). The length of time any particular piece of equipment is required is ultimately a function of the final maintenance schedule. For example, it is estimated that one welder will be necessary for 75 days; this could be accomplished through the use of one welder for 75 days, or two welders for 37.5 days. For the purposes of calculated emissions, the precise scheduling is not a critical factor; rather, the total operating hours for each piece of equipment is the relevant metric.
- Added personnel—Includes temporary commuting from the 224 shipyard workers; includes additional 50 miles of miscellaneous travel (mix of car, truck) by each of the 83 personnel living on the vessel while in port for 3 months.

Estimated emissions associated with these actions will be compared to *de minimis* threshold to screen for the need (if any) for a formal conformity determination, and will be compared to the current requirements and practices listed above to evaluate the magnitude of emissions that could occur from the proposed activities.

Results of Analysis

Appendix D contains the complete results for the screening level air quality modeling that was used to estimate net increases in air pollution. The results are summarized below.

General Air Conformity Applicability

Total air emissions for the SBX Radar Vessel maintenance and repair are assumed to occur within 1 year, which accurately represents the temporary nature of the Proposed Action. Table 3.3.1-3 shows the estimated air emissions of the subject pollutants resulting from the Proposed Action.

Table 3.3.1-3. Estimated Air Emissions from SBX Radar Vessel Maintenance and Repair, Naval Air Station North Island, CA

Emission Source	Air Emissions, Tons/Year		
	VOC	NOx	CO
Two diesel generators operations	5.93	53.76	14.28
Equipment	0.15	0.41	1.28
Shipyard worker commute	0.01	0.01	0.08
Government-owned vehicle miles travelled	0.	0.01	0.07
TOTAL Emissions	**6.09**	**54.19**	**15.71**
SDAB *de minimis* threshold[(1)]	100	100	100
Proposed Action Exceeds *de minimis* threshold?	No	No	No

Source: derived from USEPA, 1996; Air Force Center for Engineering and the Environment, 2010

[(1)]San Diego Air Basin (SDAB) is a moderate nonattainment area for the 8-hour Federal and State ozone standard; volatile organic compounds (VOCs) and nitrogen oxides (NOx) are precursors to the formation of ozone. SDAB is considered a maintenance area for the Federal carbon monoxide (CO) standard. SDAB is in attainment of the Federal sulfur dioxide (SO2), particulate matter with a mean aerodynamic diameter of 10 microns and 2.5 microns (PM10 and PM2.5) standards; therefore, emissions estimates and *de minimis* thresholds are not applicable or shown.

The estimated air emissions from air emission sources associated with the maintenance and repair of the SBX Radar Vessel would be below the *de minimis* threshold levels for conformity; i.e., VOC, NOx, and CO emissions are below 100 tons per year as shown on Table 3.3.1-3. Therefore, the Proposed Action would conform to the SDAB SIP and would not trigger a conformity determination under Section 176(c) of the CAA. A RONA for CAA conformity in accordance with Navy CAA Conformity Guidance, OPNAVINST 5090.1C, is provided in Appendix H.

Shipboard Generators Emissions

Air emissions will increase as a result of the limited use of shipboard generator. As shown on Table 3.3.1-3, the NOx emission from two diesel generators operations would be approximately 53.76 tons per year; or an additional 0.72 ton per day of NOx emissions to the air. For perspective, the 2010 Estimated Annual Average Emissions for the SDAB showed a total of 153 tons per day of NOx, almost entirely from on-road motor vehicles and other mobile sources (California Air Resources Board, 2010). Military aircraft and ship activities over and offshore of San Diego County currently emit approximately 10 tons per day of NOx (San Diego APCD, 2007). CO emissions are predicted to be 14.28 tons/year and VOC emissions 5.93 tons/year.

As shown in Appendix D, Table D-1, the ship generators are estimated to result in 0.83 ton per year of PM10, which does not represent meaningful emissions. In addition, the ship generators are estimated to result in greenhouse gas emissions (CO_2) of 2,772 tons per year. This does not represent "meaningful" greenhouse gas emissions as set forth in draft guidance by the Council on Environmental Quality (see Appendix C for more details).

The use of onboard generators may cause emissions of visible matter, or nuisance emissions (such as odors or dust), and particulates. This may impact air quality in the immediate vicinity of the project site, but these emissions are not anticipated to be noticeable by residents in downwind communities (see Figure 3.3.1-1). In every case, the Navy would be required to keep a ship's log indicating the start time, estimated duration, and reason for engine light-off and may

be required to conduct opacity testing during engine light offs to stay compliant with San Diego's visible and nuisance emissions rules. Because of the temporary nature of the use of generators, there would be no significant air quality impacts to the region.

Painting and Solvents Emissions

Over 250,000 square feet of the vessel would be prepared and painted, and this would require the use of approximately 1,500 gallons of paint and 330 gallons of solvents. VOC emissions will occur as solvents volatilize from the product. Implementation of BMPs for containment and filtering of emissions that are listed in Chapter 2.0 will minimize the impact to air quality. However, because of the large quantity of paint used during maintenance and repair of the SBX Radar Vessel, San Diego APCD regulations would require MDA or the contractor hired to perform the SBX Radar Vessel maintenance to obtain a permit for Coating and Adhesive Application Equipment and Operations. MDA/contractor must submit applications to the San Diego APCD for their review and approval. Once a permit is issued, the MDA/contractor will be responsible for compliance with the conditions specified in the permit. Because the painting and solvent activities would be permitted by an APCD permit, the emissions are exempt from conformity per 40 CFR 93.153(d) (1) and emissions from painting are not estimated in this analysis. See Appendix D, Section D.1.4 for further discussion.

In addition, San Diego APCD rules limit VOC content of paint: marine-coating paint cannot exceed 340 grams/liter or 2.8 pounds/gallon (specialty coatings VOC content is allowed to be higher). In order to comply, the MDA/contractor would use low VOC content paint, as specified on the MSDSs from the paint manufacture and shown in Table D-4. There will be no significant air impact from paint and solvent use.

Other Emissions

Equipment is listed in Chapter 2.0, Table 2-3. Estimates of emissions were based on estimated hours of usage as discussed in Appendix D. As shown on Table 3.2.1-3, potential CO, VOC, and NOx emissions from diesel-powered equipment are not expected to significantly impact air quality. The traffic-related air emissions resulting from the temporary shipyard worker commutes and Government-owned VMT would have no significant impact on air quality because of the low number of trips proposed and their temporary nature.

3.3.1.3 Mitigation Measures

By early in 2011, SDAB will likely be newly designated as a serious nonattainment area for 8-hour ozone. After a 1-year grace period, the thresholds for general conformity determination will be lowered to 50 tons/year for VOC and NOx emissions. If the air shed is newly designated to serious nonattainment and the SBX Radar Vessel maintenance is not completed during the 1-year grace period following the designation, MDA would need to mitigate the NOx air emissions from the on-board generators to meet the NOx emission requirements.

3.3.1.4 Summary of Effects

The analysis determined that the mooring of the SBX Radar Vessel for 75 days and the maintenance and repair would cause short-term impacts to air quality, but will not exceed General Conformity *de minimis* levels in the San Diego Air Pollution Control District, or NAAQS. The major ozone (measured by NOx and VOCs) and CO air pollutant emissions sources include

shipboard diesel generators, employee commuting, diesel equipment (NOx and CO), and surface coating (VOCs). The estimated air emissions from these sources associated with the maintenance and repair of the SBX Radar Vessel for NOx would be 54.19 tons per year, 6.09 tons per year of VOCs, and 15.71 tons per year of CO. These emissions will be temporary and will not significantly impact the San Diego Air Basin. If the air shed is newly designated to serious nonattainment, there would be significant impact from the use of shipboard generators that would need to be mitigated. The requirements imposed by the San Diego APCD through its procedures and the permit process for Marine Coating will ensure that the project would have no significant impact on air quality. This and the implementation of BMPs listed in Chapter 2.0 would ensure that the project would have no significant impact on air quality.

3.3.2 AIRSPACE

Airspace surrounding NASNI is analyzed in this EA because there is a potential for the SBX Radar Vessel to be an aircraft obstruction.

3.3.2.1 Affected Environment

Existing Conditions

Descriptions of airspace classes and other general information related to airspace issues are available in Appendix C.

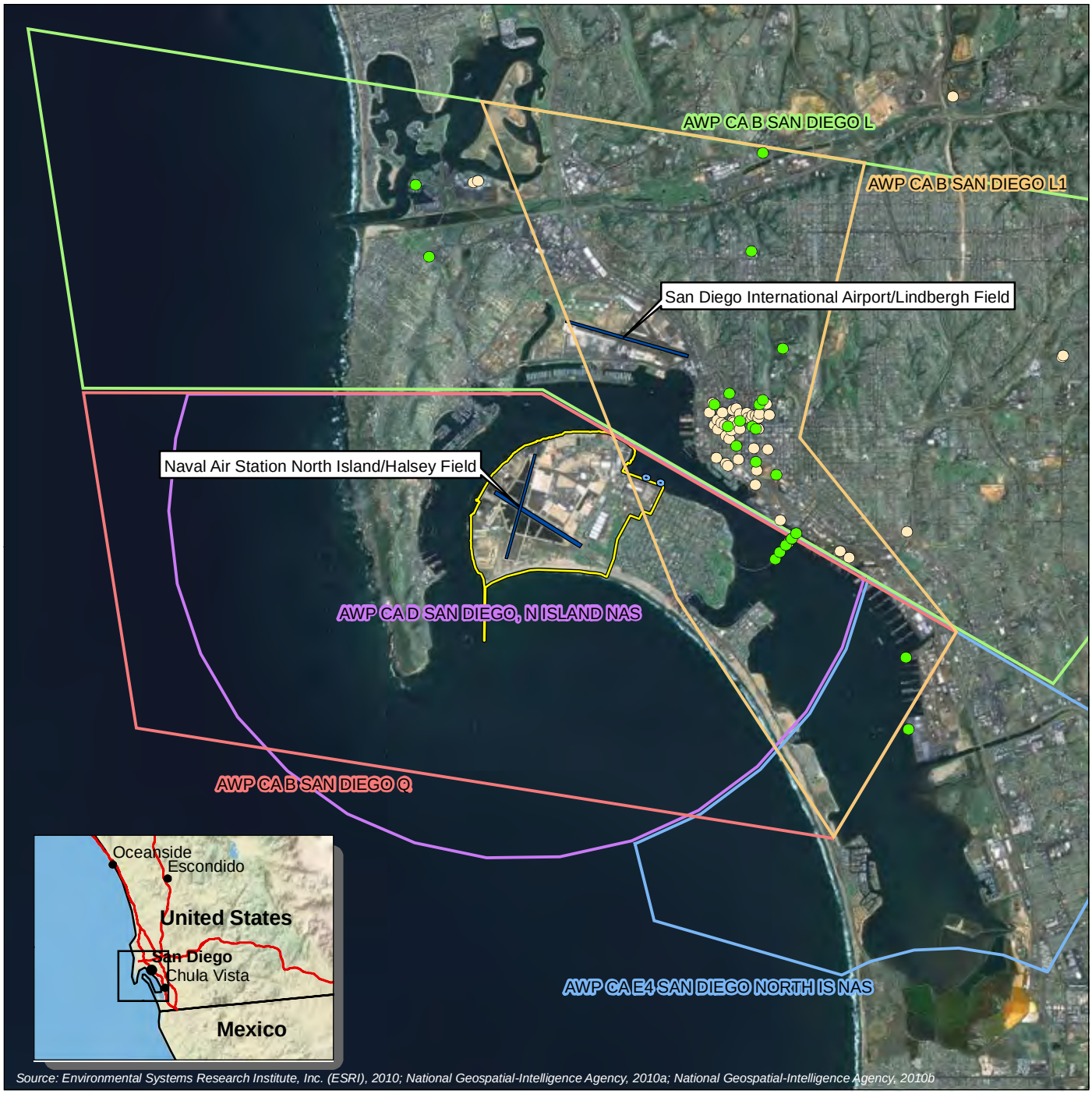
Controlled and Uncontrolled Airspace

Airspace encroachment is a serious issue at NASNI. The field's proximity to San Diego Lindbergh Field means that many activities are conducted on an "either/or" basis, with one facility having to defer to the other's traffic. NASNI must accommodate this situation by conducting almost all of its activity south of the field; however, this can worsen the tenuous noise relationship with its neighbors.

As shown on Figure 3.3.2-1, the airspace above San Diego Lindberg Field is designated Class B airspace—airspace that surrounds an airport with high density air traffic. It is developed to reduce the midair collision potential by providing an area in which all aircraft are subject to certain operating rules and equipment requirements. This Class B airspace, AWP CA B San Diego L, extends from the surface to 10,000 feet AMSL. NASNI is located in Class D airspace, AWP CA D San Diego, N Island NAS, which extends from the surface to 2,800 feet AMSL. Overlying the Class D airspace is Class B airspace, AWP CA B San Diego Q, which extends from 2,800 to 10,000 feet AMSL. There is a class B VFR corridor, AWP CA B San Diego L1, which extends through the other two San Diego Class B airspace areas from 3,300 to 4,700 feet AMSL. (National Geospatial Intelligence Agency, 2010a)

Aerial Obstructions

Generally, only man-made structures extending more than 200 feet AGL are depicted on aeronautical charts. Some objects less than 200 feet AGL, such as antennas, tanks, and lookout towers, are also included if very near an airport. There are a number of aerial obstructions to aircraft as identified in the Digital Vertical Obstruction files (National Geospatial-Intelligence Agency, 2010b). Figure 3.3.2-1 shows the aerial obstructions that are 200 to 249



EXPLANATION

- Aerial Obstruction (200' to 249')
- Aerial Obstruction (Greater than 250')
- Airfield Runway
- AWP CA D SAN DIEGO, N ISLAND NAS (Surface - 2,799')
- AWP CA E4 SAN DIEGO NORTH IS NAS (Surface - 2,800')
- AWP CA B SAN DIEGO L (Surface - 10,000')
- AWP CA B SAN DIEGO Q (2,800' - 10,000')
- AWP CA B SAN DIEGO L1 (3,301' - 4,699')
- Potential Mooring Location
- Naval Air Station North Island Boundary

NORTH

0 1 2 4 Miles

Aircraft Obstructions in the Region of Naval Air Station North Island

California

Figure 3.3.2-1

feet AGL, similar to the SBX Radar Vessel, and those that are greater than 250 feet AGL. When navigating through this area pilots must be aware of these obstructions.

Airports/Airfields

San Diego International—Lindbergh Field is 3 nautical miles from NASNI. Lindbergh Field is a civilian airport with congested air traffic. The airport services 5,923,000 passengers annually. The aircraft circulation system at NASNI consists of two runways: Runway 11/29 (300 feet by 7,500 feet) and Runway 18/36 (200 feet by 8,000 feet). These Class B runways are oriented at approximately right angles to each other and are connected through an extensive taxiway system. Fixed wing landings and take-offs use Runway 11/29. Runway 18/36 is used for additional fixed wing take-offs as well as rotary-wing operations. Aircraft maintenance facilities are housed in aircraft maintenance hangars and associated parking aprons.

Air Traffic Control operates the existing airspace associated with San Diego International Airport and NASNI as though they are serving a single airport with three dependent runways. The two airports use the same terminal airspace. The primary arrival runways for these two airports converge. This requires air traffic control to sequence, or space, aircraft on final approach with aircraft on final approach for the other airport. (San Diego County Regional Airport Authority, 2003)

Current Requirements and Practices

NASNI follows all applicable U.S. Navy and FAA rules and regulations that control and regulate area airspace.

3.3.2.2 Environmental Consequences

Approach to Analysis

To complete the analysis of the effects to airspace in the NASNI area, a systematic review of relevant literature was conducted, including scientific articles, technical reports published by Government agencies, work conducted by private businesses and consulting firms, DoD reports, operational manuals, and current and prior environmental documents for facilities and activities. The literature and other information sources cited are identified in Chapter 5.0, References.

Results of Analysis

Controlled and Uncontrolled Airspace

No impacts to controlled and uncontrolled airspace are anticipated since the XBR would not be radiating.

Aerial Obstructions

The FAA requires an Obstruction Notification submittal for all objects that intersect a 100:1 slope up from the surface of a runway out to 20,000 feet from the runway. For example, on flat ground a 200-foot structure would require a notification submittal if located within 20,000 feet of an airport. Based on an initial analysis, MDA would be required to submit an Obstruction Notification to the FAA since both the NASNI and San Diego International Airport runways are

within 20,000 feet of the proposed SBX Radar Vessel location and the SBX extends 250 feet AGL.

The SBX Radar Vessel does include FAA approved warning lights to help pilots identify it when transiting through the area. During the day in clear weather the SBX Radar Vessel is of sufficient size to easily identify and avoid. When navigating through this area pilots must already be aware of the existing aerial obstructions shown on Figure 3.3.2-1, and the addition of the SBX Radar Vessel would not result in an impact.

Airports/Airfields

The SBX Radar Vessel would not be located within the approach of any airport and would not impact aircraft transiting the area. San Diego International—Lindbergh Field is 3 nautical miles north and the NASNI runways are 1.5 miles west and southwest of the proposed SBX Radar Vessel Location. There would be no radiofrequency interference/electromagnetic interference issues with communication or radar at the airports since the XBR would not be used while the SBX Radar Vessel is in port.

3.3.2.3 Mitigation Measures

The appropriate lighting would be on the vessel as required by FAA to illuminate the height of the structure. It is anticipated that the MDA would submit an Obstruction Notification to the FAA due to the height of the SBX Radar Vessel and the proximity of several runways.

3.3.2.4 Summary of Effects

No impacts are anticipated to controlled and uncontrolled airspace since the XBR would not be radiating. No impacts are expected to area airports as a result of the SBX Radar Vessel being an aerial obstruction since it includes FAA approved lighting and the MDA would coordinate with the FAA regarding any required Obstruction Notification requirement.

3.3.3 BIOLOGICAL RESOURCES

Biological resources are analyzed in this EA because of the potential for impacts to biological species from temporarily mooring the SBX Radar Vessel at NASNI for maintenance and repair activities. These activities would result in increased noise, increased presence of personnel, lighting on the vessel required 24/7, the potential for water quality degradation, and expended materials, including those from welding, painting, or paint-chipping.

3.3.3.1 Affected Environment

The region of influence for biological resources includes areas that may potentially be affected by the use of NASNI for the SBX Radar Vessel maintenance and repair.

Existing Conditions

Marine Vegetation

Beds of eelgrass, a type of seagrass and a marine angiosperm, form an important and productive benthic habitat in San Diego Bay. Eelgrass beds in San Diego Bay have suffered

substantial losses and impacts due to their location in sheltered waters where human activity is concentrated, similar to what has occurred in bays and estuaries all along the Pacific coast and elsewhere in the world. In San Diego Bay, these beds extend from zero mean lower, low water (MLLW) to depths of at least 23 feet below MLLW, depending on levels of light and water turbidity. In south Bay the range is from 0 to –7 feet MLLW, central Bay 0 to –10 feet MLLW, and North Bay 0 to –13 feet MLLW. Near the mouth in North Bay, a different form of eelgrass (wider blades) grows from –16 to –23 feet MLLW. (Commander Navy Region Southwest, 2002)

Eelgrass beds are an important component of the San Diego Bay food web. Fish and invertebrates use eelgrass beds to escape from predators, as a food source, and as a nursery since eelgrass plants provide surfaces for egg attachment and sheltered locations for juveniles to hide and feed. Fish-eating birds, including the least tern, consume fish from these beds. Waterfowl, especially surf scoter, scaup, and brant are present in high numbers in late fall and winter. Black brant, in particular, rely heavily on eelgrass of central and south Bay, as they are one of the few birds that consume it directly. (Commander Navy Region Southwest, 2002)

Marine Invertebrates

Invertebrates consist of infaunal (those living in sediments) and epifaunal (those living on sediments). Common infauna include many polychaete families and genera. The most common epifauna are mollusks, cnidarians (hydroids and sea anemones), arthropods, and sponges. Other species occurring in low numbers include gorgonians and tunicates. (U.S. Department of the Navy, 1999)

Fish

The most common pelagic (open ocean) fish species include topsmelt, northern anchovy, and Pacific sardine. The most abundant demersal (living on or near the bottom) fish species located in San Diego Bay include round stingray, spotted sand bass, barred sand bass, yellowfin goby, diamond turbot, and California halibut. Few commercially important fish species are found in the Bay. (U.S. Department of the Navy, 1999)

Threatened and Endangered Species

No threatened or endangered fish species have been identified in San Diego Bay (Commander, U.S. Pacific Fleet, 2010).

Essential Fish Habitat

According to the Magnuson-Stevens Fisheries Conservation and Management Act, the U.S. Navy is responsible for evaluating whether projects or activities adversely impact EFH zones, broadly defined as those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (16 U.S.C. Section 1802). The Act is further defined in Appendix C.

The Coastal Pelagic EFH includes surface waters or, more specifically, waters above the thermocline where sea surface temperatures range between 50°F to 79°F. Five species are included in the Fishery Management Plan for Coastal Pelagic Species, all of which have a wide distribution throughout California. The managed species that are most likely to occur at the

project location are northern anchovy, chub mackerel, and Pacific sardine. (Commander Navy Region Southwest, 2002)

The Groundfish EFH includes surface waters and benthos, encompassing all waters from the mean higher high water line and the upriver extent of saltwater intrusion in river mouths seaward to the 200-mile boundary. Species that could possibly be found at the proposed project location include California halibut and Pacific sanddab (both associated with the water column and soft bottom habitats) as well as lingcod and various rockfishes (associated with hard bottom features in nearshore coastal environments). (Commander Navy Region Southwest, 2002)

Marine Mammals and Sea Turtles

The U.S. stock of California sea lions and the California stock of Pacific harbor seals can be commonly found at haul-out sites on the mainland, on buoys, and on docks within California harbors including northern San Diego Bay. (Commander, U.S. Pacific Fleet, 2010)

The California Coastal stock of the Pacific bottlenose dolphin regularly inhabits the nearshore waters of southern California. This species regularly moves along the California coast and may transit the area since they remain close to shore (within 0.5 nautical mile). This particular stock has limited site fidelity and can be distributed anywhere between Monterey to northern Baja Mexico depending on localized abundance of prey. The Eastern Pacific stock of gray whale occurs off southern California during their annual migration between summer feeding areas in the Bering and southern Chukchi seas and winter calving areas in Baja California and mainland Mexico. While gray whales may occasionally be found within 1 nautical mile of shore during their migration periods, they are typically found further offshore. As such, gray whales would be infrequent transients through or seaward of the outer section of the region of influence. (Commander, U.S. Pacific Fleet, 2010)

Threatened and Endangered Species

None of the four marine mammal species that inhabit or regularly transit the area are listed as threatened or endangered under the ESA (Commander, U.S. Pacific Fleet, 2010). However, the green sea turtle (*Chelonia mydas*) is a federally endangered species that has been sighted in the San Diego Bay.

Green Sea Turtle. The east Pacific green turtle is a federally endangered species that has been sighted in the San Diego Bay, but beaches in the area are not considered suitable for nesting. Both adults and juveniles have been sighted, with individuals seen throughout the summer and winter at the San Diego Gas and Electric channel, South San Diego Bay, and around Coronado Bridge, near a thick stand of eelgrass. They do not breed or nest in San Diego Bay, since they need undisturbed beaches for nesting. The resident population of east Pacific green sea turtles in San Diego Bay is approximately 30 to 60 individuals, which increases to nearly 100 during peak migratory time periods. The Marine Turtle Research Program at Southwest Fisheries Science Center regularly monitors green turtles in San Diego using biological sampling, sonic tracking, and satellite telemetry (Southwest Fisheries Science Center, 2007). (Commander, U.S. Pacific Fleet, 2010)

Sea turtles are primarily herbivores (young turtles are carnivorous from hatchling until juvenile size and gradually becoming herbivorous) that graze on marine algae and grasses. Previous studies concluded that during the day, San Diego Bay turtles are located in the deeper portion of the South San Diego Bay Power Plant warm water discharge channel. At night they feed on eelgrass beds in South San Diego Bay, such as Coronado Cays (Commander, U.S. Pacific Fleet, 2010)

Birds

San Diego Bay is part of a network of Southern California bays that provide haven for a large diversity of birds due to their sheltered and nutrient-rich waters. The shallow water and shoreline provide roosting, foraging, and nesting areas for ducks, terns, shorebirds, pelicans, cormorants, gulls, herons, raptors (such as ospreys and northern harriers), and various passerines (perching birds) in the surrounding vegetation. (Commander, U.S. Pacific Fleet, 2010)

Most birds using San Diego Bay are migratory and may only use the bay as a stopover site to rest and eat before continuing their migration. Other bird species, termed summer or winter visitors, use the bay part of the year for either breeding or wintering. Species that migrate to San Diego Bay to nest are predominantly seabirds. South San Diego Bay is home to a large multi-species seabird colony annually from April through May. From late fall through the winter (November through February), the greatest numbers of waterfowl are present in the region of influence to rest and forage including ducks, geese, coots, and grebes. (Commander, U.S. Pacific Fleet, 2010)

The California brown pelican was previously listed by the USFWS as threatened and by the California Department of Fish and Game as endangered under the California ESA. However, the USFWS published the final rule to delist the Brown Pelican on 17 November 2009. The delisting went into effect on 17 December 2009. California brown pelicans are regularly observed at all coastal or bayside Navy installations in San Diego Bay including NASNI. The California brown pelican is known to fly over, and rest in, San Diego Bay. (Commander, U.S. Pacific Fleet, 2010)

Threatened and Endangered Species

Western Snowy Plover. The western snowy plover (*Charadrius alexandrius nivosus*) is a federally threatened bird species that nests in colonies on sandy beaches along the west coast of the United States and into southern Baja California. It is a small shorebird with pale gray-brown coloring above, white below, a white hind neck collar, dark lateral breast patches, forehead bar and eye patches. Its legs and bill are black. During the breeding season, the males develop a rufous crown, but the sexes are indistinguishable the remainder of the year. (Commander, U.S. Pacific Fleet, 2010)

Western snowy plovers occur on the beaches in the San Diego Bay area. Vegetation and driftwood are generally sparse or absent from plover nesting sites. Plovers may nest several times during the breeding season, which extends from March into mid-to-late September. There are usually three eggs per clutch, and the chicks hatch in approximately 27 days, leaving the nest within hours to search for food. Adults and chicks feed on terrestrial and aquatic invertebrates such as amphipods, sand hoppers, and flies. Kelp deposited on beaches provides

an abundant food source of the invertebrates that frequent these kelp piles. Mudflats are also used for foraging. (Commander, U.S. Pacific Fleet, 2010)

Its preference for nesting on sandy beaches has led to its decline along the west coast, since much of its habitat has been developed or is subject to moderate-to-heavy human use. Nesting areas can be vulnerable to trampling, especially since plover nests and chicks can be difficult to detect. (Commander, U.S. Pacific Fleet, 2010)

Predation by birds and mammals, especially ravens, crows, and red fox is the primary cause of reproductive failure for plovers. Areas where predators have been excluded from plover nesting sites have had dramatically higher nesting success than unprotected sites. Trash accumulation on the beaches can also act as an attractant to certain predators such as ravens and crows. (Commander, U.S. Pacific Fleet, 2010)

The majority (78 percent) of the coastal breeding colonies in California occur north of San Diego County from San Francisco Bay to Oxnard and the Channel Islands. An estimated 70 percent of the snowy plover population migrates in the winter, but the rest are present all year. The San Diego Bay area also serves as the over-wintering grounds for plovers from Monterey Bay and Oregon. During the nonbreeding season, plovers are often observed on the Bay-side of NASNI and along the ocean beach. (Commander, U.S. Pacific Fleet, 2010)

The San Diego Bay area now holds much of the remaining nesting grounds for snowy plovers in Southern California. Of the 174 nests in the county in 1997; approximately 37 percent were in the San Diego Bay area at several sites including NASNI. In 2001, 13 nests were located at NASNI. No critical habitat has been designated on NASNI. (Commander, U.S. Pacific Fleet, 2010)

California Least Tern. The California least tern (*Sterna antillarum browni)* is a Federal and State endangered species. It is a small tern, approximately 9 inches long with a 20-inch wingspan. Its coloring is primarily gray and white with black wingtips. They have black caps with white foreheads and their yellow beaks are tipped with black. (Commander, U.S. Pacific Fleet, 2010)

California least terns are inshore foragers and surface-feeding fish eaters. They are opportunistic in their search for prey, eating fish that are small enough to catch, including anchovies and smelt. There is some indication that piers, docks, sea walls, and other artificial structures along the shoreline may attract California least terns, as these structures act as artificial reefs for juvenile schooling fish, which terns feed upon. California least terns also frequently forage in the open waters of the ocean and San Diego Bay. The presence of eelgrass is important as habitat for several prey species of the least terns, such as northern anchovy, topsmelt, and jacksmelt. (Commander, U.S. Pacific Fleet, 2010)

Open sandy or gravelly shores with light-colored substrates, little vegetation, and nearby fishing waters are used for nesting. California least tern nests are simple depressions in the substrate either lined or unlined with shell debris . Average clutch size is about two eggs per nest, and the chicks hatch in 21 to 28 days. Another 20 days are required before fledging. During the nesting season adult terns and their young feed almost solely on small marine fish in the surface waters (top 6 feet) of the Bay, river mouths, and adjacent near-shore ocean waters.

California least terns generally will return each year to breeding sites that have been used successfully in the past. They are present in the San Diego Bay area from about mid-April to early September.

The U.S. Navy has undertaken substantial effort to mitigate for impacts and protect the endangered California least tern over the years. In 1977, California Least Terns were discovered nesting in cracks in the deteriorated asphalt of the old airfield "MAT" area at NASNI. In 1980, the U.S. Navy initiated a phased MAT repair plan at the site and formally consulted with the USFWS to address conservation of the least tern during project implementation. (Commander, U.S. Pacific Fleet, 2010)

As part of the U.S. Navy's management efforts, California least tern populations have grown on U.S. Navy lands. The number of nests at NASNI has fluctuated in the last decade, but has overall been gradually increasing. (Commander, U.S. Pacific Fleet, 2010)

Current Requirements and Practices

Adverse impacts to biological resources are governed by several Federal acts: ESA, Marine Mammal Protection Act, Migratory Bird Treaty Act, and Magnuson-Stevens Fishery Conservation and Management Act. Federal agencies are required to assess the effect of any project on threatened and endangered species under Section 7 of the ESA.

Appendix C contains a synopsis of laws, rules, and regulations that provide guidance to avoid or minimize impacts to biological resources.

3.3.3.2 Environmental Consequences

Approach to Analysis

To complete the analysis of marine plants and wildlife in the Study Area, a systematic review of relevant literature was conducted, including scientific articles, technical reports published by Government agencies, work conducted by private businesses and consulting firms, DoD reports, operational manuals, and current and prior environmental documents for facilities and activities. The literature and other information sources cited are identified in Chapter 5.0, References.

Potential stressors to marine communities in the area that would result from the Proposed Action are limited to: (1) direct impacts to bottom-dwelling communities from materials expended during maintenance, or the accumulation of those materials; and (2) destruction of bottom habitat, partial or complete burial of bottom habitat, or detrimental effects to Federal and State species of concern or their habitats.

The analysis considered effects on ESA-listed species from:

- Noise, including sound transmission from activities within the SBX Radar Vessel during maintenance and repair activities
- Presence of SBX Radar Vessel in port
- Expended materials, including those from welding, painting, or paint-chipping

Results of Analysis

Contractors and personnel working at NASNI during the maintenance and repair period must obtain a copy of all applicable environmental guidance documents and BMPs established for NASNI (e.g., *Afloat Environmental Quick Response Guide*, 2009; SOPA COMNAVREGSW Instruction 5400.2, 2005). Divers should follow California standards for commercial diving operations.

Marine Vegetation

There are no known eelgrass beds within the water boundary of the NASNI. No effects to any vegetation from the shadow of the vessel are expected during its temporary stay at NASNI. The SBX Radar Vessel would implement the BMPs discussed in Chapter 2.0 that would incorporate marine pollution control devices such as keeping decks clear of debris, cleaning spills and residues, and engaging in spill and pollution prevention practices. Pollutant concentration amounts released from underwater welding are infrequent and in small quantities and are not estimated/analyzed (U.S. Environmental Protection Agency, 1999). Mooring the SBX Radar Vessel would cause temporary siltation/sedimentation that could result in short-term impacts to marine vegetation; however, no significant long-term adverse impacts are anticipated.

Marine Invertebrates

The SBX Radar Vessel would implement the BMPs discussed in Chapter 2.0 that would incorporate marine pollution control devices such as keeping decks clear of debris, cleaning spills and residues, and engaging in spill and pollution prevention practices. Mooring the SBX Radar Vessel would cause temporary siltation/sedimentation that could result in short-term impacts to marine invertebrates, especially to less mobile species. No significant long-term adverse impacts are anticipated to marine invertebrates.

Fish

Activities associated with maintenance and repair of the SBX Radar Vessel would not involve renovations of existing infrastructure. No construction would occur.

Intake of water from and discharge to San Diego Bay for the vessel's cooling system while in port is not anticipated to impact fish in the harbor as discussed in Section 3.2.3.2. The discharged water is considered clean because it would be recirculated from the Bay and no contaminants are added to the pumped water as part of the heat exchange process. The SBX Radar Vessel would incorporate marine pollution control BMPs (Table 2-4) such as keeping decks clear of debris, cleaning spills and residues, and engaging in spill and pollution prevention practices. No significant long-term adverse impacts are anticipated to regional fish.

Pollutant concentrations from underwater welding are released infrequently and in small quantities and are not estimated/analyzed (U.S. Environmental Protection Agency, 1999). As noted in the Phase I Final Rule and Technical Development Document of the UNDS, metals from the underwater welding operation (may contain chromium, iron, nickel, beryllium, manganese, and trace quantities of other metals) will not be readily dissolved in the surrounding waters and will fall to the harbor floor (U.S. Environmental Protection Agency, 1999; 2003). No significant long-term adverse impacts are anticipated to regional fish.

Threatened and Endangered Species

No threatened or endangered fish species have been identified in San Diego Bay (Commander, U.S. Pacific Fleet, 2010).

Essential Fish Habitat

Since the SBX Radar Vessel would incorporate marine pollution control BMPs (Table 2-4) such as keeping decks clear of debris, cleaning spills and residues, and engaging in spill and pollution prevention practices for discharge incidental to the normal operation of Armed Forces' vessels in accordance with the Clean Water Act, no significant long-term adverse impacts are anticipated to the waters and substrate to fish for spawning, breeding, feeding or growth to maturity. Welding slag materials quickly sink to the bottom, and present little to no ingestion hazard. Activities associated with maintenance and repair of the SBX Radar Vessel would not involve renovations of existing infrastructure. No impacts to EFH from SBX Radar Vessel noise and lighting are anticipated. Concurrent with this EA, MDA submitted an Essential Fish Habitat Assessment, which determined that based on the temporary time the SBX Radar Vessel would be at NASNI (about three months); the scope of anticipated repair and maintenance activities; and the required implementation of BMPs, the Proposed Action is not expected to degrade water quality or decrease or substantially alter prey species abundance or affect other EFH features. The nature of the action precludes impacts to EFH and the nearshore and tidal environment.

Marine Mammals

The SBX Radar Vessel would incorporate marine pollution control BMPs (Table 2-4) such as keeping decks clear of debris, cleaning spills and residues, and engaging in spill and pollution prevention practices; thus, no significant long-term adverse impacts are anticipated to area marine mammals.

Threatened and Endangered Species

The green sea turtle has no natural predators in San Diego Bay. Mortalities tend to be caused by various natural and human induced causes including collisions with boats or ships (Commander, U.S. Pacific Fleet, 2010). Collisions with the SBX Radar Vessel are unlikely since it is slow moving and sea turtles should be able to avoid it. During the proposed maintenance and repair activities, the vessel would be moored. Noise from the maintenance and repair activities is not expected to significantly impact the green sea turtles since they are acclimated to underwater maintenance activities from the carriers and other vessels normally moored at the proposed site, as well as noise from recreational vessels.

Seabirds

Since the SBX Radar Vessel would incorporate marine pollution control devices such as keeping decks clear of debris, cleaning spills and residues, and engaging in spill and pollution prevention practices, no significant long-term adverse impacts are anticipated to seabirds.

Military readiness activities are exempt from the take prohibitions of the MBTA provided they do not result in a significant adverse effect on the population of a migratory bird species. While individual birds may be startled by intermittent noise (welding and sandblasting), proposed maintenance and repair activities are not expected to significantly impact a population of any of

the migratory species that occur in the NASNI area and thus would be exempt from the MBTA take prohibitions.

Threatened and Endangered Species

Direct effects from maintenance and repair noise are possible, but have a low potential for occurrence given its transient nature and low overall sound level and thus are highly unlikely threats to the western snowy plover or California least tern. Noise associated with maintenance and repair activities is not expected to impact these species.

Based on the high mobility of the California least tern and western snowy plover and the static nature of the SBX Radar Vessel while in port, the probability of collisions is low. Direct collisions with vessels or a vessel's rigging could result in injury or mortality, but are unlikely based on the typical flight movements of these listed birds. Personnel would be instructed on the avoidance of plover nests. Therefore, the presence of the SBX Radar Vessel is not expected to significantly impact threatened or endangered birds at NASNI.

Critical Habitat

Based on anticipated repair and maintenance activities of the SBX Radar Vessel and the implementation of BMPs, none of the activities are expected to substantially change water quality conditions sufficiently to degrade existing water quality conditions; decrease or substantially alter prey species abundance sufficiently to adversely impact ESA-listed individuals or populations; or create barriers that would prevent or impede ESA-listed species passage through the critical habitat. Therefore, in accordance with ESA provisions to assess potential effects of proposed actions to critical habitat, it is concluded that repair and maintenance activities would not destroy or adversely modify critical habitat in the region.

3.3.3.3 Mitigation Measures

Impacts to biological resources resulting from painting, outside welding, sanding, and plasma cutting would be below thresholds that could result in long-term degradation of water resources or affect water quality at the potential location. BMPs listed in Table 2-4 would be implemented; therefore, no additional mitigation measures would be needed to protect vegetative or wildlife species.

3.3.3.4 Summary of Effects

The presence of the SBX Radar Vessel is not expected to significantly impact biological resources, including threatened or endangered species in the vicinity of NASNI. None of the activities are expected to substantially change water quality conditions sufficiently to degrade existing water quality conditions or decrease or substantially alter prey species abundance sufficiently to adversely impact ESA-listed individuals or populations.

3.3.4 HAZARDOUS MATERIALS AND HAZARDOUS WASTE

3.3.4.1 Affected Environment

Existing Conditions

Existing conditions for hazardous materials and waste are related to activities onboard the SBX Radar Vessel. Significant quantities of oil and fuel are onboard when the SBX Radar Vessel comes into port, including:

- SBX Radar Vessel has a fuel capacity of 1.88 million gallons of diesel fuel
- Diesel fuel tanks (fuel oil, lube oil, and oily waste tanks that overflow through their vent lines) have a 42-gallon capacity catch basin on the deck beneath the vent
- Lubricating oils
- Hydraulic fluids
- Galley grease or cooking oils
- Waste oil from machinery rooms
- Fuel and lube oil purifying rooms
- Paint locker
- Hazardous material storage

The batteries used in the UPS systems onboard the SBX Radar Vessel are non-lead acid sealed-type batteries. There are four tanks associated with the sewage handling system, which discharges overboard through the wet deck. While in port, the sewage handling system would be connected to shore utilities. R22 is used as a coolant for equipment onboard the SBX Radar Vessel. The system includes two large capacity R22 compressors holding a total of 2,600 pounds of liquid R22. CO_2 flooding systems are installed adjacent to both main machinery spaces, both fuel oil pump rooms and the emergency diesel generator space. There is no asbestos-containing material or lead-based paint on the SBX Radar Vessel (Boeing, 2009).

All consumable hazardous materials are stored in the manufacturer's approved containers or repackaged into manageable containers and properly labeled. The SBX Radar Vessel has two hazardous materials flammable storage spaces and one paint storage space, each with installed fire detectors, installed CO_2 flooding systems, bracketed shelving, and weather deck access.

Current Requirements and Practices

To protect habitat and people from inadvertent and potentially harmful release of hazardous materials, hazardous material use, storage, and disposal would be managed in adherence with the NASNI's *SPCC Plan* and *Hazardous Waste Management Plan*. These plans in addition to established legislation (e.g., Comprehensive Environmental Response, Compensation, and Liability Act and Resource Conservation and Recovery Act) effectively form a "safety net" intended to protect the ecosystems on which most living organisms depend.

Boeing, the SBX Radar Vessel's management company, has developed procedures which address the following on board the SBX Radar Vessel:

- Permitting for hot welding, cutting, and soldering ensures appropriate safety precautions, such as necessary fire watches, are in place before welding operations involving fixed structures begin.
- Use and disposal of hazardous materials and painting supplies.
- Fire Fighting Plan, subject to Boeing review and approval, which includes specific assignments for the crew and all embarked personnel. In accordance with USCG regulation 46 CFR 109.213, the fire fighting procedure is exercised and records are kept for audit by Boeing and ABS recertification inspectors.
- Verification of the proper operation of dynamic positioning equipment prior to underway refueling operations.
- A bunkering and transfer plan for bulk flammable liquids that includes:
  - Smoking lamp extinguished and all hot work and grinding cease.
  - Voice communications among the bunking barge pump station, the main deck bunkering manifold and the fuel oil control station within the vessel.
  - Establishing a spill containment area on the vessel main deck in case of a spill.
  - In port—deployment of a spill containment boom.

The COMNAVREGSW *Afloat Environmental Quick Response Guide* (Commander Navy Region Southwest, 2009), as well as letter correspondence incorporated by reference, further specifies hazardous materials management for vessels in San Diego Bay. The contractor hired to perform the SBX Radar Vessel maintenance would act in a manner consistent with these instructions.

3.3.4.2 Environmental Consequences

Approach to Analysis

In order to determine the hazardous materials and waste impacts of the maintenance and repair of the SBX Radar Vessel, site personnel were interviewed and documents were reviewed.

Results of Analysis

The maintenance and repair of the SBX Radar Vessel would use hazardous material and would generate hazardous wastes that are common to maintenance activities. Hazardous materials may include diesel fuel, anti-freeze, hydraulic fluid, lubricating oils, and coating systems. Hazardous waste would include solvent soaked rags, paint chips, dust fines, paint waste, and blast track residual (steel grit, paint chips, dust fines). Table 3.3.4-1 shows estimated hazardous material use and hazardous waste generation.

Table 3.3.4-1. Hazardous Materials and Waste Estimate, SBX Radar Vessel Maintenance and Repair

Materials	Quantity
Paint	1,500 gallons
Solvent	330 gallons
Diesel Fuel	1.4 million gallons (80% of tank capacity)
Waste (for disposal)	**Quantity**
Solvent Soaked Rags	17 drums
Paint Chips	2 drums
Dust Fines	3 drums
Paint Waste	3 drums
Blast Track residual (steel grit, paint chips, dust fines)	4 drums
Waste Petroleum product from thruster work	20 gallons

Note: Drum quantity = 55 gallons

The contractor hired to perform the SBX Radar Vessel maintenance would become responsible for the proper disposal of the hazardous waste generated from repairs. Waste disposal would be conducted in accordance with the installation's *Hazardous Waste Management Plan* and applicable Federal, State, and local regulations, resulting in no adverse impacts. NASNI personnel would be on site during vessel maintenance on a regular basis and would ensure compliance with hazardous materials and waste management regulations.

3.3.4.3 Mitigation Measures

There are no mitigation measures.

3.3.4.4 Summary of Effects

Hazardous materials and waste management would be performed in accordance with standard construction management procedures as well as applicable Federal, State, and local regulations. With the implementation of the procedures discussed above, significant impacts to the environment are not expected from the proper handling of large quantities of petroleum products, hazardous materials, or wastes during the maintenance and repair of the SBX Radar Vessel. Hazardous substance release to the environment shall be minimized by following the best management practices listed in Table 2-4 and following the instructions in the COMNAVREGSW *Afloat Environmental Quick Response Guide* (Commander Navy Region Southwest, 2009).

3.3.5 NOISE

This section describes existing noise conditions and potential effects on the human terrestrial environment associated with the Proposed Action. The primary noise concerns at NASNI are the onboard generator and ship equipment noise and the close proximity of the project site to residential areas. The potential impacts of noise on marine biological resources are addressed in the Section 3.3.3, Biological Resources.

Noise is defined as unwanted or annoying sound that interferes with or disrupts normal human activities. Although exposure to very high noise levels can cause hearing loss, the principal human response to noise is annoyance.

Noise measurements assessed relative to human exposure are usually expressed using an "A-weighted" scale that filters out very low and very high frequencies in order to replicate human sensitivities. Human hearing ranges from approximately 20 dBA (the threshold of hearing) to 120 dBA (the threshold of pain). Sound levels of typical noise sources and environments are presented in Table D-3.

Because noise levels vary widely during the day, they are commonly averaged over a period of time. The term DNL, is used to describe the average noise level during a 24-hour day with a penalty of 10 dBA added to nighttime sound levels (10:00 p.m. to 7:00 a.m.). The CNEL adds a 5 dBA penalty for noise events that occur in the evenings (7:00 p.m. to 10:00 p.m.), as well as a 10 dBA penalty for noise events at night (10:00 p.m. to 7:00 a.m.). DNL and CNEL are often used as the basis for land use compatibility guidelines. Shorter measurement durations (typically 1 hour) are described as L_{eq}, indicating the total energy contained by the sound over a given sample period.

3.3.5.1 Affected Environment

Existing Conditions

The SBX Radar Vessel maintenance and repair project would be located at Pier P or N, at the northeast side of NASNI in an industrial setting. The principal on-site sources of noise are typical of Navy installations including aircraft operations; truck and automobile traffic, and operations involving ship-loading cranes, diesel-powered equipment, and compressors. The San Diego International Airport is located 5 miles north of the project site and the center point of the NASNI runway is approximately 2.5 miles west from the project site.

Noise sensitive receptors are defined as existing land uses associated with indoor or outdoor activities that may be subject to significant interference from noise. Sensitive receptors are shown on Figure 3.3.5-1 and include residential, hospitals, educational facilities, sensitive biological species, and public parks. Bay View Park is the closest public park to the project site. The closest residential neighborhood, near the intersection of Alameda Blvd and First Street in Coronado, is approximately 600 feet east of Pier P. Noise from military aircraft is audible in this neighborhood; however, it is outside the 65 CNEL contour associated with the NASNI's airport noise (U.S. Department of the Navy, 1984). A variety of other on-base activities and traffic are audible.

Existing ambient traffic-related noise levels for the city of Coronado were measured for the *Supplemental Environmental Impact Statement for Developing Homeport Facilities for 3 Nimitz-Class Aircraft Carriers in Support of U.S. Pacific Fleet*, 2008. The measurement locations corresponded mainly to the residences adjacent to Third Street and Fourth Street, and several parks in the residential neighborhood. Noise levels in these areas were dominated by vehicle traffic along nearby roads rather than any noise generated on NASNI. The measured existing peak noise levels at the residences along main traffic routes range from 66 dBA to 78 dBA. These peak noise levels are considered typical for areas ranging from a busy daytime urban area to a typical commercial area (U.S. Department of the Navy, 2008).

EXPLANATION

Orientation 1

- SBX Stern
- DNL Measurement (Long-Term)
- dBA Measurement (Short-Term)
- SBX Radar Vessel Audible Noise

Orientation 2

- SBX Stern
- DNL Measurement (Long-Term)
- dBA Measurement (Short-Term)
- SBX Radar Vessel Audible Noise

NORTH

0 500 1,000 2,000 Feet

Naval Air Station North Island, Pier P Option, with SBX Radar Vessel Audible Noise Overlay and Sensitive Receptors

California

Figure 3.3.5-1

NASNI ambient noise levels were measured in 2008 during the quaywall repair project. The project area was similar to the Proposed Action site, i.e., located along the length of NASNI's Pier, from Pier L to its end at the property line with the city of Coronado. Ambient sound levels were measured late at night with no work in progress. Sound levels utilized an Extech Digital Sound Level Meter Model 407730. Readings were taken at 500-foot increments and at the property line over a 5-minute interval at each location with the meter set to record and hold the maximum value. A level filter was enabled. Table 3.3.5-1 provides the results of the 2008 measurements. As shown on the table, the maximum ambient noise levels measured late at night at the property boundary with the city of Coronado were 61.5, 60.2, and 59.9 dBA.

Table 3.3.5-1. Nighttime Ambient Sound Levels, Base Operations, No Work in Progress, NASNI

Date, Timeframe	Location- Station	Max Noise Level in dBA
23 July 2008 0005–0049 hours	17+	63.5
	22+	66.5
	27+	65
	33+	78 (Chopper flying close to project site)
	33+ End of pier/property line with City of Coronado	61.5
23 July 2008 0307–0336 hours	17+	65.6
	22+	74.5 (Birds)
	27+	58
	33+ End of pier/property line with City of Coronado	60.2
28 August 2008 2300–2330 hours	17+	66.2
	22+	69.0
	27+	66.7
	33+ End of pier/property line with City of Coronado	59.9

Source: U.S. Department of the Navy, 2010

Current Requirements and Practices

Sound analysis at military installations follows the procedures outlined in the following documents:

- *Chief of Naval Operations Instruction 5090.1* contains guidance for considering time-averaged community sound levels in environmental evaluations (Department of the Navy, 2007). Chapter 17, *Noise Prevention Ashore*, contains guidance for sound control and abatement of Navy shore activities.
- *Planning in the Noise Environment* (Department of Defense, 1978) provides compatibility criteria for various land uses. Separate evaluation criteria apply to impulsive sound events.
- The U.S. Army Public Health Command has also developed DoD guidance for military operational noise, including *Environmental Noise Management, An Orientation Handbook for Army Facilities* (U.S. Department of the Army, 2001).

Sound standards for land use compatibility established by DoD and civilian jurisdictions are expressed in terms of the DNL or CNEL. Based on numerous sociological surveys and recommendations of Federal interagency councils, the most common benchmark for assessing environmental sound impacts is a CNEL of 65 dBA (DNL is normally within 1 dB of CNEL using the same 24-hour data). Sound levels up to 65 dBA CNEL are considered to be compatible with land uses such as residences, transient lodging, and medical facilities. Appropriate sound mitigation is recommended for new development in areas where the CNEL exceeds 65 dBA. A sound level of 75 dBA CNEL is a threshold above which individuals in the community may experience annoyance and minor health effects.

Many agencies, including the DoD, have adopted a DNL of 65 dBA as a criterion that still protects those most impacted by noise. In general, residential land uses are not compatible with an outdoor DNL above 65 dBA, and the extent of land areas and populations exposed to a DNL of 65 dBA or higher provides one of the means for assessing and comparing the noise impacts of proposed actions. See Appendix C for details.

The City of Coronado has established a noise ordinance addressing construction-related noise. In accordance with *Title 41: Noise Abatement and Control Regulation, Chapter 41.10: Limits, Section 41.10.050: Construction Noise Limits*, the maximum allowable construction noise is an average sound level no greater than 75 dB during a 1-hour period any time between the hours of 7:00 a.m. to 7:00 p.m.

See Appendix C for more details of the current requirements and practices listed above.

3.3.5.2 Environmental Consequences

Approach to Analysis

To assess the potential impacts of noise from the SBX Radar Vessel's onboard generators, a technical study, *SBX Radar Vessel Noise Assessment In Port at Joint Base Pearl Harbor–Hickam* (ManTech, 2010b), was prepared for this EA. The results of the sound levels collected in Hawaii are presented in Appendix D, Section D.2. The entire report is provided in Appendix G.

The goal of the Hawaii study was to determine the general overlay of sound from the SBX Radar Vessel that could be placed on alternate locations. Sound levels from shipboard generators as well as sound levels from typical shipyard maintenance activity were overlaid onto the existing environment in San Diego and compared to sound standards for land use compatibility established by DoD and other governmental agencies discussed above.

Results of Analysis

Shipboard Diesel Generators

Noise levels from the 24-hour per day use of two shipboard diesel generators will be constant over the approximately 3-month project period. The *SBX Radar Vessel In-Port Noise Assessment at Joint Base Pearl Harbor–Hickam* showed that beyond a measured distance of 2,750 feet from the stern, the sounds from the SBX Radar Vessel (56.8 dBA) were not audible above the ambient noise environment during data collection periods, which in Hawaii was between 51.2 and 51.6 dBA. Likewise, beyond a measured distance of 1,000 feet from the

bow, the sounds from the SBX Radar Vessel platform (52.2 dBA) were not audible above ambient.

The DNL sound level at 1,800 feet from the stern of the SBX Radar Vessel (closest data collection point in Hawaii for long-term measurements) is averaged at 62.6 DNL (ManTech, 2010b). The 62.6 DNL is within the standard that DoD has adopted (DNL of 65 dBA) as a criterion that still protects those most impacted by noise. In general, residential land uses are not compatible with an outdoor DNL above 65 dBA. The 62.6 DNL is also in the range of low risk of complaints from the public (see Appendix D, Figure D-2).

The data collected in Hawaii were overlain onto the NASNI project site in order to see the equivalent noise levels at the sensitive noise receptors (residences and public parks) in the city of Coronado. The potential audible noise levels of the SBX Radar Vessel at NASNI are identified in Figures 3.3.5-1 and 3.3.5-2. These are estimates and a wide variety of environmental factors could affect the actual received sound levels. Figure 3.3.5-1 shows the noise overlay with the vessel moored at Pier P. Figure 3.3.5-2 shows the noise overlay with the vessel moored at Pier N.

As stated in Appendix D, consideration must be given to the directional characteristics of the noise from the diesel generators. The noise is louder and propagates further along the exhaust axis. Figure 3.3.5-1 and Figure 3.3.5-2 show the audible noise levels of the shipboard diesel generators. "Orientation 1" and "Orientation 2" are provided on each figure to illustrate the difference in the noise exposure when the SBX Radar Vessel is turned around in port.

Pier P Option: As stated above, the closest residential neighborhood to the Proposed Action (Alameda Blvd and First Street in Coronado) is approximately 600 feet east of Pier P. The maximum audible noise exposure to this neighborhood would be Orientation 2: the noise level 500 feet east of the vessel would be 66.3 dBA, and the noise level at 725 feet east of the vessel would be 60.1 dBA. The ambient noise environment at the base boundary was measured between 59.9 and 61.5 dBA at night (Department of Navy, 2010). If the received sound level at the closest neighborhood is conservatively estimated at 63 dBA, this could be perceived by the neighbors as twice as loud as ambient nighttime environment (noise levels are typically *perceived* by receptors as doubling every 3 dBA*).* Orientation 1, by turning exhaust axis away from the nearby neighborhood, would reduce the noise: the received sound level at 500 feet east of the vessel would be 57.5 dBA.

The maximum audible noise exposures (Orientation 2) from the shipboard generators at Bay View Park would be between 56.1 and 60.1 dBA assuming Bay View Park is approximately 1,030 feet from Pier P. The ambient noise environment is on average 60 dBA at night close to that location, at the base boundary. The vessel will not be audible above ambient conditions at the Park. If the exhaust axis of the shipboard generators would be oriented away from Bay View Park (Orientation 1), the maximum audible noise in Bay View Park would be reduced to 52 dBA.

EXPLANATION

Orientation 1

- SBX Stern
- DNL Measurement (Long-Term)
- dBA Measurement (Short-Term)
- SBX Radar Vessel Audible Noise

Orientation 2

- SBX Stern
- DNL Measurement (Long-Term)
- dBA Measurement (Short-Term)
- SBX Radar Vessel Audible Noise

NORTH

0 500 1,000 2,000 Feet

Naval Air Station North Island, Pier N Option, with SBX Radar Vessel Audible Noise Overlay and Sensitive Receptors

California

Figure 3.3.5-2

Pier N Option: If the SBX Radar Vessel is moored at Pier N, it would be approximately 1,380 feet from the intersection of Alameda Boulevard and First Street. Mooring at Pier N would allow for less of the noise from the vessel being heard from the intersection of Alameda Boulevard and First Street than if it was moored at Pier P. Figure 3.3.5-2 illustrates the Pier N Option, with both orientations, and shows that maximum audible noise exposures (Orientation 2) in the neighborhood from the SBX Radar Vessel would be 56.1 dBA. If the exhaust axis would be oriented away from the residential neighborhoods (Orientation 1), the estimated noise level in the nearby neighborhood would be estimated at 52.6 dBA. Therefore, mooring at Pier N would reduce the impact on the noise environment for the residential area closest to Alameda Boulevard and First Street.

The maximum audible noise exposures (Orientation 2) at Bay View Park would be 56 dBA, assuming Bay View Park is approximately 2,100 feet from Pier N. The ambient noise environment is on average 60 dBA at night close to that location, at the base boundary. The vessel will not be audible above ambient conditions. If the exhaust axis of the shipboard generators would be oriented away from Bay View Park (Orientation 1) the estimated noise level at Bay View Park would be an estimated 53 dBA, and the sounds from the generator exhaust would not be audible above ambient.

Mooring at Pier N rather than at Pier P would reduce the level of noise from the shipboard diesel generators in the nearby residential neighborhood. However, NASNI determines berthing locations based on carrier in port schedules and logistical needs and Port Operations.

Equipment

A variety of noise generating equipment would be used—such those listed in Chapter 2, Table 2-3—all of which would create temporary impulse noise. Noise levels from point sources such as these typically attenuate at a rate of about 6 dBA per doubling of distance. Table 3.3.5-2 shows the peak noise level of the equipment used for the Proposed Action. Based on these noise levels, the noise levels from the operation of equipment are below the 75 dBA threshold within NASNI property limits.

Table 3.3.5-2. Typical Noise Levels for Common Equipment

Source	Peak Noise level (dBA)	Distance from Source						
		100 feet	200 feet	500 feet	1,000 feet	2,000 feet	2,640 feet (0.5 mile)	5,280 feet (1 mile)
Portable or Standby Generators	96	86	80	72	66	60	58	52
Crane	90	80	74	66	60	54	52	46
Deck Grinding Units	86	76	70	62	56	50	48	42
Loud Speaker	97.2	87	81	73	67	61	59	53

Source: Golden et al., 1980; Occupational Safety and Health Administration, 2003; ManTech, 2010b; Noise Control Engineering, 2010.

Sound levels were also collected from deck grinding activities as part of the *SBX Radar Vessel In-Port Noise Assessment at Joint Base Pearl Harbor–Hickam in Hawaii* (ManTech, 2010b). The results are provided in Appendix D and are as follows:

- 300 feet south of the vessel (ST2), perpendicular to the moored position and directly in line of sight of the deck grinding activity, the received levels of the deck grinding were between 67 and 72 dBA.
- 350 feet southwest of the vessel (ST3), approximately 45 degrees off the stern of the vessel, the received levels of the deck grinding were between 62 and 68 dBA.
- 800 feet southwest of the vessel (ST4), approximately in line with the position at the dock, the received levels of the deck grinding were between 56 and 58 dBA. At this location, the noise associated with the deck grinding was only marginally above the Hawaiian ambient levels recorded at the site.

From Pier P, residences are about 600 feet east of the source of noise. At 600 feet distance (worst case), deck grinding activity sound levels would be attenuated to approximately 58 dBA, well below the 1-hour average 75 dBA limit for construction noise levels at the city boundary (City of Coronado Noise Abatement and Control Ordinance, Title 41, section 41.10.050). Therefore, only areas within a few hundred feet of the project site would be expected to be exposed to unacceptable noise levels.

Mooring at Pier N rather than at Pier P would reduce the level of noise from the equipment in the nearby residential neighborhood. However, NASNI determines berthing locations based on carrier in port schedules and logistical needs and Port Operations.

For Pier P and Pier N, the equipment would have a less than significant adverse impact on residents of Coronado because of the brevity of the maintenance sounds generated at the SBX Radar Vessel mooring site. The influence of the equipment noise on the community will be minimized by scheduling any work done after 7:00 p.m. to be internal to the vessel. Additionally, noise-producing maintenance activities between early morning hours (5:30 a.m. to 7:00 a.m.) and evening hours between (7:00 p.m. to 10:00 p.m.) would be limited to those internal to the vessel.

Radiate Warning System (Siren System/Loud Speaker)

One of the maintenance activities to the SBX Radar Vessel while in port will be to add additional speakers to the Radiate Warning System. The system has to be audible in topside areas where high levels of noise occur when the vessel is underway. MDA conducted a survey to determine how loud the upgrade to the warning system had to be. The maximum noise level on the topside area was 97.2 dBA while the SBX Radar Vessel was at sea with all systems running (Noise Control Engineering, 2010). The system would be tested at 97.2 dBA at peak level. Data from the survey was extrapolated in Table 3.2.5-1 to show that at a distance of 0.5 mile, the sound level would be 59 dBA, an insignificant impact on surrounding residential areas. Prior to conducting tests of the Radiate Warning System's additional speakers, MDA, working with the local installation would provide notification to the local of the system testing prior to conducting the test. The testing of the speakers will be limited to one day, several hours between 7:00 a.m. and 7:00 p.m., and only intermittently. The additional speakers will not be tested at night.

Traffic-related Noise

The temporary increase in personnel may increase vehicles and traffic noise temporarily. The shipyard workers will be onsite 6 days a week, from 5:30 a.m. until 10:00 p.m., for 2 to 3 months, with a work shift change expected to be twice per day, approximately 8 hours apart. A total of 224 shipyard workers would be commuting (83 on board the vessel are not counted in the

commute), which means the average trips per shift (arrivals and departures) would be 112 workers.

Shipyard workers' commute is the source of additional noise. Traffic-related noise in the vicinity of NASNI is an ongoing issue in Coronado, California. Currently, the NASNI generates thousands of inbound and outbound vehicle trips per day. The additional commutes that result from the Proposed Action traffic-related noise would occur at shift changes, which are 5:30 a.m., 1:30 p.m., and 10:00 p.m. This does not coincide with current NASNI traffic, which peaks between 6:15 a.m. and 7:15 a.m., and 2:30 p.m. and 3:30 p.m. However, any consolidation of workforce would be encouraged to lessen traffic-related noise.

Wind Speed

Wind speed may impact the sound heard from the Proposed Action. Higher wind speed is highly correlated to elevated hourly L_{eq} values. As shown in the wind rose provided in the Air Quality Section, Figure 3.3.5-1, the winds in San Diego are predominately from the northwest at an average of 8 miles per hour. The wind speeds during *the Noise Assessment of the SBX Radar Vessel in Hawaii* averaged 13 miles per hour. Therefore, it is assumed that a worst case impact of wind on sound levels was well captured in the Hawaii environment (ManTech, 2010b).

3.3.5.3 Mitigation Measures

Although the vessel may be turned about (orientation of the bow and stern may vary) to best access thrusters (one half of the ≈ 45 days) and pier side equipment, consideration of the alignments of the SBX Radar Vessel would mitigate the noise levels produced by the Proposed Action. As a means of reducing the noise during the 3-month maintenance period) from the two diesel generators, the use of the existing noise baffles and the alignment of the generators' exhaust away from residences (i.e., towards NASNI) would provide a greater buffering of the noise-sensitive areas. Equipment noise on the community will be minimized by scheduling any noise-producing maintenance activities between 5:30 a.m. and 7:00 a.m. and from 7:00 p.m. to 10:00 p.m. to be internal to the vessel. Prior to conducting tests of the Radiate Warning System (Siren System/Loud Speaker) additional speakers, the community MDA, working with the local installation would provide notification to the local of the system testing prior to conducting the test. The testing of the speakers will be limited to one day, several hours between 7:00 am and 7:00 pm, and only intermittently. The additional speakers will not be tested at night.

3.3.5.4 Summary of Effects

The proximity of the vessel to off-base sensitive noise receptors and alternate alignment of the SBX Radar Vessel while in port can have a major impact on noise exposure. The potential noise from the Proposed Action would not significantly alter the ambient noise environment in the city of Coronado if moored in either orientation at Pier N. There would be effects to the noise environment from the shipboard generators if moored in Orientation 2 at Pier P. With the use of the existing noise baffles and the alignment of the generators' exhaust away from residences (Orientation 1) would mitigate this impact. Equipment noise would be below the City of Coronado's construction noise ordinance within NASNI property limits. The equipment noise will be minimized by scheduling high-level noise work, when required, between 7:00 a.m. – 7:00 p.m. Noise-producing maintenance activities performed between 5:30 a.m. to 7:00 a.m. and 7:00 p.m. to 10:00 p.m. would be limited to those internal (inside) to the vessel. No in-water repairs (i.e., divers working on thrusters) would be performed at night. Because of the low

number of added vehicle trips proposed and their temporary nature, there would be no significant noise impact due to increased traffic.

3.3.6 SOCIOECONOMICS

This section describes existing socioeconomic conditions and potential effects associated with the Proposed Action. Socioeconomics includes an evaluation of the basic attributes and resources associated with the human environment, particularly population, and economic activity. Economic activity encompasses employment, personal income, and industrial growth. Impacts on these fundamental socioeconomic components influence other issues such as housing availability and provision of public services.

3.3.6.1 Affected Environment

The socioeconomics environment potentially affected by the Proposed Action extends to the city of Coronado and the city of San Diego. NASNI lies within the county of San Diego as well as within the city of Coronado.

Existing Conditions

The city of Coronado is in San Diego County, California and is a resort and residential city. The total population was 24,100 at the 2000 census and 23,307 at 2006-2008 in the 3-year estimation report (U.S. Census Bureau, 2000b: 2006-2008b). NASNI is located adjacent to Coronado on the northern section of Coronado Island.

The city of San Diego is in San Diego County, California. The total population was 1,223,400 at the 2000 census and was estimated at 1,251,184 in the 2006-2008 3-year estimation report (U.S. Census Bureau, 2000b: 2006-2008b).

Local Economy

The Naval Base Coronado employs over 36,000 military and civilian personnel and is considered the largest workforce in San Diego County (U.S. Department of the Navy 2008).

City of Coronado

Downtown Coronado boasts unique shops and many restaurants serving residents and visitors. Coronado's award-winning beach was recently ranked second best in the country by the Travel Channel. U.S. News and World Report lists Coronado as one of the most expensive places to reside in the United States. Tourism is an essential component of Coronado's economy. The city is home to three major resorts (Hotel Del Coronado, Coronado Island Marriott, and Loews Coronado Bay Resort) as well as several other hotels and inns (Coronado Island Adventure, 2010). Businesses based in Coronado include Benetrends and Cybernetics Leadership Center.

City of San Diego

San Diego's economy, once dominated by military and defense endeavors (now the city's second largest economic sector) is led by manufacturing, particularly in the areas of shipbuilding and repair, industrial machinery and computers, metals production, and the manufacture of toys and sporting goods. In 2002, manufacturing contributed $25 billion to the county's economy. International trade

is an important part of San Diego's economy, accounting for 37 percent of its manufacturing dollars. In 2001, goods moving through San Diego customs totaled $33.6 billion. The border between the San Diego area and Tijuana is the busiest in the world. (San Diego Economy, 2009)

Since the founding of San Diego, the city's economy has been tied to San Diego Bay, a natural harbor which today is one of California's five major ports. It is an important link in the nation's international shipping trade; the port's two marine cargo facilities are the National City Marine Terminal, which is a primary port of entry for Honda, Acura, Volkswagen, Isuzu, Mitsubishi Fuso, and Hino Motors vehicles; and Tenth Avenue Marine Terminal, which handles a wide variety of commodities. The port also has a growing cruise ship operation, with more than 180 cruise ships docking annually. (San Diego Economy, 2009)

San Diego's harbor has had the most significant impact on the local economy. San Diego Bay is the Navy's principal location for West Coast and Pacific Ocean operations. Increases in military and homeland defense spending during the early 2000s have contributed to economic growth in San Diego. The military/defense industry is the city's second largest economic sector, bringing more than $13 billion into the local economy annually. The Marine Corps Base Camp Joseph H. Pendleton, the Marine Corps Recruit Depot, Marine Corps Air Station at Miramar, NASNI, Naval Station San Diego, and Naval Submarine Base, San Diego, are among San Diego's military installations. (San Diego Economy, 2009)

Housing

City of Coronado

In 2000 there were 9,494 total housing units in the city of Coronado, and of those units 3,987 were owner-occupied, 3,987 were renter-occupied and 1,760 were vacant. In 2000 a single-family owner-occupied home had a median dollar value of $683,400. In 2006-2008 the U.S. Census Bureau estimated the total number of housing units available in the city of Coronado were 9,412, with 3,962 owner-occupied, 3,705 renter-occupied, and 1,775 vacant. In 2006-2008 a single-family owner-occupied home had a median dollar value of $1 million or more. Table 3.3.6-1 provides the 2000 and 2006-2008 housing characteristics for the city of Coronado.

Table 3.3.6-1. Housing Characteristics for the City of Coronado in 2000 and 2006-2008

Housing Characteristics	2000	2006-2008	Percent Change
Owner-occupied	3,987	3,962	0.62% decrease
Renter-occupied	3,742	3,705	0.99% decrease
Vacant	1,760	1,745	0.85% decrease
Total Units	9,494	9,412	0.86% decrease
Median Dollar Value	$683,400	$1,000,000+	31.7% increase

Source: U.S. Census Bureau, 2000b; 2006-2008b

City of San Diego

In 2000 there were 469,689 total housing units in the city of San Diego, and of those units, 223,280 were owner-occupied, 227,411 were renter-occupied, and 18,988 were vacant. In 2000 a single-family owner-occupied home had a median dollar value of $469,689. In 2006-2008 the U.S. Census Bureau estimated that the total number of housing units available were 503,941, with 232,204 owner-occupied, 232,360 renter-occupied, and 39,377 vacant. In 2006-

2008 a single-family owner-occupied home had a median dollar value of $550,300. Table 3.3.6-2 provides the 2000 and 2006-2008 housing characteristics for the city of San Diego.

Table 3.3.6-2. Housing Characteristics for the City of San Diego in 2000 and 2003-2008

Housing Characteristics	2000	2006-2008	Percent Change
Owner-occupied	223,280	232,204	3.9% decrease
Renter-occupied	227,411	232,360	2.2% increase
Vacant	18,988	39,377	107% increase
Total Units	469,689	503,941	7.3% increase
Median Dollar Value	$233,100	$550,300	136% increase

Source: U.S. Census Bureau, 2000b; 2006-2008b

Schools

City of Coronado

The Coronado Unified School District manages five schools in the city of Coronado with 3,037 students. The five schools are Coronado High School, Palm Academy, Coronado Middle School, Strand Elementary, and Village Elementary. There is a locally elected five member Board of Education; the superintendent is employed by the Board. (Coronado Unified School District, 2008-2009)

City of San Diego

The San Diego Unified School District is the second largest school district in the State and eighth largest urban school district in the country. Its nonpartisan five-member board is elected every 4 years, and the superintendent is hired by the board. (San Diego Economy, 2009)

Recreation and Tourism

City of Coronado

The city of Coronado has more than 2 million visitors annually. With 15 hotels, including three world class resorts, 1,792 hotel rooms, and 71 highly acclaimed restaurants, this island community has 29,229 residents as well as a flourishing tourist population. On 15 June 2010, the City Council adopted Ordinance No. 2013 to formally establish the Coronado Tourism Improvement District. (City of Coronado, 2010)

City of San Diego

San Diego's tourism industry is the third largest segment of its economy, with more than 26 million visitors to the county bringing more than $5.6 billion in annual revenues. Service industries have seen continued growth in recent years, specifically in areas such as dining, lodging, shopping and recreation services. San Diego regularly ranks as a top-10 U.S. vacation destination for international travelers. (San Diego Economy, 2009)

Population Demographics

NASNI and neighboring communities are located in the east and northeast portion of San Diego County California. Table 3.3.6-3 provides the racial and ethnic composition for the cities, state, and nation using the 2000 census and the 2006-2008 census FactFinder.

Table 3.3.6-3. Racial and Ethnic Composition for the City, State, and Nation

Race / Ethnicity	City of Coronado		City of San Diego		California		USA	
	2000	2006/ 2008	2000	2006/ 2008	2000	2006/ 2008	2000	2006/ 2008
Population	24,100	23,307	1,223,400	1,251,184	33,873,638	36,418,499	281,421,906	
White persons (%)	84.4	89.9	60.2	67.4	59.5	60.9	75.1	74.3
Black or African American persons (%)	5.1	4.2	7.9	6.7	6.7	6.2	12.3	12.3
American Indian and Alaskan Native persons (%)	0.7	0.6	0.6	0.7	1.0	0.8	0.9	0.8
Asian persons (%)	3.7	2.2	13.6	14.7	10.9	12.3	3.6	4.4
Native Hawaiian and Pacific Islander (%)	0.3	0.2	0.5	0.4	0.3	0.4	0.1	0.15
Other race (%)	3.1	0.3	12.4	6.5	16.8	16.0	5.5	5.8
Two or more races (%)	2.6	2.6	4.8	3.6	4.7	3.4	2.4	2.18
Hispanic (%)	9.8	13.3	25.4	27.3	32.4	36.1	12.5	15.1

Sources: U.S. Census 2000b; 2006-2008b

Low-Income Populations

Table 3.3.6-4 depicts median household income and poverty levels for the cities, county, state and nation using the 2000 census and the 2006-2008 census FactFinder. In general the city of Coronado has a smaller percentage (approximately 65 percent less for 2000 and approximately 51 percent in 2006/2008)) of persons below the poverty level than the State of California and the United States. In general the city of San Diego has a greater percentage of persons below the poverty level than the State of California and the United States.

Table 3.3.6-4. Low-Income Population for the Study Area

Metrics	City of Coronado		City of San Diego		California		USA	
	2000	2006/2008	2000	2006/2008	2000	2006/2008	2000	2006/2008
Population	24,100	23,307	1,223,400	1,251,184	33,871,648	36,418,499	281,421,906	301,237,703
Median household income	$66,544	$85,461	$45,733	$63, 181	$47,493	$61, 154	$41,994	$52,175
% Persons below poverty	5.0	6.2	14.6	13.4	14.2	12.9	12.4	13.2

Source: U.S. Census 2000b, 2006-2008b

3.3.6.2 Environmental Consequences

Approach to Analysis

The socioeconomic analysis addresses the potential for MDA activities to affect, either positively or negatively, the basic attributes and resources associated with the human environment, particularly population and economic activity. This analysis investigates the potential for

activities associated with the Proposed Action to noticeably affect (either adversely or beneficially) socioeconomic activity in the public waterfront area near Pier N and Pier P and the cities of Coronado and San Diego.

Study Area

In terms of socioeconomics, relevant portions of the Study Area which the temporary mooring of the SBX Radar Vessel could potentially affect include the city of Coronado and the city of San Diego.

Source of Information

A systematic review of relevant literature was conducted to complete this analysis of socioeconomics in the potential location, including the 2000 census, the 2006-2008 census FactFinder and current and prior environmental documents. The literature and other information sources cited are identified in Chapter 5.0, References.

Result of Analysis

All 307 potential personnel associated with the Proposed Action would have a temporary presence in the Study Area. The permanent personnel and shipyard workers assigned to the SBX Radar Vessel would only be in the area for approximately 3 months; therefore, it is not anticipated to have a direct or indirect impact on the housing characteristics, school enrollment, population demographics, roads, or infrastructure improvements for the cities of Coronado and San Diego. The Proposed Action does not include an increase in personnel stationed at NASNI. The potential for a positive impact may be had on some aspects of the local economy (e.g., restaurants, hotels, recreation, and tourism).

The Proposed Action has a contractual potential of providing $9.4 million to awardees. Based on an Economic Impact Forecasting System (EIFS) the Proposed Action would have a negligible impact on the study area. There would a 0.05 percent increase for sales, income, and employment and a 0 percent increase in population for the City of Coronado and a 0.04 percent increase for sales, income, and employment and a 0 percent increase in population for the city of San Diego. Although a temporary security barrier (see Figure 3.3.8-1 in Section 3.3.8) would be in place during the short-term mooring period (approximately 3 months) of the SBX Radar Vessel, no impacts are anticipated on commercial and private use of the waterways adjacent to Piers N or P. Therefore, the socioeconomic impact from the Proposed Action would be positive, but considered negligible. The outputs for the EIFS II Model are presented in Appendix F.

3.3.6.3 Mitigation Measures

Impacts to the socioeconomic characteristic are negligible, no mitigation measures are proposed.

3.3.6.4 Summary of Effects

The Proposed Action would not have a long-term effect on the socioeconomic characteristics of the city of Coronado and the city of San Diego. Short-term effects would be negligible.

3.3.7 TRANSPORTATION

This section addresses the traffic movement within the city of Coronado and NASNI, including the current status of various types of ground transportation that serve the proposed project site. Operating conditions on roadways and intersections under various traffic volume loads are described in terms of LOS. The LOS is a qualitative measure of the effect of a number of factors, including roadway geometries, speed, travel delay, freedom to maneuver, and safety. LOS provides an index to the operational qualities of a roadway segment or an intersection. LOS designations range from A to F, with LOS A representing free flowing operating conditions and LOS F representing heavy congestion and delay.

3.3.7.1 Affected Environment

Existing Conditions

City of Coronado

The 2008 Supplemental EIS traffic evaluation considered traffic generated by three CVNs homeported at NASNI, with 3,217 personnel associated with each carrier (U.S. Department of the Navy, 2008). Based on these considerations, it was concluded that direct traffic impacts associated with three CVNs have not changed significantly since they were studied in the 1999 Final Environmental Impact Statement (FEIS) (U.S. Department of the Navy, 1999). Table 3.3.7-1 and Figure 3.3.7-1 summarize baseline roadway segment daily LOS with three homeported CVNs. Roadway segment analysis was based on the comparison of Average Daily Traffic (ADT) volumes to the city's roadway classification, capacity, and LOS standards. ADT is the average number of vehicles that use a roadway segment within a 24-hour period.

Traffic Conditions on NASNI

The NASNI gates at Alameda Boulevard / Third Street and Alameda Boulevard / Fourth Street were realigned in 2007. Traffic counts taken in 2007 for the 2008 Traffic Study indicate that the traffic volume on Alameda Boulevard between Third and Fourth Streets has declined over 75 percent since the gate realignment, from 20,000 ADT to 4,542 ADT. The previous main access to NASNI was provided via Fourth Street, which turns into McCain Boulevard on the installation. The majority of the inbound traffic originates from Third Street. Inbound traffic from Third Street required a left-turn at Alameda Boulevard and a right-turn at Fourth Street to enter NASNI. For outbound traffic, the majority of the traffic continued onto Fourth Street from NASNI. The segment of Alameda Boulevard between Third Street and Fourth Street was configured for southbound one-way traffic. The Navy has finished the construction of the NASNI Base Main Gate at Stockdale Boulevard (Third Street) and McCain Boulevard (Fourth Street) and it was opened to the public on 9 July 2007. The gate serves the majority of traffic to and from NASNI, with Stockdale Boulevard processing inbound traffic and McCain Boulevard discharging outbound traffic. (U.S. Department of the Navy 2008)

Table 3.3.7-1. 2007 Baseline Conditions Roadway Segment Daily LOS Summary

Location		Daily Capacity	3 CVNs[1]	
			ADT	LOS
First St.	Alameda Blvd	8,000	7,271	E
	H Ave. to Orange Ave.	8,000	8,619	F
Third St.	Alameda Blvd. to H Ave.	30,000	18,885	C
	H Ave. to Orange Ave.	30,000	19,865	C
	Orange Ave. to Pomona Ave.	30,000	39,506	F
Fourth St.	Alameda Blvd. to H Ave.	30,000	17,224	B
	H Ave. to Orange Ave.	30,000	18,433	C
	Orange Ave. to Pomona Ave.	30,000	32,519	F
Sixth St.	H Ave. to Orange Ave.	8,000	2,131	A
Ocean Blvd.	Marina Ave. to Alameda Blvd	15,000	8,081	C
	Alameda Blvd. to Orange Ave.	15,000	10,469	D
Alameda Blvd.	First St. to Third St.	15,000	4,608	A
	Third St. to Fourth St.	15,000	5,308	B
	Fourth St. to Sixth St.	15,000	8,388	C
	Sixth St. to Tenth St.	15,000	5,678	B
	Tenth St. to Ocean Blvd.	15,000	5,390	B
Orange Ave.	First St. to Third St.	30,000	12,193	B
	Third St. to Fourth St.	40,000	24,154	C
	Fourth St. to Sixth St.	40,000	32,113	D
	Sixth St. to Tenth St.	40,000	33,022	D
	Tenth St. to R.H. Dana Pl.	40,000	28,297	C
	R.H. Dana Pl. to Pomona Ave.	40,000	35,100	E
Silver Strand Blvd. (SR-75)	Pomona Ave. to Tarawa Rd	40,000	39,053	E
	Tarawa Rd. to Tulagi Rd.	40,000	25,566	C
	Tulagi Rd. to Leyte Rd.	40,000	30,327	D
Pomona Ave	Fourth St. to Glorietta Blvd	15,000	6,155	B
	Glorietta Blvd. to Silver Strand Blvd.	15,000	12,786	D

Source: U.S. Department of the Navy, 2008

Notes: [1] CVN's without staggering: roadway segment analysis is based on 24 hour ADT and would not show the effects of staggering

EXPLANATION

- Street
- North Island Naval Air Station Boundary
- LOS A, B, or C
- LOS D
- LOS E
- LOS F

AM / PM Signalized Intersection

AM / PM Non-Signalized Intersection

NORTH

0 1,000 2,000 4,000 Feet

Baseline Roadway Segment Daily Level of Service (LOS)

California

Figure 3.3.7-1

With the completion of the Main Gate, Alameda Boulevard from Third Street to Fourth Street has been converted to two-way traffic. Both the intersection of Third Street and Alameda Boulevard and the intersection of Fourth Street and Alameda Boulevard are now operating as a two-way stop-controlled intersection, with traffic along Alameda Boulevard required to stop. Traffic signals are already planned for these two intersections. On NASNI, McCain Boulevard and Stockdale Boulevard have been reconfigured to function similarly to a one-way segment from the gate to Quentin Roosevelt Boulevard. Although both McCain Boulevard and Stockdale Boulevard allow two-way traffic west of North R Avenue, the primary travel routes are McCain Boulevard for eastbound traffic and Stockdale Boulevard for westbound traffic (Table 3.3.7-2). (U.S. Department of the Navy 2008)

Table 3.3.7-2. 2007 Count for Data Entering Traffic at NASNI

GATE	ADT Entering NASNI		Average Distribution
	July 2007 Tube Counts [1]	July 2007 Manual Counts [2]	
First St (Gate 2)	3,350	2,967	16%
Third St	14,234	14,264	73%
Ocean Blvd (Gate 5)	2,424	2,319	11%
Total Entering Traffic	**20,008**	**19,550**	**100%**
Est. Total Traffic [3]	40,016	39,100	----

Source: U.S. Department of the Navy, 2008
[1] July 2007 tube counts were taken between 22 and 28 July 2007 by National Data & Surveying Services, with one CVN in port.
[2] July 2007 manual counts were taken between 16 July 2007 and 30 July 2007 by NASNI security personnel working at the gates, with one CVN in port.
[3] These are estimates of total traffic entering and exiting NASNI, derived by doubling the counts of entering traffic.

Current Requirements and Practices

The City of Coronado has developed acceptable LOS threshold standards to determine impacts to intersections and roadway segments. As indicated in the *City of Coronado General Plan Circulation Element* (October 1995), all signalized and unsignalized intersections are expected to operate at LOS D or better (Table 3.3.7-3). The City's goal for roadway segments is LOS C or better (Table 3.3.7-4). These standards for acceptable intersection and roadway segment operation were applied in all traffic-related analyses presented in the Supplemental EIS traffic analysis.

Table 3.3.7-3. Intersection LOS and Delay Ranges

LOS	Delay (seconds per vehicle)	
	Signalized Intersections	Unsignalized Intersections
A	≤10.0	≤10.0
B	>10.0 to ≤20.0	>10.0 to ≤15.0
C	>20.0 to ≤35.0	>15 to ≤25.0
D	>35.0 to ≤55.0	>25 to ≤35.0
E	>55.0 to ≤80.0	>35.0 to ≤50.0
F	>80.0	>50.0

Source: Transportation Research Board of the National Academies, 2000

Table 3.3.7-4. City of Coronado Level of Service Thresholds for Roadways Segments

Classification (# Lanes)	Level of Service [1]					
	A	B	C	D	E	F
Principal Arterial (6)	25,000	35,000	50,000	55,000	60,000	>60,000
Principal Arterial (4)	15,000	21,000	30,000	35,000	40,000	>40,000
Principal Arterial (1-way) (3)	12,500	17,500	25,000	27,500	30,000	>30,000
Minor Arterial (4)	10,000	14,000	20,000	25,000	30,000	>30,000
Principal Arterial (2)	5,000	7,000	10,000	13,000	15,000	>15,000
Collector (2)	2,500	3,500	5,000	6,500	8,000	>8,000

Source: City of Coronado, 1995
[1] Roadway level of service threshold are based on 2-way traffic volumes during a 24-hour period.

3.3.7.2 Environmental Consequences

Approach to Analysis

Study Area

In terms of transportation, relevant portions of the Study Area are those in which the temporary mooring of the SBX Radar Vessel could potentially affect principal and minor arterial and local roadways leading to NASNI via the city of Coronado. See Figure 3.3.7-1 for city of Coronado roadways associated with the Proposed Action.

Source of Information

A systematic review of relevant literature was conducted to complete this analysis of transportation in the potential location, including maps, technical reports published by Government agencies, work conducted by private businesses and consulting firms, DoD reports, operational manuals, and current and prior environmental documents for facilities and activities in the Study Area. The literature and other information sources cited are identified in Chapter 5.0, References.

Results of Analysis

The Navy prepared a 2008 Traffic Study to establish new baseline conditions for key elements of the Coronado transportation network. This study was based upon traffic counts collected in July and September 2007, and an understanding of current lane configuration at intersections and on roadway segments of the impacted traffic network. The July traffic counts were collected to represent the month with the highest traffic demand on Coronado based on historical traffic data. The September traffic counts were collected to represent traffic while schools are in session and to serve as a comparison to the summer traffic. The collected traffic data demonstrated that ADT volumes are higher in the summer than in the fall, resulting in higher levels of congestion at intersections and on roadway segments during the summer. The analysis results reflect worst-case conditions of three CVNs being in port during the temporary mooring period of the SBX Radar Vessel (approximately 3 months).

There is the potential for 307 temporary personnel to use principal and minor arterials and local roads leading to NASNI via the city of Coronado for approximately 3 months. For the purposes of analysis, assuming the worst case scenario of three CVNs in port with 73 percent of the traffic entering the Third Street Gate (Stockdale Gates) by using Orange Ave to Pomona Ave (39,506 ADT), 307 additional personnel have the potential to temporarily increase the ADT by 0.8 percent. Additionally, based on the 2008 traffic study, the 2008 Supplemental EIS concluded that direct traffic impacts associated with three CVNs have not changed significantly. Therefore, when three CVNs and the SBX Radar Vessel are in port the 0.8 percent increase of ADT would have a negligible impact on the overall ADT leading to NASNI via the city of Coronado. Even though three CVNs is the worst case scenario, there may not be three carriers in-port. Using the same analysis with the SBX Radar Vessel, and two CVNs in-port, with 73 percent of the traffic entering the Third Street Gate (Stockdale Gates) by using Orange Ave to Pomona Ave (approximately 26,337 ADT), 307 additional personnel would temporary increase the potential ADT by 1.2 percent.

Any impacts from traffic-related noise are discussed in Section 3.3.5.

3.3.7.3 Mitigation Measures

In the 2000 Record of Decision (ROD), the Navy agreed to provide staggered work shift timing when three carriers are in port simultaneously (U.S. Department of the Navy, 2000). In addition to the staggering of work times, the 2000 ROD also committed the Navy to encourage carpools and vanpools and subsidize the use of public transportation by military personnel and civilian employees in an effort to reduce traffic congestion on local roads (i.e., bus and ferry service). In compliance with the ROD requirement, the Navy provides a transit subsidy program to help offset some of the costs for employees commuting with the use of mass transit and vanpools. This level of participation is the equivalent of approximately 700 vehicles per day not traveling the roadways of San Diego County and Coronado. In the 2009 ROD the Navy identified potential traffic improvements both internal (on-base) and external (off-base) to NASNI. All mitigation measures established in the 2009 ROD will continue to be considered, and no further mitigation measures would be needed in the Study Area.

Mitigation measures in the 2009 ROD included the following:

Recommended Internal Improvements for NAS North Island: Several internal (on-base) traffic improvements were analyzed. At First Street and Alameda Boulevard, the potential traffic improvement requires reconfiguring the First Street Gate to support four inbound only traffic lanes during the Navy a.m. peak hour, with normal 2-way traffic flow (inbound and outbound) at all other times. Naval Base Coronado Commanding Officer will implement this traffic improvement when three CVNs are in port and voluntarily at other times deemed necessary to manage traffic entering NASNI when it does not impair accomplishment of the defense mission. At Fourth Street and Alameda Boulevard, the traffic improvement assumes the City will install a planned traffic signal and requires adding an internal (on-base) exclusive eastbound right-turn lane along McCain Boulevard for vehicles turning right onto Alameda Boulevard. These two traffic measures improve the overall traffic flow entering and exiting NASNI. The Navy will coordinate with the City of Coronado and/or the California Department of Transportation (CALTRANS) District 11 regarding internal (on-base) improvements that could affect external (off-base) roadways.

Potential External Intersection Improvements: Potential improvement measures were identified and evaluated for those intersections external to NASNI to improve traffic congestion and address pedestrian safety. Five intersections were identified as appropriate candidates for potential traffic improvements. Four of the five intersections can achieve acceptable level of service conditions through combination of internal (on-base) and external (off-base) traffic improvement measures. One intersection cannot achieve an acceptable level of service through intersection widening and the City of Coronado is investigating other options within their jurisdiction to implement at the intersection of Fourth Street and Orange Avenue. All external (off-base) traffic improvements are under the jurisdiction of either the City of Coronado or CALTRANS and require funding and implementation through the appropriate State of California Transportation Organizations. State and/or local governments would determine whether improvements identified off-base in the 2008 Final SEIS should be implemented. The Navy remains committed to cooperate to the maximum extent allowable by law with these agencies if any of these proposed improvement measures are implemented. The DoD and its component branches have no authority to manage or fund road improvements outside its property, except as may be authorized by law under the Defense Access Roads (DAR) Program. DAR is the only authority the Navy has to address these recommended improvements and the Navy will submit requests for consideration under this program. For each project that is certified by the DAR program, the Navy commits to seek funding from DoD. Execution will be subject to availability of funding through the DoD budget process.

Additional Traffic Management Measures: The following measures are within the Navy's purview to accomplish and will be implemented when these measures do not impair accomplishment of the defense mission. The Navy will manage NASNI related traffic during peak hours of the workday commute by optimizing the timing of existing on-base Navy bus routes, by staggering work hours when two CVNs and three CVNs are in-port, and by implementing the internal (on-base) traffic improvements as previously discussed. The Navy will monitor traffic conditions during peak hours. Based on the assessment of need by Naval Base Coronado Commanding Officer, the Navy may voluntarily stagger work hours when 1 CVN is in port as a temporary measure to improve traffic flow. The Navy will work cooperatively with San Diego Association of Governments on regional transportation initiatives to leverage the Navy's Transportation Incentive Program and will promote incentives to the Navy's military members and civilian workforce with a goal of increasing mass transit ridership and carpooling. The Navy will also continue to work with City of Coronado and CALTRANS to find mutually acceptable solutions to traffic concerns.

Any mitigation measure associated with traffic-related noise is discussed in Section 3.3.5.

3.3.7.4 Summary of Effects

The Proposed Action would not have a long-term impact on ground transportation in the Study Area. Short-term effects on ground transportation are negligible and would decrease as the number of CVNs in port increases.

3.3.8 VISUAL AND AESTHETIC RESOURCES

This section addresses the visual and aesthetic resources of the waterfront area of NASNI as discussed in Section 1.3.1. Visual resources consist of topographic features such as landforms and bodies of water, and man-made features as buildings, bridges, and recreational areas. The aesthetic quality of an area is evaluated by the extent that important visual resources are seen from view corridors (vantage points), or experienced from roadways, parks, or buildings (public or private).

3.3.8.1 Affected Environment

Existing Conditions

NASNI is on a prominent peninsula within the San Diego Bay. It is located adjacent to the city of Coronado, in San Diego County California. NASNI is surrounded by water on three sides (the Pacific Ocean to the west and San Diego Bay to the north and east. It is visible from two major roadways: Harbor Drive skirting the bay, and the Coronado Bay Bridge. A variety of commercial and recreational uses along the bay provides view corridors of NASNI. The installation and the City are separated by Alameda Boulevard, McCain Boulevard, and South O Street, with NASNI being on the west side and the city lying on the east side of the Pier P area. A residential area to the east side of First Street is in direct view of the potential temporary mooring location. See Figure 3.3.8-1 for a view of NASNI and adjacent city areas.

The dominant waterfront across the San Diego Bay and east of Pier P and Pier N includes parks, open space, and recreation areas, as well as commercial and industrial, retail, and services areas (marina, USS Midway Museum, San Diego Convention Center, Petco Park). Multiple-use and multiple-family residential areas are adjacent to multiple and commercial use areas northeast of Harbor Drive. See Figure 3.3.8-1 for a view of NASNI and waterfront areas.

Current Requirements and Practices

The county of San Diego has established guidelines governing dark skies polices and glare impacts from light sources (County of San Diego, 2009). The guidelines specifically address the potential for a proposed project creating a new source of substantial light or glare which would adversely affect day or nighttime views, including skyglow, light trespass, and glare, in the area in relation to recreation and community character, human health, and astronomical research. Additionally, San Diego County Code-Division 9-Light Pollution Code (LPC-59.105) restrict the permitted use of outdoor light fixtures emitting undesirable light rays into the night sky which have a detrimental effect on astronomical research.

3.3.8.2 Environmental Consequences

Approach to Analysis

Study Area

In terms of visual and aesthetics, relevant portions of the Study Area are those in which the temporary mooring of the SBX Radar Vessel could potentially affect the topographic features such as landforms and bodies of water, and man-made features such as buildings, bridges, and recreational areas. The study areas include NASNI and the public waterfront area adjacent to Pier P. See Figure 3.3.8-1 for a view of the waterfront areas adjacent to Pier N and Pier P.

EXPLANATION

- Highway
- Protective Barrier
- Potential Mooring Location
- Naval Air Station North Island Boundary

NORTH 0 1,000 2,000 4,000 Feet

Visual and Aesthetics, Naval Air Station North Island

California

Figure 3.3.8-1

Source of Information

A systematic review of relevant literature was conducted to complete this analysis of visual and aesthetic resources in the potential location, including maps, technical reports published by Government agencies, work conducted by private businesses and consulting firms, DoD reports, operational manuals, natural resource management plans, and current and prior environmental documents for facilities and activities in the Study Area. The literature and other information sources cited are identified in Chapter 5.0, References.

Results of Analysis

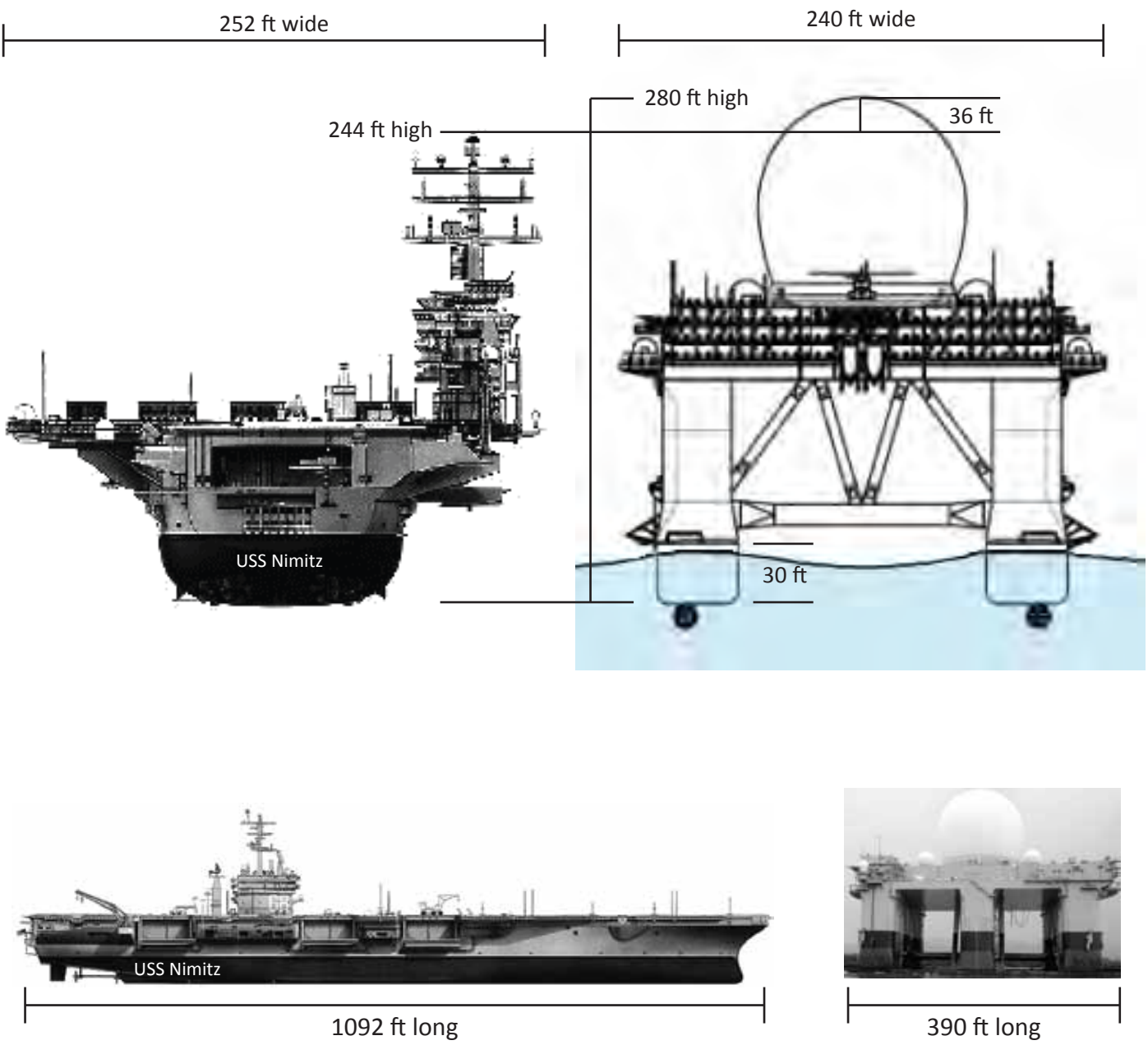
The SBX Radar Vessel would be moored at NASNI for approximately 3 months. There would be no dredging or construction activities that would impact visual and aesthetics. The dome of the SBX Radar Vessel does extend 36 feet higher than the top of *USS Nimitz,* and the dome is approximately 22 feet wider at mast (see Figure 3.3.8-2). The overall appearance of the SBX Radar Vessel is unique and may be perceived as intrusive. As illustrated in Figure 3.3.8-2, the SBX Radar Vessel is similar in size, although not shape, and character to the other naval vessels (Aircraft Carriers, Oilers) transiting the base.

To provide a perspective on distance views for the city of Coronado, if the SBX Radar Vessel is moored at Pier N it would be approximately 1,380 feet from the intersection of Alameda Boulevard and First Street and approximately 2,000 feet from Bay View Park, approximately 4,200 feet from Centennial Park and approximately 5,100 feet from Coronado Ferry Landing. If the SBX Radar Vessel is moored at Pier P it would be approximately 600 feet from the intersection of Alameda Boulevard and First Street and approximately 1,200 feet from Bay View Park, approximately 3,700 feet Centennial Park and approximately 4,000 feet from Coronado Ferry Landing (See Figure 3.3.8-1). Mooring at Pier N would allow for less of the vessel being viewed from the intersection of Alameda Boulevard and First Street than if it was moored at Pier P. Therefore, being moored at Pier N would lessen the impact on the visual and aesthetic resources for some of the residential area closest to Alameda Boulevard and First Street. Although the overall appearance of the SBX Radar Vessel is unique and may be perceived as intrusive, the mooring of the SBX Radar Vessel at either Pier N or Pier P would be temporary (approximately 3 months) and comparable to the visual impact of other Navy vessels at these berthing locations.

To provide a perspective on distance views for the city of San Diego, if the SBX Radar Vessel is moored at Pier N it would be approximately 4,065 feet from the deck of the Fish Market Restaurant and approximately 5,100 feet from the Cruise Ship Terminal. If moored from Pier P it would be approximately 4,065 feet from the deck of the Fish Market Restaurant and 6,400 feet from the Cruise Ship Terminal (See Figure 3.3.8-1). The mooring of the SBX Radar Vessel at either Pier N or Pier P would be temporary (approximately 3 months) and comparable to the visual impact of other Navy vessels at these berthing locations.

Lighting System

The SBX Radar Vessel operates its lighting systems 24/7. The vessel would use its external lights on the platform, the perimeter of the dome, and on top of the dome in the evening or nighttime hours. The lights on the dome are considered “incandescent floodlights” and the trainable 500-W and 300-W incandescent floodlights are not operated while in-port (see Figure 2-1). Lights are shielded to the maximum degree possible or pointed downward to minimize the impacts to area residents. Therefore, the light and glare produced from the external lights are anticipated to have a negligible effect on the visual and aesthetic resources of the area.



Sea-Based X-Band Radar Size Compared to the USS Nimitz Aircraft Carrier

Figure 3.3.8-2

Any effects from noise associated with aesthetics resources are discussed in Section 3.3.5.

3.3.8.3 Mitigation Measures

Impacts from the SBX Radar Vessel on visual and aesthetics would be negligible and temporary. The lighting system on the vessel is in accordance with navigational rules, OSHA, and FAA regulations. No further mitigation measures would be needed to protect visual and aesthetic resources in the Study Area, and no additional mitigation measures are proposed.

3.3.8.4 Summary of Effects (Naval Air Station North Island)

The Proposed Action would not have a long-term impact on the visual and aesthetic resources in the Study Area. Short-term effects on visual and aesthetic resources may be perceived as intrusive, but would be negligible and temporary.

3.3.9 WATER RESOURCES

This section describes the marine waters of NASNI that could be affected by the Proposed Action.

3.3.9.1 Affected Environment

Existing Conditions

As illustrated on Figure 2-6, NASNI is encircled by San Diego Bay, with Glorietta Bay being approximately 2 miles south of the potential temporary mooring locations (Pier N or Pier P). Beneficial uses and specific water quality objectives for San Diego Bay are described in the Basin Plan, prepared by the Regional Water Quality Control Board (RWQCB), San Diego Region (1998). The Basin Plan lists 12 beneficial uses: (1) industrial service supply; (2) navigation; (3) water-contact recreation; (4) non-water-contact recreation; (5) commercial/sport fishing; (6) preservation of biological habitats of special significance; (7) estuarine habitat; (8) wildlife habitat; (9) rare, threatened, or endangered species; (10) marine habitat; (11) migration of aquatic organisms; and (12) shellfish harvesting. The Basin Plan specifies numerical water quality objectives for a limited set of water quality parameters (e.g., nutrients, bacteria, and pH) and descriptive criteria for other parameters including floating material, oil and grease, pesticides, radioactivity, suspended and settleable solids, sediment, taste and odor, temperature, toxicity, toxic pollutants, and turbidity. In most cases, these descriptive criteria prohibit harm or adverse impacts to the beneficial uses.

Water Currents and Circulation

Circulation patterns in the central portion of San Diego Bay are primarily influenced by tides. Tides within the bay are mixed, semi-diurnal (two high and two low tides per day), with an average and maximum tidal range of 5.6 feet and 9.8 feet, respectively. The volume of water exchanged during a tidal cycle is approximately one-third of the volume of the entire bay. Water currents in the main channel offshore from the project site flow at a speed of approximately 0.4 knot. Relatively slower currents typically occur near shore in shallower areas outside of the main channel, although diver-conducted studies adjacent to the project area (east, in the vicinity of Pier J/K) reported currents of 1-2 knots. (U.S. Department of the Navy, 2008) Waves within the bay typically are generated by local winds, and are generally less than 2 to 3 feet in height

(San Diego Unified Port District, 1980). The project area is well protected from waves generated by predominant northwest winds.

Marine Water Quality

Water quality conditions within San Diego Bay are influenced by circulation patterns, flushing or exchange of bay and ocean waters, and the duration of the flushing cycle or water residence times. Water quality conditions in San Diego Bay vary between the northern and southern portions of the bay due to differences in the influences of mixing with ocean waters. Freshwater inputs to the bay are minimal, except during periods of heavy rainfall, and conditions rapidly return to pre-storm levels after the rain event. Processes affecting marine water quality at the proposed project site, such as circulation and exchange of bay and ocean waters, are not substantially different from processes affecting water quality in other portions of the central bay. Thus, because water quality parameters have not been measured within the immediate vicinity of the project site, the water quality conditions are characterized using existing information from adjacent areas of the bay.

Temperature

Water temperatures in the bay range from approximately 57.2°F to 80.6°F, and salinities (salt content) can range from 31 to 39 parts per thousand (U.S. Department of the Navy, 1992). Higher water temperatures and slightly higher salinities occur in summer than in winter, particularly due to seasonal differences in evaporation, heating, and freshwater inputs to the south bay. A smaller range in temperature and salinity conditions occurs at the project site because mixing of bay and ocean waters moderates the effects of these processes. (U.S. Department of the Navy, 2008)

Chemical Contaminants

In May 2008, the Navy obtained permit approval from the U.S. Army Corps of Engineers and RWQCB to begin repair of the quaywall immediately northeast of the proposed mooring site (improvements at Pier L). As part of the permit application process, the Navy tested sediment quality within the proposed quaywall repair project dredge footprint. The analytical results were compared with sediment quality guidelines derived by the NOAA from studies of sediment testing throughout the country. The NOAA sediment quality guidelines are reported as two values: the Effects-Range Low (ERL) and the Effects-Range Medium (ERM). The ERL value represents the concentration below which adverse biological effects rarely occur, and the ERM value represents the concentration above which adverse biological effects frequently occur. The sediment was determined not to be toxic, and bioaccumulation test results were within the range of acceptability for ocean disposal. Table 3.3.9-1 presents the results of the bulk chemistry tests of the upper quaywall sample and the lower quaywall sample.

Table 3.3.9-1. Bulk Sediment Contaminant Along Quaywall

	Criteria		Samples	
Contaminant	**ERL**	**ERM**	**QWU**	**QWL**
Arsenic (mg/kg)	8.2	70	6.48	2
Cadmium (mg/kg)	1.2	9.6	0.537	ND
Chromium (mg/kg)	81.0	370	33.9	9.54
Copper (mg/kg)	34.0	270	123	6.12
Lead (mg/kg)	46.7	218	37.9	2.14
Mercury (mg/kg)	0.15	0.71	**0.411**	ND
Nickel (mg/kg)	20.9	51.6	9.29	3.09
Selenium (mg/kg)	NA	NA	0.816	ND
Silver (mg/kg)	1.0	3.7	0.621	ND
Zinc (mg/kg)	150	410	211	34.3
TRPH (mg/kg)	NA	NA	230	28
Organotins (µg/kg)	NA	NA	34.2	ND
Total Pesticides (µg/kg)	NA	NA	ND	ND
Total PCBs (µg/kg)	22.7	180	**65**	ND
Total PAHs (µg/kg)	4022	44,792	1639	ND

Source: U.S. Department of the Navy, 2008

***Notes*:**

Bold values indicate exceedance of an ERL value, but within range.
mg/kg – milligrams per kilogram
µg/kg – micrograms per kilogram
NA – not available/not applicable
ND – not detected above the method reporting limit
ERL – Effects Range-Low
ERM – Effects Range-Medium
PAH – polynuclear aromatic hydrocarbon
PCB – polychlorinated biphenyl
TRPH – total recoverable petroleum hydrocarbons
QWU – quaywall upper
QWL – quaywall lower

Current Requirements and Practices

Environmental compliance policies and procedures related to ocean and nearshore water quality are regulated by Federal and State programs including the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78), which prohibits certain discharges of oil, garbage, and other substances from vessels. The MARPOL convention is implemented by national legislation, including the Act to Prevent Pollution from Ships (33 USC 1901, et seq.); the Federal CWA (33 USC 1251, et seq.) which is a measure that reduce potential impacts to water resources and which includes creation and adherence to storm water management plans, erosion control, maintaining vegetative buffers adjacent to waterways, and enforcement of pollution permit requirements under the NPDES (33 USC 1342), and the MARPOL convention implemented by the Oil Pollution Act (33 USC 40 §2701 et seq.) which streamlined and strengthened EPA's ability to prevent and respond to catastrophic oil spills. In addition, provisions in Executive Order 12856, *Federal Compliance With Right-To-Know Laws and Pollution Prevention Requirements*, and Executive Order 13101, *Greening the Government through Waste Prevention, Recycling, and Federal Acquisition*, reinforce the CWA's prohibition

against discharge of harmful quantities of hazardous substances into U.S. waters out to 200 nm, and mandate stringent hazardous waste discharge, storage, dumping, and pollution prevention requirements. For the Navy, these and other requirements are implemented by the *Navy Environmental and Natural Resources Program Manual* (OPNAVINST 5090.1C, 2007), and related Navy guidance documents governing waste management, pollution prevention, and recycling.

Shipboard waste-handling procedures governing the discharge of non-hazardous waste streams have been established for commercial and Navy vessels. These categories of wastes include solids (garbage) and liquids such as “black water” (sewage), “grey water” (water from deck drains, showers, dishwashers, laundries, etc.), and oily wastes (oil-water mixtures).

The San Diego Regional Board's Basin Plan is designed to preserve and enhance water quality and protect the beneficial uses of all regional waters. Specifically, the Basin Plan: (1) designates beneficial uses for surface and ground waters; (2) sets narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the State's antidegradation policy; (3) describes implementation programs to protect the beneficial uses of all waters in the Region; and (4) describes surveillance and monitoring activities to evaluate the effectiveness of the Basin Plan [California Water Code sections 13240 thru 13244, and section 13050(j)]. Additionally, the Basin Plan incorporates by reference all applicable State and Regional Board plans and policies.

Regulatory Requirements—Federal

The principal Federal laws protecting water quality are the Federal Water Pollution Control Act (33 USC 1251, et seq.) and the Safe Drinking Water Act (42 USC 300f, et seq.). Both are enforced by the USEPA and various State Government agencies. In addition, the NOAA (U.S. Department of Commerce) oversees coastal and marine water resources under CWA, the CERCLA, the CZMA, and the Oil Pollution Act (marine oil spills). NOAA also has responsibilities in managing and protecting coastal and marine habitats (and species) through the National Marine Fisheries Service.

Discharges Incidental to Normal Operation of a Vessel of the Armed Forces

The Clean Water Act was amended in 1996 to allow for the Secretary of the Defense and Administrator of the USEPA to work in consultation with the USCG and interested States to determine discharges incidental to the normal operation of a vessel of the Armed Forces for which it is reasonable and practicable to require use of a marine pollution control device. This amendment allowed for a comprehensive system for regulating discharges incidental to the normal operation of an Armed Forces' vessel operating in inland waters and the ocean out to 12 nautical miles. On 10 May 1999, USEPA and DoD published the final rule establishing regulations for undertaking to establish the UNDS for Vessels of the Armed Forces. This rule completed the first phase of a three-phase process to set the UNDS. This Phase I rule determined the type of vessel discharges that require control by Marine Pollution Control Devices and those that do not, based on anticipated environmental effects of the discharge as well as factors listed in the Clean Water Act. A total of 25 vessel discharges that have the potential to cause an adverse impact on the environment requiring control standards have been identified under Phase I of the program (Uniform National Discharge Standards, 2008). Phase II involves developing performance standards and control procedures for those discharges. The Navy and USEPA have agreed to promulgate Phase II standards in batches. The batch

rulemaking approach allows the Navy and USEPA to conduct technical analyses and develop discharge standards in batches (approximately five discharges per batch) rather than conducting analyses and developing standards for all 25 discharges at one time. To date, this Phase II process is still ongoing.

Since the SBX Radar Vessel is a vessel of the Armed Forces, Section 33 USC 1322(n) applies concerning discharge incidental to the normal operation of a vessel. Certain discharges from the vessel in connection with maintenance and repair fall under the UNDS being developed by the Secretary of Defense and the Administrator of the USEPA and are therefore not "pollutants" regulated by the CWA. Of the 25 discharges, Seawater Cooling Overboard Discharge and Underwater Ship Husbandry apply to this EA.

Seawater Cooling Overboard Discharge

This discharge consists of seawater from a dedicated system that provides noncontact cooling water for other vessel systems. The seawater cooling system continuously provides cooling water to heat exchangers, removing heat from main propulsion machinery, electrical generating plants, and other auxiliary equipment. The heated seawater is discharged directly overboard. With the exception of some small, non-self-propelled vessels and service craft, all Armed Forces vessels discharge seawater from cooling systems. Typically, the demand for seawater cooling is continuous and occurs both within and beyond 12 nautical miles from shore. Seawater cooling overboard discharge is primarily seawater that contains trace materials. The expected constituents of seawater cooling discharge include copper, iron, aluminum, zinc, nickel, tin, titanium, arsenic, manganese, chromium, lead, and possibly oil and grease from valves and pumps. Of the constituents expected to be present in this discharge, arsenic, chromium, copper, lead, nickel, and zinc are priority pollutants. None of the expected constituents is a bioaccumulator. (U.S. Environmental Protect Agency, 1999)

Underwater Ship Husbandry

Underwater ship husbandry includes underwater welding. The underwater ship husbandry discharge is composed of materials discharged during the inspection, maintenance, cleaning, and repair of hulls and hull appendages performed while the vessel is waterborne. Underwater ship husbandry includes activities such as hull cleaning, fiberglass repair, welding (underwater), sonar dome repair, propulsor lay-up, non-destructive testing, masker belt repairs, and painting operations. The primary constituents found in the discharge from underwater welding are metals in the slag associated with welding rods. These (slag and welding rods) may contain chromium, iron, nickel, beryllium, manganese, and trace (small/barely perceivable) quantities of other metals. (U.S. Environmental Protect Agency, 1999) All discharges from underwater welding done for maintenance activities on ships are covered under the UNDS program and are not activities that are regulated under the 401 discharge program run by the California Regional Quality Control Board.

Regulatory Requirements—State and Local—California

Water Quality and Pollution Control

In California, water quality is governed by the State Water Resources Control Board and nine regional water quality control boards, including point and nonpoint source pollution provisions of the Federal CWA, and groundwater and surface waters within the 3-mile State jurisdictional limit (California Water Code–Division 7, §13000, et seq.). The State board adopted the Ocean

Waters of California Water Quality Control Plan—the "Ocean Plan"—in 2005. This plan established beneficial uses and water quality objectives for waters of the Pacific Ocean adjacent to the California coast outside of enclosed bays, estuaries, and coastal lagoons. The plan also identifies "Areas of Special Biological Significance" that are approved by the State board.

Underwater Welding

All discharges from underwater welding done for maintenance activities on ships are covered under the UNDS program and are not activities that are regulated under the 401 discharge program run by the California Regional Water Quality Control Board.

Coastal Zone Management

The California Coastal Act defines the coastal zone as the area of the State which extends three miles seaward and (generally) about 1,000 yards inland. The act also sets forth specific uses that may be permitted in the coastal zone, provides for additional review and approvals for proposed actions, and directs local governments within the coastal zone to prepare a "local coastal program" for certification. California Coastal Act activities are overseen by the California Coastal Commission (California Public Resources Code §30000, et seq.). Under the California Ocean Resources Management Program, the California Resources Agency is charged with comprehensive management and stewardship of the State's ocean resource, including review of oil and gas development on the continental shelf and coordination of resources management in the exclusive economic zone (California Public Resources Code §36000, et seq.).

Storm Water Discharge

NASNI is under a NPDES permit for storm water discharge into San Diego Bay. The Discharger submitted a Report of Waste Discharge, dated November 2007, and applied for an NPDES permit renewal to discharge steam condensate, diesel engine cooling water, pier boom cleaning wastewater, utility vault and manhole dewatering wastewater, pier washing wastewater, Reverse Osmosis Water Purification Unit product water, boat rinsing wastewater, swimmer rinsing wastewater, marine mammal enclosure cleaning wastewater, miscellaneous wastewater, and industrial storm water at numerous discharge locations from Naval Base Coronado. The application was deemed complete on 27 March 2008.

3.3.9.2 Environmental Consequences

Approach to Analysis

Study Area

In terms of water (surface, ground, flood hazard area), relevant portions of the each Study Area are those in which the temporary mooring of the SBX Radar Vessel could potentially affect the bodies of water. The study area includes the marine waters associated with the proposed optional locations (Pier N or Pier P) at NASNI.

Source of Information

A systematic review of relevant literature was conducted to complete this analysis of water resources in the potential location, including maps, technical reports published by Government agencies, work conducted by private businesses and consulting firms, DoD reports, operational manuals, natural resource management plans, and current and prior environmental documents

for facilities and activities in the Study Area. The literature and other information sources cited are identified in Chapter 5.0, References.

Results of Analysis

Painting, Outside Welding, Sanding, and Plasma Cutting

The SBX Radar Vessel would have a temporary effect (approximately 3 months) on the marine waters associated with the Pier N and Pier P area at NASNI. During the vessel temporary mooring period, activities such as painting, outside welding, sanding, and plasma cutting will be performed. Standard BMPs listed in Table 2-4 would prevent any debris from entering the waterway and from being circulated in the bay. The standard BMPs would be applied to mitigate impacts to marine waters from such activities (i.e., enclose, cover, or contain work areas to prevent debris from reaching water). Therefore, the impacts on marine waters from these activities would be negligible.

Seawater Cooling Discharge Overboard

A Nature of Discharge Report was produced as part of the *Technical Development Document for Phase I Uniform National Discharge Standards for Vessels of the Armed Forces* (U.S. Environmental Protection Agency and U.S. Department of the Navy, 1999). The thermal effects of seawater cooling water overboard discharge were modeled using the Cornell Mixing Zone Expert System. This system was used to estimate the plume size and temperature rises in the water body receiving the discharge. Modeling included the cooling water discharge of three vessels in three harbors. Of the five States having a significant presence of Armed Forces' vessels, only Virginia and Washington have established thermal mixing zone dimensions. The models predicted that U.S. Navy aircraft carriers, with a typical cooling water temperature rise of 10 to 15 degrees, would generate thermal plumes that, under conditions of low harbor flushing, low wind velocities, and maximum cooling water flow rates (120,000 gallons per minute), would only exceed the regulatory thermal mixing zone limits of Washington. Thermal plumes models from destroyers did not exceed regulatory limits (U.S. Environmental Protection Agency and U.S. Department of the Navy, 1999). In contrast, the SBX Radar Vessel's cooling water would have a much lower flow rate (7,400 gallons per minute), and a lower typical temperature rise of 6 to 10 degrees (Missile Defense Agency, 2005).

The Nature of Discharge Report also evaluated metals that enter the cooling water as it moves through the components of the cooling system. These metals include copper, nickel, lead, aluminum, tin, silver, iron, titanium, chromium, and zinc. The Nature of Discharge Report concluded that seawater cooling discharge from armed forces vessels has a potential to cause an adverse environmental effect due to exceedences of Federal water quality criteria for heavy metals and significant heavy metal mass loading (U.S. Environmental Protection Agency and U.S. Department of the Navy 1999). Although the SBX Radar Vessel seawater cooling discharge would contain some heavy metals, the quantity would be less than on typical armed forces vessels which utilize nickel-copper piping. While the SBX Radar Vessel uses some copper-nickel piping, it also uses a composite piping that does not contribute heavy metals. (Missile Defense Agency, 2005)

Any water discharged from the vessel's Seawater Cooling System while in-port would have originated directly from San Diego Bay. The review of the bulk sediment contaminant along the quaywall indicates that the heavy metals associated with the Seawater Cooling Discharge are not contaminants of concern (see Table 3.3.9-1). There is no thermal pollution anticipated due to any increase in temperature of the receiving ambient water (potentially 6-10 degrees Fahrenheit higher at point of entry). Additionally, the tidal influences on water flow in the SBX Radar Vessel area would aid in minimizing the area of elevated water temperature by promoting rapid mixing of water return to ambient water temperature within a short distance of the outflow. It is anticipated that the change in temperature will not affect water quality or biological productivity. Therefore, impacts to current marine water quality from this activity are anticipated to be negligible.

Underwater Welding

Pollutant concentrations from underwater welding are released infrequently and in small quantities and are not estimated/analyzed (U.S. Environmental Protection Agency, 1999). As noted in the Phase I Final Rule and Technical Development Document of UNDS, metals from the underwater welding operation (which may contain chromium, iron, nickel, beryllium, manganese, and trace quantities of other metals) will not be readily dissolved in the surrounding waters and will fall to the harbor floor (U.S. Environmental Protection Agency, 1999; 2003).

A review of the bulk sediment contaminants concentration along the quaywall immediate northeast of the Pier N and Pier P indicates that chromium and nickel were found (See Table 3.3.9-1). These metals (chromium and nickel) were determined not to be toxic, and the levels are below values which adverse environmental affects occur (U.S. Department of the Navy, 2008). The remaining metals (iron, beryllium, manganese, and other trace metals) are not listed as contaminants detected within the area. Although these metal constituents have the potential to oxidize and enter the water stream over time, the mooring of the SBX Radar Vessel is temporary at the proposed site, and there is a low potential for the metal constituents to cause an adverse environmental effect. The underwater welding activities are temporary and have a short performance time. It is anticipated that levels of the metals would continue to be negligible. Therefore, the impacts on marine waters from these underwater welding activities would be negligible.

Oil

The small amount of oil remaining in the thruster wells (less than 5 gallons) would be removed from the thruster via a hose leading up to a surface tank. BMPs would be followed to prevent the spill of oil into the water during the transfer of the excess oil. Therefore, the impacts on marine waters from this activity would be negligible.

Storm Water Discharge

Storm water discharge activities being performed during the maintenance and repair period associated with pier side laydown equipment would adhere to the BMPs listed in Table 2-4 (e.g., Material Storage and Handing, Discharge to Storm Drain, Outdoor Work Operations) and the NASNI's SWPPP. Additionally, the SBX Radar Vessel would manage the discharge of all gray and black water by connecting to sewage risers provided on Pier N or Pier P and in accordance to the requirements of the 2009 Afloat Environmental Quick Guide established for naval ship operating in Navy Region Southwest. Adherence to the BMPs, the 2009 Afloat Guide and the SWPPP would prevent the discharge of stormwater and gray and black water into the San

Diego Bay. Therefore, any impacts from storm water discharge and gray and black water would be negligible.

3.3.9.3 Mitigation Measures

Impacts to water resources resulting from painting, outside welding, sanding, and plasma cutting would not result in long-term degradation of water resources or affect water quality at the potential location. Current requirements and practices described in Section 3.3.8.1 would be considered, the 2009 Afloat Environmental Quick Guide established for naval ships operating in Navy Region Southwest and all applicable BMPs listed in Table 2-4 would be implemented.

Although specific performance standards and potential pollution control device requirements have not been determined for seawater discharge and specific requirements for the SBX Radar Vessel have not been developed at this time, the continuing use of the composite piping on the SBX Radar Vessel is considered a pollution control device; therefore, no mitigation measures are proposed.

Although chromium and nickel are the only potential metals from underwater welding operations found in the study area, impacts to water quality resources resulting from underwater wet welding activities have a low potential for causing an adverse environmental effect. To mitigate potential loss of welding rods/electrodes from entering and accumulating on the floor of the San Diego Bay, underwater welders are required to log and track the number of rods used during the underwater process.

Contractors and personnel working at NASNI during the maintenance and repair period must obtain a copy of all environmental equipments and BMPs established for NASNI (e.g., Afloat Environmental Quick Response Guide, 2009; SOPA COMNAVREGSW Instruction 5400.2, 2005; SWPPP).

3.3.9.4 Summary of Effects

The Proposed Action would not have long-term impacts on marine water resources in the study area within San Diego Bay. Although underwater welding activities have the potential to introduce additional chromium and nickel into the water of the Study Area, as well as metal constituents not currently tested for (iron, nickel, beryllium, manganese, and trace quantities of other metals) into waters associated with Pier N and Pier P, these metal constituents are not readily dissolved in the surround waters and will fall to the harbor floor. Additionally, some heavy metals could be introduced though the seawater cooling discharge. Although these metal constituents have the potential to oxidize and enter the water stream over time, the temporary mooring of the SBX Radar Vessel in conjunction with the low potential for the metal constituents to cause an adverse environmental effect, a long-term affect is not likely. No long-term accumulations are expected, and therefore no impact is anticipated.

Short-term effects on water quality from the SBX Radar Vessel has the potential to introduce metals (underwater welding slag and rod may contain chromium, iron, nickel, beryllium, manganese, and trace quantities of other metals and seawater cooling discharge contains copper, iron, aluminum, zinc, nickel, tin, titanium, arsenic, manganese, chromium, lead, and possibly oil and grease from valves and pumps) into San Diego Bay. These metals have a low

potential for environmental affect in the surrounding water. Therefore, the Proposed Action is anticipated to have a negligible short-term effect on the water quality of San Diego Bay.

3.4 FEDERAL ACTIONS TO ADDRESS ENVIRONMENTAL JUSTICE IN MINORITY POPULATIONS AND LOW-INCOME POPULATIONS (EXECUTIVE ORDER 12898)

This section addresses the Proposed Action's potential to generate disproportionately high and adverse human or environmental effects on minority and low-income populations, as required under Executive Order 12898. As part of this directive, the Federal agency must promote enforcement of all health and environmental strategies in areas where minority and low-income populations reside. Identifying differential patterns of natural resource consumption and ensuring greater public participation is required. Guidance provided by the Council on Environmental Quality (1997) has been considered in developing the environmental justice analysis presented below.

Federal Requirements

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Population,* focuses on identification and analysis of disproportionately high and adverse human health or environmental effects of actions on minority and low-income populations in the United States. The USEPA and the Council for Environmental Quality have emphasized the importance of incorporating environmental justice review in the analyses conducted by Federal agencies under NEPA and of developing protective measures that avoid disproportionate environmental effects on minority and low-income populations. For this Proposed Action, analysis for Executive Order 12898 requires assessment of readily available demographic data on the local, regional, and national populations, including race and ethnicity, age, income, and poverty metrics. Information to support this analysis is derived from U.S. Census Bureau readily accessible documents and internet sites. The U.S. Decennial Census, which is completed every 10 years, forms the basis of the data for 2000, with the next scheduled census occurring in 2010. The U.S. Census Bureau also conducts ongoing surveys to supplement the decennial survey, and the most recent U.S. Census American FactFinder for 2006-2008 data is used to document the most recent conditions.

3.4.1 NAVAL STATION EVERETT

The Proposed Action would not result in disproportionately high and adverse human health or environmental effects on minority populations and low-income populations. Table 3.2.6-2 indicates that traditional minority populations comprise a small percentage of the total population for the city of Everett.

3.4.2 NAVAL AIR STATION NORTH ISLAND

The Proposed Action would not result in disproportionately high and adverse human health or environmental effects on minority populations and low-income populations. Table 3.3.6-2 indicates that traditional minority populations comprise a small percentage of the total population for the cities of Coronado and San Diego.

3.5 FEDERAL ACTIONS TO ADDRESS PROTECTION OF CHILDREN FROM ENVIRONMENTAL HEALTH RISKS AND SAFETY RISKS (EXECUTIVE ORDER 13045, AS AMENDED BY EXECUTIVE ORDER 13229)

In compliance with Executive Order 13045*, Protection of Children From Environmental Health Risks and Safety Risks*, this EA examines demographic data on the local, regional, and national populations; and, in particular on children. This EA also evaluated the number and distribution of children in the region and whether these children are exposed to environmental health and safety risks from the Proposed Action.

This Executive Order focuses on environmental health risks and safety risks that may affect children. This Executive Order was prompted by the recognition that children are more sensitive than adults to adverse environmental health and safety risks because they are still undergoing physiological growth and development. For this EA, analysis for Executive Order 13045 required the assessment of readily available information regarding demographic data on the local, regional, and national populations, and, in particular, children less than 18 years old, as well as the evaluation of the number and distribution of children in the region and whether these children are exposed to environmental health and safety risks from the Proposed Action. Information to support this assessment is derived from the U.S. Census Bureau, 2006-2008 American Community Survey and identified locations with potentially high concentrations of children, such as schools, recreational areas for children, and residential areas.

3.5.1 POPULATION OF CHILDREN

Table 3.5-1 depicts the percentage of population less than 18 years of age and average family size for the applicable cities, county, state, and nation, using the 2006/2008 update data.

Table 3.5-1. Population of Children in Study Areas

	City of Everett, WA	City of Seattle, WA	City of Coronado, CA	City of San Diego, CA	State	USA
Population	102,050	571,293	23,307	1,251,184	6,453,083(WA) 36,418,499(CA)	301,237,703
Population less than 18 years of age (%)	23.5%	15.3%	18%	22.6%	23.8%(WA) 25.7%(CA)	24.5%
Average family size	3.05	2.90	2.93	3.31	3.08(WA) 3.53(CA)	3.20

Source: U.S. Census Bureau, 2006-2008c

In compliance with Executive Order 13045, as amended by Executive Order 13229, this EA has not identified any environmental health and safety risks at either of the two alternative locations that may disproportionately affect children. Additionally, no adverse socioeconomic effects were identified; therefore, no proposed mitigation measures are warranted.

3.6 GOVERNMENT–TO–GOVERNMENT CONSULTATION AND COORDINATION WITH NATIVE AMERICAN TRIBES

3.6.1 NAVAL STATION EVERETT

American Indian and Alaskan Native persons comprise 1.6 percent of the population for the city of Everett. Government-to-Government coordination was executed with Federally recognized Tribal governments (Lummi, Stillaguamish, Suquamish, Swinomish, and Tulalip Tribes) with the potential to be impacted by activities at NSE (See Appendix I). It was determine that the Proposed Action would not result in adverse impacts on these recognized Tribal governments.

3.6.2 NAVAL AIR STATION NORTH ISLAND

There were no Federally recognized Tribes identified in the NASNI study area; therefore, no Government-to-Government coordination was conducted at this location.

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4.0 Cumulative Impacts

4.0 CUMULATIVE IMPACTS

4.1 PRINCIPLES OF CUMULATIVE IMPACTS ANALYSIS

Cumulative impacts are impacts on the environment that result from:

> ". . . the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." (40 Code of Federal Regulations [CFR] 1508.7)

The Proposed Action would be implemented over approximately 3 months. Thus, each resource is analyzed in terms of its ability to accommodate additional effects of the Proposed Action in combination with past, present, or reasonably foreseeable future projects within this timeframe.

The cumulative effects analysis encompasses the region of influence associated with the resources analyzed in Chapter 3.0. While this single project may have minor impacts, when it is considered together with other projects in the region, the effect may be collectively significant. The other projects likely to result in cumulative impacts in those regions over the next year and into the future are listed in Tables 4-1 and 4-2. Table 4-1 lists projects in the vicinity of Naval Station Everett (NSE), and Table 4-2 lists projects in vicinity of Naval Air Station North Island (NASNI).

Table 4-1. Cumulative Project List, Naval Station Everett, Washington

Number	Project	Description of Impacts	Status
1	Naval Station Everett (NSE) Homeport	NSE is home to two destroyers, three frigates, one nuclear-powered aircraft carrier, and a Coast Guard buoy tender. There are about 6,000 Sailors and Civil Service persons assigned to commands located at NSE. NSE itself has about 350 Sailors and Civilians assigned.	Past
2	NSE Restricted Area Expansion	Project to amend the existing Naval Restricted Area (RA) at NSE by extending the RA outwards 250 yards from Alpha and Bravo gates. This will allow the opening of the booms and ensure clear traffic for ships entering and leaving NSE, while providing a 100-foot buffer for security movement of tugs and ships. The purpose is to ensure public safety and satisfy the security, safety, and operational requirements as they pertain to U.S. Navy vessels at NSE by establishing an area into which unauthorized vessels and persons may not enter. U.S. Army Corps of Engineers (USACE) project number NWS-2009-311.	Current

Table 4-1. Cumulative Project List, Naval Station Everett, Washington (Continued)

Number	Project	Description of Impacts	Status
3	Small Craft Launch, NSE	An Environmental Assessment is being prepared for the proposed construction of a small craft launch at NSE. The purpose of the project is to provide unrestricted access to an on-site small craft launch for waterfront services in support of operational forces assigned to NSE. A boat ramp would allow the Navy to expeditiously respond to events such as oil spills, security threats, or other situations in the East Waterway that require immediate response by boat. The project is needed because NSE does not currently have a small craft launch facility. All launches of small craft are conducted off-base at the Port of Everett public launch, located 1 mile north of the installation.	Present
4	New Central Utility Plant for the Providence Everett Medical Center (north of NSE)	Providence Everett Medical Center, located between 13 and 14 Street from Colby to Oakes Avenues in Everett, has added a new central utility plant Noise mitigation techniques associated with a new central utility plant were installed because of the noise sources and because the hospital property is located adjacent to single family homes.	Present
5	P-8A Multi-Mission Aircraft (MMA)	The Navy is preparing an Environmental Impact Statement (EIS) for providing facilities and functions to support the homebasing of 12 P-8A MMA squadrons and one fleet replacement squadron at established maritime patrol homebases. The P-8A would replace the P-3C aircraft. Currently, P-3C patrol squadrons are based at Naval Air Station (NAS) Jacksonville, Florida; NAS Whidbey Island; NAS Brunswick, Maine; and Marine Corps Base Hawaii Kaneohe Bay, with periodic detachments at NAS North Island, California. Under the preferred alternative, four P-8A MMA fleet squadrons would be homebased at NAS Whidbey Island. The transition would begin no later than 2012 and be complete in 2019.	Future
6	EA-18G Growler	The EA-18G Growler is an Airborne Electronic Attack aircraft that operates from either an aircraft carrier or from land bases. The Growler has been developed as a replacement for the U.S. Navy EA-6B Prowler aircraft that entered service in 1971 and is approaching the end of operational life. The EA-18G Growler fleet will be based at NAS Whidbey Island, Washington. The transition is underway and is expected to be completed by 2013.	Future
7	The Crescent Bay Salt Marsh and Salmon Restoration Project	The Restoration Project will restore 200 acres of juvenile salmon rearing habitat and other wetland functions to the Crescent Bay marsh, once the largest open barrier island salt marsh (approximately 300 acres) on Whidbey Island in Puget Sound. The restoration site is located on Naval Air Station Whidbey Island. The initial phase of the project includes baseline ecological assessment, restoration design, construction, and 1 year of post-construction monitoring. A second phase will cover implementation of 10 years of post construction monitoring and adaptive management.	Future

Table 4-1. Cumulative Project List, Naval Station Everett, Washington (Continued)

Number	Project	Description of Impacts	Status
8	Waterfront Repairs, NSE	Various repairs are required for Piers A and B and the South Wharf at NSE. Damaged pre-cast and cast in-place concrete on the under-deck of Pier A would be repaired. Timber protection piles and related support systems would be replaced at five locations on Piers A and B. The repair activities require pile driving; therefore, a USACE permit approval will be obtained. Construction will be scheduled during the approved in-water work windows.	Future
9	Debris Deflector, NSE	Plans to modify a floating debris deflector at NSE located at the northwest corner of the South Wharf. The project involves construction of a floating barrier to effectively deflect debris from the Snohomish River and include anti-terrorism/force protection requirements, sizing of the debris deflector (barrier) to resist wave loadings from a 100-year storm event, and incorporating steel piles into the support system for the structure.	Future
10	Training at Explosive Ordnance Disposal (EOD) Crescent Harbor	Although most activities in the in-shore area will increase, mine countermeasure activities will decrease. No more than two underwater detonations per year (a decrease of 56 detonations) will take place at Crescent Harbor, and no more than two underwater detonations per year will take place at Floral Point, for a maximum of four detonations per year. The charges will be no larger than 2.5 pounds at Crescent Harbor and 1.5 pounds at Floral Point, Record of Decision signed for the Ongoing and Proposed Use of the Northwest Training Range Complex, October, 2010.	Future
11	Riverfront Redevelopment, Port of Everett, City of Everett	The proposed action includes construction of a mixed-use commercial/residential development, shoreline and habitat restoration, and rehabilitation of a former, mostly industrial site. The proposed Master Plan includes the construction of up to 900,000 square feet of mixed commercial use; 200,000 square feet of hotel space; and up to 1,400 residential units (multi- and single-family). The ultimate mix of uses constructed will be determined by market demand and the land use capacity of the site (type, location, and size of uses and structures, and infrastructure capacity). A Final Environmental Impact Statement (FEIS) was issued on 11 June 2008. On 24 November 2008, the City issued an Addendum to the Riverfront Redevelopment EIS. On 8 January 2010, the City issued a second Addendum to the Everett Riverfront Redevelopment FEIS to address the Riverfront Public Amenities Master Plan. On 4 March 2010, the City issued Addendum No. 3 to the Everett Riverfront Redevelopment FEIS to address new information regarding the Wetland and Stream Compilation and Review Report.	Future
12	Everett Smelter Site Cleanup Action Plan Area	Construction of an asphalt and concrete batch plant and barge off-load facility on a 22.07 acre site.	Future

Table 4-2. Cumulative Project List, Naval Air Station North Island, California

Number	Project	Description of Impact	Status
1	Wastewater Master Plan	A City of Coronado plan for sewer main replacement, rehabilitation of the Cays main pump station, and Margarita Avenue sewer main replacement.	Past
2	Development of Home Port Facilities for the Three NIMITZ-Class Aircraft Carriers in Support of the *U.S. Pacific Fleet, Coronado, California; Bremerton, Washington; Everett, Washington; and Pearl Harbor, Hawaii*,	Documented in an Environmental Impact Statement (EIS) dated 1999 and Supplemental EIS (SEIS) dated December 2008, construction and operation of facilities and infrastructure needed to support the capacity to homeport three NIMITZ-class nuclear-powered aircraft carriers at Naval Base Coronado (NBC). The SEIS included a cumulative impacts analysis that projected traffic increases as a result of future actions at NBC. Actions to mitigate cumulative traffic impacts on NBC and in the city of Coronado were identified in the SEIS.	Past
3	USFWS Refuges Comprehensive Conservation Plan (CCP)	The CCP addresses topics of resource management, visitor use, refuge operations, and development in general terms.	Past
4	Roadway Preventive Maintenance	Slurry seal of one-sixth of the city of Coronado's streets. Slurry seal is a thin mixture consisting of fine sand, water, and emulsified asphalt applied to asphalt.	Past, Present, and Future
5	Coronado Cays Storm Drain Rehabilitation Phase III	Repair of storm drains in the Coronado Cays that show failed joint lines, non-storm related flow, and heavy debris and soil build up within the lines.	Past, Present, and Future
6	The Marina at Naval Amphibious Base Coronado, NBC	Erosion control, restoration of deteriorated marina facilities, and enhancement and expansion of existing recreational functions of the marina at NBC.	Present
7	Fiber Optic Cabling Connection Project	The City of Coronado plans an interconnection of the main sewer pump stations for monitoring purposes and future automated control.	Present
8	U.S. Navy Lighterage	Construction of a Waterfront Command and Control Facility for Amphibious Construction Battalion One facilities to support the introduction of the improved Navy Lighterage System at NBC.	Present
9	Current, Emerging, and Future Training Operations in the Southern California (SOCAL) Range Complex	Within the SOCAL Range Complex, continuation of training, an increase in training activities, force structure changes associated with introduction of new weapons systems, new classes of ships, and the introduction of new types of aircraft into the Fleet.	Present, Future
10	Mobile Security Forces and Naval Special Clearance Team-One Pier and Boat Ramp	Provision of facilities for the co-location of two new commands at Naval Air Station North Island (NASNI), the Mobile Security Forces and the Naval Special Clearance Team-One, including construction of a pier, boat ramp, and several buildings; paving; site improvements with security fencing and lighting, landscaping and irrigation; and a paved vehicle storage yard.	Future

Table 4-2. Cumulative Project List, Naval Air Station North Island, California (Continued)

Number	Project	Description of Impact	Status
11	Final Environmental Impact Statement (FEIS) for the Introduction of the P-8A Multi-Mission Maritime Aircraft (MMA) into the U.S. Navy Fleet	This FEIS evaluates the environmental consequences associated with homebasing 12 P-8A Fleet squadrons and 1 Fleet Replacement Squadron at established maritime patrol home bases. The FEIS analyzes personnel transition, new construction and renovation of structures, and all airfield operations necessary to accommodate the basing of P-8A MMA. The P-8A is being introduced to replace the aging P-3C Orion aircraft. Currently, P-3C patrol squadrons have periodic detachments at NASNI. The Notice of Record of Decision was published in the Federal Register on 2 January 2009.	Future
12	Silver Strand Training Complex (SSTC), San Diego, CA	Draft EIS prepared January 2010 covers future Navy training exercises. At SSTC-South, training would increase the number of intrusive noise events.	Future
13	Helicopter Wings Realignment and MH-60R/S Helicopter Transition, Naval Base Coronado, CA	Proposed realignment of the Helicopter Wings. Noise from additional aircraft and traffic from additional personnel are the main impacts to be analyzed. Analysis of traffic impact is covered in #2, SEIS Home Port Facilities for the Three NIMITZ-Class Aircraft Carriers in Support of the Pacific Fleet, NBC. The additional aircraft will have little effect on existing noise contours because predicted helicopter operations at end-state are less than historic air operations used in modeling, and fixed-wing aircraft dominate the noise environment.	Future
14	NASNI, NBC Lodge Expansion	Demolition of four existing Navy Lodge buildings and several smaller structures and the construction of a lodge building and cottages to increase room capacity. Construction of recreation facilities, parking lots and road upgrades, retail shops, a restaurant, and landscaping and utility upgrades.	Future
15	Sixth and Orange Drainage Improvements	The City of Coronado is planning the preparation of drainage studies and improvements for the Fourth and Alameda drainage basin and the Sixth and Orange drainage basin.	Future

4.2 CUMULATIVE IMPACT ANALYSIS

For the purpose of determining the overall impact that can be expected if individual impacts are allowed to accumulate, the impacts listed in Tables 4-1 and 4-2 and the impacts of the Proposed Action are analyzed below.

4.2.1 AIR QUALITY

Potential cumulative impacts on air quality include the operation of the shipboard generators while in port, and emissions from marine coatings used during maintenance and repair. In light of these concerns, the No-action Alternative, Alternative 1, or Alternative 2 in conjunction with the cumulative actions listed in Tables 4-1 or 4-2 would have a temporary increase in nitrogen oxides (NOx) and volatile organic compounds (VOC) air emissions. However, none of the

emissions generated by the Proposed Action or for those individual projects listed in Tables 4-1 or 4-2 would exceed the General Conformity *de minimis* emissions thresholds in any one year. Therefore, the cumulative effects on air quality from implementation of the Proposed Action in combination with past, present, or reasonably foreseeable future projects would be minimal.

4.2.2 AIRSPACE

Implementation of the Proposed Action in conjunction with the cumulative actions listed in Tables 4-1 or 4-2 would not incrementally affect airspace within the region of influence because no airspace impacts were identified in the analysis presented in Chapter 3.0. No other projects in the region of influence have been identified that would have the potential for incremental additive cumulative impacts on controlled or uncontrolled airspace, special use airspace, military training routes, en route airways and jet routes, airports/airfields, or air traffic control. Consultation with the Federal Aviation Administration on all matters affecting airspace would eliminate the possibility of indirect adverse impacts and associated cumulative impacts on airspace use. Therefore, the Proposed Action in combination with past, present, or reasonably foreseeable future projects would not result in significant cumulative airspace impacts.

4.2.3 BIOLOGICAL RESOURCES

Potential cumulative impacts on marine plants and invertebrates include releases of chemicals into the ocean, introduction of debris into the water column and onto the seafloor, and mortality and injury of marine organisms near the mooring site of the SBX Radar Vessel. In light of these concerns, implementation of the No-action Alternative, Alternative 1 or Alternative 2 in conjunction with the cumulative actions listed in Tables 4-1 or 4-2 would have small or negligible potential impacts as described in Chapter 3. Analysis provided in Chapter 3.0 determined that any impacts to biological resources including threatened or endangered species would be less than significant. There would be no long-term changes to species abundance or diversity, no loss or degradation of sensitive habitats, and no effects to threatened and endangered species from the temporary mooring, maintenance, and repair of the SBX Radar Vessel. Therefore, the Proposed Action in combination with past, present, or reasonably foreseeable future projects would not result in significant cumulative biological impacts.

4.2.4 HAZARDOUS MATERIALS AND WASTE

Cumulative impacts on hazardous materials and waste would consist of the effects of the Proposed Action in conjunction with the cumulative actions listed in Tables 4-1 or 4-2. Large quantities of hazardous materials and waste would affect the hazardous materials management system of the facilities involved, in addition to impacting the local hazardous waste recycling facilities and treatment, storage, and disposal facilities. However, the impacts are expected to be minimal and effectively managed through the existing permitting and procedures. Therefore, the Proposed Action in combination with past, present, or reasonably foreseeable future projects would not result in significant cumulative hazardous materials and waste impacts.

4.2.5 NOISE

Residents in the vicinity of the proposed project site at NASNI and at NSE would be affected by the noise from the operation of the shipboard generators and equipment while in port, but only temporarily. When mitigated, this effect, in conjunction with the cumulative actions listed in

Tables 4-1 or 4-2, is not expected to cause elevated noise levels significantly above the ambient noise in the residential areas contiguous to the naval stations. The proposed activities would not occur at the same time as the homeporting of a nuclear-powered aircraft carrier, thus decreasing the impact of added traffic noise. Therefore, the Proposed Action in combination with past, present, or reasonably foreseeable future projects would not result in significant cumulative noise impacts.

4.2.6 SOCIOECONOMICS

Cumulative impacts on socioeconomics would consist of any significant effect to regional employment, income, housing, or infrastructure. Implementation of the Proposed Action would not produce any significant regional employment, income, housing, or infrastructure impacts. The mooring of the SBX Radar Vessel should not significantly impact any individual fisherman, overall commercial revenue, or public recreational opportunities. Therefore, the Proposed Action in combination with past, present, or reasonably foreseeable future projects listed in Tables 4-1 or 4-2 would not result in significant cumulative socioeconomic impacts.

4.2.7 TRANSPORTATION

Cumulative impacts on traffic would consist of the effects of the Proposed Action at NASNI in combination with other projects listed in Table 4-2 that would result in increased traffic volumes or conflicts in the city of Coronado. When two CVNs and the SBX Radar Vessel are in port, the 1.2 percent increase in average daily traffic from the SBX Radar Vessel would have a negligible impact on the average daily traffic leading to NASNI via the city of Coronado. The cumulative impact of the Proposed Action at NASNI in conjunction with actions listed in Table 4-1 is mitigated by current traffic reduction measures and incentives. Therefore, the Proposed Action in combination with past, present, or reasonably foreseeable future projects listed in Table 4-2 would not result in significant cumulative transportation impacts.

There is no potential for significant impacts from the Proposed Action on transportation in the vicinity of NSE.

4.2.8 VISUAL AND AESTHETICS

NSE is one of a number of industrial land uses on the waterfront area of the city of Everett. NSE is experienced visually from prominent public vantage points to the east. NASNI is experienced from prominent public vantage points on adjacent shoreline and marine areas as well as from the city of San Diego across the bay. Military aircraft carriers and related ships have been recognized as part of both installations for decades, and the nature of the shoreline constantly changes. Although the overall visual effect of the SBX Radar Vessel may be perceived as intrusive at NSE and NASNI, the cumulative impact of the Proposed Action in conjunction with the actions listed in Table 4-1 and 4-2 is mitigated because the proposed activities would not occur at the same time as the homeporting of a nuclear-powered aircraft carrier, thus decreasing the visual and aesthetic impact.

4.2.9 WATER RESOURCES

Effects of the Proposed Action, specifically underwater welding activities having the potential to introduce metals into waters, are insignificant. These metal constituents are not readily dissolved in the surround waters and would fall to the harbor floor. No long-term accumulation is expected; therefore, the cumulative effects on water quality from implementation of the Proposed Action in combination with past, present, or reasonably foreseeable future projects listed in Tables 4-1 and 4-2 would be minimal.

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5.0 REFERENCES

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6.0 List of Preparers

6.0 LIST OF PREPARERS

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7.0 Agencies and Individuals Contacted

7.0 AGENCIES AND INDIVIDUALS CONTACTED

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Boeing

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Navy Region Southwest
Naval Air Station North Island
San Diego, CA

National Marine Fisheries Service
Washington State Habitat Conservation Branch

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Regional Director, Naval Base Coronado
Environmental Installation Program
Manager, Naval Air Station North Island

Suzanne Graham
Marie Biologist, Environmental Department
Naval Region Southwest

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Regional Legal Service Office
Naval Region Northwest–Bangor, WA

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NAVFAC NW Public Works Department
Naval Station Everett
Everett, WA

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Stillaguamish Tribe of Indians

Honorable Henry Cagey
Lummi Nation

Honorable Leonard Forsman
Suquamish Tribe

Honorable Brian Cladoosby
Swinomish Indian Tribal Community

Honorable Melvin R. Sheldon, Jr.
Tulalip Tribes of Washington

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New Orleans, LA

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Community Planner, Naval Base Coronado
NAVFAC, Southwest

Carl (Bruce) Shaffer, AICP
Naval Base Coronado
Public Works Office
Community Plans and Liaison

Mr. Mark Delaplaine
California Coastal Commission

Mr. Eric Chavez
National Marine Fisheries Service California

Appendix A
Distribution List

APPENDIX A
DISTRIBUTION LIST

LIBRARIES

Coronado Public Library
640 Orange Ave
Coronado, CA 92118

San Diego Central Library
820 E St
San Diego, CA 92101

Everett Main Library
2702 Hoyt Ave
Everett, WA 98201

South Whidbey Island
Langley Library
104 Second St
Langley, WA 98260

Seattle Central Library
1000 Fourth Ave
Seattle, WA 98104

FEDERAL, STATE, AND LOCAL, AND TRIBAL GOVERNMENTS

Federal Governments

California

Honorable Susan Davis
U.S. House of Representatives, District 53, California

Honorable Barbara Boxer
Senator, California

Honorable Dianne Feinstein
Senator, California

Ms. Sandy Vissman
Field Supervisor, U.S. Fish and Wildlife Service, Carlsbad Office

Mr. Daniel Hazard
Office of U.S. Representative Susan Davis
Ms. Caridad Sanchez
Office of U.S. Senator Barbara Boxer

James Peterson
Office of U.S. Senator Dianne Feinstein

Washington

Mr. Luke Loeffler
Community Representative, Office of U.S. Representative Rick Larsen

Ms. Sheila Babb
Deputy State Director, Office of U.S. Senator Patty Murray

Mr. Uriel Ybarra
Northwest Regional Director, Office of U.S. Senator Patty Murray

Honorable Congressman Rick Larsen
Second District, Washington

Honorable Maria Cantwell
Senator, Washington

Honorable Patty Murray
Senator, Washington

Mr. Jim McDermott
Office of U.S. Representative

Mr. Peter Mills
Community Representative, Office of U.S. Representative, Mr. Jim McDermott

Ms. Nancy Biery State Director of Outreach, Office of U.S. Senator Maria Cantwell

Ms. Sally Hintz
State Director of Outreach, Office of U.S. Senator Maria Cantwell

Mr. Geoff Kirkwood
Office of U.S. Senator Patty Murray

Ms. Kathryn Vernon
Regional Administrator, FAA Northwest Mountain Region

CDR Jerry Hermann
Department of the Navy Representative, FAA Western Service Area (ANM-903)

RADM Gary Blore
U.S. Coast Guard, District 13

State Governments and Agencies

California

Honorable Toni Atkins
Assembly Member, 76th District, California

Honorable Ben Hueso
Assembly Member, 79th District, California

Honorable Christine Kehoe
Senator, District 40, California

Honorable Juan Vargas
Senator, District 40, California

Honorable Jerry Brown
Governor, California

Mr. Mark Delaplaine
California Coastal Commission

Mr. Peter Douglas
Executive Director, California Coastal Commission

Ms. Sherilyn Sarb
Deputy Director, California Coastal Commission, San Diego Coast District Office

Mr. Ed Pert
Regional Manager, California Department of Fish and Game, South Coast Region

Mr. William Withycombe
Regional Administrator

Mr. Gil Duran
Governor's Press Secretary

Washington

Mr. Phil Anderson
Director, Washington State Department of Fish and Wildlife

Honorable Christine Gregoire
Governor, Washington

Honorable Barbara Bailey
Representative–10th District, Washington State House of Representatives

Honorable John McCoy
Representative–38th District, Washington State House of Representatives

Honorable Mike Sells
Representative–38th District, Washington State House of Representatives

Honorable Norma Smith
Representative–10th District, Washington State House of Representatives

Honorable Nick Harper
Senator–38th District, Washington State

Honorable Mary Margaret Haugen
Senator–10th District, Washington State

Local Governments

California

Honorable Mayor Casey Tanaka
City of Coronado

Honorable Greg Cox
County of San Diego Board of Supervisors
District 1

Ms. Rachel Hurst
Director, City of Coronado, Community Development

Mr. Ronald Powell
Director, Unified Port of San Diego, Community Services

Honorable Mayor Jerry Sanders
City of San Diego

Washington

Honorable Mayor Ray Stephanson
City of Everett

Honorable Mayor Vern Little
City of Lake Stevens

Honorable Mayor Paul Samuelson
City of Langley

Honorable Mayor Jon Nehring
City of Marysville

Honorable Mayor Mike Todd
City of Mill Creek

Honorable Mayor Joe Marine
City of Miukilteo

Ms. Angie Homola
County Commissioner, Island County

Ms. Helen Price Johnson
County Commissioner, Island County

Ms. Kelly Emerson
County Commissioner, Island County

Mr. Dave Gossett
County Councilmember, Snohomish County

Mr. John Koster
County Councilmember, Snohomish County

Mr. Brian Sullivan
County Councilmember, Snohomish County

Mr. Aaron Reardon
County Executive, Snohomish County

Mr. Dave Somers
County Councilmember, Snohomish County

Ms. Stephanie Wright
County Councilmember, Snohomish County

Mr. Pat McClain
Government Affairs Director, City of Everett

Mr. Paul Kaftanski
Director, Everett Parks and Recreation

Mr. Dave Waggoner
Airport Director, Paine Field Airport

Ms. Catherine D'Ambrosia
Communications and Legislative Affairs Assistant, Port of Everett

Ms. Diane Jaffa
President, Navy League of the United States–Seattle

Tribal Governments

The Honorable Henry Cagey
Chairman, Lummi Nation

The Honorable Shawn Yanity
Chairman, Stillaguamish Tribe of Indians

The Honorable Leonard Forsman
Chairman, Suquamish Way

The Honorable Brain Cladoosby
Chairman, Swinomish Indian Tribal Community

The Honorable Melvin R. Sheldon, Jr.
Chairman, Tulalip Tribes of Washington

Appendix B
Correspondence

APPENDIX B
CORRESPONDENCE

B.1 NAVAL STATION EVERETT CORRESPONDENCE

Press Release

Naval Station Everett
2000 West Marine View Drive, Everett, WA 98207-5001

Contact: Kristin Ching
Naval Station Everett Public Affairs
T (425) 304-3202
C (360) 340-5321

PRESS RELEASE
Naval Station Everett Public Affairs

FOR IMMEDIATE RELEASE
July 20, 2010

Navy Hosts Community Outreach Events to Discuss Proposed SBX Vessel Maintenance and Repair Project

The U.S. Navy invites the public to attend two community outreach events on July 27, 2010, in Everett, Wash., and July 29, 2010, in Langley, Wash., to discuss a proposed maintenance and repair project at Naval Station Everett.

The Missile Defense Agency (MDA) needs to perform limited maintenance work on its Sea-Based X-Band Radar (SBX) vessel. The required maintenance can be accomplished only at a deepwater port. Three locations on the West Coast, including Naval Station Everett, have the appropriate depth to accomplish the repairs and are under consideration for use.

The type of maintenance under consideration is similar to the type of maintenance the Navy performs responsibly on Navy vessels at Navy shipyards. MDA will not operate the X-Band Radar while in port for the required maintenance.

The public is encouraged to attend the open-house style community outreach events in Everett and South Whidbey Island to learn about the proposal and to provide comments for consideration in an environmental assessment. Community input ensures that decision makers consider local knowledge, issues and concerns prior to making a decision.

Two community outreach events are scheduled at the following locations:

Date: **July 27, 2010, 5:00 to 8:00 p.m.**
Location: Everett Community College
Whitehorse Hall, Room 105
2000 Tower St.

Date: **July 29, 2010, 5:00 to 8:00 p.m.**
Location: South Whidbey Island
Langley Middle School Cafeteria
723 Camano Ave.

Information regarding the SBX Environmental Assessment can be found at the project website (www.govsupport.us/sbxea).

MEDIA AVAILABILITY: If media are interested in attending or receiving further information prior to the event, contact Kristin Ching, Public Affairs Officer, 425-304-3202.

Background Information:

The Missile Defense Agency (MDA) needs to perform limited maintenance work on its Sea-Based X-Band Radar (SBX), an integral part of the nation's Ballistic Missile Defense System. The SBX vessel's thrusters, which help move it through the water, require periodic maintenance to retain American Bureau of Shipping/U.S. Coast Guard certification, which is required for the vessel to operate. Thruster maintenance is needed in order to maintain a full suite of radars for anti-ballistic missile testing and defense.

MDA also needs to perform additional maintenance and repair on the vessel. Work includes repainting needed areas, inspecting and repairing other vessel components, and upgrading some internal systems.

-USN-

108 CANNON HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
(202) 225-2605

DISTRICT OFFICES:
119 N. COMMERCIAL STREET, SUITE 1350
BELLINGHAM, WA 98225
(360) 733-4500

2930 WETMORE AVENUE, SUITE 9F
EVERETT, WA 98201
(425) 252-3188

E-MAIL: Rick.Larsen@mail.house.gov
http://www.house.gov/larsen

RICK LARSEN
2ND DISTRICT, WASHINGTON

Congress of the United States
House of Representatives
Washington, DC 20515–4702

COMMITTEES:
TRANSPORTATION AND INFRASTRUCTURE

ARMED SERVICES

BUDGET

July 27, 2010

Mr. David Hasley
Deputy Chief of Staff, Engineer
U.S. Army Space and Missile Defense Command
P.O. Box 1500
Huntsville, AL 35807

Dear Mr. Hasley:

I am writing to express my views on the Sea-Based X-Band Radar (SBX) Radar Vessel Maintenance and Repair Environmental Assessment.

I recognize that the SBX is vital to our national security, and that certain maintenance to this platform can only be performed at three deepwater facilities in the U.S. Further, SBX maintenance will provide a significant economic boost at a time when our economy is struggling and unemployment remains high.

However, Naval Station Everett was planned and built to support nuclear-powered aircraft carriers and surface combatants, and community members have raised meritorious concerns regarding the SBX's effect on the environment and the core missions of the base. I believe that SBX maintenance should only be performed at Everett if the following conditions are met:

- The time period for maintenance should be limited in nature;
- The SBX radar should not be operational while under maintenance;
- The maintenance period should not interfere with Naval Station Everett's core missions or limit existing ships' access to piers;
- The US Navy and Missile Defense Agency should conduct a thorough community outreach effort in order to understand fully the community's views and concerns;
- Under no circumstance should Naval Station Everett be considered as a permanent homeport for SBX.

Thank your for your consideration of my views.

Best,

Rick Larsen
United States Representative
Washington State, 2nd Congressional District

PRINTED ON RECYCLED PAPER

OFFICE OF THE MAYOR

Ray Stephanson
Mayor

August 11, 2010

Deputy Chief of Staff, Engineer
U.S. Army Space and Missile Defense Command
Attn: SMDC-ENN (Mr. David Hasley)
PO Box 1500
Huntsville, AL 35807

Email: sbxea@govsupport.us

Dear Mr. Hasley:

I appreciated the outreach efforts conducted in Everett on July 27 regarding the possibility of Sea-Based X-Band Radar (SBX) Radar Vessel Maintenance and Repair Environmental Assessment. The Open House at Everett Community College attracted neighborhood and community leadership who have deep and long standing concerns about SBX presence on our waterfront. As you well know, the Everett community spoke with great intensity on the SBX in 2003.

Col. Mark Arn and I had a frank and open discussion regarding the maintenance availability of the SBX at Naval Station Everett later this year. I have concerns, which I shared with Col. Arn regarding even limited SBX presence on Naval Station Everett and the reaction of the community.

I recognize that the SBX is vital to our national security and that certain maintenance to this platform can only be performed at three deepwater facilities in the U.S. - Everett, San Diego and Todd Shipyards, Seattle. I also recognize SBX maintenance will provide some economic benefits for a limited period of time.

As I related to Col. Arn, as well as CNO Admiral Gary Roughead and Navy officials in April, Naval Station Everett was planned and built to support nuclear-powered aircraft carriers and surface combatants. I remain concerned about the SBX's effect on the environment, the Port, the community and the core missions of Naval Station Everett. While I have been assured that the time period for maintenance is limited; the SBX radar would not be operational in port; and noise from generators would be minimal, interference with the operations of Naval Station Everett and the Port of Everett during this maintenance availability, in my view, is still in question.

CITY OF EVERETT • 2930 Wetmore Ave., Suite 10A • Everett, WA 98201 • 425-257-8700 • Fax 425-257-8729

August 11, 2010
Page 2

I remain unconvinced that this use of Naval Station Everett is in the best interests of base, the Port and the waterfront. SBX dominance of Pier Alpha facilities jeopardizes the naval station's port operations, Port of Everett ship traffic and possibly Port security. I believe that SBX maintenance should be conducted elsewhere.

Thank you for your consideration.

Sincerely,

Ray Stephanson
Mayor

C: U.S. Representative Rick Larsen
Capt. Mike Coury, Naval Station Everett
John Mohr, Executive Director, Port of Everett
Everett City Council

DEPARTMENT OF THE NAVY
NAVAL STATION EVERETT
2000 WEST MARINE VIEW DRIVE
EVERETT, WASHINGTON 98207-5001

5090
Ser N45/005
September 8, 2010

Mr. Steve Landino
Washington State Habitat Conservation Branch
National Marine Fisheries Service
510 Desmond Drive SE, Suite 103
Lacey, WA 98503

Dear Mr. Landino:

Enclosed is a biological assessment for proposed maintenance and repair activities on the Government-owned Sea-based X-Band Radar Vessel (SBX vessel) that would occur at Naval Station Everett (NSE). The SBX vessel consists of a converted semi-submersible, mobile, twin-hulled platform on which an X-Band Radar and other Ground-Based Midcourse Defense system components are mounted. The SBX vessel is presently owned by the Missile Defense Agency (MDA) and contractor-operated by Boeing. The MDA is proposing to bring the SBX vessel to NSE for maintenance and repair work.

Proposed activities that would occur at NSE include inspection and maintenance work on the four SBX vessel thrusters and other interior and exterior maintenance and repairs, as described in the enclosed biological assessment.

We are requesting informal consultation pursuant to Section 7(a)(2) of the Endangered Species Act and the regulations implementing the Act, 50 CFR Section 402.13. The MDA has determined that the proposed action *is not likely to adversely affect* Puget Sound Chinook salmon (*Oncorhynchus tshawytscha*), Puget Sound steelhead (*O. mykiss*), or the Southern Resident killer whale (*Orcinus orca*).

We request consultation pursuant to the Magnuson-Stevens Act on effects to Essential Fish Habitat. The Navy and MDA have determined that the proposed action *will not adversely affect* Essential Fish Habitat.

5090
Ser N45/005
September 8, 2010

For additional information, please contact Linda Wagoner at (425) 304-3466 or by email at linda.wagoner@navy.mil.

Sincerely,

J.A. MILLER
Installation Environmental PGRM MGR
Naval Station Everett

Enclosure: Biological Assessment

2

DEPARTMENT OF THE NAVY
NAVAL STATION EVERETT
2000 WEST MARINE VIEW DRIVE
EVERETT, WASHINGTON 98207-5001

5090
Ser N45/004
September 8, 2010

Mr. Ken Berg
U.S. Fish and Wildlife Service
Western Washington Fish and Wildlife Office
510 Desmond Dr. SE Suite 102
Lacey, WA 98503

Dear Mr. Berg:

Enclosed is a biological assessment for proposed maintenance and repair activities on the Government-owned Sea-based X-Band Radar Vessel (SBX vessel) that would occur at Naval Station Everett. The SBX vessel consists of a converted semi-submersible, mobile, twin-hulled platform on which an X-Band Radar and other Ground-Based Midcourse Defense system components are mounted. The SBX vessel is presently owned by the Missile Defense Agency (MDA) and contractor-operated by Boeing. The MDA is proposing to bring the SBX vessel to Naval Station Everett (NSE) for maintenance and repair work.

Proposed activities that would occur at NSE include inspection and maintenance work on the four SBX vessel thrusters and other interior and exterior maintenance and repairs, as described in the enclosed biological assessment.

We request informal consultation pursuant to Section 7(a)(2) of the Endangered Species Act and the regulations implementing the Act, 50 CFR Section 402.13. The MDA has determined that the proposed action is *not likely to adversely affect* Puget Sound bull trout (*Salvelinus confluentus*) or the marbled murrelet (*Brachyramphus marmoratus*).

5090
Ser N45/004
September 8, 2010

For additional information, please contact Linda Wagoner at (425) 304-3466 or by email at linda.wagoner@navy.mil.

Sincerely,

J.A. MILLER
Installation Environmental PGRM MGR
Naval Station Everett

Enclosure: Biological Assessment

2

DEPARTMENT OF THE NAVY
NAVAL STATION EVERETT
2000 WEST MARINE VIEW DRIVE
EVERETT, WASHINGTON 98207-5001

5090
Ser N45/006
September 16, 2010

Ms. Rebekah Padgett
Washington Department of Ecology
Northwest Regional Office
3190 160th Avenue SE
Bellevue, WA 98008

Dear Ms. Padgett:

Enclosed is a Federal Consistency Determination pursuant to the Coastal Zone Management Act (16 USC § 1451 et seq) and Washington's Coastal Zone Management Program for proposed maintenance and repair activities on the Government-owned Sea-based X-Band Radar Vessel (SBX vessel). The SBX vessel consists of a converted semi-submersible, twin-hulled platform on which an X-Band Radar and other Ballistic Missile Defense System components are mounted. The SBX vessel is presently owned by the Missile Defense Agency (MDA) and contractor-operated by Boeing.

The MDA is proposing to bring the SBX vessel to Naval Station Everett (NSE) for needed maintenance. Proposed activities include inspection and maintenance of the four SBX vessel thrusters and other interior and exterior work, as described in the enclosed Consistency Determination. The SBX vessel would be at NSE for about three months.

The MDA has determined that the proposed activity complies to the maximum extent practicable with the enforceable policies within the six laws identified in Washington's Coastal Zone Management Program document.

For additional information, please contact Ms. Linda Wagoner at (425) 304-3466 or by email at linda.wagoner@navy.mil.

Sincerely,

J. A. Miller
Installation Environmental PGM Mgr
Naval Station Everett

Enclosures: CZMA Consistency Determination

U.S. Department of Homeland Security

United States Coast Guard

Captain of the Port
United States Coast Guard
Sector Puget Sound

1519 Alaskan Way South
Seattle, WA 98134-1192
Staff Symbol: s
Phone: (206) 217-6203
Fax: (206) 217-6244

16650

SEP 17 2010

Missile Defense Agency (MDA/SNX)
Attention: Colonel Mark Arn
X-Band Radars Project Manager
Bldg 5222, Martin Road
Redstone Arsenal, AL 35898

Dear Colonel Arn:

As the Captain of the Port responsible for maritime safety and security within the Puget Sound region, I have become aware of the Missile Defense Agency's plans to possibly perform maintenance work on the Sea-Based X-Band Radar (SBX) at a location within Puget Sound, either Naval Station Everett or Todd Shipyard. I stand ready to support entry of SBX into my Captain of the Port zone, however, I have several safety and security concerns that need to be addressed well in advance of SBX's arrival.

The waters of the Pacific Northwest, particularly in the fall and winter months when SBX may be arriving, are inherently dangerous. Our weather, particularly in the approaches to the Strait of Juan de Fuca, can be extreme. Thus, safety of SBX is of utmost concern. The environmental sensitivities of this pristine area dictate that SBX's seakeeping and emergency towing capability be robust with adequate thruster/generator capacity to maintain a trackline in storm force winds and follow the prescribed IMO adopted Traffic Separation Scheme. I desire a dialog with you regarding the following issues:

- SBX's seakeeping and thruster capability,
- Sea-state and environmental condition limitations that would be problematic in maintaining a trackline or establishing an emergency tow,
- SBX's towing configuration and the availability of adequate towing resources both when SBX is ballasted and operating on pontoons, and
- SBX's contingency plans for an oil spill response.

Additionally, the security of SBX while operating within the port must be assured. The significant distances from the entrance of the Strait of Juan de Fuca to the Ports of Everett or Seattle will make escort security a challenge, particularly due to SBX's slow speed of advance and choke points in Admiralty Inlet. Planning for this, including the establishment of any security zones, should start soon if SBX will come to Puget Sound. Security of SBX while inport will be the responsibility of MDA as Coast Guard resources are routinely detailed to other missions. Thoroughly understanding SBX's ATFP Plan and the legal authorities for use of force by SBX's contract crew and how those security measures will address operations of nearby commercial and recreational vessel traffic and maritime facilities, is also essential.

I look forward to working with you to ensure a successful availability period should SBX come to Puget Sound. Please contact myself or Mr. Mark Ashley, U. S. Coast Guard Sector Puget Sound Vessel Traffic Service Director at (206) 217-6046 to begin addressing these concerns.

Sincerely,

S. J. FERGUSON
Captain, U. S. Coast Guard
Sector Commander

Copy: CCGDThirteen (dp), (dr)

2

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, Washington 98115

NMFS Tracking No.:
2010/04431

October 8, 2010

J.A. Miller
Installation Environmental Program Manager
Department of the Navy
Naval Station Everett
2000 West Marine View Drive
Everett, WA 98207 - 5001

Re: Endangered Species Act Section 7 Informal Consultation for the Department of Navy Radar Vessel Repair and Maintenance Project in Snohomish County, (Lower Snohomish River 6th Field HUC 171100110201).

Dear Mr. Miller:

This correspondence is in response to your request for consultation under the Endangered Species Act (ESA).

The Department of the Navy (Navy) submitted a Biological Assessment (BA) on behalf of the Missile Defense Agency (MDA) to the National Marine Fisheries Service (NMFS), which was received on September 10, 2010. The Navy is handling all of the necessary environmental permitting for the MDA, even though the MDA will be conducting the actual vessel maintenance and repair. The Navy requested NMFS' concurrence with the following determinations: (1) "may affect, not likely to adversely affect" Puget Sound Chinook (*Oncorhynchus tshawytscha*) salmon (PS Chinook), (2) "may affect, not likely to adversely affect" designated critical habitat for PS Chinook salmon, (3) "may affect, not likely to adversely affect" Puget Sound steelhead (*O. mykiss*) (PS steelhead), and (4) "may affect, not likely to adversely affect" Southern Resident (SR) killer whales (*Orcinus orca*). The NMFS listed PS Chinook salmon as threatened under the ESA on March 24, 1999 (64 FR 14308). Following listing, NMFS designated critical habitat for PS Chinook salmon on September 2, 2005 (70 FR 52630). On June 11, 2007, NMFS listed the PS steelhead Distinct Population Segment (DPS) as threatened under the ESA (72 FR 26722). SR killer whales were listed under the ESA on November 18, 2005 (70 FR 69903).

The NMFS conducts consultations with the COE under section 7(a)(2) of the ESA, and its implementing regulations found at 50 CFR 402.

The MDA is bringing the Sea-Based X-Band (SBX) radar vessel to Naval Station Everett, because of it deep-water bay, to perform inspection, maintenance, and repair work. The SBX Radar Vessel consists of a converted semi-submersible mobile, twin-hulled platform on which an X-Band Radar and other Ground-Based Midcourse Defense system components have been mounted. The operation of the SBX Radar Vessel is dependent upon a required 5-year maintenance and repair cycle for the four vessel thrusters. The work will begin in mid-March and be completed 60 days later. Due to the size of the vessel, some maintenance and repair items must be completed at a deep-water facility.

These activities on the SBX Radar Vessel are similar to activities that are performed on all U.S. Navy ships, though not normally performed at Naval Station Everett. The work will be conducted in the interior and exterior of the vessel and the activities include: thruster maintenance which is analogous to propeller work, painting and paint removal, pressure washing, welding (i.e. five day duration), blasting, sanding, inspections, installation of new equipment, removal of broken and obsolete equipment, equipment calibration, and washing of equipment and vessel using cleaning solvents. The interior work will not be analyzed further.

A majority of the outside work will involve hull preservation and major structural work. Specific in-water work also involves a purging component incorporating an inlet structure suspended at 20 feet below the surface to extract cool water at a low flow velocity, eventually discharging warm water (6 to 10 degrees over ambient water temperature) back into the bay. The inlet structure will have a very fine mesh screen (i.e. .79 inch) attached to avoid accidental suction or impingement of aquatic species. In addition, there will be only four days of under-water welding during the 90 day work period. The Navy and the MDA will be implementing standard industry Best Management Practices (BMPs) often used in ship-building activities which are: floating containment, standard spill kits, use of tarps or hanging curtains, utilizing small (2 gallon) containers for paint and solvents, etc.

The aquatic action area includes 50 feet around the immediate area of the docked vessel in the east waterway. The principal effects of this action include accidental suction or impingement of aquatic species during uptake of cooler water and discharge of cooling water which is minimally warmer than ambient temperatures in the bay. Because the MDA is using a fine mesh screen to avoid accidental suction and the fact that juvenile salmonids prefer to forage in much shallower depths, it is unlikely that these habitat changes will affect listed species.

Species Determinations

Puget Sound Chinook Salmon
Puget Sound Steelhead

The short and long-term effects to PS steelhead will be discountable because they are seldom observed in Puget Sound or upper sound at any life stage. Juvenile steelhead rear in freshwater for over a year and are thought to pass quickly through estuarine areas in May or June. Adult steelhead that return to the Snohomish to spawn are expected to avoid the highly industrialized port area.

Vessel maintenance and repair effects will be discountable because juvenile PS Chinook are not expected to be present during these activities. Peak juvenile abundance in the action area is expected to occur between April and June. Adult and sub-adult Chinook salmon may be present throughout the year but are not nearshore dependent and are expected to avoid areas of vessel maintenance. Adult PS Chinook will have passed through the action area before the construction period begins.

If a few PS Chinook salmon or PS steelhead do occur in the action area, the effects will be insignificant because the applicant is using BMPs that will eliminate the potential for accidental spills of a variety of solvents, paints, and fuel or the accidental suction/impingement of aquatic species and therefore limits exposure of juvenile or adult fish.

Because all potential adverse effects are discountable or insignificant, NMFS concurs with the Navy's effect determination of "may affect, not likely to adversely affect" for PS Chinook salmon and PS steelhead.

Southern Resident Killer Whales

The final rule listing SR killer whales as endangered identified several potential factors that may have caused their decline or may be limiting recovery. These are: quantity and quality of prey, toxic chemicals which accumulate in top predators, and disturbance from sound and vessel traffic. The rule also identified oil spills as a potential risk factor for this species. The final recovery plan includes more information on these potential threats to SR killer whales (73 FR 4176).

SR killer whales spend considerable time in the Georgia Basin from late spring to early autumn, with concentrated activity in the inland waters of the state of Washington around the San Juan Islands, and then move south into Puget Sound in early autumn. While these are seasonal patterns, Southern Resident killer whales have the potential to occur throughout their range (from Central California north to the Queen Charlotte Islands) at any time of the year.

The Whale Museum manages a long-term database of SR killer whale sightings and geospatial locations in inland waters of Washington. While these data are predominately opportunistic sightings from a variety of sources (public reports, commercial whale

watching, Soundwatch, Lime Kiln State Park land-based observations, and independent research reports), SR killer whales are highly visible in inland waters, and widely followed by the interested public and research community. The dataset does not account for level of observation effort by season or location; however, it is the most comprehensive long-term dataset available to evaluate broad scale habitat use by SR killer whales in inland waters. For these reasons, NMFS relies on the number of past sightings to assess the likelihood of SR killer whale presence in a project area when work would occur.

A review of this dataset from the years 1990 to 2008 indicates that SR killer whales are rarely observed in the project vicinity during the months that in-water construction activities are proposed (Table 1).

Table 1. SR Killer Whale Sightings in the Project Vicinity

Month	Number of Days Sighted[1]
March	1
April	0
May	0

[1] Unique sighting days during the work window from 1990 to 2008.

Given the underwater sounds in the project vicinity are expected to be less than those of a ship underway, and the unlikely occurrence of SR killer whales in the project vicinity, NMFS concludes that potential effects from the proposed action are discountable because it is extremely unlikely that SR killer whales would be exposed to the proposed activities at the Naval Station of Everett. The proposed action is not likely to adversely affect salmonids (prey of SR killer whales) and is not anticipated to have a measurable effect on prey quality because the applicant will use BMPs that will limit the exposure to juvenile and adult salmon. Therefore, the NMFS finds that the potential adverse effects to SR killer whales are discountable or insignificant and concurs with the COE determination of "may affect, not likely to adversely affect" for SR killer whales.

Critical Habitat Determination

The action area includes designated critical habitat for PS Chinook salmon. Critical habitat consists of six Primary Constituent Elements (PCEs) for the PS Chinook Evolutionary Significant Unit (ESU) (September 2, 2005, 70 FR 52662). The action area contains the nearshore marine area primary constituent element (PCE) of Puget Sound Chinook salmon critical habitat that includes areas free of obstruction and excessive predation with (1) water quality and quantity conditions and foraging opportunities, including aquatic invertebrates and fishes, supporting growth and maturation, and (2) natural cover including submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side habitat.

NMFS analyzed the potential impacts of the project on critical habitat of PS Chinook salmon and determined that the impacts will be insignificant to the conservation value of

nearshore marine areas. A majority of the outside work consists of hull preservation, thruster maintenance, and underwater welding that involve sand blasting, scraping, and prepping. All of these activities will be minimized by BMPs commonly used during shipbuilding activities. The proposed project has the potential to slightly alter water quality during these activities but it will be limited to a localized area within the East Waterway. Effects from recirculating water will be minimized by inlet structure placement depth (i.e. 20 feet below surface), utilizing a fine mesh screen, and incorporating a low flow velocity which eliminates the potential for accidental suction or impingement. When sediment re-suspension or warm water discharge occurs, the effects will be rapidly diluted and temporary, and will not significantly impact water quality.

Because all potential adverse effects are discountable or insignificant, NMFS concurs with the Navy's effect determination of "may affect, not likely to adversely affect" for the critical habitat of PS Chinook salmon.

This concludes informal consultation pursuant to the regulations implementing the ESA, 50 CFR 402.10. The Navy must re-analyze this ESA consultation if new information reveals effects of the action that may affect listed species in a way not previously considered, the action is modified in a manner that causes an effect to the listed species or critical habitat that was not previously considered, or a new species is listed, or critical habitat designated, that may be affected by the identified action.

The Navy determined that the project "would not adversely affect" habitats which have been designated as Essential Fish Habitat (EFH) for various life stages of 46 species of Pacific coast groundfish, four species of coastal pelagics, and three species of Pacific salmon. Therefore, the NMFS did not conduct an EFH analysis for this project.

If you have questions regarding this consultation, please contact Sean Callahan of the Washington State Habitat Office at (206) 526-4744, or by electronic mail at Sean.Callahan@noaa.gov.

Sincerely,

William W. Stelle, Jr.
Regional Administrator

cc: Linda Wagoner, Navy

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Northwest Regional Office • 3190 160th Avenue SE • Bellevue, Washington 98008-5452 • (425) 649-7000

October 20, 2010

Dan Spiegelberg
Missile Defense Agency
Attn: Environmental Division – DXFE
Building 5222 Martin Road
Redstone Arsenal, AL 35898

Dear Mr. Spiegelberg:

RE: Coastal Zone Management Consistency Status Letter for Sea-Based X-Band Radar Vessel Project, Naval Station Everett, Everett, Snohomish County, Washington

The Washington State Department of Ecology (Ecology) received your Certification of Consistency with the Washington State Coastal Zone Management (CZM) Program for the above-referenced project on September 21, 2010. A Coastal Zone Management (CZM) consistency determination is required.

CZM Consistency
The enforceable policies of the CZM Program in Washington State are the:

- State Environmental Policy Act
- Shoreline Management Act
- Clean Air Act
- Federal Water Pollution Control Act (Clean Water Act)

Certification of consistency with the CZM Program is Ecology's determination that a project complies with these statutes and regulations and will have minimal or no impact on coastal resources.

Ecology is currently reviewing your submittal and will issue a public notice prior to concurring with or objecting to your CZM certification statement.

Ecology has 60 days from the receipt of the consistency analysis to make a CZM consistency determination.

I look forward to working with you on your proposal. Please contact me if you have any questions regarding your application or the CZM process at (425) 649-7129 or e-mail rpad461@ecy.wa.gov.

Sincerely,

Rebekah R. Padgett
Federal Permit Manager

cc: Linda Wagoner, Naval Station Everett
Catherine Blackwell, U.S. Army Corps of Engineers

e-cc: David Pater, Ecology

DEPARTMENT OF ECOLOGY
SEA-Federal Permit Unit
PO BOX 47600
OLYMPIA WA 98504-7600

DAN SPIEGELBERG--ENV'L DIVISION DXFE
MISSILE DEFENSE AGENCY
BLDG 5222 MARTIN RD
REDSTONE ARSENAL AL 35898

4505

Public Notice of Application for State of Washington Coastal Zone Management Act Consistency

Project Name: Maintenance and Repair of Sea-based X-Band Radar Vessel (SBX Vessel)

Applicant: Missile Defense Agency (MDA)

Project Description: MDA is proposing to bring the SBX Vessel to the west coast for 3 months to conduct maintenance activities. Naval Station Everett is one of three locations under consideration and is the subject of this review. The Everett site is a contingency should the preferred location (Todd Shipyard) not be viable.

Project Location: Vessel would be docked at Naval Station Everett, 2000 W. Marine View Dr., Everett, WA.

Public Notice Date: October 28, 2010
Comment Period Ends: Nov. 17, 2010

Application and Additional Information:
Ecology's Federal Permit Website
http://www.ecy.wa.gov/programs/sea/fed-permit/
Click on **Northwest Region**.

Ecology will evaluate whether the project is consistent with the Coastal Zone Management Act (CZMA). For a project to receive federal consistency under the State's Coastal Zone Management Program (CZMP), it must be in compliance with the programs six enforceable policies.

Ecology is requesting comments from the public, state and local agencies, tribes, and other interested parties to evaluate the impacts of each proposed activity. Conventional mail or e-mail comments on this public notice will be accepted and made part of the record.

Comments should be sent to:
Department of Ecology—SEA Program
Federal Project Coordinator
Post Office Box 47600
Olympia, Washington 98504
ecyrefedpermits@ecy.wa.gov

To obtain a hard copy of the project information, please call 360-407-7421.

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Washington Fish and Wildlife Office
510 Desmond Dr. SE, Suite 102
Lacey, Washington 98503

NOV - 8 2010

In Reply Refer To:
13410-2010-I-0554

John Miller, Installation Environmental
Program Manager
Department of the Navy
ATTN: Naval Station Everett (Linda Wagoner)
2000 West Marine View Drive
Everett, Washington 98207-5001

Dear Mr. Miller:

This is in response to your letter and attached Biological Assessment (BA), for the proposed maintenance and repair activities on the Sea-based X-Band Radar Vessel (SBX vessel) that would occur in Port Gardner Bay, at Naval Station Everett (Naval Station) in Snohomish County, Washington. Your letter and the BA were received in our office on September 8, 2010. The letter requests our concurrence with your finding that the project "may affect, but is not likely to adversely affect" bull trout (*Salvelinus confluentus*) and marbled murrelet (*Brachyramphus marmoratus*). This request was submitted in accordance with section 7(a) (2) of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act).

The SBX radar vessel is a converted oil drill platform that is 238 feet (ft) wide, 398 ft long, 250 ft tall and has a draft of approximately 50 ft. The SBX vessel, which is owned by the Army's Missile Defense Agency, has a permanent crew of 83 people, a fuel capacity of 1.88 million gallons, and a surface area of 94,724 ft^2 (2.1 acres). The proposed action consists of inspection, maintenance and repair activities to the SBX vessel. The action is needed to maintain the vessel's 5-year certification and to ensure the operational capability of the SBX vessel and its systems. Maintenance activities would be conducted both in and outside of the SBX vessel. According to the BA, the following work activities would be performed:

TAKE PRIDE IN AMERICA

- Welding
- Painting
- Sanding
- Solvent cleaning
- Paint removal (scraping, sandblasting and chipping)
- Underwater welding
- Acid cleaning
- Testing of the propulsion system
- Testing of loudspeakers and warning systems

Additional staging and support activities will occur at the adjacent pier. The vessel would be docked on the east side of Pier A in area normally occupied by an aircraft carrier. Both vessels would be docked at Everett while work is being done on the SBX vessel. The duration of the project is anticipated to be approximately 90 days. Testing of the 3.4 megawatt thrusters is anticipated to take 45 days and would occur concurrently with other maintenance activities. The SBX radar vessel would use a large volume of water from the bay in heating, ventilation and operation of the generators. The U.S. Navy is requiring the implementation of a large number of Best Management Practices to minimize impacts to listed species, water quality and the environment (Table 3-4 of the BA).

Bull trout and marbled murrelets may be affected by the following:

- Elevated sound levels (in air and under water)
- Exposure to chemicals
- Presence of the SBX vessel in port
- Activities conducted in the water, on deck, and at the pier

The Naval Station is not designated bull trout or marbled murrelet critical habitat. Based on the information provided, we have concluded that effects to the federally listed bull trout and marbled murrelet would be insignificant or discountable. Therefore, we concur with your "may affect, not likely to adversely affect" determination for these species. Our conclusion is based on the following rationale.

Bull trout

Bull trout use Possession Sound for foraging, migration, and overwintering and likely will be in the vicinity of the Naval Station at the time that maintenance activities are being conducted on the SBX vessel.

- None of the underwater activities are expected to generate sound pressure levels that could potentially harm bull. Most of the noise-generating activities will occur above the waterline and would not penetrate below the surface due to the buffering effect of the air-water interface. Underwater sound associated with testing of the propulsion systems,

underwater welding, and other activities may cause temporary avoidance of the area by bull trout. The U.S. Navy dock is located in an industrial port with high levels of vessel traffic and limited foraging opportunities. Because the underwater sound-generating activities will be intermittent and short in duration, effects to bull trout associated with exposure to elevated underwater sound levels are considered insignificant.

- Project activities may result in the discharge of small amounts of materials used to perform vessel repairs. However, bull trout are not anticipated to be measurably affected. With the implementation of the Best Management Practices provided in the Biological Assessment, the amount of materials released into the water column is expected to be minimal and occur infrequently. Therefore, effects to bull trout as a result of exposure to expended materials are considered to be insignificant.

- The proposed project would result in the suspension of a relatively minor amount of sediment. Although bull trout may be exposed to the sediment and increased turbidity, the concentration and duration of this exposure are not at levels that would result in a measurable effect to bull trout and are considered insignificant.

- In order to operate the vessel's cooling system while it is undergoing repairs, water will be pumped from the bay and circulated through the cooling system, then discharged back into the surrounding waters. The discharge of the cooling water may result in a slight increase in water temperature at the point of the discharge. However, water quality is not anticipated to be measurably impacted due to the relatively small amount of warmed water being discharged compared to the size of the receiving water body. Although bull trout may avoid or quickly pass through the thermal plume at the discharge, we do not anticipate operation of the cooling system to result in a significant alteration of behavior, impaired movement or reduction in foraging efficiencies. Therefore, effects to bull trout associated with potential exposure to elevated water temperature are considered insignificant.

- Naval Station Everett is the homeport for a large aircraft carrier, six combat ships, and two U.S. Coast Guard vessels. Repairs and maintenance to the SBX vessel will occur in the location where the aircraft carrier is usually docked. Because the SBX vessel is roughly the same size as the aircraft carrier that is usually docked there, impacts to bull trout due to the temporary presence of the SBX vessel in port are considered to be insignificant.

- The action area is a highly developed area with a heavily modified shoreline and dredged waterways. Vegetation is absent in the substrate under the piers. The proposed action does not occur within a documented or expected forage fish spawning area and bull trout prey species are not likely to be affected to any appreciable degree (i.e., some fish may be affected). Therefore, effects to bull trout via reduced forage fish abundance are not expected to be measurable.

Marbled Murrelet

- There is no suitable marbled murrelet nesting habitat within a mile of the Naval Station. Because the project will not affect suitable nesting habitat or generate sound above ambient background levels in forested areas that could be used by marbled murrelets for nesting, effects to nesting marbled murrelets are considered discountable.
- The project activities are not expected to result in underwater sound pressure levels that could injure or would measurably affect foraging marbled murrelets. Activities above the water line, such as repair work and testing of loudspeaker systems will also cause elevated in-air noise levels. Although marbled murrelets forage in Possession Sound, they are not expected to forage in the project area because of the high levels of vessel traffic and waterfront use and poor habitat quality along the industrial waterfront. Because better foraging opportunities are available in the marine areas adjacent to the project site, effects to marbled murrelets associated with exposure to elevated levels of underwater and in-air sound are considered insignificant.
- Project activities will cause temporary periods of elevated turbidity. Marbled murrelets are diving seabirds that rely on eyesight when hunting fish underwater. Because foraging efficiencies are appreciably reduced by high levels of turbidity, it is likely that marbled murrelets will avoid the area during construction. Because the area of impact is relatively small and isolated and there are ample foraging opportunities adjacent to the project site, effects to foraging marbled murrelets are not expected to be measurable and are considered insignificant.
- Repairs and maintenance to the SBX vessel will occur in the location where a similar-sized aircraft carrier is usually docked. Because the operation of lights, cooling systems, and other activities on and around the SBX vessel are comparable to background conditions in the port and it is unlikely that marbled murrelets forage in the vicinity of the industrial waterfront, impacts to marbled murrelets due to the temporary presence of the SBX vessel in port are considered to be insignificant.
- The proposed action does not occur within documented or potential forage fish spawning areas and marbled murrelet prey species are not likely to be affected by the proposed action to any appreciable degree. Operation of the vessel and use of the facility may re-suspend minor amounts of suspended sediments for a short time period through the testing of propulsion systems or other underwater activities. However, due to the low levels of turbidity and duration of exposure, the effects to forage fish are not expected to be measurable. Therefore, effects to marbled murrelets associated with potential impacts to prey resources are considered insignificant.

This concludes informal consultation pursuant to the regulations implementing the Act (50 CFR 402.13). This project should be re-analyzed if new information reveals effects of the action that may affect listed species or critical habitat in a manner, or to an extent, not considered in this consultation. The project should also be re-analyzed if the action is subsequently modified in a manner that causes an effect to a listed species or critical habitat that was not considered in this consultation, and/or a new species is listed or critical habitat is designated that may be affected by this project.

If you have any questions regarding this letter or the Act, please contact Tiffany Nabors at (360)753-4371 or Martha Jensen at (360) 753-9000, of this office.

Sincerely,

Martha L. Jensen

for Ken S. Berg, Manager
Washington Fish and Wildlife Office

cc:
WDFW, Region 4, Mill Creek, WA
WDOE, Bellevue, WA (R. Padgett)

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Northwest Regional Office • 3190 160th Avenue SE • Bellevue, Washington 98008-5452 • (425) 649-7000

November 18, 2010

Dan Spiegelberg
Missile Defense Agency
Attn: Environmental Division – DXFE
Building 5222 Martin Road
Redstone Arsenal, AL 35898

Dear Mr. Spiegelberg:

RE: **Coastal Zone Consistency for Maintenance and Repair of Sea-Based X-Band Radar Vessel (SBX Vessel) Project, Naval Station Everett, Everett, Snohomish County, Washington**

On September 21, 2010, Missile Defense Agency submitted a Certification of Consistency with the Washington State Coastal Zone Management Program (CZMP). Pursuant to Section 307(c)(3) of the Coastal Zone Management Act of 1972 as amended, Ecology concurs with Missile Defense Agency's determination that the proposed work is consistent with Washington's CZMP.

If you have any questions regarding Ecology's consistency determination please contact Rebekah Padgett at (425) 649-7129.

YOUR RIGHT TO APPEAL

You have a right to appeal this Order to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of this Order. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal you must do the following within 30 days of the date of receipt of this Order:

- File your appeal and a copy of this Order with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and this Order on Ecology in paper form - by mail or in person. (See addresses below.) E-mail is not accepted.

You must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.

ADDRESS AND LOCATION INFORMATION

Street Addresses	Mailing Addresses
Department of Ecology Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503 **Pollution Control Hearings Board** 1111 Israel Rd SW STE 301 Tumwater, WA 98501	**Department of Ecology** Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608 **Pollution Control Hearings Board** PO Box 40903 Olympia, WA 98504-0903

CONTACT INFORMATION

Please direct all questions about this Order to:

Rebekah Padgett
Department of Ecology
Northwest Regional Office
3190 160th Avenue SE
Bellevue, WA 98008
(425) 649-7129
rpad461@ecy.wa.gov

MORE INFORMATION

Pollution Control Hearings Board Website
www.eho.wa.gov/Boards_PCHB.aspx
Chapter 43.21B RCW - Environmental Hearings Office – Pollution Control Hearings Board
http://apps.leg.wa.gov/RCW/default.aspx?cite=43.21B
Chapter 371-08 WAC – Practice and Procedure
http://apps.leg.wa.gov/WAC/default.aspx?cite=371-08

Sincerely,

Geoff Tallent, Section Manager
Northwest Regional Office
Shorelands and Environmental Assistance Program

ES:rrp:cja

By certified mail: 7009 2820 0001 7154 3351

cc: Linda Wagoner, Naval Station Everett
Catherine Blackwell, U.S. Army Corps of Engineers
Gerry Ervine, City of Everett
e-cc: David Pater, Ecology
Raman Iyer, Ecology
Loree' Randall, Ecology
ecyrefedpermits@ecy.wa.gov

B.2 NAVAL AIR STATION NORTH ISLAND CORRESPONDENCE

STATE OF CALIFORNIA – NATURAL RESOURCES AGENCY ARNOLD SCHWARZENEGGER, GOVERNOR

CALIFORNIA COASTAL COMMISSION
45 FREMONT, SUITE 2000
SAN FRANCISCO, CA 94105-2 219
VOICE AND TDD (415) 904-5 200
FAX (4 15) 904-5 400

September 23, 2010

IMPORTANT PUBLIC HEARING NOTICE

CD-045-10

Missile Defense Agency, Coronado

Consistency Determination by Dept. of Defense, Missile Defense Agency, for temporary installation (for 3 months) of SeaBased X-Band (SBX) Radar Vessel for inspection, maintenance and repair purposes, northeast side of the Naval Air Station North Island, Coronado, San Diego County.

HEARING DATE AND LOCATION:

DATE: **Friday, October 15, 2010**
TIME: **Meeting begins at 8 a.m.,** Item **F6a**
PLACE: **Oceanside City Council Chambers**
300 North Coast Highway
Oceanside, CA 92054
(760)427-6127

HEARING PROCEDURES

This item has been scheduled for a public hearing and vote. People wishing to testify on this matter may appear at the hearing and/or may present their concerns in writing to the Commission before the hearing date. In the event the Commission's action differs substantially from the staff recommendation, it may be necessary for the Commission to consider adoption of revised findings on a day following the day on which the public hearing on the matter is scheduled to occur.

SUBMISSION OF WRITTEN MATERIALS:

If you wish to submit written materials for review by the Commission, please observe the following suggestions:

- We request that you submit your materials to the Commission staff no later than three working days before the hearing (staff will then distribute your materials to the Commission).
- Mark the agenda number of your item, the application number, your name and your position in favor or opposition to the project on the upper right hand corner of the first page of your submission. If you do not know the agenda number, contact the Commission staff person listed on page 2.

- If you wish, you may obtain a current list of Commissioners' names and addresses from any of the Commission's offices and mail the material directly to the Commissioners. If you with to submit materials directly to Commissioners, we request that you mail the materials so that the Commissioners receive the materials no later than Thursday of the week before the Commission meeting. Please mail the same materials to all Commissioners, alternates for Commissioners, and the four non-voting members on the Commission with a copy to the Commission staff person listed below.
- You are requested to summarize the reasons for your position in no more than two or three pages, if possible. You may attach as many exhibits as you feel are necessary.
- **Please note:** while you are not prohibited from doing so, you are discouraged from submitting materials to the Commission at the day of the hearing, unless they are visual aids, as it is more difficult for the Commission to carefully consider late materials. The Commission requests that if you submit written copies of comments to the Commission on the day of the hearing, that you provide 20 copies.

ALLOTTED TIME FOR TESIMONY: Oral testimony may be limited to 5 minutes or less for each speaker depending on the number of persons wishing to be heard.

Questions regarding the report or the hearing should be directed to **MARK DELAPLAINE,** at the above address.

DEPARTMENT OF DEFENSE
MISSILE DEFENSE AGENCY
7100 DEFENSE PENTAGON
WASHINGTON, DC 20301-7100

DXF

SEP 2 4 2010

Mr. Peter Douglas
Executive Director
California Coastal Commission
45 Fremont Street, Suites 1900 & 2000
San Francisco, CA 94105-2219

Dear Mr. Douglas:

The enclosed Coastal Consistency Determination for the proposed Maintenance and Repair of the Missile Defense Agency Sea-based X-Band Radar (SBX) Vessel is forwarded for consideration by the California Coastal Commission.

As discussed with Mr. Mark Delaplaine during a phone call on September 14, 2010, the Commission has an opening on their agenda for their October meeting in San Diego. The Missile Defense Agency would like to present this proposal to the Commission during the October meeting. Our spokespersons at the meeting will be representatives from our SBX program office and our environmental staff.

We appreciate this opportunity to present our proposal to the Commission and look forward to working with you. Should you have any questions in the meantime, please feel free to contact Lieutenant Colonel Howard R. Jaynes, (256) 450-1634, or Mr. Dan Spiegelberg, (256) 450-3357.

MARTIN F. DUKE
Director, Facilities, Military Construction,
and Environmental Management

Enclosure:
As stated

CITY OF CORONADO

1825 STRAND WAY
CORONADO, CA 92118

OFFICE OF THE CITY MANAGER
(619) 522-7335
FAX (619) 522-7846

October 12, 2010

California Coastal Commission
Ms. Neely and Honorable Commissioners
Attn: Mark Delaplaine, Coastal Staff
45 Fremont, Suite 2000
San Francisco, CA 94105-2219

Re: CD-045-10 Consistency Determination for Maintenance and Repair of Sea-based X-Band (SBX) Radar Vessel in Coronado, San Diego County.

Dear Ms. Neely and Honorable Commissioners:

The City of Coronado has received notice of the October 15, 2010, Coastal Commission hearing to be held in Oceanside to consider the Department of Defense, Missile Defense Agency's planned maintenance and repair of a Sea-based X-band (SBX) Radar Vessel at Naval Air Station North Island, Coronado. While it appears that Todd Pacific Shipyards in Seattle has become the preferred alternative for the maintenance project, it is the City's understanding that the Missile Defense Agency is still pursuing a Coastal Consistency Determination for the NASNI site as a back-up location for the project.

The City has reviewed the project and has the following concerns and recommended conditions of project approval:

Summary of Consistency Determination Issues of Interest to Coronado:

Article 4: Marine Environment: Shoreline Alterations and Oil and Hazardous Substance Spills.

1. The application should clearly identify or address how the pumping of bay water discharge back into San Diego Bay has any effect on water quality or the shoreline.
2. The SBX Radar Vessel has a fuel capacity of 1.88 million gallons of diesel. While the document references the project's compliance with *NASNI's Spill Prevention, Control and Countermeasure Plan and Hazardous Waste Management Plan,* the City questions whether the Missile Defense Agency has a Disaster Management Plan specific to the SBX Vessel when repair and maintenance activities occur. The MDA should be required to provide a copy of the MDA's disaster management plans specific to this type of repair activity.

Article 6: Development: Scenic and Visual Qualities, Minimization of Adverse Impacts

1. The City recognizes that this is a 3-month maintenance project and repairs will occur similar to the typical repairs and maintenance activities that occur for the aircraft carriers homeported at NASNI. However, the SBX Vessel is significantly wider and taller than a normal aircraft carrier. The dome of the radar would extend 36' higher than the top of a ship and would be 22' wider at mast. The City desires to minimize the impacts upon residents who live near Pier P. The City requests that the SBX vessel be located at Pier N rather than Pier P to minimize visual and noise impacts associated with this structure to adjoining residential areas.
2. The 24-hour lighting on the SBX Vessel raises concerns given the structure's increased height, bulk and scale and potential nighttime lighting impacts to neighboring properties. Aircraft carriers do not have the same type of nighttime lighting. The City requests that lighting shields be installed to reduce glare to residential areas.
3. The proposed construction hours for the maintenance and repair activity from 5:30 a.m. to 10:00 p.m. raise concerns for potential noise impacts to neighboring residents. The City requests that the maintenance and repair activities be limited to 7:00 a.m. to 7:00 p.m. Monday through Saturday.
4. The application is not clear how improvements will be made to the Radiate Warning System that involves testing of loud speakers. Testing should be during the day and not after 7 p.m. The MDA should be required to provide the community with advance warning through local media efforts before these warning systems are tested to minimize confusion by community members.

Conclusion: The City is aware that the Commission's review authority is limited to the provisions of the Coastal Zone Management Act (CZMA). The CZMA focuses on areas of public access, recreation, marine environment, land resources, development, and industrial development. The City believes the issues raised within this letter fall within the Commission's CZMA review authority and would appreciate your consideration of the suggested conditions of approval.

Thank you in advance for your attention to issues raised within this letter.

Sincerely,

Blair King
City Manager

BK/mlc
cc: Capt. Yancy B. Lindsey, Commander Officer, Naval Base Coronado
Mayor and City Councilmembers

STATE OF CALIFORNIA – NATURAL RESOURCES AGENCY ARNOLD SCHWARZENEGGER, GOVERNOR

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

October 27, 2010

Martin F. Duke, Director,
Facilities, Military Construction, and Environmental Management
Missile Defense Agency
7100 Defense Pentagon
Washington, DC 20301-7100

Re: **CD-045-10** Missile Defense Agency (MDA), Sea-based X Band (SBX) Radar Vessel Maintenance and Repairs, Naval Air Station North Island (NASNI), Coronado, San Diego Co.

Dear Mr. Duke:

On October 15, 2010, by a unanimous vote, the California Coastal Commission **concurred** with the above-referenced consistency determination submitted by the MDA.

Prior to the hearing the MDA made several commitments which were contained in the addendum to the staff recommendation, including: (1) using low-watt night lighting; (2) using shielding to minimize night-lighting impacts on area residents; (3) limiting construction activities in the evening hours (7:00 p.m. to 10:00 p.m.) to those internal to the SBX to the maximum extent possible; (4) using existing noise baffles and directing generator noise away from residential areas to the maximum extent possible; and (5) limiting radar warning tests to one day, several hours (at most), and only intermittently.

During the hearing the MDA also clarified that: (1) if the pier further from Coronado residential areas (Pier N) is available and if its use would not conflict with Navy logistical needs, the SBX would be repaired at that pier; (2) construction activities in the early morning hours (5:30 a.m. to 7:00 a.m.) would be limited to those internal to the SBX; (3) the Navy would re-submit its spill contingency plans to the Commission staff for its review; and (4) radar warning tests would not be conducted at night and the community would receive advance warning prior to conducting any such tests. With these commitments, the Commission found the project to be consistent to the maximum extent practicable with the California Coastal Management Program.

Sincerely,

MARK DELAPLAINE
Manager, Energy, Ocean Resources, and
Federal Consistency Division

cc: San Diego District Office
David Hasley, MDA
Kathryn Ostapuk, Navy
Ann McCaull, City of Coronado

David Hasley, SMDC-ENN
U.S. Army Space and Missile Defense Command/
U.S. Army Forces Strategic Command
P.O. Box 1500
Huntsville, AL 35807-3801

Kathryn Ostapuk J.D.
NEPA Coordinator
CNRSW Environmental
937 Harbor Drive, 5th floor
San Diego CA 92312-0058

Ann McCaull
Community Development
City of Coronado
1825 Strand Way
Coronado, CA 92118-3099

DEPARTMENT OF DEFENSE
MISSILE DEFENSE AGENCY
7100 DEFENSE PENTAGON
WASHINGTON, DC 20301–7100

DXF

NOV 10 2010

Mr. Eric Chavez
National Marine Fisheries Service
501 West Ocean Boulevard
Suite 4200
Long Beach, CA 90802

Dear Mr. Chavez:

The enclosed Essential Fish Habitat Assessment (EFHA) for the proposed maintenance and repair of the Missile Defense Agency (MDA) Sea-based X-Band Radar Vessel at Naval Air Station North Island is forwarded for your consideration.

As required by 50 CFR 600.290(e)(3), the enclosed EFHA includes a description of the proposed action, an analysis of potential adverse effects on essential fish habitat and managed species, and MDA's conclusion that the proposed action has no adverse effect. We appreciate your review of the EFHA and concurrence that essential fish habitat, including coral reef ecosystems, will not be adversely affected.

Should you have any questions, my point of contact for this action is Mr. Dan Spiegelberg, (256) 450-3357. Mr. Spiegelberg can also be reached via E-mail at dan.spiegelberg@mda.mil.

MARTIN F. DUKE
Director
Facilities, Military Construction,
and Environmental Management

Enclosure:
As stated

From: Eric Chavez, NOAA
Sent: Monday, February 28, 2011 7:07 PM
To: Spiegelberg, Daniel L CIV MDA/DXFE

Subject: Re: Essential Fish Habitat Assessment for Sea-based X-Band Radar Vessel

Hi Dan,

NOAA's National Marine Fisheries Service (NMFS) has reviewed the updated Essential Fish Habitat (EFH) Assessment you provided for the Sea-based X-Band Radar Vessel Maintenance and Repair project at Naval Air Station North Island, Naval Base Coronado, California. For the purposes of this consultation, the proposed action is as described in the updated EFH assessment and includes a variety of inspection, maintenance and repair activities to be performed on the vessel over a period of approximately 90 days. These activities include thruster maintenance, painting, welding, blasting, sanding, plasma cutting, inspections, installation of new equipment, removal of broken and obsolete equipment, equipment calibration, washing of equipment and vessel, and purging of systems (i.e., cooling, sewage, water, etc.). The proposed project occurs in EFH for various federally managed fish species within the Pacific Coast Groundfish and Coastal Pelagic Species Fishery Management Plans.

Project-related activities that may adversely affect EFH include, but are not limited to, the generation of sound from maintenance and repair activities, entrainment/impingement and thermal discharge associated with the vessel's heat-exchange system, and the release of construction-related materials (e.g., paint, debris) into the surrounding water. However, NMFS believes that the best management practices included in the updated EFH Assessment provide adequate protective measures and that any impacts associated with the proposed project will be temporary and minimal in nature. Therefore, NMFS has no further EFH conservation recommendations to provide. Thank you for consulting with NMFS.

Regards,
Eric

Spiegelberg, Daniel L CIV MDA/DXFE wrote:
>
> Eric,
>
>> Attached please find an updated submittal of the Essential Fish
> Habitat Assessment for the Sea-based X-Band Radar Vessel Maintenance
> and Repair at Naval Air Station North Island, Naval Base Coronado, California.
>
>> We appreciate the information that you provided in our discussion with
> you on February 3, 2011. And, we believe that we have incorporated
> your suggestions. We highlighted the changes and clarifications in
> blue. Most of the changes are contained in Section 5 of the document.
>
> We believe that this submittal addresses your comments, but let me
> know if there is anything else that would help clarify our submittal.
>
> If you have any questions, please feel free to contact me by phone or
> e-mail listed below, or at the mailing address shown on the title page of the EFHA.
> Again, thank you for your assistance. It has been a pleasure working with you.
>
> Dan Spiegelberg, PE
> Test Environmental Compliance Support
> MDA/DXFE

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Appendix C
Resource Descriptions Including Laws and Regulations Considered

APPENDIX C
RESOURCE DESCRIPTIONS INCLUDING LAWS AND REGULATIONS CONSIDERED

This appendix provides a general description of each resource and addresses the Federal, State, and local environmental review programs that do, or may, apply to the No-action Alternative and Proposed Action. Project facilities and activities will be implemented in accordance with applicable Federal laws and regulations and with State and local laws, regulations, programs, plans, and policies as applicable.

This Environmental Assessment (EA) has been prepared and provided for public review in accordance with the Council on Environmental Quality regulations implementing the National Environmental Policy Act (40 Code of Federal Regulations [CFR] Part 1500-1508).

C.1 Air Quality

Air quality in a given location is defined by the concentration of various pollutants in the atmosphere, generally expressed in parts per million (ppm) or micrograms per cubic meter (µg/m3), or as a pollution standard index. Air quality is determined by the type and amount of pollutants emitted into the atmosphere, the size and topography of the air basin, and the prevailing meteorological conditions.

The significance of a pollutant concentration is determined by comparing it to Federal and State ambient air quality standards. The Federal Clean Air Act (CAA) (42 United States Code [USC] 7401) requires the adoption of national ambient air quality standards (NAAQS) to protect the public health, safety, and welfare from known or anticipated effects of air pollution. Seven air pollutants have been identified by the U.S. Environmental Protection Agency (USEPA) as being a nationwide concern: carbon monoxide, ozone, nitrogen dioxide, particulate matter equal to or less than 10 microns in size (also called respirable particulate and suspended particulate), fine particulate matter equal to or less than 2.5 microns in size, sulfur dioxide, and lead. USEPA has established NAAQS for these pollutants, which are collectively referred to as criteria pollutants, as shown in Table C-1. Amendments to the CAA require USEPA to describe the health and welfare impacts of a pollutant as the “criteria” for inclusion in the regulatory regime.

According to USEPA guidelines, an area with air quality equal to or better than the NAAQS is designated as being in attainment; areas with worse air quality are classified as nonattainment areas. A nonattainment designation for a particular pollutant is given to a region if the primary NAAQS for that criteria pollutant is exceeded at any point in the region for more than 3 days during a 3-year period. An air basin may be designated as unclassified when there is insufficient data for USEPA to determine attainment status.

Air quality in a given location is described by the concentrations of various pollutants in the atmosphere, expressed in units of ppm, or µg/m^3. Pollutant concentrations are determined by the type and amount of pollutants emitted into the atmosphere; the physical characteristics, including size and topography; and meteorological conditions related to prevailing climate.

Table C-1. Federal Ambient Air Quality Standards

Pollutant	Averaging Time	National Primary Standard	National Secondary Standard
Carbon Monoxide	8-hour	10 mg/m^3 (9 ppm)	None
	1-hour	40 mg/m^3 (35 ppm)	None
Nitrogen Dioxide	Annual (1)	100 µg/m^3 (0.053 ppm)	Same as Primary
Ozone	8-hour (2)	147 µg/m^3 (0.075 ppm) (1)	Same as Primary
	1-hour	235 µg/m^3 (0.12 ppm) (7)	Same as Primary
Lead	Quarterly (1)	1.5 µg/m^3	Same as Primary
	Rolling 3-month average	0.15 µg/m^3	Same as Primary
PM2.5	Annual (3)	15.0 µg/m^3	Same as Primary
	24-hour (4)	35 µg/m^3	Same as Primary
PM10	Annual (arithmetic mean)	Revoked (8)	
	24-hour (5)	150 µg/m^3	Same as Primary
Sulfur Dioxide (6)	Annual (1)	80 µg/m^3 (0.03 ppm)	None
	24-hour	365 µg/m^3 (0.14 ppm)	None
	3-hour	None	1,300 µg/m^3 (0.5 ppm)
Hydrogen Sulfide	1-hour	None	None

Source: 40 CFR Part 50

(1) Calculated as the arithmetic mean
(2) Calculated as the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year (effective 27 May 2008)
(3) Calculated as the 3-year average of the arithmetic means
(4) Calculated as the 98th percentile of 24-hour PM2.5 concentration in a year (averaged over 3 years) at the population oriented monitoring site with the highest measured values in the area (effective 17 December 2006)
(5) Calculated as the 99th percentile of 24-hour PM10 concentrations in a year (averaged over 3 years)
(6) Measured as sulfur dioxide
(7) As of 15 June 2005 USEPA revoked the 1-hour ozone standard in all areas except the fourteen 8-hour ozone nonattainment Early Action Compact Areas
(8) USEPA revoked the annual PM10 standard in 2006 (effective 17 December 2006)
mg/m^3 = milligrams per cubic meter
µg/m^3 = micrograms per cubic meter
PM2.5 = fine particulate matter equal to or less than 2.5 microns in size
PM10 = particulate matter equal to or less than 10 microns in size (also called respirable particulate and suspended particulate)
ppm = parts per million

The significance of a pollutant concentration is determined by comparison with NAAQS and State ambient air quality standards that establish limits on the maximum allowable concentrations of various pollutants in order to protect public health and welfare. Nonattainment areas are regions within the State that have failed to meet the NAAQS for one or more of the seven criteria pollutants. Maintenance areas are regions in the State that were at one time in nonattainment for one of the seven criteria pollutants, but are now in attainment and must continue to show compliance with the NAAQS. These criteria air pollutants are:

- Particulate matter (PM, 10 micrometers and 2.5 micrometers in diameter)
- Ozone (measured as NOx and volatile organic compounds [VOC])
- Nitrogen oxides (NOx)
- Carbon monoxide (CO)
- Sulfur dioxide (SOx)
- Lead (Pb)

Shipbuilding and Ship Repair Surface Coating National Emissions Standards for Hazardous Air Pollutants

These Federal regulations apply to major sources of Hazardous Air Pollutant (HAP) emissions. Major sources are shipbuilding and repair facilities coating operations emitting over 9.1 megagrams per year (Mg/yr) (10 tons/yr) of an individual HAP or over 23 Mg/yr (25 tons/yr) of total HAP are regulated. The Proposed Action is not expected to be a major source of HAP emissions.

General Conformity Rule

The CAA Amendments of 1990 (Public Law [PL] 101-549, 104 Statute 2399) required USEPA to promulgate rules to ensure that Federal actions in areas classified as nonattainment or maintenance areas (geographic areas that had a history of nonattainment, but are now consistently meeting NAAQS) conform to the appropriate State implementation plan. These rules are known together as the General Conformity. USEPA has published *Revisions to the General Conformity Regulations; Final Rule*, in the 5 April 2010 Federal Register (40 CFR Parts 51 and 93). The U.S. Navy published *Clean Air Act (CAA) General Conformity Guidance* in Appendix F, OPNAVINST 5090.1C, dated 30 October 2007. These publications provide implementing guidance to document CAA Conformity Determination requirements.

Federal agency responsible for an action located in a Federal ambient air quality area that is designated as nonattainment or maintenance for a national ambient air quality standard (40 CFR 81.305) is required to complete an applicability analysis to determine if its action conforms to pertinent guidelines and regulations. If the projected emission rates would be less than specified emission rate thresholds, known as *de minimis limits*, the project is then exempt from conformity determination and a Record of Non-Applicability is prepared.

To focus conformity requirements on those Federal actions with the potential to have significant air quality impacts, annual threshold (de minimis) rates of emissions were established in the general conformity rule. The conformity de minimis thresholds (in tons/year) are Federal limits listed in 40 CFR 51.853(b) (1). Federal actions with emissions below the de minimis levels are presumed to conform, that is, not cause or contribute to new violations of NAAQS, in areas that are in nonattainment. Federal actions with emissions above the *de minimis* levels are subject to a conformity determination under Section 176(c) of the CAA.

De minimis emissions are total direct and indirect emissions of a criteria pollutant caused by a Federal action in a nonattainment or maintenance area at levels less than specified applicability thresholds. Calculating a project's air emissions in accordance with the General Conformity Rule differs from the traditional air quality analyses included in NEPA documents. The definition of “indirect emissions” under conformity is narrower than NEPA’s definition of “indirect impacts.” Also, the General Conformity Rule allows exemptions and presumptions not otherwise available under traditional NEPA analysis.

The six criteria pollutants are PM10 and PM2.5, sulfur dioxide, carbon monoxide, nitrogen oxides, 8-hour ozone, and lead. Ozone is measured by emissions of VOCs and nitrogen oxides. See Table C-2 for de minimis levels that apply nationwide.

Regionally Significant

USEPA has eliminated the regional significance test in its newest rulemaking (5 April 2010); therefore, installations no longer have to compare an action's emissions to the regional emissions.

Table C-2. General Conformity Applicability Thresholds

Criteria Pollutants	Tons Per Year
Ozone (VOC or Nitrogen Oxides)	
Serious Non-attainment Areas (NAAs)	50
Severe NAAs	25
Extreme NAAs	10
Other ozone NAAs outside an ozone transport region	100
Other ozone NAAs inside an ozone transport region	50 (VOC) 100 (nitrogen oxides)
VOC	50
Nitrogen Oxides	100
Carbon Monoxide—All NAAs and maintenance areas	100
Sulfur Dioxide or Nitrogen Oxides—All NAAs	100
PM10	
Moderate NAAs and maintenance areas	100
Serious NAAs	70
PM2.5 (direct PM2.5, Nitrogen Oxides, VOC, Sulfur Dioxide)	100
Lead—All NAAs	25

Source: 40 CFR §51.853
Notes:
PM10 = particulate matter equal to or less than 10 microns in size
PM2.5 = particulate matter equal to or less than 2.5 microns in size
VOC = volatile organic compounds

Greenhouse Gas Emissions

In 2007, a Supreme Court ruling allowed USEPA to regulate greenhouse gas (GHG) as pollutants under the existing CAA. This has set the stage for additional regulation of GHG in the future. Most recently, USEPA published guidance on use of low GHG emitting vehicles by Federal vehicle fleets.

At the same time that USEPA is working on GHG regulation, President Obama issued Executive Order 13514 in 2009: Federal Leadership in Environmental, Energy, and Economic Performance. This Executive Order sets sustainability goals for Federal agencies to inventory and report their direct and indirect GHG emissions. The Executive Order requires Federal agencies to set a 2020 GHG emissions reduction target within 90 days; increase energy efficiency; reduce fleet petroleum consumption; conserve water; reduce waste; support sustainable communities; and leverage Federal purchasing power to promote environmentally-responsible products and technologies. And finally, in February 2010 the Council on Environmental Quality issued draft National Environmental Policy Act guidance for addressing GHG emissions in EAs and environmental impact statements (EISs) that states that emissions greater than 27,557 short tons annually of carbon dioxide-equivalent GHG emissions meets the

test of "meaningful" GHG. Emissions above this level warrant at least some qualitative or quantitative discussion in an EA/EIS.

State of California

Diesel Airborne Toxic Control Measures (ATCM) Requirements

For Auxiliary Diesel Engines Operated on Ocean-going Vessels at-Berth in a California Port. This regulation would not apply to the SBX. Section 93118.3 (b)(3)(B) appears to provide an exemption for Government-owned or operated vessels. This provision exempts: "Auxiliary engines on-board ocean-going vessels owned or operated by any branch of local, State, Federal Government, or by a foreign government, when such vessels are operated on government non-commercial service. However, such vessels are encouraged to act in a manner consistent, so far as is reasonable and practicable, with this section."

Amendments to the Airborne Toxic Control Measures for Stationary Compression Ignition (CI) Engines. Section 93115. The purpose of this regulation is to reduce diesel PM and criteria pollutant emissions from stationary diesel-fueled CI engines. This regulation would not apply to the SBX because the onboard gensets are not defined as stationary compression ignition engines.

Rule 1210. Toxic Air Contaminant Public Health Risks, Public Notification and Risk Reduction.

Local NASNI Requirements

Applicable San Diego Air Pollution Control District Rules and Regulations

Rules 10, 11, and 67-18 The painting and solvents portion of the Proposed Action includes major or minor new or modified stationary sources that require a permit under the New Source Review program (Section 110(a)(2)(c) and Section 173 of the CAA). San Diego Air Pollution Control District (APCD) Rules 10, 11, and 67-18 implement these Federal programs, and would require the contractor or MDA to apply for a permit with the San Diego APCD for Coating and Adhesive Application Equipment and Operations because of the amount of paint being used.

Rule 11—Exemptions from Rule 10 Permit Requirements. Rule 11 provides exemptions from the requirements of Rule 10 to obtain permits for certain categories of sources. Rule 11 specifically exempts the following sources used at the SSTC: mobile sources; any reciprocating internal combustion engine with a brake horsepower rating of less than 50; any engine mounted on, within, or incorporated into any motor vehicle, train, ship, boat, or barge, that is used exclusively to load or unload cargo; portable pile drivers and construction cranes that are routinely dismantled and transported to noncontiguous locations for temporary use; any portable internal combustion engine or gas turbine engine used exclusively in conjunction with military tactical support equipment (TSE); and any portable equipment that is registered in accordance with District Rule 12.1.

Rule 12 and Rule 12.1. Registration of Specified Equipment/Portable Equipment Registration.

Rule 12 and 12.1 allow for the registration of internal combustion engines that are registered under the APCD's or the California Air Resources Board's registration program in lieu of permitting under Rule 10.

Rule 50—Visible Emissions. Rule 50 limits emissions of visible emissions from any single source of emissions whatsoever and any air contaminant for a period or periods aggregating more than 3 minutes in any period of 60 consecutive minutes which is darker in shade than that designated as Number 1 on the Ringelmann Chart, as published by the U.S. Bureau of Mines, or of such opacity as to obscure an observer's view to a degree greater than does smoke of a shade designated as Number 1 on the Ringelmann Chart. It should be noted that the use of obscurants for the purpose of training military personnel and the testing of military equipment by the U.S. Department of Defense on any military reservation and equipment used exclusively for the purpose of flash-over fire-fighting training are exempt from the requirements of Rule 50.

Rule 51—Nuisance. Rule 51 requires that a person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health, or safety of any such persons or the public or which cause or have a natural tendency to cause injury or damage to business or property.

Regulation XV—Federal Conformity. The purpose of Regulation XV and Rule 1501 are to ensure that Federal agencies do not take or support actions which are in any way inconsistent with the efforts of the APCD to achieve the NAAQS, and that Federal agencies do not fail to take advantage of opportunities to assist in the achievement of the NAAQS. Under the CAA Section 176(c), as amended (42 USC 7506(c) et. seq.) and regulations under 40 CFR part 51 Subpart W, no department, agency or instrumentality of the Federal Government shall engage in, support in any way or provide financial assistance for, license or permit, or approve any activity which does not conform to an applicable implementation plan.

C.2 Airspace

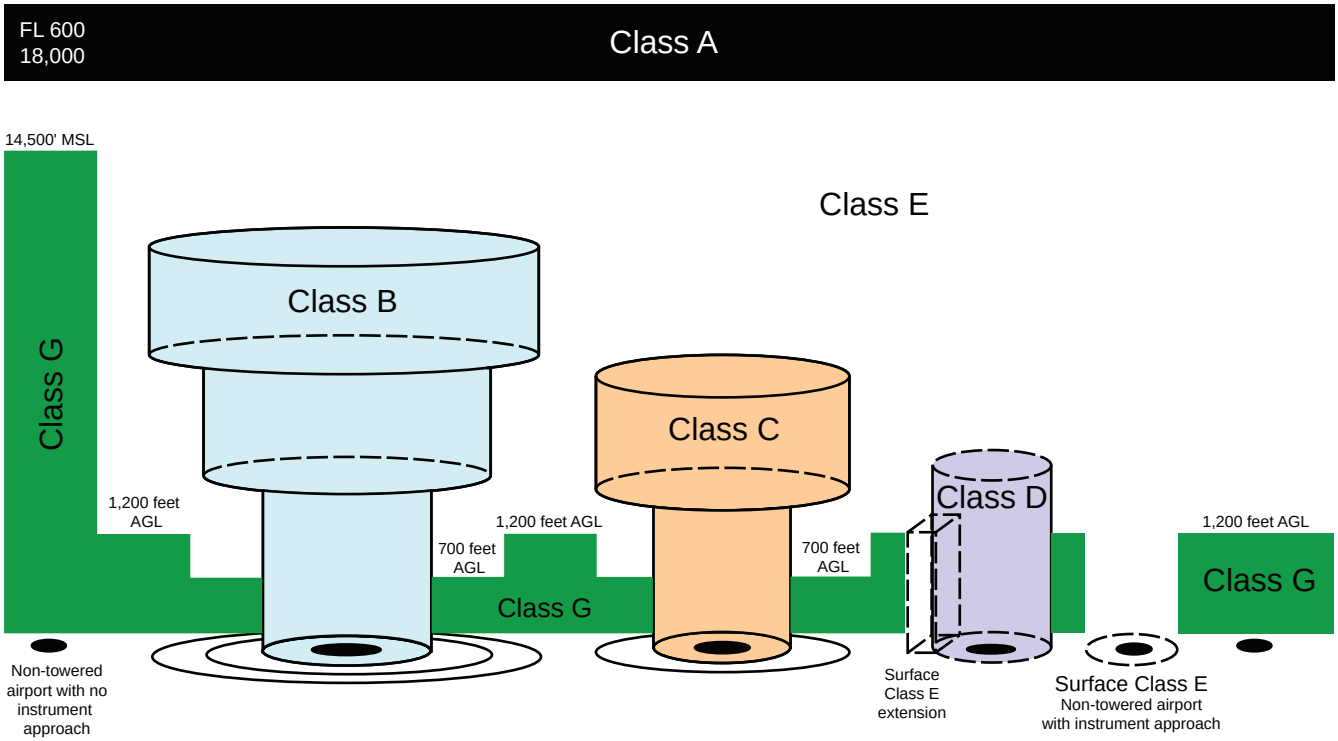
Airspace, or that space which lies above a nation and comes under its jurisdiction, is generally viewed as being unlimited. However, it is a finite resource that can be defined vertically and horizontally, as well as temporally, when describing its use for aviation purposes.

Under PL 85-725, Federal Aviation Act of 1958, the Federal Aviation Administration (FAA) is charged with the safe and efficient use of our nation's airspace, and has established certain criteria for and limits to its use. The method used to provide this service is the National Airspace System. This system is "…a common network of U.S. airspace; air navigation facilities, equipment and services, airports or landing areas; aeronautical charts, information and services; rules, regulations and procedures, technical information and manpower and material."

Types of Airspace

Controlled and Uncontrolled Airspace

As part of the National Airspace System, controlled and uncontrolled airspace is divided into six classes, depending on location, use, and degree of control. Pilots are also subject to certain qualification requirements, operating rules, and equipment requirements. Figure C-1 depicts the six classes of non-military airspace.



Source: Federal Aviation Administration, 2002

EXPLANATION
AGL = Above Ground Level
FL = Flight Level
MSL = Above Mean Sea Level

The Six Classes of Non-Military Airspace

Figure C-1

A brief description of each class follows:

- Class A airspace includes airspace overlying the waters within 12 nautical miles (nm) of the coast.
- Class B airspace is generally that airspace surrounding the nation's busiest airports in terms of Instrument Flight Rules (IFR) operations or passengers boarding an aircraft. An air traffic control clearance is required for all aircraft to operate in the area, and all aircraft that are so cleared receive separation services within the airspace.
- Class C airspace is generally that airspace surrounding those airports that have an operational control tower, are serviced by a radar approach control, and that have a certain number of IFR operations or passenger boardings.
- Class D airspace is generally that airspace surrounding those airports that have an operational control tower.
- Class E airspace is controlled airspace that is not Class A, Class B, Class C, or Class D airspace.
- Class G or uncontrolled airspace has no specific definition but generally refers to airspace not otherwise designated and operations below 1,200 feet above ground level. No air traffic control service to either IFR or Visual Flight Rules (VFR) aircraft is provided other than possible traffic advisories when the air traffic control workload permits and radio communications can be established.

Special Use Airspace

Complementing the classes of controlled and uncontrolled airspace are several types of special use airspace used by the military to meet its particular needs. Special use airspace consists of that airspace where activities must be confined because of their nature, or where limitations are imposed on aircraft operations that are not a part of these activities, or both. Except for controlled firing areas, special use airspace areas are depicted on aeronautical charts, IFR or visual charts, and include hours of operation, altitudes, and the controlling agency. Only the special use airspace found in the region of influence is described. For areas over and surrounding land and offshore areas this includes:

- Restricted Areas contain airspace identified by an area on the surface of the earth within which the flight of aircraft, while not wholly prohibited, is subject to restriction. Activities within these areas must be confined, because of their nature, or limitations imposed upon aircraft operations that are not a part of these activities, or both. Restricted Areas denote the existence of unusual, often invisible, hazards to aircraft such as artillery firing, aerial gunnery, or guided missiles. Restricted Areas are published in the Federal Register and constitute Federal Aviation Regulation Part 73.

Other Airspace Areas

Other types of airspace include airport advisory areas, temporary flight restrictions areas, flight limitations and prohibitions areas, published VFR routes, and terminal radar service areas (Federal Aviation Administration, 2006).

Special Airspace Use Procedures

Other types of airspace, and special airspace use procedures used by the military to meet its particular needs, include air traffic control assigned airspace and Notices to Airmen (NOTAMs):

- Air Traffic Control Assigned Airspace (ATCAA), or airspace of defined vertical and lateral limits, is assigned by air traffic control to provide air traffic segregation between specified activities being conducted within the assigned airspace and other IFR air traffic. Air Traffic Control Assigned Airspace is usually established in conjunction with Military Operations Areas, and serves as an extension of Military Operations Area airspace to the higher altitudes required. These airspace areas support high altitude operations such as intercepts, certain flight test operations, and air refueling operations.
- The NOTAM System is a telecommunication system designed to distribute unanticipated or temporary changes in the National Airspace System, or until aeronautical charts and other publications can be amended. This information is distributed in the NOTAM Publication. The NOTAM Publication is divided into four parts: (1) NOTAMs expected to be in effect on the date of publication, (2) revisions to Minimum En Route Instrument Flight Rules Altitudes and Changeover Points, (3) international—flight prohibitions, potential hostile situations, foreign notices, and oceanic airspace notices, (4) special notices and graphics such as military training areas, large scale sporting events, air shows, and airport specific information–Special Traffic Management Programs. Notices in Sections 1 and 2 are submitted through the National Flight Data Center, ATA-110. Notices in Sections 3 and 4 are submitted and processed through Air Traffic Publications, ATA-10. Air Traffic Publications, ATA-10 issues the NOTAM Publication every 28 days.

C.3 Biological

Native or naturalized vegetation, wildlife, and the habitats in which they occur, are collectively referred to as biological resources. Existing information on plant and animal species and habitat types in the vicinity of the proposed sites was reviewed, with special emphasis on the presence of any species listed as threatened or endangered by Federal or State agencies, to assess their sensitivity to the effects of the No-action Alternative, Alternative 1, or Alternative 2.

The **Endangered Species Act** of 1973 (ESA) (16 USC 1531-1544, 87 Stat. 884, as amended) applies to Federal actions in two separate respects. First, Section 7 of the ESA requires that Federal agencies ensure that proposed actions are not likely to jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of designated critical habitat. Regulations implementing the ESA require that to avoid this situation of jeopardizing the species' existence, the Federal agency is required to determine if threatened or endangered species are present in the area affected by the Proposed Action and consult with either or both of the appropriate resource agencies (National Marine Fisheries Service [NMFS] or U.S. Fish and Wildlife Service [USFWS]) when the agency proponent determines that a Proposed Action may adversely affect a threatened or endangered species. Secondly, Section 9 of the ESA requires Federal agencies to obtain an incidental take statement from the responsible resource agency should a take (including harm or harassment) result from implementing the Proposed Action.

The **Migratory Bird Treaty Act** (16 USC 703-712) protects many species of migratory birds. Specifically, the act prohibits the pursuit, hunting, taking, capture, possession, or killing of such

species or their nests and eggs. The Armed Forces, pursuant to 50 CFR Section 21.15, may take migratory birds incidental to military readiness activities provided that, for those ongoing or proposed activities that the Armed Forces determine may result in a significant adverse effect on a population of a migratory bird species, the Armed Forces must confer and cooperate with the Service to develop and implement appropriate conservation measures to minimize or mitigate such significant adverse effects. Military readiness activities are defined as all training and operations of the Armed Forces that relate to combat and the adequate and realistic testing of military equipment, vehicles, weapons, and sensors for proper operation and suitability for combat use. Routine installation operation, industrial activities, and construction or demolition of facilities used for these purposes are not considered military readiness activities. Migratory bird conservation relative to non-military readiness activities is addressed in a Memorandum of Understanding (signed 31 July 2006) developed in accordance with Executive Order 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds* (10 January 2001).

The final rule authorizing the Department of Defense (DoD) to take migratory birds during military readiness activities (50 CFR Part 21) was published in the Federal Register on 28 February 2007. The rule states that the Armed Forces must confer and cooperate with the USFWS on the development and implementation of conservation measures to minimize or mitigate adverse effects of a military readiness activity if it determines that such activity may have a significant adverse effect on a population of a migratory bird species.

An activity will be determined to have a significant adverse effect when it is found within a reasonable period of time to diminish the capacity of a population of a migratory bird species to maintain genetic diversity, to reproduce, and to function effectively in its native ecosystem.

The **Marine Mammal Protection Act** (16 USC 1361, et seq.) gives the USFWS and NMFS co-authority and outlines prohibitions for the taking of marine mammals. A take means to attempt as well as to actually harass, hunt, capture, or kill any marine mammal. Subject to certain exceptions, the Act establishes a moratorium on the taking and importation of marine mammals. Exceptions to the taking prohibition allow USFWS and NMFS to authorize the incidental taking of small numbers of marine mammals in certain instances.

The **Magnuson-Stevens Fishery Conservation and Management Act** (Public Law 94-265) (16 USC 1801-1882, 13 April 1976, as amended) requires that Federal agencies consult with NMFS on activities that could harm Essential Fish Habitat areas. Essential Fish Habitat refers to “those waters and substrate (sediment, hard bottom) necessary to fish for spawning, breeding, feeding or growth to maturity.”

C.4 Hazardous Material and Waste

Hazardous Materials

The U.S. Department of Transportation defines a hazardous material as a substance or material that the Secretary of Transportation has determined is capable of posing an unreasonable risk to health, safety, and property when transported in commerce, and that has been designated as hazardous under Section 5103 of the Federal hazardous materials transportation law (49 USC 5103). The term includes hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, materials designated as hazardous in the Hazardous Materials

Table (see 49 CFR 172.101), and materials that meet the defining criteria for hazard classes and divisions (49 CFR 173).

Hazardous Wastes

Solid waste materials are defined in 40 CFR 261.2 as any discarded material (i.e., abandoned, recycled, or "inherently waste-like") that is not specifically excluded from the regulatory definition. This waste can include materials that are solid, liquid, or gaseous (but contained). Hazardous waste is further defined as any solid waste not specifically excluded which contains specified concentrations of chemical constituents or has certain toxicity, ignitability, corrosivity, or reactivity characteristics.

Federal Regulations

The **Oil Pollution Act** of 1990 required oil storage facilities and vessels to submit to the Federal Government plans detailing how they will respond to large discharges. In 2002, however, USEPA amended the Oil Pollution Prevention regulation. The Oil Pollution Prevention and Response; Non-Transportation-Related Onshore and Offshore Facilities; Final Rule (40 CFR 112) requires Spill Prevention, Control, and Countermeasure Plans and Facility Response Plans. These plans outline the requirements to plan for and respond to oil and hazardous substance releases. Chapter 10 (2003) of Chief of Naval Operations Instruction (OPNAVINST) 5090.1C also describes the Navy's requirements for oil and hazardous substance spills.

The **Clean Water Act** prohibits discharges of harmful quantities of hazardous substances into or upon U.S. waters out to 200 nautical miles. Environmental compliance policies and procedures applicable to shipboard operations afloat are defined in OPNAVINST 5090.1C (2002), Chapter 19. These instructions reinforce the Act's discharge prohibition. The Navy's Consolidated Hazardous Materials Reutilization and Inventory Management Program (CHRIMP) Manual also contains information to provide to the chain of command, afloat and ashore, to assist in developing and implementing hazardous materials management. Hazardous materials on Navy vessels afloat are procured, stored, used, and disposed in accordance with CHRIMP and related guidance.

In 1999, USEPA adopted a final rule intended to establish **Uniform National Discharge Standards** for 25 discharge sources on U.S. military vessels. The rule exempted 14 additional sources (40 CFR Part 1700). Pursuant to this legislation, State and local governments are prohibited from regulating the 14 discharges exempted from control, but may establish no-discharge zones for them. The discharge standards legislation amended the Clean Water Act to exclude from the definition of "pollutant" a discharge incidental to the normal operation of a vessel of the Armed Forces.

The Environmental and Natural Resource Program Manual, **OPNAVINST 5090.1C** provides Navy policy, identifies key statutory and regulatory requirements, and assigns responsibility for Navy programs, including pollution prevention, clean up of waste disposal sites, and compliance with current laws and regulations for the protection of the environment and natural resources.

"Pollution prevention," as defined by the **Pollution Prevention Act** of 1990 (PL 101-508, 42 USC 13101, *et seq.*) and **Executive Order 12856** (Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements, 3 August 1993), is "any practice which reduces

the amount of a hazardous substance, pollutant or contaminant entering any waste stream or otherwise released to the environment (including fugitive emissions) prior to recycling, treatment or disposal; and any practice that reduces the hazards to public health and the environment associated with the release of such substances, pollutants or contaminants." The Pollution Prevention Act of 1990 requires USEPA to develop standards for measuring waste reduction, serve as an information clearinghouse, and provide matching grants to State agencies to promote pollution prevention.

The **Toxic Substances Control Act** of 1976 (PL 94-469, 15 USC 2601, et seq.) establishes that USEPA has the authority to require the testing of new and existing chemical substances entering the environment, and, subsequently, has the authority to regulate these substances. The Toxic Substances Control Act also regulates polychlorinated biphenyls.

The **Emergency Planning and Community Right-to-Know Act** of 1986 (EPCRA) as part of the Superfund Amendments and Reauthorization Act Title III establishes the emergency planning efforts at State and local levels and provides the public with potential chemical hazards information. There are two key concepts to understanding EPCRA: (1) EPCRA's intent to inform the public; and (2) a facility has four reporting requirements, defined in part by hazardous substance lists and exemptions, for emergency planning, emergency notification, community right-to-know, and toxic chemical release inventory. Facilities with more than 10 employees that manufacture, import, process, or otherwise use any chemical listed in and meeting threshold requirements of the Emergency Planning and Community Right-to-Know Act must file a toxic chemical source reduction and recycling report.

The **Federal Insecticide, Fungicide, and Rodenticide Act** of 1972 regulates the labeling requirement and disposal practices of pesticide usage.

The **Hazardous Materials Transportation Act** of 1975 gives the U.S. Department of Transportation authority to regulate shipments of hazardous substances by air, highway, or rail. These regulations, found at 49 CFR 171–180, may govern any safety aspect of transporting hazardous materials, including packing, repacking, handling, labeling, marking, placarding, and routing (other than with respect to pipelines).

C.5 Noise

The **Noise Control Act** (PL 92-574, 42 USC 4901, et seq.) directs all Federal agencies, to the fullest extent within their authority, to carry out programs within their control in a manner that promotes an environment free from noise that jeopardizes the health or welfare of any American. The act requires a Federal department or agency engaged in any activity resulting in the emission of noise to comply with Federal, State, interstate, and local requirements respecting control and abatement of environmental noise. Federal and State governments have established noise regulations and guidelines for the purpose of protecting citizens from potential hearing damage and various other adverse physiological, psychological, and social effects associated with noise. The Federal Government preempts the State on control of noise emissions from aircraft, helicopters, railroads, and interstate highways.

Department of Defense and Other Agency Ambient Sound Guidance

Chief of Naval Operations Instruction 5090.1C contains guidance for considering time-averaged community sound levels in environmental evaluations. Chapter 20, Noise Prevention Ashore, contains guidance for sound control and abatement of Navy shore activities (U.S. Department of the Navy, 2007).

Planning in the Noise Environment provides multi-service compatibility criteria for various land uses. Separate evaluation criteria apply to impulsive sound events, such as the equipment used during the Proposed Action. Community annoyance from impulsive sound is assessed by DoD using C-weighted day/night average sound level (CDNL), but also may be assessed using A-weighted day-night average level (ADNL). This document indicates that impulse sound should be considered separately when the peak sound level exceeds 110 decibels (dB) (Department of Defense, 1978).

U.S. Department of the Army, Public Health Command, formerly known as the Center for Health Promotion and Preventive Medicine, has developed DoD guidance for military operational noise, including *Operational Noise Manual: An Orientation for Department of Defense Facilities* (U.S. Army, 2005).

The U.S. Department of Housing and Urban Development (HUD) has developed noise standards for determining the acceptability of a project that is assisted by HUD. The HUD generally prohibits projects with "unacceptable" noise exposure as defined in Table C-3. If the Day/Night Sound Level (DNL) exceeds 75 dB, this site is considered unacceptable for residential use. Although these guidelines are not mandatory, they provide the best means of determining noise impacts.

Table C-3. HUD Site Acceptability Standard

Noise	Day/Night Sound Level (DNL)
Acceptable	Not exceeding 65 dB
Normally Unacceptable	Above 65 but not exceeding 75 dB
Unacceptable	Above 75 dB

Source: US Department of Housing and Urban Development,44 FR 40861, 12 July 1979, as amended at 49 FR 12214, Mar. 29, 1984

Many agencies, including the DoD, have adopted a DNL of 65 A-weighted decibels (dBA) as a criterion that still protects those most impacted by noise and would amount to an annoyance in less than 15 percent of the population (U.S. Department of the Army, 1997). In general, residential land uses are not compatible with an outdoor DNL above 65 dBA, and the extent of land areas and populations exposed to a DNL of 65 dBA or higher provides one of the means for assessing and comparing the noise impacts of proposed actions.

Local Ordinances

The City of Coronado Noise Abatement Regulation sets some standards for noise abatement. The maximum allowable construction noise is an average sound level greater than 75 dB during

a 1-hour period any time between the hours of 7:00 a.m. to 7:00 p.m. ref. 41.10.050 Construction noise limits.

The maximum allowable noise level at the boundary between two zoning districts (the city of Coronado does not have industrial or military zone districts) is the arithmetic mean of the respective limits for the two districts. The maximum sound levels for the various time frames is as follows:

Time Frame	Residential	Commercial	Arithmetic Mean
7:00 a.m. to 7:00 p.m.	50 dB	60 dB	55 dB
7:00 p.m. to 10:00 p.m.	45 dB	60 dB	52.5 dB
10:00 p.m. to 7:00 a.m.	40 dB	50 dB	45 dB

Within the city of Everett, noise is regulated by a noise control ordinance. For sound sources located within the city, the maximum permissible daytime sound levels are shown in Table C-4. Section 20.08.050A modifies the City of Everett Code to reduce the permissible sound level to 45 dBA during nighttime hours (10:00 p.m. to 7:00 a.m.).

Naval Station Everett (NSE) is in Noise District III, with neighboring properties either Noise District I or II. Therefore, NSE operational sound levels must not exceed the maximum permissible sound levels (60 dBA during the daytime and 45 dBA from 10:00 p.m. to 7:00 a.m.).

Table C-4. Noise Control District Land Use Zones and Maximum Permissible Daytime Sound Levels, Everett, Washington

District Sound Source	District of Receiving Property within the City of Everett		
	I	**II**	III
I	55 dBA	57 dBA	60 dBA
II	57 dBA	60 dBA	65 dBA
III	**60 dBA**	**65 dBA**	70 dBA

Source: City of Everett, 2009a and b

District I - All residentially zoned districts including but not limited to R.S., R-1, R-2, R- 3(A), R-4 and R-5
District II - All business and commercially zoned districts including but not limited to B-1, B-2(A), B-2, B-2(B), B-3, C-1 and C-2
District III - All agricultural and manufacturing zoned districts including but not limited to A, M-M and M-1, and all other nonresidential, nonbusiness and noncommercially zoned districts.

C.6 Transportation

Ground Transportation

Traffic circulation refers to the movement of ground transportation vehicles from origins to destinations through a road and rail network. Roadway operating conditions and the adequacy of the existing and future roadway systems to accommodate these vehicular movements usually are described in terms of the volume-to-capacity ratio, which is a comparison of the average daily traffic volume on the roadway to the roadway capacity. The volume-to-capacity ratio corresponds to a Level of Service (LOS) rating, ranging from free-flowing traffic conditions (LOS A) for a volume-to-capacity of usually less than 30 percent of the roadway capacity to forced-

flow, congested conditions (LOS F) for a volume-to-capacity of 100 percent of the roadway capacity (Department of Defense, 2004).

Waterways

Water traffic is the transportation of commercial, private, or military vessels at sea, including submarines. Sea traffic flow in congested waters, especially near coastlines, is controlled by the use of directional shipping lanes for large vessels (cargo, container ships, and tankers). Traffic flow controls also are implemented to ensure that harbors and ports-of-entry do not become congested. There is less control on ocean traffic involving recreational boating, sport fishing, commercial fishing, and activity by naval vessels. However, Navy vessels follow military procedures and orders (e.g., Fleet Forces Command) as well as Federal, State, and local marine regulations. In most cases, the factors that govern shipping or boating traffic include adequate depth of water, weather conditions (primarily affecting recreational vessels), the availability of fish of recreational or commercial value, and water temperature (higher water temperatures will increase recreational boat traffic and diving activities) (Department of Defense, 2004).

Airways

Air transportation is the movement of aircraft through airspace. Airspace is described in Section C.2.

C.7 Visual and Aesthetics

The City of Everett's municipal General Provisions 39.140.A (Performance regulations—General: Light and Glare Regulation) state that "any artificial surface which produces light or glare which annoys, injures, endangers the health or safety of persons, or interferes with the use of property is a violation of this title."

County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements—Dark Skies and Glare. Land Use and Environment Group Department of Planning and Land Use Department of Public Works July 30, 2007 Modified 15 January 15, 2009. These Guidelines for Determining Significance for Dark Skies and Glare and information presented herein shall be used by County staff for the review of discretionary projects and environmental documents pursuant to the California Environmental Quality Act (CEQA). These Guidelines present a range of quantitative, qualitative, and performance levels for particular environmental effects. Normally, (in the absence of substantial evidence to the contrary), non-compliance with a particular standard stated in these Guidelines will mean the project will result in a significant effect, whereas compliance will normally mean the effect will be determined to be "less than significant."

The San Diego County Light Pollution Code (Title 5, Div.9, Sections 59.101-59.113 of the County Code of Regulatory Ordinances as added by Ordinance No 6900, effective January 18, 1985, and amended July 17, 1986 by Ordinance No. 7155 and April 20, 2005 by Ordinance No. 9716). The Light Pollution Code, also known as the Dark Sky Ordinance, was adopted "to minimize light pollution for the enjoyment and use of property and the night environment by the citizens of San Diego County and to protect the Palomar and Mount Laguna observatories from the effects of light pollution that have a detrimental effect on astronomical research by restricting the permitted use of outdoor light fixtures on private property" (Sec. 59.101).

San Diego County General Plan, Conservation Element (Part X), Chapter 7 Astronomical Dark Sky (http://www.ceres.ca.gov/planning/counties/San_Diego/plans.html). The San Diego County General Plan Conservation Element's Chapter on Astronomical Dark Sky discusses the importance of maintaining dark skies in the County. This chapter makes several findings pertaining to suitable observatory site criteria. It also sets out several policy and action programs designed to limit light pollution and ensure the protection of dark skies, including minimizing the impacts of development on the useful life of the observatories, assisting in the regulation of dark sky conservation, amending ordinances to control potentially significant adverse effects to Palomar and Mount Laguna Observatories, and designing future roadways and development in a way suitable for the protection of dark skies near the observatories.

San Diego County Zoning Ordinance, Performance Standards (Sections 6320, 6322, and 6324, http://www.co.san-diego.ca.us/dplu/zoning/index.html). Section 6320 of the Zoning Ordinance has performance standards for glare for all commercial and industrial uses in residential, commercial, and identified industrial zones. All commercial and industrial uses subject to this section shall be operated in a manner that does not produce glare, which is readily detectable without instruments by the average person beyond the stated zones in this section. Section 6322 controls excessive or unnecessary outdoor light emissions which produce unwanted illumination of adjacent properties by restricting outdoor lighting usage. Section 6324 establishes limitations on lighting permitted in required yards by Section 4835; of particular importance is the limitation upon light trespass (not to exceed a value of 0.2 footcandles measured 5 feet onto the adjacent property).

C.8 Water

Federal

The objective of the **Clean Water Act** and its amendments is to "restore and maintain the chemical, physical and biological integrity of the nation's waters." The overall goal of the Clean Water Act is to produce waters of the United States that are "fishable and swimmable." Under the Clean Water Act, the Federal Government delegated responsibility for establishing water quality criteria to each State, subject to approval by USEPA.

A primary means of evaluating and protecting water quality is establishing and enforcing water quality standards. Water quality standards consist of:

- Designated beneficial uses of water (for example, drinking, recreation, aquatic life);
- Numeric criteria for physical and chemical characteristics for each type of designated use;
- An "antidegradation" provision to protect uses and water quality.

In accordance with the Clean Water Act, States define the uses of waters within their borders, and each water body must be managed in accordance with its designated uses. Water quality standards are established for each designated use. Standards must be at least as stringent as those established by USEPA. Most States have adopted the USEPA standards.

Under Section 313 of the Clean Water Act, Federal agencies must comply with all Federal, State, interstate, and local requirements to control and abate water pollution. Compliance includes managing any activity that may result in the discharge or runoff of pollutants. The Clean Water Act does not apply, however, to Navy operations more than 3 nautical miles from the shoreline of the United States.

Water bodies that do not meet designated minimum quality standards are listed as "impaired" waters. For impaired water bodies, States are expected to develop Total Maximum Daily Loads, which are the amounts of pollutants that can be delivered to a body of water without exceeding the water quality standards. Based on the Total Maximum Daily Loads that are developed, the State can limit discharges of pollutants to achieve the minimum water quality standards.

The Clean Water Act also created Uniform National Discharge Standards that regulate incidental liquid discharges from military vessels operating in inland waters and the ocean out to 12 nautical miles. This program is jointly administered by the DoD, USEPA, and the U.S. Coast Guard. A total of 25 vessel discharges requiring control standards have been identified under Phase I of the program (Uniform National Discharge Standards, 2008). Phase II involves developing performance standards and control procedures for those discharges. The program also established processes that USEPA and the States must follow to establish zones in which any release of a specified discharge is prohibited.

Coastal Zone Management Act

The Federal Coastal Zone Management Act (CZMA; 16 USC 1451, et seq.) is a voluntary State–Federal partnership that encourages States to adopt programs that meet Federal goals of protecting and restoring coastal zone resources, especially protecting coastal waters from nonpoint source pollution (16 USC 1455[b]). The program is administered by the National Oceanic and Atmospheric Administration. The act requires participating coastal States to develop management programs that demonstrate how States will carry out their obligations and responsibilities in managing their coastal areas. Upon Federal approval of a State's coastal zone management program, the State becomes eligible for coastal grants and gains review authority over certain Federal activities in the coastal zone. The CZMA specifically excludes Federal lands from State designation.

State

California

California Environmental Quality Act (CEQA) (http://ceres.ca.gov/ceqa/stat/). California Environmental Quality Act requires that biological resources be considered when assessing the environmental impacts resulting from proposed actions. CEQA does not specifically define what constitutes an "adverse effect" on a biological resource. Instead, lead agencies are charged with determining what specifically should be considered an impact.

Porter-Cologne Water Quality Control Act (http://law.justia.com/california/codes/wat/13000-13002.htm). This Act provides for statewide coordination of water quality regulations. The Act established the California State Water Resources Control Board as the statewide authority and nine separate Regional Water Quality Control Boards to oversee water quality on a day-to-day basis at the regional/local level.

Washington

The Washington State Department of Ecology regulates water pollution control activities in the State (Chapter 90.48, RCW). The department also jointly regulates water quality in Puget Sound with the Puget Sound Action Team (Chapter 90.71, RCW). The Puget Sound Water Quality Management Plan calls for the preparation and implementation of watershed action plans to control and prevent nonpoint source pollution and to protect the beneficial uses of water. The plan also serves as the Federally-approved Comprehensive Conservation and Management Plan for Puget Sound under Clean Water Act §320, the National Estuary Program. (See also Puget Sound Water Quality Protection Act 1996 [Chapter 90.71, RCW].)

C.9 Government-to-Government Consultation

Naval Station Everett

Government-to-Government coordination was executed with Federally recognized Tribal governments (Lummi, Stillaguamish, Suquamish, Swinomish, and Tulalip Tribes) with the potential to be impacted by activities at NSE.

Naval Air Station North Island

There were no Federally recognized Tribes identified in the NASNI study area; therefore, no Government-to-Government coordination was done at this location.

Appendix D
Resource Calculations

APPENDIX D
RESOURCE CALCULATIONS

D.1 Air Quality

For this Environmental Assessment (EA), emissions calculations were estimated using AP-42 tables from U.S. Environmental Protection Agency (USEPA) (U.S. Environmental Protection Agency, 1996) and using a screening-level air quality model called U.S. Air Force's Air Conformity Applicability Model (ACAM), Version 4.6. Emissions from onboard generators were derived using the USEPA emission factors and formulas. Emissions from equipment and added personnel were derived using algorithms described within the ACAM software Technical Documentation (Air Force Center for Engineering and the Environment, 2010). Inputs used to complete the air emissions estimate are described below.

D.1.1 Onboard Generators

Two of the six Sea-Based X-Band (SBX) Radar Vessel generators would be operational during the in-port maintenance and repair period. Two generators would be required 24 hours a day for lights, air conditioning, computers, etc. because personnel would still live on the vessel during its time in port. Emission estimates were conservatively calculated assuming these generators would be used for 75 days, or 2½ months, because the proposed action could be 2 to 3 months in length. Emissions were then determined based on 40 percent generator operational capacity, which results in 80 barrels per day of diesel fuel throughput, or 3,200 gallons per day (Missile Defense Agency, 2010). This represents 240,000 gallons of fuel for two generators.

USEPA recommends the following formula to calculate yearly emissions from diesel generators (U.S. Environmental Protection Agency, 1996):

Ep = EFp x Fuel use/2000

where:

Ep = Emissions of a pollutant

EFp = AP-42 Emission Factor for pollutant, p, pounds/1,000 gallons

Fuel use = Number of gallons of diesel fuel used per year, 1,000 gallons/year

2,000 = Conversion factor from pounds to tons

Sample inputs for nitrogen oxides (NOx) are presented below*:*

AP-42 emission factor (pounds/1,000 gallons)	448
Total Fuel Use (1,000 gallons/year)	240

Table D-1 shows the net increase in air emissions of all criteria pollutants from the use of onboard generators.

Table D-1. Two Onboard Generators Emissions Worksheet

CAS	Pollutant	AP-42 Emission Factor (lb/1,000 gal)	Generator Emissions (lb/year)	Generator Emissions (Tons/Year)
11104-93-1	Nitrogen Oxides	448	107,520	53.76
630-08-0	Carbon Monoxide	119	14,459	14.28
PM	Particulate Matter	8.022	975	0.96
PM10	Particulate Matter 10	6.944	844	0.83
PM2.5	Particulate Matter 2.5	6.706	815	0.80
12624-32-7	Sulfur Dioxide*	0.2121	26	0.03
VOC	Volatile Organic Compounds	49.40028	6,002	5.93
124-38-9	Carbon dioxide (greenhouse gas)	23,100	2,806,650	2,772.00

Source: U.S. Environmental Protection Agency, 1996
* Assumed sulfur content is 0.05% by weight.

D.1.2 Added Personnel

During the maintenance and repair period, there could be up to 307 personnel working onsite (83 SBX Radar Vessel permanent personnel, 24 shore support, and 200 shipyard workers). There would be two work shifts scheduled from 0530 to 2200, 6 days per week. Trucks and commuting vehicles would result in indirect emissions. The only activities subject to conformity analysis include shipyard workers' commuter vehicles and miscellaneous vehicle operations within the installation. Emissions from both were determined as follows:

- The 224 shipyard workers would be commuting to the site in privately owned cars for up to 3 months with a one-way commute assumed to be 10 miles. This is called Shipyard Worker Commute-vehicle miles traveled (VMT).
- The 83 Government contractor support would live on the vessel during the maintenance and repair period. These personnel would use Government-owned vehicles or rental cars at some point during their approximate 3-month stay, assumed to be 50 miles for each employee. This is called On-road Government-owned vehicle (GOV) VMT.

These emissions were calculated using the following formula found in ACAM:

<u>Shipyard Worker Commute-VMT:</u>

Ep = F x N x 2 x COMDIST x EFp / 454 / 2,000

where:

F = Fraction of the year the shipyard workers will commute—75 days

N = Number of shipyard workers—224 workers

COMDIST = One-way commute distance, miles—10 miles

2 = Number of commutes per work day

EFp = Emission factor for pollutant, p, grams/mile. These factors were determined from MOBILE6 for carbon monoxide (CO), NOX, and volatile organic compounds (VOCs) for a default fleet mix in ACAM.

454 = Conversion factor from grams to pounds

2,000 = Conversion factor from pounds to tons

On-road GOV VMT:

Ep = F x N x GOVVMT x EFp / 454 / 2,000

where:

F = Fraction of the year the personnel operate—75 days

N = Number of personnel—83 Government contractor support

GOVVMT = 50 miles/employee

EFp = Emission factor for pollutant, p, grams/mile. These factors were determined from MOBILE6 for CO, NOX and VOCs for a default fleet mix in ACAM.

454 = Conversion factor from grams to pounds

2,000 = Conversion factor from pounds to tons

Neither category of added personnel would significantly contribute to the annual emissions of the Proposed Action as shown in Section D.1.5 Compliance Analysis.

D.1.3 Equipment

Equipment listed in Table D-2 is reflective of maximum equipment requirements, and is not necessarily reflective of equipment needed on any given day. The length of time any particular piece of equipment is required is ultimately a function of the final maintenance schedule. For example, it is estimated that one welder will be necessary for 75 days operating 13 hours per day (total 975 hours); this could be accomplished through the use of one welder for 75 days, or two welders for 37.5 days. For the purposes of calculated emissions, the precise scheduling is not a critical factor; rather, the total operating hours for each piece of equipment is the relevant metric.

USEPA recommends the following formula to calculate the hourly emissions from nonroad engine sources including the equipment listed in Table D-2 and using the emission factors listed in Table D-3:

Ep = N x HP x LF x EFp x .00205/2000

where:

N = source; i.e., 975 hours

HP =Horsepower (HP)

LF = typical load factor (percent)

EFp = emissions factor (grams/brake-hp-hr)

0.00205= Conversion factor from grams to pounds

2,000 = Conversion factor from pounds to tons

A sample calculation for aerial lift NOx emissions during maintenance and repair is provided below:

= 975 hours X 60hp x 46% x 3.500 grams/brake-hp-hr

= 94,185 grams/break-hp-hr

=0.10 tons (See Table D-2)

Table D-2. Equipment Emissions Worksheet

Equipment Type	Hours of Operation	Horsepower (HP)	Load Factor (percent)	NOx (tons)	CO (tons)	VOC (tons)	SO2 (tons)	PM10 (tons)	PM2.5 (tons)
Aerial Lift	975	60	0.46	0.10	0.10	0.03	0.00	0.00	0.00
Air Compressor	975	106	0.48	0.02	0.19	0.01	0.00	0.00	0.00
Crane	975	399	0.43	0.05	0.45	0.02	0.00	0.00	0.00
Ultra high pressure (UHP) washer	975	200	0.6	0.04	0.31	0.02	0.00	0.00	0.00
Pump	975	53	0.74	0.14	0.15	0.04	0.00	0.00	0.00
Welder	975	45	0.45	0.07	0.08	0.02	0.00	0.00	0.00
Tons/Year				**0.41**	**1.28**	**0.15**	**0.00**	**0.01**	**0.01**

Table D-3. Mobile and Stationary Construction Equipment Emission Factors 2010-2020

Horsepower	Emission Factors (g/brake-hp-hr)					
	CO	NOX	VOC	SO2	PM10	PM2.5
hp < 11	6.000	5.600	1.141	0.003	0.300	0.276
11 ≤ hp < 25	4.900	5.600	1.141	0.003	0.300	0.276
25 ≤ hp < 50	4.100	3.500	1.141	0.003	0.022	0.020
50 ≤ hp < 75	3.700	3.500	1.141	0.003	0.022	0.020
75 ≤ hp < 175	3.700	0.300	0.140	0.003	0.015	0.014
175 ≤ hp < 600	2.600	0.300	0.140	0.003	0.015	0.014
600 ≤ hp < 750	2.600	0.300	0.140	0.006	0.015	0.014
hp ≥ 750	2.600	4.800	0.320	0.006	0.150	0.138

Sources: Air Force Center for Engineering and the Environment, 2010

D.1.4 Painting and Solvents

Use of paints, primers, and other surface coating would result in the release of VOCs through the evaporation of solvents that are contained in these products. Emissions from painting and solvent operations are subject to the general conformity analysis. However, the painting and solvent activities that are part of this Proposed Action will be performed under local air shed permits in both locations. Thus, the emissions are exempt from conformity per 40 CFR 93.153(d) (1) and emissions from painting are not estimated in this analysis.

The type of paint and their VOC content is important to ensure NASNI and NSE will not exceed permitted emission limits. Table D-4 shows a breakdown of the coatings that are proposed for priming and painting all zones, columns, K-bracing, topside weather deck, underside of the wet deck, and the pontoon tops on the SBX Radar Vessel. This would be exterior work. The Proposed Action would require approximately 1,500 gallons of paint and 330 gallons of solvents. All painting would be roller or brush application to reduce air emissions.

Table D-4. Paint VOC Content Worksheet

Proposed Coating	Approx Area (sq ft)	Total gal	%VOC by weight	VOC (EPA-24) lb/gal	VOC lb/gal	VOC (EPA-24) (g/L)	VOC (g/L)	Coating Density (lb/gal)	Specific Gravity of paint (lb/gal)
Primer	47,800.00	177.04	14	2	2	250	250	12.7	1.52
Nonskid	18,600.00	620.00	5	0.90	0.90	4.80	0.90	18.7	2.24
Paint-Specialty Coating*	23,900.00	74.69	33	3.40	3.40	415.00	415.00	10.3	1.23
Primer/paint	94,900.00	405.56	23	2.67	2.67	320.00	320.00	11.38	1.36
Primer/paint	128,950.00	220.37	21	2.40	2.40	287.80	287.80	11.5	1.38
Total	**314,150.00**	**1,497.65**							

Source: Technical Data Sheets for each coating

Notes: g = grams gal = gallons L = liter lb = pounds sq ft = square feet VOC = volatile organic compound

* USEPA limits VOCs to 340 g/L coating for general use and 340 to 780 g/L coating for specialty coatings (U.S. Environmental Protection Agency, 1995).

D.1.5 Compliance Analysis

Table D-5 shows the estimated emission levels for generators, shipyard worker commute, Government use of vehicles, and equipment. Based on the results of this analysis of criteria pollutant emissions, the Proposed Action would not require a formal conformity determination since no exceedance of any applicable *de minimis* criteria level (100 tons/year for NOx, VOC, CO, and PM10) is predicted. Therefore, the Proposed Action would have minimal air quality impact and would not require a formal conformity determination.

Table D-5. Estimated Air Emissions for SBX Radar Vessel Maintenance and Repair Activity

Source Type	Carbon Monoxide (Tons/Year)	Nitrogen Oxides (Tons/Year)	Sulfur Dioxide* (Tons/Year)	VOC (Tons/ Year)	PM10 (Tons/ Year)	PM2.5 (Tons/ Year)	CO2 (Greenhouse Gas, Tons/Year)
Generators	14.28	53.76	0.03	5.93	0.83	0.80	2,772.00
Shipyard Worker Commute-VMT	0.08	0.01	0.00	0.01	0.00	0.00	3.03
On Road Government-Owned Vehicles VMT	0.07	0.01	0.00	0.00	0.00	0.00	2.8
Equipment	1.28	0.41	0.00	0.15	0.01	0.01	2.19
Net Emissions	**15.71**	**54.19**	**0.03**	**6.09**	**0.84**	**0.81**	**2,780.02**

Source: Emissions calculations were estimated using ACAM, Version 4.5 (Air Force Center for Engineering and the Environment, 2010) and AP-42 (U.S. Environmental Protection Agency, 1996)

Notes:

CO2 = Carbon dioxide—greenhouse gas

PM2.5 = particulate matter equal to or less than 2.5 microns in size

PM10 = particulate matter equal to or less than 10 microns in size

VOC = Volatile organic compounds

VMT= Vehicle Miles Traveled

Emissions displayed as fixed decimal numbers. Total calculated using full numbers.

*Assumed sulfur content is 0.05% by weight.

D.2 Noise

To assess the potential noise impacts of the SBX vessel while in port, a *SBX Radar Vessel In-Port Noise Assessment at Joint Base Pearl Harbor–Hickam* (ManTech, 2010b*)* was prepared for this EA. Excerpts from the assessment follow below.

To capture the widest variety of noises that could potentially affect adjacent public and private lands, including the operating noises of two of six on-board generators, time-weighted community noise metrics were collected at 19 locations at varying distances from the moored SBX Radar Vessel in Pearl Harbor, Hawaii (3 locations for long-term noise monitoring [LT1, LT2, and LT3], and 16 locations for short-term, or point, monitoring [ST1–ST16]). These locations are identified in Figure D-1.

All noise level readings were measured utilizing the Larson-Davis (Larson-Davis, Provo, Utah) Model 820 Type 1 (an acoustical accuracy standard) sound level meter. Noise level readings were averaged over a 1 minute interval at each of the short-term sites. Day-Night Levels (DNLs) were collected from the long-term monitoring locations for determining noise compatibility at the alternative locations being investigated in this EA. Additionally, besides the DNL, supplemental metrics such as single event noise data (e.g., equivalent, peak sound pressure levels, etc.) are employed, where appropriate, to provide additional information on the effects of noise.

While intermittent and transient noises contributed to hourly L_{eq} values and resulting DNLs, it is likely that the continuous noise sources such as the onboard generators, especially those occurring during nighttime hours, contributed largely to community noise levels. However, DNLs collected at the closest point to the in-port vessel (1,800 feet, LT1) averaged 62.6 decibels (dB) over the data collection period, which is in the range of low risk of complaints from the public.

As shown in Table D-6, Site LT1, positioned in line with the generator exhaust ports of the SBX Radar Vessel (1,800 feet southwest of the Vessel), and LT2 (3,500 feet southwest) reported the higher DNL values than LT3 (3,300 feet north/northwest). This is likely correlated to the orientation of the SBX Radar Vessel while in port. The SBX was moored with the exhaust axis (fans of the generators, or the stern of the vessel) facing to the southwest. The bow of the vessel was facing the northeast towards Pearl City. LT2 and LT3 were approximately the same distance from the vessel, but LT2, located along the exhaust axis, reported a DNL that was over 5 dB higher than that reported at LT3. The report concluded that the generator noise spreads louder and further along the exhaust axis.

The following conclusions can be made regarding the short term sound levels in Table D-7:

- Noise levels (average 1 minute Leq levels) from the generator exhausts on the SBX platform (only two of six operating), were measured between 65.8 and 67.1 A-weighted decibels (dBA) at 250 feet from the source (ST1). Average of 66.5 dBA.
- At a measured distance of 2,750 feet to the west of the generator exhaust (ST6), this stimulus was measured at 56.6 and 56.9 dBA. Average of 56.8 dBA.
- At a measured distance of 3,500 feet (ST7) the sounds from the generator exhaust were not audible above Hawaii's ambient noise environment during data collection periods, which was between 51.2 and 51.6 dBA.

Source: ManTech 2010b

EXPLANATION

- Victor / Foxtrox Mooring Locations
- Short-Term Recording Site
- Long-Term Recording Site

N

0 750 1,500 3,000 4,500 Feet

Meter Locations and Sound Level Measurements, SBX Radar Vessel Moored in Hawaii

Ford Island, Hawaii

Figure D-1

Table D-6. Sound Levels at Long Term Sound Level Meters, SBX Radar Vessel

	Site LT1	Site LT2	Site LT3
Distance from Source (feet)	1,800 Southwest	3,500 Southwest	3,300 North/Northwest
Total Time (hours)	64.2	63.2	61.5
Total Run Time (days)	2.7	2.6	2.5
Overall L_{eq}	56.6	60.2	53.6
Max 1-Hour L_{eq}	68.2	68.4	*
Min 1-Hour L_{eq}	46.6	48.9	*
Overall DNL	62.6	63.3	57.8
Overall Event L_{eq}	69.7	68.3	68.4
Overall Background L_{eq}	53.6	54.6	51.6
Number of Events	1,071	5,162	*
# Events SEL > 70 dB	453	2,291	*

Source: ManTech, 2010b

* Due to a memory fault on the sound level meter, discrete hourly level and event data was corrupted and not presented here.

Notes:

dB = decibel

DNL = Day-Night Level

SEL = Sound Equivalent Level (L_{eq})

Table D-7. Sound Levels at Short-Term Sound Level Meters, SBX-Radar Vessel

Sound Level Meter	Average Noise Level in dBA	Distance from Source
Sound Meters Along Exhaust Axis		
ST1	66.5	250 feet south
ST2	66.3	500 feet south/southwest
ST3	60.1	725 feet south/southwest
ST4	56.1	1,300 feet south/southwest
ST5	56.5	1,800 feet southwest
ST6	56.8	2,750 feet southwest
ST7	51.4	3,500 feet southwest
ST8	53.6	4,200 feet southwest
Sound Meters Oriented 90 degrees off the Exhaust Axis		
ST9	57.5	500 feet southeast
ST10	52.2	1,000 feet southeast
ST11	52.6	1,500 feet southeast
ST12	53.2	2,000 feet southeast
ST13	54.0	3,300 feet north/northwest
ST14	53.8	3,400 feet west
ST15	57.0	2,600 feet northwest
ST16	53.1	5,000 feet north

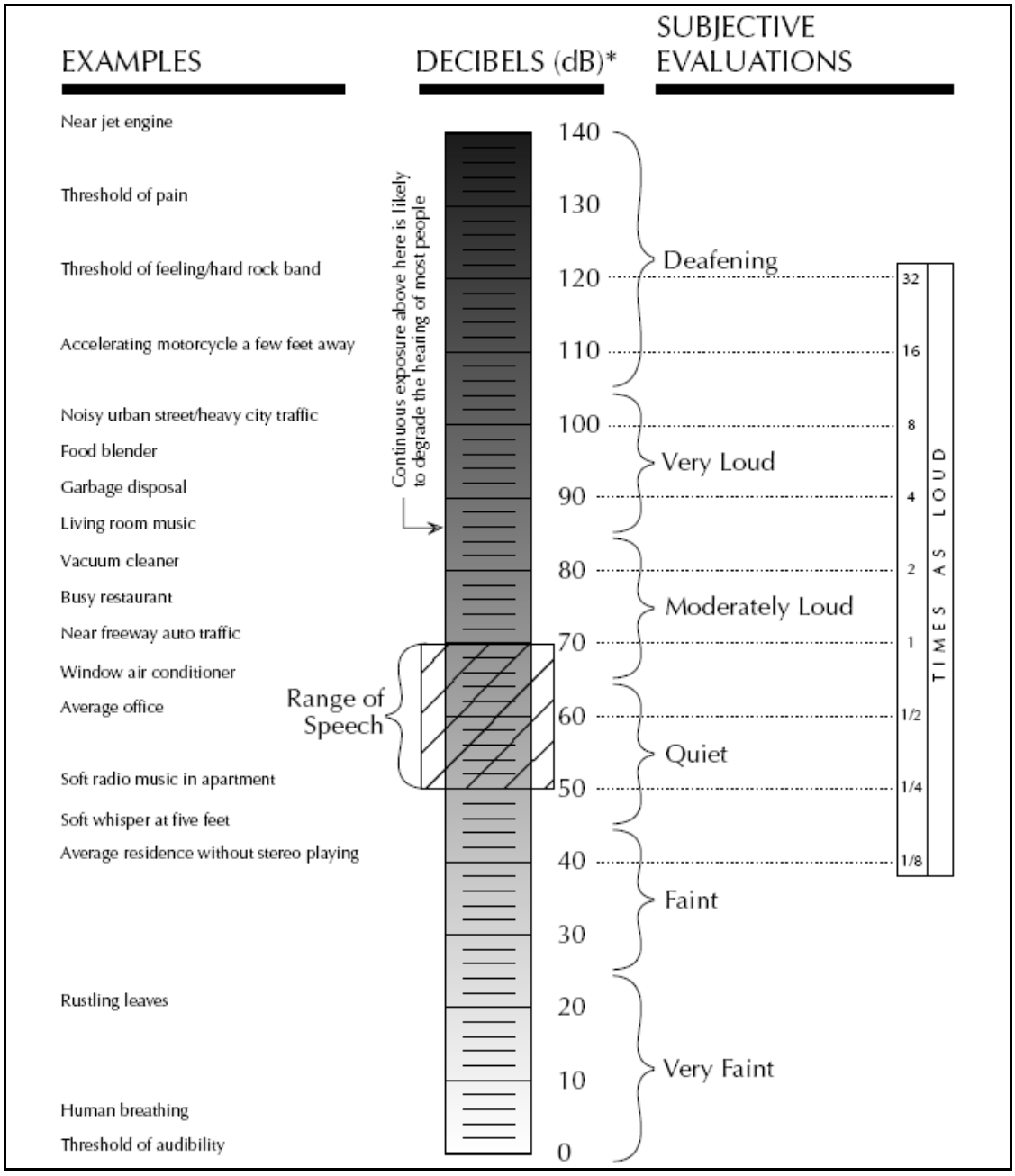
Source: ManTech, 2010b

Note: dBA = A-weighted decibels

At an orientation approximately 90 degrees off the exhaust axis, the noise from the generators was audible only to 1,000 feet away (ST10). No sounds from the SBX Radar Vessel were audible at ST12, which was approximately 2,000 feet away from the moored vessel.

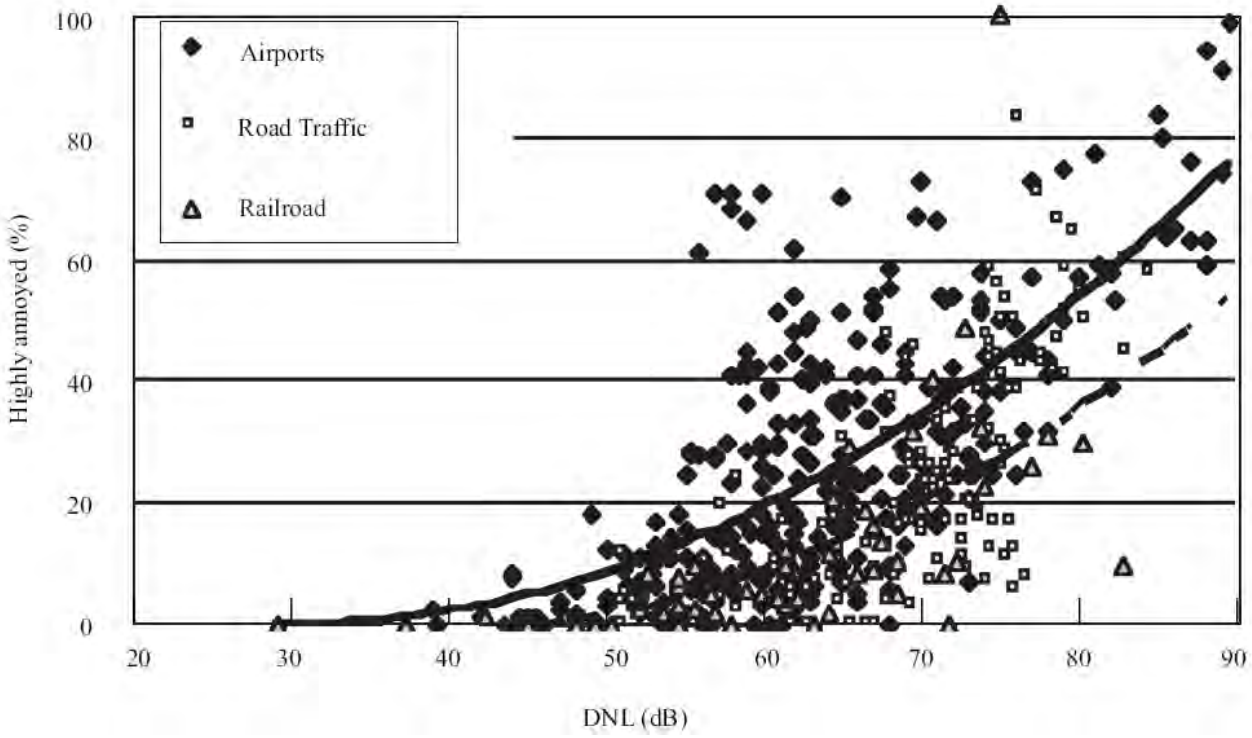
Table D-8 shows examples of A-weighted noise levels for various common noise sources.

Table D-8. Sound Levels of Typical Noise Sources and Environments



*dBA
Source: ManTech, 2010b

A strong correlation between DNL and annoyance exists and, as such, there is still the likelihood of noise-induced complaints as a result of noise levels produced by the SBX Radar Vessel. This is because noise induced annoyance eludes succinct definition, is subjective, and sensitive individuals can be annoyed even at very quiet DNLs. The DNL at Sites LT1 and LT2 were 62.6 and 63.3 dBA, respectively. Based on Figure D-2, the percentage of annoyed receivers would be approximately 20 percent of the community at sites that are a comparable distance (and along the same axis) from LT1 and LT2.



Source: ManTech, 2010b.

Figure D-2. Relationship between DNL and Percentage of Community Highly Annoyed

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Appendix E
Biological Resources

APPENDIX E
BIOLOGICAL RESOURCES

The following threatened and endangered species were not analyzed in this Environmental Assessment due to their rare occurrence in the action area or unsuitable habitat in the action area.

Green Sturgeon

Green sturgeon (*Acipenser medirostris*) are long-lived, slow-growing fish of the sturgeon species. Mature males range from 4.5 to 6.5 feet and do not mature until they are at least 15 years old, whereas mature females range from 5 to 7 feet in length and do not mature until they are at least 17 years old. Maximum ages of adult green sturgeon are likely to range from 60 to 70 years. This species is found along the west coast of Mexico, the United States, and Canada. (National Marine Fisheries Service, 2009)

Although they are members of the class of bony fishes, the skeleton of sturgeons is composed mostly of cartilage. Sturgeon lack scales; however, they have five rows of characteristic bony plates on their body called "scutes." The backbone of the sturgeon curves upward into the caudal fin, forming their shark-like tail. Sensory barbels and a siphon-shaped, protrusible, toothless mouth are on the underside of their flattened snouts. (National Marine Fisheries Service, 2009)

Green sturgeon are believed to spend the majority of their lives in nearshore oceanic waters, bays, and estuaries. Early life-history stages reside in freshwater, with adults returning to freshwater to spawn when they are more than 15 years of age and more than 4 feet in size. Spawning is believed to occur every 2 to 5 years. Adults typically migrate into freshwater beginning in late February; spawning occurs from March–July, with peak activity from April–June. Females produce 60,000 to 140,000 eggs. Juvenile green sturgeon spend 1 to 4 years in fresh and estuarine waters before dispersal to saltwater. (National Marine Fisheries Service, 2009)

Green sturgeon eat benthic invertebrates including shrimp, mollusks, amphipods, and even small fish. Green sturgeon use both freshwater and saltwater habitat. They spawn in deep pools or "holes" in large, turbulent, freshwater river mainstems. Specific spawning habitat preferences are unclear, but eggs likely are broadcast over large cobble substrates, but range from clean sand to bedrock substrates as well. It is likely that cold, clean water is important for proper embryonic development. (National Marine Fisheries Service, 2009)

When not spawning, adults live in oceanic waters, bays, and estuaries. Green sturgeon are known to forage in estuaries and bays ranging from San Francisco Bay to British Columbia. (National Marine Fisheries Service, 2009)

In October 2009, the National Marine Fisheries Service (NMFS) designated critical habitat for the Southern Distinct Population Segment (DPS) (National Marine Fisheries Service, 2009).

Distribution

The actual historical and current distribution of where this species spawns is unclear, as green sturgeon make non-spawning movements into coastal lagoons and bays in the late summer to fall, and because their original spawning distribution may have been reduced due to harvest and other anthropogenic effects. Today, green sturgeon are believed to spawn in the Rogue River, Klamath River Basin, and the Sacramento River. Spawning appears to rarely occur in the Umpqua River. Green sturgeon in the South Fork of the Trinity River were thought extirpated, but juveniles are captured at Willow Creek on the Trinity River, and it is suspected that the fish could be coming from either the South Fork or the Trinity River. Green sturgeon appear to occasionally occupy the Eel River. (National Marine Fisheries Service, 2009)

Population Trends

No good data on current population sizes exists, and data on population trends is lacking (National Marine Fisheries Service, 2009).

Threats

A principal factor in the decline of the Southern DPS is the reduction of the spawning area. This remains a threat due to increased risk of extirpation due to catastrophic events. Insufficient freshwater flow rates in spawning areas, contaminants (e.g., pesticides), bycatch of green sturgeon in fisheries, potential poaching (e.g., for caviar), entrainment by water projects, influence of exotic species, small population size, impassable barriers, and elevated water temperatures likely pose a threat to this species. (National Marine Fisheries Service, 2009)

Conservation Efforts

Fishing regulations and conservation measures represent a reduction in risk to green sturgeon. California, Oregon, Washington (United States) and British Columbia (Canada) have restricted commercial and sport fisheries where green sturgeon occur. Recent implementation of sturgeon fishing restrictions in Oregon and Washington and protective efforts put in place on the Klamath, Trinity, and Eel Rivers in the 1970s, 1980s, and 1990s may offer protection to the Southern DPS. The recent closure of the California recreational fishery may also be beneficial to this species. The most important conservation currently occurring is the change in operations of Red Bluff Diversion dam (open from mid September to mid May) allowing access to spawning areas above the dam. Originally, the dam was closed year around. (National Marine Fisheries Service, 2009)

Regulatory Overview

After completion of a study of its status in 2002, NMFS determined that the green sturgeon is composed of two DPSs that qualify as species under the Endangered Species Act (ESA), but that neither warranted listing as threatened or endangered (68 FR 4433). Uncertainties in the structure and status of both DPSs led NMFS to add them to the Species of Concern List (69 FR 19975). (National Marine Fisheries Service, 2009)

The “not warranted” determination was challenged on 7 April 2003. NMFS produced an updated status review on 22 February 2005 and reaffirmed that the northern green sturgeon DPS only warranted listing on the Species of Concern List; however, they proposed that the Southern DPS should be listed as threatened under the ESA. NMFS published a final rule on

7 April 2006 listing the Southern DPS as threatened (71 FR 17757), which took effect 6 June 2006. (National Marine Fisheries Service, 2009)

In September 2008, NMFS proposed critical habitat for the Southern DPS. The public comment period was extended to 22 December for the proposed critical habitat. (National Marine Fisheries Service, 2009)

On 21 May 2009, NMFS proposed a 4(d) rule to apply ESA take prohibitions to the Southern DPS (National Marine Fisheries Service, 2009).

Eulachon

Species Description

Eulachon (*Thaleichthys pacificus,* commonly called smelt, candlefish, or hooligan) are a small, anadromous fish from the eastern Pacific Ocean. They are distinguished by the large canine teeth on the bone in the roof of the mouth and 18 to 23 rays in the anal fin. Like Pacific salmon they have a sickle-shaped adipose fin. The paired fins are longer in males than in females. Adults are brown to blue on the back and top of the head, lighter to silvery white on the sides, and white on the ventral surface; speckling is fine, sparse, and restricted to the back. They feed on plankton, but only while at sea. (National Marine Fisheries Service, 2010a)

Eulachon typically spend 3 to 5 years in saltwater before returning to freshwater to spawn from late winter through mid spring. During spawning, males have a distinctly raised ridge along the middle of their bodies. Eggs are fertilized in the water column. After fertilization, the eggs sink and adhere to the river bottom, typically in areas of gravel and coarse sand. Most eulachon adults die after spawning. Eulachon eggs hatch in 20 to 40 days, and the larvae are then carried downstream and are dispersed by estuarine and ocean currents shortly after hatching. Juvenile eulachon move from shallow nearshore areas to mid-depth areas. Within the Columbia River Basin, the major and most consistent spawning runs occur in the mainstem of the Columbia River as far upstream as the Bonneville Dam, and in the Cowlitz River. (National Marine Fisheries Service, 2010a)

Habitat

Eulachon occur in nearshore ocean waters and to 1,000 feet in depth, except for the brief spawning runs into their birth streams. Spawning grounds are typically in the lower reaches of larger snowmelt-fed rivers with water temperatures ranging from 39 to 50 degrees Fahrenheit (°F). Spawning occurs over sand or coarse gravel substrates. (National Marine Fisheries Service, 2010a)

Distribution

Eulachon are endemic to the eastern Pacific Ocean, ranging from northern California to southwest Alaska and into the southeastern Bering Sea. In the continental United States, most eulachon originate in the Columbia River Basin. Other areas in the United States where eulachon have been documented include the Sacramento River, Russian River, Humboldt Bay and several nearby smaller coastal rivers (e.g., Mad River), and the Klamath River in California; the Rogue River and Umpqua Rivers in Oregon; and infrequently in coastal rivers and tributaries to Puget Sound, Washington. (National Marine Fisheries Service, 2010a)

Population Trends

Eulachon abundance exhibits considerable year-to-year variability. However, nearly all spawning runs from California to southeastern Alaska have declined in the past 20 years, especially since the mid 1990s. From 1938 to 1992, the median commercial catch of eulachon in the Columbia River was approximately 2 million pounds, but from 1993 to 2006, the median catch had declined to approximately 43,000 pounds, representing a nearly 98 percent reduction in catch from the prior period. Eulachon returns in the Fraser River and other British Columbia rivers similarly suffered severe declines in the mid-1990s and presently remain at very low levels. The populations in the Klamath River, Mad River, Redwood Creek, and Sacramento River are likely extirpated or nearly so. (National Marine Fisheries Service, 2010a)

Threats

Habitat loss and degradation threaten eulachon, particularly in the Columbia River basin. Hydroelectric dams block access to historical eulachon spawning grounds and affect the quality of spawning substrates through flow management, altered delivery of coarse sediments, and siltation. The release of fine sediments from behind a U.S. Army Corps of Engineers sediment retention structure on the Toutle River has been negatively correlated with Cowlitz River eulachon returns 3 to 4 years later and is thus implicated in harming eulachon in this river system, though the exact cause of the effect is undetermined. Dredging activities during spawning runs may entrain and kill fish or otherwise result in decreased spawning success. (National Marine Fisheries Service, 2010a)

Eulachon have been shown to carry high levels of chemical pollutants, and although it has not been demonstrated that high contaminant loads in eulachon result in increased mortality or reduced reproductive success, such effects have been shown in other fish species. Harvesting eulachon has been curtailed significantly in response to population declines. However, existing regulatory mechanisms may be inadequate to recover eulachon stocks. (National Marine Fisheries Service, 2010a)

Global climate change may also threaten eulachon, particularly in the southern portion of its range where ocean warming trends may be the most pronounced and may alter prey, spawning, and rearing success (National Marine Fisheries Service, 2010a).

Conservation Efforts

Conservation efforts include fishing restrictions and habitat improvements targeted to improve the status of eulachon, salmon, and other native species in Pacific Northwest streams (National Marine Fisheries Service, 2010a).

Regulatory Overview

In 1999, National Oceanic and Atmospheric Administration (NOAA) Fisheries was petitioned under the ESA to add Columbia River eulachon to the list of federally threatened and endangered species. In November 1999, NMFS issued a finding that the petition did not present substantial scientific information indicating the petitioned action may be warranted (64 FR 66601; 29 November 1999). (National Marine Fisheries Service, 2010a)

On 8 November 2007, NMFS received a petition from the Cowlitz Indian Tribe to list southern eulachon (populations in Washington, Oregon, and California) under the ESA. The Cowlitz Indian Tribe's petition sought delineation of a southern eulachon DPS extending from the U.S.-Canada border south to include populations in Washington, Oregon, and California. In March 2008, NMFS determined that the petition presented substantial scientific and commercial information indicating the petitioned action may be warranted, and initiated a status review. In March 2010, NMFS listed the Southern DPS of eulachon as threatened under the ESA. (National Marine Fisheries Service, 2010a)

Rockfish

Species Description

Bocaccio (*Sebastes paucispinis*) are large Pacific coast rockfish that reach up to 3 feet in length. They have a distinctively long jaw extending to at least the eye socket. Their body ranges in color from olive to burnt orange or brown as adults. Young bocaccio are light bronze in color and have small brown spots on their sides. Fecundity in female bocaccio ranges from 20,000 to over 2 million eggs, considerably more than many other rockfish species. Approximately 50 percent of adult bocaccio mature in 4 to 6 years. Bocaccio age is difficult to determine, but they are suspected to live as long as 50 years. (National Marine Fisheries Service, 2010b)

Canary rockfish (*Sebastes pinniger*) are large rockfish that reach up to 2.5 feet long and weigh 10 pounds. Adults are bright yellow to orange mottling over gray, have three orange stripes across the head, and have orange fins. Animals less than 14 inches long have dark markings on the posterior part of the spiny dorsal fin and gray along the lateral line. Approximately 50 percent of adult canary rockfish are mature at 14 inches total length (about 5 to 6 years of age). Canary rockfish can live to be 75 years old. (National Marine Fisheries Service, 2010c)

Yelloweye rockfish *(Sebastes ruberrimus)* are very large rockfish that reach up to 3.5 feet long and weigh about 39 pounds. They are orange-red to orange-yellow and may have black on their fin tips. Their eyes are bright yellow. Adults usually have a light to white stripe on the lateral line; juveniles have two light stripes, one on the lateral line and a shorter one below the lateral line. Fecundity in female yelloweye rockfish ranges from 1.2 to 2.7 million eggs, considerably more than many other rockfish species. Yelloweye rockfish occur in waters 80 to 1,560 feet deep, but are most commonly found between 300 to 590 feet. (National Marine Fisheries Service, 2010d)

Rockfishes are unusual among the bony fishes in that fertilization and embryo development is internal and female rockfish give birth to live larval young. Larvae are found in surface waters, and may be distributed over a wide area extending several hundred miles offshore. Larvae and small juvenile rockfish may remain in open waters for several months, being passively dispersed by ocean currents. (National Marine Fisheries Service, 2010b;c)

Larval rockfish feed on diatoms, dinoflagellates, tintinnids, and cladocerans, and juveniles consume copepods and euphausiids of all life stages. Adults eat demersal invertebrates and small fishes, including other species of rockfish, associated with kelp beds, rocky reefs, pinnacles, and sharp dropoffs. (National Marine Fisheries Service, 2010b)

Habitat

Bocaccio are most common in water between 160 to 820 feet deep, but may be found as deep as 1,560 feet. Adults generally move into deeper water as they increase in size and age but usually exhibit strong site fidelity to rocky bottoms and outcrops. Juveniles and subadults may be more common than adults in shallower water, and are associated with rocky reefs, kelp canopies, and artificial structures, such as piers and oil platforms. (National Marine Fisheries Service, 2010b)

Canary rockfish primarily inhabit waters 160 to 820 feet deep but may be found to 1,400 feet. Juveniles and subadults tend to be more common than adults in shallow water and are associated with rocky reefs, kelp canopies, and artificial structures, such as piers and oil platforms. Adults generally move into deeper water as they increase in size and age but usually exhibit strong site fidelity to rocky bottoms and outcrops where they hover in loose groups just above the bottom. (National Marine Fisheries Service, 2010c)

Distribution

Bocaccio range from Punta Blanca, Baja California, to the Gulf of Alaska off Krozoff and Kodiak Islands. They are most common between Oregon and northern Baja California. In Puget Sound, most bocaccio are found south of Tacoma Narrows. (National Marine Fisheries Service, 2010b)

Canary rockfish range between Punta Colnett, Baja California, and the Western Gulf of Alaska. Within this range, canary rockfish are most common off the coast of central Oregon. (National Marine Fisheries Service, 2010c)

Yelloweye rockfish range from northern Baja California to the Aleutian Islands, Alaska, but are most common from central California northward to the Gulf of Alaska (National Marine Fisheries Service, 2010d).

Population Trends

Recreational catch and effort data spanning 12 years from the mid-1970s to mid-1990s suggest possible declines in abundance in Washington. Additional data over this period show the number of angler trips increased substantially and the average number of rockfish caught per trip declined. Taken together, these data suggest declines in the population over time. Currently there are no survey data being taken for this species, but few of these fish are caught by fishermen and none have been caught by Washington state biological surveys in 20 years, suggesting very low population abundance. They are thought to be at an abundance of less than 10 percent of their unfished abundance, but a 2005 stock assessment by NOAA Fisheries suggests bocaccio there have higher populations than was thought to be the case. (National Marine Fisheries Service, 2010b)

Currently there are no survey data being taken for canary rockfish, but few of these fish are currently caught by fishermen, suggesting a low population abundance. Canary rockfish were one of the three principal species caught in Puget Sound in the 1960s. (National Marine Fisheries Service, 2010c)

Threats

Rockfish are fished directly and are often caught as bycatch in other fisheries, including those for salmon. Adverse environmental factors led to recruitment failures in the early- to mid-1990s. (National Marine Fisheries Service, 2010b; c)

Conservation Effort

Various State restrictions on fishing have been put in place over the years. Current regulations in the State of Washington, where the species is most at risk, limit the daily rockfish catch to three rockfish total (of any species). Retention of canary and yelloweye rockfish was banned in Washington in 2003. Because rockfish are so slow-growing, late to mature, and long-lived, recovery from the above threats will take many years, even if the threats are no longer affecting the species. (National Marine Fisheries Service, 2010b; c)Regulatory Overview

On 23 April 2009, NMFS proposed that this species should be listed as endangered under the ESA (National Marine Fisheries Service, 2010b).

On 9 April 2007, NMFS received a petition to list DPSs of bocaccio, and four other rockfishes in Puget Sound, as endangered or threatened species under the ESA and to designate critical habitat. NMFS found that this petition also did not present substantial scientific or commercial information to suggest that the petitioned actions may be warranted (72 FR 56986; 5 October 2007). On 29 October 2007, NMFS received a letter presenting information that was not included in the April 2007 petition, and requesting reconsideration of the decision not to initiate a review of the species' status. NMFS considered the supplemental information as a new petition and concluded that there was enough information in this new petition to warrant conducting status reviews of these rockfishes. The status review was initiated on 17 March 2008 (73 FR 14195). (National Marine Fisheries Service, 2010b)

In February 1999, NMFS received a petition to list 18 species of marine fishes in Puget Sound, including bocaccio and canary rockfish, under the ESA. On 21 June 1999, NMFS found that there was insufficient information concerning stock structure, status, and trends for bocaccio species to suggest that listing this species may be warranted (64 FR 33037). (National Marine Fisheries Service, 2010b; c)

On 28 April 2010, NMFS issued a final determination to list the Puget Sound/Georgia Basin DPS of bocaccio as endangered under the ESA and canary and yelloweye rockfish as threatened under the ESA (National Marine Fisheries Service, 2010f).

Humpback Whale

Species Description

The humpback whale (*Megaptera novaeangliae*) is a Baleen whale ranging in size from about 40 to 50 feet and weighing approximately 79,000 pounds and is greyish in color. The humpback whale is characterized by a tapered head and unusually long pectoral fins. Similar to other baleen whales, the female is larger than the male and reaches lengths of up to 60 feet. The humpback whale is found in oceans around the world but tends to stay in polar waters in the summer where they feed, and then migrate to more tropical waters in the winter. In winter months, the whales survive off of their fat supplies. The whales mate during the summer and then give birth during the winter. Adult whales feed on krill and small fish and produce a distinct

whale song that can last 10 to 20 minutes. Calves are weaned at 6 to 10 months and are thought to live 50 to 60 years, although there is evidence that some may live even longer. (National Marine Fisheries Service, 2010g; Whalewatching.com, 2008)

Photo-identification is a technique employed to track the sightings of animals in a population that are individually identifiable by natural markings. With humpback whales, variation in the natural coloration patterns and shape of the ventral surface of the tail flukes can be used to distinguish one whale from another. Cascadia Research Collective in Olympia, Washington has been collecting identification photographs of humpback whales from the entire U.S. west coast for more than 20 years, and maintains a catalog of over 1,400 known individuals, which includes nearly 200 whales from the outside waters of Washington and Southern British Columbia. Cascadia Research Collective responded to sighting reports of whales in the South Sound and collected photographs taken opportunistically by whale watching vessels throughout the Georgia Basin region in 2003 and 2004. These photographs were compared to each other and to the previously photographed whales from the outer coast of Washington and British Columbia. This allowed the determination of the number of individual whales entering inside waters and the relationship of these whales to the larger offshore population. (Falcone, et al., 2005)

Prior to 2003 only three individuals had been identified in inside waters: the two juveniles in 1988 noted above (which were not sighted again), and a third single adult whale seen off Victoria, B.C. in October 1997. A total of 13 unique individuals were identified in 2003 and 2004, one of which was the same whale seen in October 1997. Most of the whales were identified in the fall; however, two juvenile humpbacks were identified in spring of 2004, one in the San Juan Islands and the other in southern Puget Sound. The South Sound whale, which was initially reported as a gray whale, was sighted frequently in the waters between Southern Vashon Island and Point Defiance in May and June of that year. (College of Engineering at the University of Washington, 2005)

Eleven of the thirteen whales identified in inside waters had photographs of sufficient quality to be compared against the collection of whales previously identified on the outer coast. Of particular interest is whale WABC03-1, which was identified in fall 2003 as a calf. It was photographed twice in 2004 as a yearling: once with its mother, and later with a second whale of unknown sex and age. (College of Engineering at the University of Washington, 2005)

Habitat

Humpbacks stay near the water's surface during migration. They prefer shallow water during feeding and calving. During calving, humpback whales are usually found in the warmest water available at that latitude. Feeding grounds are in cold, productive water. (National Marine Fisheries Service, 2010g)

Distribution

Humpback whales are found in all major oceans from the equator to sub-polar latitudes. In the North Pacific, the California/Oregon/Washington stock winters in coastal Central America and Mexico and migrates to areas ranging from the coast of California to southern British Columbia in summer/fall. (National Marine Fisheries Service, 2010g)

Population Trends

Humpback whale numbers are increasing in much of their range. While estimating humpback whale abundance is inherently difficult, the best estimates for minimum populations for the five stocks of humpback whales recognized in U.S. waters are:

1. Gulf of Maine stock in the Atlantic Ocean—about 550
2. Western North Pacific—about 365
3. Central North Pacific (including the Southeast Alaska feeding area)—about 3,700
4. California/Oregon/Washington—about 1,250
5. American Samoa—about 150

The Gulf of Maine, central North Pacific, and California/Oregon/Washington stocks seem to be increasing. (National Marine Fisheries Service, 2010g)

Threats

Humpback whales face a series of threats including entanglement in fishing gear (bycatch), ship strikes, whale watch harassment, habitat impacts, and proposed harvest. Humpback whales can become entangled in fishing gear, either swimming off with the gear or becoming anchored. NMFS has observed "incidental take"" of humpback whales in the California/Oregon swordfish and thresher shark drift gillnet fishery. (National Marine Fisheries Service, 2010g)

Inadvertent ship strikes can injure or kill humpback whales. NMFS has verified mortality related to ship strikes in the Gulf of Maine and in southeastern Alaska. Ship strikes have also been reported in Hawaii. Whale watching vessels may stress or even strike whales. (National Marine Fisheries Service, 2010g)

Shipping channels, fisheries, and aquaculture may occupy or destroy humpback whale aggregation areas. Recreational use of marine areas, including resort development and increased boat traffic, may displace whales that would normally use that area. Acoustic impacts from vessel operation, oceanographic research using active sonar, and military operations are also of increasing concern. (National Marine Fisheries Service, 2010g)

While there is no current legal commercial harvest of humpback whales, Japan has proposed killing 50 humpback whales as part of its program of scientific research under special permit (scientific whaling). Also, Denmark recently proposed a hunt of 10 humpback whales a year. Both of these proposed harvests have the potential to negatively impact recovery of humpback whales. (National Marine Fisheries Service, 2010g)

Conservation Efforts

The most recent conservation efforts by NMFS and its partners for Pacific populations of humpback whales are to:

- Implement marine mammal take reduction measures identified in the Pacific Offshore Cetacean Take Reduction Plan.

- Mitigate ship strikes and respond to humpback whales in distress.
- Educate whale watch vessels and boat operators on practicing safe boating around whales.
- Monitor humpbacks in U.S. waters via shipboard surveys and mark recapture studies.
- Research humpback whale population structure and abundance including the Structure of Populations, Levels of Abundance, and Status of Humpbacks projects as well as work done at the Hawaiian Islands Humpback Whale National Marine Sanctuary. (National Marine Fisheries Service, 2010g)

Regulatory Overview

In 1946, the International Convention for the Regulation of Whaling regulated commercial whaling of humpback whales. In 1966, the International Whaling Commission prohibited commercial whaling of humpbacks. In June 1970, humpback whales were designated as "endangered" under the Endangered Species Conservation Act. In 1973, the Endangered Species Act (ESA) replaced the Endangered Species Conservation Act, and continued to list humpback whales as endangered. (National Marine Fisheries Service, 2010g)

In 1972, humpback whales were provided additional protection under the Marine Mammal Protection Act (MMPA), and were considered "depleted" in 1973. Under the MMPA, threats to humpback whales are mitigated by regulations implementing the Pacific Offshore Cetacean Take Reduction Plan and the Atlantic Large Whale Take Reduction Plan. (National Marine Fisheries Service, 2010g)

Steller Sea Lion

Species Description

The Steller sea lion (*Eumetopias jubatus)*, also known as the northern sea lion, is the largest member of the Otariid (eared seal) family. Steller sea lions exhibit sexual dimorphism, in which adult males are noticeably larger than females and further distinguished by a thick mane of coarse hair. Adult males may be up to 10 to 11 feet long and can weigh up to 2,500 pounds. (Females are smaller than males, at 7.5 to 9.5 feet in length and weigh up to 770 pounds.) The coats of adult males and females are light blonde to reddish brown and slightly darker on the chest and abdomen. The light coloration is still visible when the body is wet, which is different from many pinniped species. Like other pinnipeds, their coat of fur molts every year. Both sexes also have long whitish whiskers on their muzzle. The flippers and other hairless parts of the skin are black. The fore-flippers are broader and longer than the hind-flippers and are the primary means of locomotion in water. On land, sea lions, unlike "true" seals, can turn their hind flippers forward for walking. (National Marine Fisheries Service, 2010e)

Steller sea lions forage near shore and pelagic waters. They are capable of traveling long distances in a season and can dive to approximately 1,300 feet deep. They also use terrestrial habitat as haul-out sites for periods of rest, molting, and as rookeries for mating and pupping. At sea, they are seen alone or in small groups, but may gather in large rafts at the surface near rookeries and haul outs. This species is capable of powerful vocalizations that are accompanied by a vertical head bobbing motion by males. Steller sea lions are opportunistic predators, foraging and feeding primarily at night on a wide variety of fishes (e.g., capelin, cod, herring, mackerel, pollock, rockfish, salmon, sand lance, etc.), bivalves, cephalopods (e.g.,

squid and octopus) and gastropods. Their diet may vary seasonally depending on the abundance and distribution of prey. They may disperse and range far distances to find prey, but are not known to migrate. (National Marine Fisheries Service, 2010e)

Steller sea lions are colonial breeders. Adult males, also known as bulls, establish and defend territories on rookeries to mate with females. Bulls become sexually mature between 3 and 8 years of age, but typically are not large enough to hold territory successfully until they are 9 or 10 years old. Mature males may go without eating for 1 to 2 months while they are aggressively defending their territory. Females typically reproduce for the first time at 4 to 6 years of age, usually giving birth to a single pup each year. At birth, pups are about 3.3 feet long and weigh 35-50 pounds. Adult females, also known as cows, stay with their pups for a few days after birth before beginning a regular routine of alternating foraging trips at sea with nursing their pups on land. Female Steller sea lions use smell and distinct vocalizations to recognize and create strong social bonds with their newborn pups. Pups have a dark brown to black coat until 4 to 6 months old, when they molt to a lighter brown. By the end of their second year, pups are the same color as adults. Females usually mate again with males within 2 weeks after giving birth. Males can live to be up to 20 years old, while females can live to be 30. (National Marine Fisheries Service, 2010e)

Habitat

Steller sea lions prefer the colder temperate to sub-arctic waters of the North Pacific Ocean. Haul outs and rookeries usually occur on beaches (gravel, rocky or sand), ledges, and rocky reefs. In the Bering Sea and Okhotsk Sea, sea lions may also haul out on sea ice, but this is considered atypical behavior. (National Marine Fisheries Service, 2010e)

Critical habitat has been defined for Steller sea lions as a 20 nautical mile buffer around all major haul-outs and rookeries, as well as associated terrestrial, air and aquatic zones, and three large offshore foraging areas (50 CFR 226.202 on Aug. 27, 1993). (National Marine Fisheries Service, 2010e)

Distribution

Steller sea lions are distributed mainly around the coasts to the outer continental shelf along the North Pacific Ocean rim from northern Hokkaiddo, Japan through the Kuril Islands and Okhotsk Sea, Aleutian Islands and central Bering Sea, southern coast of Alaska and south to California. The population is divided into the Western and the Eastern DPSs at 144° West longitude (Cape Suckling, Alaska). The Western DPS includes Steller sea lions that reside in the central and western Gulf of Alaska, Aleutian Islands, as well as those that inhabit the coastal waters and breed in Asia (e.g., Japan and Russia). The Eastern DPS includes sea lions living in southeast Alaska, British Columbia, California, and Oregon. (National Marine Fisheries Service, 2010e)

Population Trends

For management purposes, Steller sea lions inhabiting U.S. waters have been divided into two DPSs: the Western U.S. and the Eastern U.S. The differentiation is based primarily on genetic and physical differences, but also on differing population trends in the two regions. There are approximately 39,000-45,000 Steller sea lions in the Western U.S. and 44,500 to 48,000 in the Eastern U.S. (National Marine Fisheries Service, 2010e)

The Western DPS declined by 75 percent between 1976 and 1990, and decreased another 40 percent between 1991 and 2000 (the average annual decline during this period was 5.4 percent). Since the 1970s, the most significant drop in numbers occurred in the eastern Aleutian Islands and the western Gulf of Alaska. The extent of this decline led NMFS to list the Steller sea lion as threatened range-wide under the ESA in April 1990. In the 1990s, the decline continued in the Western portions of the range, leading NMFS to divide the species into two distinct DPSs, Western and Eastern and to list the Western DPS as endangered in 1997. Population surveys suggest that the Eastern U.S. DPS is stable or increasing in the northern part of its range (Southeast Alaskan and British Columbia), while the remainder of the Eastern DPS and all the Western DPS is declining. (National Marine Fisheries Service, 2010e)

Threats

Anthropogenic (or human-induced) threats to Steller sea lions include boat strikes, contaminants/pollutants, habitat degradation, illegal hunting/shooting, offshore oil and gas exploration, direct and indirect interactions with fisheries, and subsistence harvests by natives in Alaska and Canada (150 to 300 taken a year). Some Steller sea lions were killed to limit their predation on fish in aquaculture facilities (fish farms), but intentional killing of Steller sea lions has not been permitted since they were protected under the Marine Mammal Protection Act and listed under the ESA. (National Marine Fisheries Service, 2010e)

Direct and indirect interactions with fisheries by Steller sea lions are currently receiving significant attention and may possibly be an important factor in their decline. Direct fishing impacts are largely due to fishing gear (drift and set gillnets, longlines, trawls, etc.) that has the potential to entangle, hook, injure, or kill sea lions. These pinnipeds have been seen entangled in fishing equipment with what are considered serious injuries. Steller sea lions are also indirectly threatened by fisheries because they have to compete for food resources, and critical habitat may be modified by fishing activities. (National Marine Fisheries Service, 2010e)

Conservation Efforts

Protective zones, catch/harvest limits, various procedures and other measures have been implemented around major haul-outs and rookeries in order to safeguard their critical habitat. The IUCN Red List of Threatened Species considers this species to be endangered. (National Marine Fisheries Service, 2010e)

Regulatory Overview

The Steller sea lion was listed under the ESA as threatened throughout its range on 4 December 1990. This listing included animals from Alaska, California, Oregon, and Washington in the United States, as well as Canada, Japan, and Russia. (National Marine Fisheries Service, 2010e)

On 4 June 1997, the population west of 144° W longitude was listed as an endangered DPS (the Western DPS) under the ESA; the population east of 144° W remained listed as threatened as the Eastern DPS. Under the Marine Mammal Protection Act, all Steller sea lions are classified as strategic stocks and are considered depleted. (National Marine Fisheries Service, 2010e)

Critical habitat has been designated (50 CFR 226.202 on 27 August 1993) for Steller sea lions as a 20 nautical mile buffer around all major haul-outs and rookeries, as well as associated terrestrial, air, and aquatic zones, and three large offshore foraging areas. NMFS has also designated no-entry zones around rookeries (50 CFR 223.202). NMFS has implemented a complex suite of fishery management measures designed to minimize competition between fishing and the endangered population of Steller sea lions in critical habitat areas. (National Marine Fisheries Service, 2010e)

A recovery plan was developed for Steller sea lions in 1992. A revised recovery plan, which discusses separate recovery actions for the threatened and endangered populations, was issued in 2008. (National Marine Fisheries Service, 2010e)

Short-Tailed Albatross

Species Description

The short-tailed albatross (*Phoebastria albatrus*) is the largest and only white-bodied albatross in the north Pacific. It has a golden, yellow cast on head and nape. Upper wings are white with black primaries, secondaries, and tertials. Under wings are white with black leading and trailing edges. It has a white tail with black fringe, large, pink bill with blue tip and black border around the base, and pale bluish feet and legs. Their length ranges from 33.6 to 36.4 inches with a wingspan of 7 to 7.5 feet). Their average life span is 12 to 45 years. (U.S. Fish and Wildlife Service, 2010)

Distribution

The short-tailed albatross once ranged throughout most of the North Pacific Ocean and Bering Sea. A recent discovery of a fossil breeding site on Bermuda confirms that this species also formerly nested in the North Atlantic during the middle Pleistocene (420–362 thousand years ago). These authors speculate that short-tailed albatross were extirpated from the North Atlantic during an interglacial period in which sea level rose more than 20 meters higher than present, with violent storm surges. Sightings of individual short-tailed albatross have been recorded along the west coast of North America, as far south as the Baja Peninsula, Mexico. (U.S. Fish and Wildlife Service, 2008)

As of 2008, 80 to 85 percent of the known breeding short-tailed albatross use a single colony, Tsubamezaki, on Torishima Island. Torishima is an active volcano, approximately 1,182 feet high and 1.5 miles wide. Ongoing management efforts focus on maintaining high rates of breeding success. However, the location of this colony, on the fluvial outwash plain of the active volcano's caldera, is precarious. A minor eruption occurred here in 2002, and it is said by Japanese scientists that a major eruption is overdue. A new colony, Hatsunezaki, has recently formed on the northwest side of Torishima Island, on a safer, less actively eroding site as a result of the efforts put forth by the Yamashina Institute for Ornithology in Japan. (U.S. Fish and Wildlife Service, 2008)

The 2007–2008 population estimates of short-tailed albatross indicate 343 breeding pairs (or 686 breeding adults). The total worldwide estimate for breeding age short-tailed albatross as of the 2007–2008 nesting season is 1,114 individuals. (U.S. Fish and Wildlife Service, 2008)

Regulatory Overview

The U.S. Fish and Wildlife Service (USFWS) originally listed the short-tailed albatross in 1970 (35 FR 8491), under the then-Endangered Species Conservation Act of 1969, before passage of today's Act (16 U.S.C. 1531 et seq.). However, as a result of an administrative error (and not from any biological evaluation of status), USFWS listed the species as endangered throughout its range, except within the United States (50 CFR 17.11). On 31 July 2000, USFWS corrected this error when they published a final rule listing the short-tailed albatross as endangered throughout its range (65 FR 46643). This listing was effective 30 August 2000. In that rule, USFWS also determined designation of critical habitat to be not prudent because, among other reasons, USFWS could not find habitat-related threats to the species within U.S. territory. (U.S. Fish and Wildlife Service, 2009)

The species occurs in waters throughout the North Pacific, primarily along the east coast of Japan and Russia, in the Gulf of Alaska, along the Aleutian Islands and in the Gulf of Alaska south of 64 degrees north latitude. At the time of the 2000 final listing rule, the short-tailed albatross population consisted of about 1,200 individuals known to breed on two islands: Torishima, an active volcanic island in Japan, and Minami-Kojima, an island whose ownership is under dispute by Japan, China, and Taiwan. (U.S. Fish and Wildlife Service, 2009)

Critical habitat has not been designated for this species. In the 2000 final rule, the Service determined that designation of Critical Habitat was not prudent due to the lack of habitat-related threats to the species, and the lack of specific areas in U.S. jurisdiction that could be identified as meeting the definition of Critical Habitat. (U.S. Fish and Wildlife Service, 2009)

Threats

The severe decline in short-tailed albatross was caused by overexploitation for its feathers prior to and following the turn of the 20th century. This threat no longer exists, but its effect lingers. The species is thought to have once numbered 5 million individuals, but birds were harvested until only a few dozen remained. Numbering about 2,400 individuals in 2008, the short-tailed albatross is currently threatened by volcanic activity, extreme weather, small population size, a limited number of breeding sites, contamination by oil and other pollutants, and commercial fishery bycatch. (U.S. Fish and Wildlife Service, 2008)

Conservation Efforts

Key recommendations for immediate action, as described in the recovery plan, are:
(1) Formation of new breeding colonies at safe locations on Torishima and in the Bonin Islands; (2) Stabilization of existing breeding habitat on Torishima Island; and (3) Reduction of seabird bycatch in all North Pacific fisheries that may take this species. (U.S. Fish and Wildlife Service, 2009)

Appendix F
Economic Impact Forecast System Report

APPENDIX F
ECONOMIC IMPACT FORECAST SYSTEM REPORT

Economic Impact Forecast System

EIFS REPORT

PROJECT NAME

Naval Station Everett

STUDY AREA

53061 Snohomish, WA

FORECAST INPUT

Change In Local Expenditures	$9,400,000
Change In Civilian Employment	307
Average Income of Affected Civilian	$49,392
Percent Expected to Relocate	0
Change In Military Employment	0
Average Income of Affected Military	$0
Percent of Militart Living On-post	0

FORECAST OUTPUT

Employment Multiplier	2	
Income Multiplier	2	
Sales Volume - Direct	$14,076,110	
Sales Volume - Induced	$14,076,110	
Sales Volume - Total	$28,152,210	0.14%
Income - Direct	$15,808,200	
Income - Induced)	$2,317,550	
Income - Total(place of work)	$18,125,750	0.12%
Employment - Direct	382	
Employment - Induced	75	
Employment - Total	457	0.17%
Local Population	0	
Local Off-base Population	0	0%

RTV SUMMARY

	Sales Volume	Income	Employment	Population
Positive RTV	6.73 %	6.7 %	8.44 %	2.99 %
Negative RTV	-10.12 %	-8.92 %	-12.03 %	-3.04 %

****** End of Report ******

Economic Impact Forecast System

EIFS REPORT

PROJECT NAME

Naval Air Station North Island-Coronado

STUDY AREA

06073 San Diego, CA

FORECAST INPUT

Change In Local Expenditures	$9,400,000
Change In Civilian Employment	307
Average Income of Affected Civilian	$85,461
Percent Expected to Relocate	0
Change In Military Employment	0
Average Income of Affected Military	$0
Percent of Militart Living On-post	0

FORECAST OUTPUT

Employment Multiplier	2.51	
Income Multiplier	2.51	
Sales Volume - Direct	$22,290,960	
Sales Volume - Induced	$33,659,340	
Sales Volume - Total	$55,950,300	0.05%
Income - Direct	$27,196,150	
Income - Induced)	$6,854,192	
Income - Total(place of work)	$34,050,340	0.05%
Employment - Direct	442	
Employment - Induced	204	
Employment - Total	646	0.04%
Local Population	0	
Local Off-base Population	0	0%

RTV SUMMARY

	Sales Volume	Income	Employment	Population
Positive RTV	6.3 %	6.32 %	3.27 %	1.93 %
Negative RTV	-3.71 %	-3.38 %	-3.29 %	-0.74 %

******** End of Report ********

Economic Impact Forecast System

EIFS REPORT

PROJECT NAME

Naval Air Station North Island - San Diego

STUDY AREA

06073 San Diego, CA

FORECAST INPUT

Change In Local Expenditures	$9,400,000
Change In Civilian Employment	307
Average Income of Affected Civilian	$63,181
Percent Expected to Relocate	0
Change In Military Employment	0
Average Income of Affected Military	$0
Percent of Militart Living On-post	0

FORECAST OUTPUT

Employment Multiplier	2.51	
Income Multiplier	2.51	
Sales Volume - Direct	$17,708,180	
Sales Volume - Induced	$26,739,360	
Sales Volume - Total	$44,447,540	0.04%
Income - Direct	$20,356,190	
Income - Induced)	$5,445,046	
Income - Total(place of work)	$25,801,240	0.04%
Employment - Direct	414	
Employment - Induced	162	
Employment - Total	577	0.04%
Local Population	0	
Local Off-base Population	0	0%

RTV SUMMARY

	Sales Volume	Income	Employment	Population
Positive RTV	6.3 %	6.32 %	3.27 %	1.93 %
Negative RTV	-3.71 %	-3.38 %	-3.29 %	-0.74 %

******** End of Report ********

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Appendix G
Sea-Based X-Band Radar Vessel In-Port Noise Assessment

Sea-Based X-Band Radar Vessel

In-Port Noise Assessment

Joint Base Pearl Harbor–Hickam

FINAL

Prepared for:
U.S. Army Space and Missile Defense Command
Missile Defense Agency

Prepared by:
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September 2010

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EXECUTIVE SUMMARY

This report provides the Missile Defense Agency and the United States Navy with information relating to results of the Sea Based X-Band (SBX) Radar Vessel Baseline Noise Assessment. In support of the development of an Environmental Assessment regarding alternative locations for SBX Radar Vessel maintenance and repair activities, ManTech International Corporation collected time-weighted community noise metrics at 19 locations in and around the moored SBX Radar Vessel in Pearl Harbor, Hawaii (3 locations for long-term noise monitoring [LT1, LT2, and LT3], and 16 locations for short-term, or point, monitoring [ST1 – ST16]). These locations were along the northern and eastern portions of Ford Island and north and east across the East Loch of Pearl Harbor on adjacent military and public lands. Day-Night Levels (DNL) were collected from the long term monitoring locations for determining noise compatibility at the alternative locations being investigated in the EA. Additionally, besides the DNL, supplemental metrics such as single event noise data (e.g., equivalent, peak sound pressure levels [dBP], etc.) are employed, where appropriate, to provide additional information on the effects of noise.

The SBX activities covered in this report are not expected to be significant contributors to the noise environment off of Navy property due to the brevity of maintenance sounds generated at the SBX mooring site as well as the lack of propagation of continuous noises away from the source.

- Noise levels (average 1 minute L_{eq} levels) from the loudest continuous noise source, generator exhausts on the SBX platform (only two of six operating), were measured between 65.8 and 67.1 A-weighted decibels (dBA) at 250 feet from the source (ST1).

- At a measured distance of 2,750 feet to the west of this noise source (ST6), this stimulus was measured at 56.6 and 56.9 dBA.

- At a measured distance of 3,500 feet (ST7) the sounds from the SBX platform were not audible above the ambient noise environment during data collection periods, which was between 51.2 and 51.6 dBA.

- DNLs collected at the closest point to the in-port vessel (1,800 feet, LT1) averaged 62.6 dB over the data collection period, which is in the range of low risk of complaints from the public.

Though this is the loudest continuous noise source from the SBX platform, the contribution of this noise source to adjacent public land community noise levels is low, most notably due to distance to residential or public lands. Non-military noise sources, such as the vehicle corridor (Highway 99 [Kamehameha Hwy] and the H1 Highway) contributed significantly to time-weighted averages at locations closest to these sources (Site ST16), where noises from the moored SBX platform were inaudible.

The highest DNLs were recorded at Site LT2, approximately 3,500 feet from the moored SBX platform. At this location, hourly equivalent sound level (L_{eq}) values averaged 60.2 dBA (±3 dBA). However, the hourly levels varied depending on time of day environmental condition, indicating contributions to community noise levels that were not from the continuous noise source of the SBX.

Though the continuous noise levels from the moored SBX are predicted to be below the DNL limit for residential areas for most locations, a strong correlation between DNL and public annoyance exists. As such, there is still the possibility of noise-induced complaints due to sensitive individuals. It is important to note that the propagated sound field was strongly correlated to the orientation of the SBX platform. Locations along the axis leading directly away from the generator exhaust fan had higher received noise levels than those locations where sounds were measured along other axes (off the port or starboard side of the SBX platform).

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ACRONYMS AND ABBREVIATIONS

µPa	Micropascals
CNEL	Community Noise Equivalent Level
dB	Decibel
dBA	A-weighted Decibels
dBP	Peak Sound Pressure Level
DNL	Day-Night Level
DoD	Department of Defense
FICUN	Federal Interagency Committee on Urban Noise
L_{max}	Maximum Fast Sound Level
L_{eq}	Equivalent Sound Level
Hz	Hertz
Ln	Noise Level Percentile
NOAA	National Oceanic and Atmospheric Administration
SBX	Sea-Based X-Band
SEL	Sound Exposure Level
SLM	Sound Level Meter
USS	United States Ship

1 INTRODUCTION

This report provides the Missile Defense Agency and the United States Navy with information relating to results of the Sea-Based X-Band (SBX) Radar Vessel Noise Assessment Project. In support of the development of an Environmental Assessment regarding possible locations for SBX Radar Vessel maintenance and repair activities, physical noise measurements of the SBX Radar Vessel were performed between August 2 and August 5, 2010 at Pearl Harbor, Hawaii. In order to capture the widest variety of noises that could potentially affect adjacent public and private lands, including the operating noises of two of six on-board generators, sound level meters (SLMs) were placed south and west of the SBX Radar Vessel on Ford Island and north and east across the East Loch of Pearl Harbor on adjacent military and public lands. To monitor the long-term sound environment and to measure noises associated with maintenance activities, the Larson-Davis (Larson-Davis, Provo, Utah) Model 820 Type 1 (an acoustical accuracy standard) SLM was deployed at two locations along the northern boundary of Ford Island and one location north across the East Loch of Ford Island.

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2 METHODS

2.1 FUNDAMENTALS OF SOUND

Noise is often defined as unwanted or annoying sound that is typically associated with human activity. Airborne sound is a rapid fluctuation of air pressure above and below atmospheric levels. The loudest sounds the human ear can hear comfortably are approximately one trillion times the acoustic energy that the ear can barely detect. Because of this vast range, any attempt to represent the acoustic intensity of a particular sound on a linear scale becomes unwieldy. As a result of this, a logarithmic ratio originally conceived for radio and telephone work known as the decibel (dB or one-tenth Bel) is commonly employed.

The decibel is thus defined as 10 times the common (base ten) logarithm of the measured sound intensity to some reference level. For the purposes of airborne environmental monitoring, this level is defined as 20 times the logarithm of the measured sound pressure to a reference pressure. This reference pressure level is taken as 20 micropascals (μPa) or 20×10^{-6} Pascals (2.9×10^{-9} pounds per square inch or 1.973×10^{-10} atmospheres).

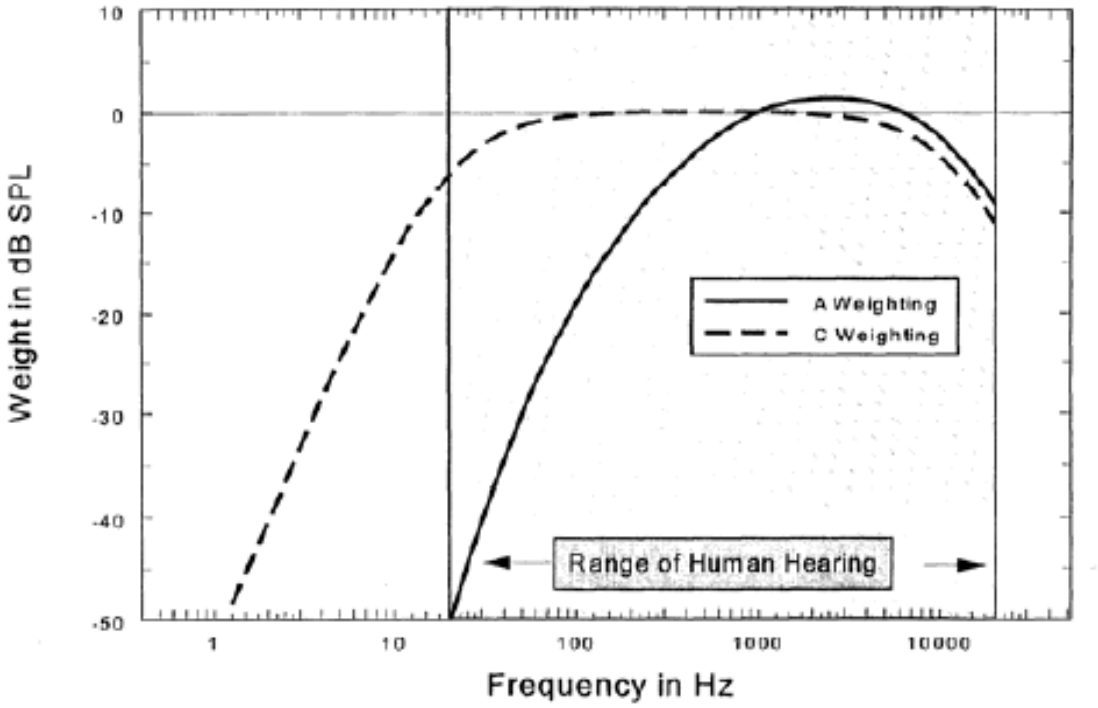
A sound level of zero "0" dB is scaled such that it is defined as the threshold of human hearing and would be barely audible to a human of normal hearing under extremely quiet listening conditions and would correspond to a sound pressure level equal to the reference level of 20 μPa. Such conditions can only be generated in anechoic or "dead rooms." Typically the quietest environmental conditions (extreme rural areas with extensive shielding) yield sound levels of approximately 20 dB. Normal speech has a sound level of approximately 60 dB. Sound levels above 120 dB roughly correspond to the threshold of pain.

The minimum change in sound level that the human ear can detect is approximately 3 dB. A change in sound level of 10 dB is usually perceived by the average person as a doubling (or halving) of a sound's loudness. A change in sound level of 10 dB actually represents an approximate 90 percent change in the sound intensity, but only about a 50 percent change in the perceived loudness. This is due to the nonlinear response of the human ear to sound.

Most of the sounds we hear in the environment do not consist of a single frequency, but rather a broad band of frequencies differing in sound level. The intensities of each frequency add to generate the sound we hear. Although exposure to high noise levels has been demonstrated to cause hearing loss, the principal human response to environmental noise is annoyance. The response of individuals to similar noise events is diverse and influenced by the type of noise, the perceived importance of the noise and its appropriateness in the setting, the time of day, and the sensitivity of the individual hearing the sound.

2.1.1 Weighting

The method commonly used to quantify environmental sounds consists of determining all of the frequencies of a sound according to a weighting system that reflects the nonlinear response characteristics of the human ear. There are two weighting filters commonly used in acoustical analysis: A-weighting and C-weighting (Figure 1). There is also an unweighted or flat sound measurement, through which the sound is analyzed without any filtering. A-weighting is a standard filter used in acoustics that approximates human hearing. C-weighting approximates human response to loud, usually transient sounds, such as a sonic boom or gunshot. Figure 1 shows how much more A-weighting reduces the low frequency sound compared to C-weighting. For example, using an A-weighted filter, a sound at 20 hertz (Hz) would be reduced about 50 dB from the unweighted sound, while with C-weighting the 20 Hz sound is only reduced about 6 dB.



Source: U.S. Army 2005

Figure 1: Plot of the A-weighted and C-weighted Acoustical Filters

2.1.2 Acoustical Metrics

Although weighted sound levels may adequately indicate the level of airborne environmental noise at any instant in time, community noise levels vary continuously. Most environmental noise includes a conglomeration of sounds from distant sources that create a relatively steady background noise in which no particular source is identifiable. For this type of noise a single descriptor called the L_{eq} (or equivalent sound level) is used. L_{eq} is the energy-mean A-weighted sound level during a measured time interval. It is the "equivalent" constant sound level that would have to be produced by a given source to equal the fluctuating level measured; that is, if a 1 hour L_{eq} is 45.3 dB, this is what would be measured if a sound measurement device were placed in a sound field of 45.3 dB for one hour. However, this is not what happens during real sound measurements. When a 1 hour L_{eq} level of 45.3 dB is measured, the sound level has fluctuated above and below 45.3 dB, but the average during that hour is 45.3 dB. The 1 hour L_{eq} is usually A-weighted unless specified otherwise. The L_{eq} measurements can also be specified for other time periods such as 8 or 24-hour periods.

2.1.2.1 Single Event Sound Metrics

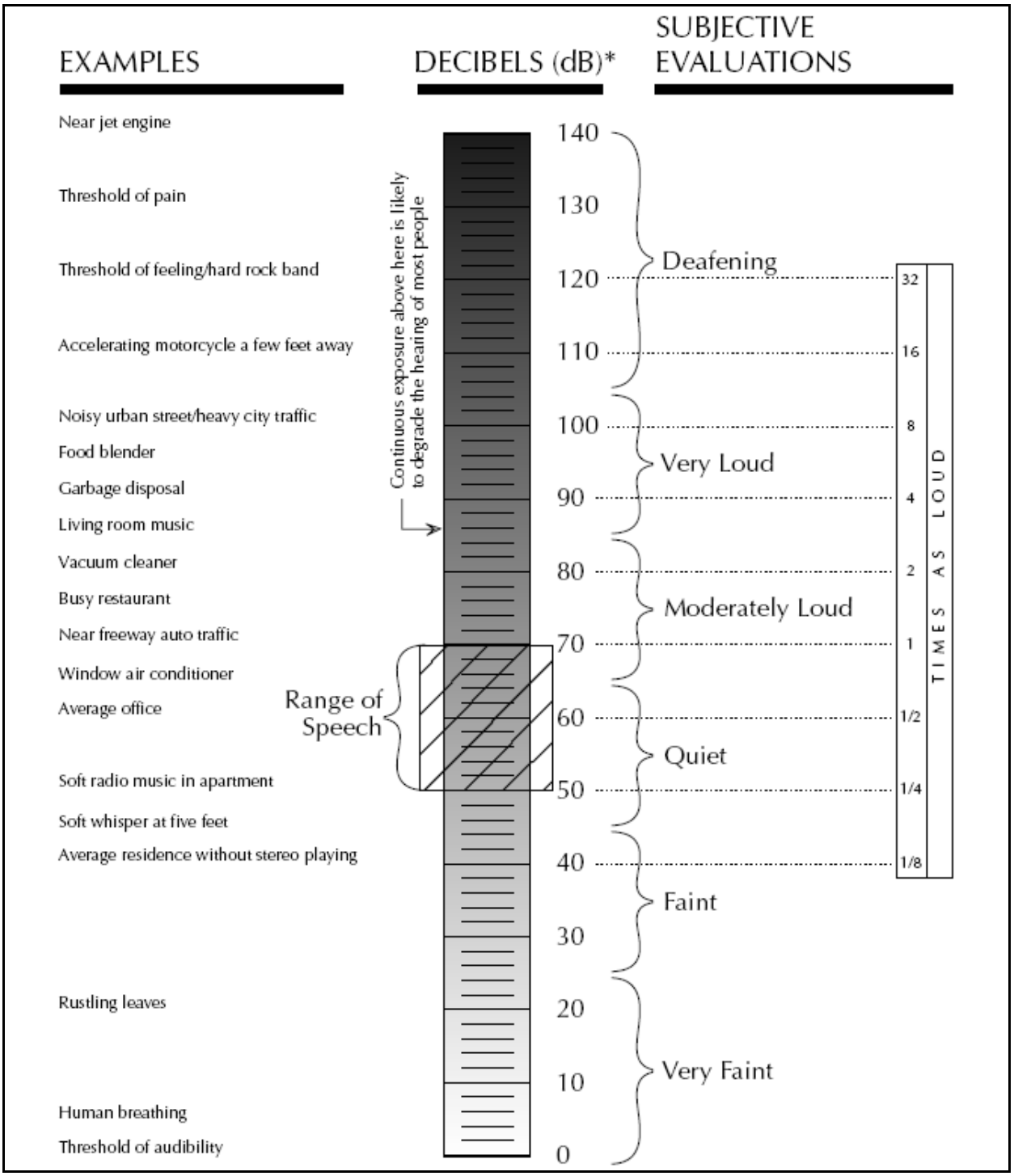
The most common acoustical metrics used to describe transient noises, such as an aircraft overflight, individual train, or automobile transits, are sound exposure level (SEL), maximum fast sound level (L_{max}), L_{eq}, peak sound pressure level (dBP), and unweighted Peak Level. The L_{max}, usually with A-weighting applied, is the greatest sound level reached during a sound event with a time weighting applied during the calculation. The time weighting causes the sound levels to be influenced by sounds that most recently occurred. The "fast" refers to specific exponential moving average time weighting with a time constant of 1/8 of a second. As this metric does not average the sound over a period of time like the L_{eq} measurements it is a good indicator of the loudest level the sound reaches.

Although the highest noise level measured during an event (i.e., L_{max}) is the most easily understood descriptor for a noise event, alone it provides little information. Specifically, it provides no information concerning either the duration of the event or the amount of sound energy. Thus, SEL, which is a measure of the physical energy of the noise event and accounts for both intensity and duration, is used for single event noise analysis. The SEL is the total sound energy in a sound event if that event could be compressed into one second. This provides a normalized metric. By definition, SEL values are referenced to a duration of 1 second and should not be confused with either the average (L_{eq}) or L_{max} associated with a specific event. When an event lasts longer than 1 second, the SEL value will be higher than the L_{max} from the event.

Subjective tests indicate that human response to noise is a function not only of the maximum level, but also of the duration of the event and its variation with respect to time. Evidence indicates that two noise events with equal sound energy will produce the same response. For example, a noise at a constant level of 85 dB lasting for 10 seconds would be judged to be equally as annoying as a noise event at a constant level of 82 dB and duration of 20 seconds (i.e., 3 dB decrease equals one half the sound energy but lasting for twice the time period). This is known as the "equal energy principle." The SEL value represents the A-weighted level of a constant sound with duration of 1 second, providing an amount of sound energy equal to the event under consideration. SEL is commonly reported with A-weighting but other weightings, such as unweighted or C-weighted can be applied.

The peak sound level is the greatest instantaneous sound level reached during a sound event. Peak levels can also have various frequency weightings applied to them. Peak levels, though useful in some cases, can often be misleading. It can occur that a single peak in a complex waveform can be substantially greater than the majority of a sound event. Peak levels should always be presented along with one or more of the metrics described above to better describe the sound event. Unweighted peak sound level is simply the Peak sound level with no frequency weighting applied.

Examples of A-weighted noise levels for various common noise sources are shown in Figure 2.



Source: U.S. Department of Housing and Urban Development.
*dB are "average" values as measured on the A-scale of a sound-level meter (From Concepts in Architectural Acoustics. M. David Egan, McGraw Hill, 1972)

Figure 2: A-weighted Sound Levels of Typical Noise Sources and Environments

2.1.2.2 Averaged Noise Metrics

Single event analysis has a major shortcoming — single event metrics do not describe the overall noise environment. Day-Night Level (DNL) is the measure of the total noise environment. DNL averages the sum of all noise producing events over a 24-hour period, with a 10 dB upward adjustment added to the nighttime events (between 2200 and 0700 hours). Figure 3 depicts the relationship of the single event, the number of events, the time of day, and DNL. This adjustment is an effort to account for increased human sensitivity to nighttime noise events. A similar metric, the community noise equivalent level (CNEL), is calculated similar to the DNL, but an additional upward adjustment of 5 dB is added to evening events (between 1900 and 2200 hours). The summing of sound during a 24-hour period does not ignore the louder single events; it actually tends to emphasize both the sound level and number of those events. The logarithmic nature of the dB unit causes sound levels of the loudest events to control the 24-hour average.

DNL is the accepted unit for quantifying annoyance to humans from general environmental noise. As the DNL increases, it is expected that the percentage of annoyance will also increase. The Federal Interagency Committee on Urban Noise (FICUN) developed land use compatibility guidelines for noise exposure areas (FICUN 1980). DNL is the method used to estimate the amount of exposure to noise and predict impacts. Land use compatibility and incompatibility are determined by comparing the predicted DNL level at a site with recommended land uses.

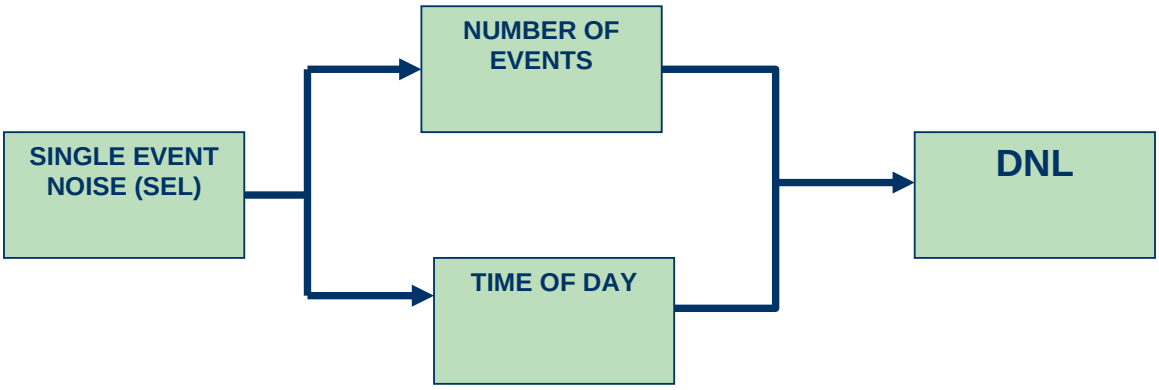


Figure 3: Day-Night Average A-Weighted Sound Level

2.2 PHYSICAL ACOUSTICS

Physical noise measurements were performed around the moored Sea Based X-Band (SBX) Radar Vessel and the surrounding area between August 2 and 5, 2010. To monitor the sound environment and to measure noises associated with in-port SBX activities over several days, the Larson-Davis (Larson-Davis, Provo, Utah) Model 820 Type 1 (an acoustical accuracy standard) sound level meter (SLM) (Figure 4) was deployed at two locations along the northern boundary of Ford Island and one location to the north across the East Loch of Ford Island.

The SLM measures specific sound events that exceed a minimum sound level, background noise levels, and ambient noise levels. The SLM does not make an actual recording of sound but computes acoustic metrics (described above) used to describe specific events and the surrounding sound environment. The acoustical metrics that the meter provides are the A-weighted sound exposure level, L_{max}, unweighted and A-weighted peak measurement for specific events and the DNL, L_{eq} for hourly and 24-hour periods. The SLMs were set to begin measurements of noise events when the noise level exceeded threshold levels of 60 dB and end measurements when the level dropped 6 dB below the threshold to the hysteresis level of 54 dB. These threshold levels were determined and adjusted site by site on the expected and measured wind and ambient noise levels at each location.

Figure 4: Larson Davis Model 820

During routine checks of sound level meters to download data and perform periodic maintenance on the SLMs, the acoustician noted the fast, A-weighted sound levels received at the sites for the different audible noise sources.

The SLM microphones were mounted 2 meters (6.5 feet) above the ground atop a single tripod (Figure 5). The microphones were covered by extra large windballs (20 centimeters diameter) and mounted in a short length of weatherproofing polyvinyl chloride. These systems were calibrated prior to data collection using a Bruel & Kjaer sound level calibrator type 4230 (94 dB calibration tone at 1,000 Hz).

Figure 5: Sound Level Meter Deployed in Field

In order to capture the widest variety of noises that could potentially affect adjacent public and private lands, time-weighted community noise metrics were collected at 19 locations in Pearl Harbor (3 locations for long-term noise monitoring and 16 locations for short-term, or point monitoring). These locations were along the northern and eastern portions of Ford Island and north and east across the East Loch of Pearl Harbor on adjacent military and public lands (Figure 6).

2.2.1 Long-Term Sound Level Meters

Three SLMs were set up to collect hourly L_{eq} values as well as DNLs in A-weighted decibels (which is calculated from L_{eq} levels). SLM data collection began the afternoon of August 2, 2010 and concluded the morning of August 5, 2010 (Table 1). Basic site descriptions, along with a general description of noise sources at each site, are presented below.

Table 1: Long-term Sound Level Meter Locations

Location Name	Geographic Coordinates		Start Date	End Date	Approximate Distance and Direction from SBX Radar Vessel (horizontal distance)
	North	West			
LT1	21.367638	-157.962908	August 2, 2010	August 5, 2010	1,800 feet southwest
LT2	21.364566	-157.966817	August 2, 2010	August 5, 2010	3,500 feet southwest
LT3	21.377351	-157.966725	August 2, 2010	August 5, 2010	3,300 feet north/northwest

2.2.1.1 Site LT1

This meter was set up on the northern edge of Ford Island, approximately 1,800 feet southwest of the moored SBX Radar Vessel. This site was the closest of all the long-term meter locations to the moored SBX Radar Vessel, and had no obstructions between the collection point and the SBX Radar Vessel. This location was positioned in line with the generator exhaust fans of the SBX Radar Vessel. Primary sources of continuous sound noted at this location during meter installation were exhaust noise from the two operating generators (of 6 present on the vessel) on the SBX Radar Vessel, and engine noise from the moored Department of Defense (DoD) Missile Defense Agency telemetry ship Pacific Collector.

2.2.1.2 Site LT2

This meter was also set up on the northern edge of Ford Island, though farther from the SBX Radar Vessel, approximately 3,500 feet southwest of the moored SBX Radar Vessel. This location was positioned in line with the generator exhaust fans of the SBX Radar Vessel, although there were two moored boats, the National Oceanographic and Atmospheric Administration (NOAA) R335 and the DoD Missile Defense Agency telemetry ship Pacific Collector, between the recording location and the SBX Radar vessel. Primary sources of continuous sound noted at this location during meter installation were engine noise from the moored NOAA vessels and the barely audible generator exhaust of the SBX Radar Vessel.

Figure 6: Pearl Harbor, Hawaii and Sound Level Meter Recording Locations

2.2.1.3 Site LT3

This meter was set up on the eastern edge of Victor Wharf, to the north/northwest of the moored SBX Radar Vessel, across the East Loch of Pearl Harbor. This location was approximately 3,300 feet from the moored SBX Radar Vessel. This location was positioned approximately 90 degrees off-axis of the generator exhaust fans of the SBX Radar Vessel, with a direct line of sight between the recording location and the SBX Radar Vessel. Primary sources of continuous sound noted at this location during meter installation were engine noise from the moored Navy vessel United States Ship (USS) Sioux and the barely audible generator exhaust of the SBX Radar Vessel.

2.2.2 Short-Term Meter Locations

At 16 additional locations, the SLM was set up to collect noise data similar to the long-term noise level monitors, but only collected data for 20 minutes at each site. This was done to gather short-term L_{eq} levels that could be used to estimate the influence on various noise sources at discrete distances from the noise source (Figure 6, Table 2). Due to geographic restrictions (inability to collect data at locations on the harbor), measurements were taken along two primary axes leading away from the SBX Radar Vessel, as well as various locations across the harbor. The first axis led away from the stern of the ship, which is the location of the generator exhaust fans. The second axis leads away from the starboard side (pier side) of the SBX Radar vessel where maintenance activities were anticipated to occur. Short-term L_{eq} levels were collected on August 3, 4, and 5, 2010 throughout the day.

Table 2: Short-Term Sound Level Meter Locations

Location Name	Geographic Coordinates		Approximate Distance and Direction from SBX Radar Vessel (horizontal distance)
	North	West	
ST1	21.370679	-157.959404	250 feet south
ST2	21.369996	-157.959845	500 feet south/southwest
ST3	21.369557	-157.960301	725 feet south/southwest
ST4	21.368563	-157.961708	1,300 feet south/southwest
ST5	21.367677	-157.962823	1,800 feet southwest
ST6	21.365992	-157.965232	2,750 feet southwest
ST7	21.364562	-157.966786	3,500 feet southwest
ST8	21.362808	-157.967863	4,200 feet southwest
ST9	21.370869	-157.957954	500 feet southeast
ST10	21.370222	-157.956766	1,000 feet southeast
ST11	21.369121	-157.955529	1,500 feet southeast
ST12	21.368180	-157.954195	2,000 feet southeast
ST13	21.377270	-157.966727	3,300 feet north/northwest
ST14	21.370096	-157.969462	3,400 feet west
ST15	21.373520	-157.967032	2,600 feet northwest
ST16	21.384773	-157.955730	5,000 feet north

2.2.2.1 Short-Term Site 1 (ST1)

This location was 250 feet south of the stern of the SBX Radar Vessel, at the edge of the water. At its moored position, the generator exhaust fans were approximately 100 feet above the waterline, with an approximate slant distance of approximately 270 feet to the recording location. Sound sources noted during meter setup were primarily SBX related.

2.2.2.2 Short-Term Site 2 (ST2)

This location was 500 feet south/southwest of the stern of the SBX Radar Vessel, at the edge of the water, with an approximate slant distance of approximately 509 feet to the generator exhaust fans. Sound sources noted during meter setup were primarily SBX related, continuous exhaust noise, along with intermittent vehicle and lift noises.

2.2.2.3 Short-Term Site 3 (ST3)

This location was 725 feet south/southwest of the stern of the SBX Radar Vessel, at the edge of the water, with an approximate slant distance of approximately 756 feet to the generator exhaust fans. This position had a direct line of sight to the SBX Radar Vessel, and the moored DoD Missile Defense Agency telemetry ship Pacific Collector was located approximately 300 feet north of the recording location. Sound sources noted during meter setup were primarily SBX related, continuous exhaust noise, along with intermittent vessel noise from the Pacific Collector.

2.2.2.4 Short-Term Site 4 (ST4)

This location was 1,300 feet south/southwest of the stern of the SBX Radar Vessel, at the edge of the water, and in line with the output of the SBX Radar Vessel generator exhaust fans. This position had a direct line of sight to the SBX Radar Vessel, and the moored DoD Missile Defense Agency telemetry ship Pacific Collector was located between the recording location and the SBX Radar Vessel, approximately 800 feet north/northeast of the SLM. Sound sources noted during meter setup were primarily SBX related, continuous exhaust noise, along with intermittent vessel noise from the Pacific Collector.

2.2.2.5 Short-Term Site 5 (ST5)

This location was 1,800 feet southwest of the stern of the SBX Radar Vessel, at the edge of the water, and in line with the output of the SBX Radar Vessel generator exhaust fans. This position had a direct line of sight to the SBX Radar Vessel, and the moored DoD Missile Defense Agency telemetry ship Pacific Collector was located between the recording location and the SBX Radar Vessel. The moored NOAA vessel R335 was located approximately 500 feet north/northwest of the SLM. Sound sources noted during meter setup were primarily SBX related, continuous exhaust noise, along with intermittent vessel noise from NOAA R335.

2.2.2.6 Short-Term Site 6 (ST6)

This location was approximately 2,750 feet southwest of the stern of the SBX Radar Vessel, at the edge of the water, and in line with the output of the SBX Radar Vessel generator exhaust fans. This position had a partial line of sight to the SBX Radar Vessel, and the moored DoD Missile Defense Agency telemetry ship Pacific Collector and NOAA vessel R335 were located between the recording location and the SBX Radar Vessel. Sound sources noted during meter setup were primarily NOAA vessel related, with noise from the SBX Radar Vessel occasionally becoming audible above ambient conditions.

2.2.2.7 Short-Term Site 7 (ST7)

This location was approximately 3,500 feet southwest of the stern of the SBX Radar Vessel, at the edge of the water at the NOAA small boat dock, and in line with the output of the SBX Radar Vessel generator exhaust fans. This position had a partial line of sight to the SBX Radar Vessel, and the moored DoD Missile Defense Agency telemetry ship Pacific Collector and NOAA vessel R335 were located between

the recording location and the SBX Radar Vessel. Sound sources noted during meter setup were primarily NOAA vessel related, with noise from the SBX Radar Vessel not readily audible.

2.2.2.8 Short-Term Site 8 (ST8)

This location was approximately 4,200 feet southwest of the stern of the SBX Radar Vessel, at the edge of the water at the boat ramp immediately west of the brig, and in line with the output of the SBX Radar Vessel generator exhaust fans. This position had an obstructed line of sight to the SBX Radar Vessel, and the moored DoD Missile Defense Agency telemetry ship Pacific Collector and NOAA vessel R335 were located between the recording location and the SBX Radar Vessel. Sound sources noted during meter setup were primarily related to air conditioners on adjacent buildings and other industrial noise, with noise from the SBX Radar Vessel not readily audible. This data collection was the furthest from the SBX Radar Vessel as during meter setup it was noted that sites further away would be more representative of pier construction activities to the west of Ford Island and residential noises than SBX Radar Vessel related.

2.2.2.9 Short-Term Site 9 (ST9)

This location was 500 feet southeast of the stern of the SBX Radar Vessel. At its moored position, the generator exhaust fans were approximately 100 feet above the waterline, with an approximate slant distance of approximately 506 feet to the recording location. This position was approximately 90 degrees off the axis of the SBX Radar Vessel generator exhaust fans. Sound sources noted during meter setup were primarily SBX related.

2.2.2.10 Short-Term Site 10 (ST10)

This location was 1,000 feet southeast of the stern of the SBX Radar Vessel. This position was approximately 90 degrees off the axis of the SBX Radar Vessel generator exhaust fans with a direct line of sight to the SBX Radar Vessel. Sound sources noted during meter setup were primarily SBX related, along with intermittent noises from the adjacent roads.

2.2.2.11 Short-Term Site 11 (ST11)

This location was 1,500 feet southeast of the stern of the SBX Radar Vessel. This position was approximately 90 degrees off the axis of the SBX Radar Vessel generator exhaust fans with a direct line of sight to the SBX Radar Vessel. Sound sources noted during meter setup were intermittent noises from the adjacent roads.

2.2.2.12 Short-Term Site 12 (ST12)

This location was 2,000 feet southeast of the stern of the SBX Radar Vessel. This position was approximately 90 degrees off the axis of the SBX Radar Vessel generator exhaust fans with a direct line of sight to the SBX Radar Vessel. Sound sources noted during meter setup were intermittent noises from the adjacent roads.

2.2.2.13 Short-Term Site 13 (ST13)

This location was 3,300 feet north/northwest of the stern of the SBX Radar Vessel, at the edge of the water, immediately south of the USS Sioux. This position was approximately 90 degrees off the axis of the SBX Radar Vessel generator exhaust fans with a direct line of sight to the SBX Radar Vessel. Sound sources noted during meter setup were intermittent noises from the adjacent roads and ship noise from the USS Sioux.

2.2.2.14 Short-Term Site 14 (ST14)

This location was 3,400 feet west of the stern of the SBX Radar Vessel, at the edge of the water with a direct line of sight to the SBX Radar Vessel. Sound sources noted during meter setup were intermittent noises from the adjacent roads.

2.2.2.15 Short-Term Site 15 (ST15)

This location was 2,600 feet northwest of the stern of the SBX Radar Vessel, at the edge of the water. This position was approximately 90 degrees off the axis of the SBX Radar Vessel generator exhaust fans with a direct line of sight to the SBX Radar Vessel. Sound sources noted during meter setup were intermittent noises from the adjacent roads and SBX Radar Vessel noise, albeit only marginally above the ambient sound.

2.2.2.16 Short-Term Site 16 (ST16)

This location was approximately 5,000 feet north of the SBX Radar Vessel, at the edge of the water at the southern edge of Neil S. Blaisdell Park and west of both Highway 99 (Kamehameha Highway) and the H1 Highway. This position was approximately 180 degrees off the axis of the SBX Radar Vessel generator exhaust fans with a direct line of sight to the SBX Radar Vessel. Sound sources noted during meter setup were intermittent noises from the adjacent roads.

2.3 TYPICAL SOUND SOURCES ANTICIPATED DURING IN-PORT SBX RADAR VESSEL ACTIVITIES

A number of typical noise sources were expected to be encountered during the SBX Radar Vessel Baseline Noise Assessment. The loudest continuous sound source was anticipated to be the exhaust fans from the moored vessel. Intermittent noises from the SBX Radar Vessel were expected to include noises associated with warning bells and whistles, loading/unloading noises/lift operation, and announcements from the vessel sound system.

2.4 TYPICAL SOUND SOURCES ANTICIPATED IN THE PEARL HARBOR COMMUNITY

Several community noise sources were expected to be encountered during the SBX Radar Vessel Baseline Noise Assessment that were not related to SBX Radar Vessel activities. The loudest continuous sound source was expected to be the transportation corridors that parallel the shoreline to the north of the SBX Radar Vessel's location. Intermittent pier construction noise was expected to come from pier construction activities to the west of Ford Island.

3 RESULTS

Existing noise levels in the Pearl Harbor area are highly dependent on their location in relation to sound sources. Background noise levels are primarily driven by vehicular traffic; however, louder noise levels can be found near commercial or military areas. Noise levels can also be influenced by local weather patterns, with trade winds often increasing the ambient noise environment.

3.1 COMMUNITY NOISE MEASUREMENTS

The sound level meters (SLMs) measured the sound environment at the three locations for a cumulative total of 190 hours or 7.9 days. This averages to 2.6 days per meter. During that time, the 1 hour equivalent sound level (L_{eq}) ranged from 46.6 A-weighted decibels (dBA) at Site LT1 to 68.4 dBA at Site LT2 (Table 3).

Table 3: Summary of Sampling Duration and Sound Level Meter Measurements

	Site LT1	Site LT2	Site LT3
Total Time (Hours)	64.2	63.2	61.5
Total Run Time (Days)	2.7	2.6	2.5
Overall L_{eq}	56.6	60.2	53.6
Max 1-Hr L_{eq}	68.2	68.4	*
Min 1-Hr L_{eq}	46.6	48.9	*
Overall DNL	62.6	63.3	57.8
Overall Event L_{eq}	69.7	68.3	68.4
Overall Background L_{eq}	53.6	54.6	51.6
Number of Events	1,071	5,162	*
# Events SEL > 70dB	453	2,291	*
Distance from SBX Radar Vessel (feet)	1,800 Southwest	3,500 Southwest	3,300 North/Northwest

* Due to a memory fault on the SLM, discrete hourly level and event data was corrupted and not presented here.

As the meters were set to a threshold value of 65 dBA, the number of events at each site ranged from 1,071 at Site LT1 to 5,162 at Site LT2. The influence of non Sea-Based X-Band (SBX) Radar Vessel noise sources was notable at other sites by the higher number of triggered events at greater distances from the SBX Radar Vessel. Additionally, local weather events, such as wind, were highly correlated to elevated hourly L_{eq} values (Figure 7, Table 4).

3.1.1 Site LT1

The SLM at Site LT1 ran for 2.7 days and recorded a minimum hourly L_{eq} of 46.6 dBA and maximum hourly L_{eq} of 68.2 dBA. The average hourly levels varied throughout a 24-hour period, ranging from 48.6 dBA to 61.3 dBA. Figure 7 shows the average hourly L_{eq} (the 1-hour L_{eq} values for each day were averaged) for Site LT1 over the recording duration. Sound levels (Ln: the noise level exceeded X% of the time) exceeded 47.3 dBA during 90% of the data collection period, 51.5 dBA 50% of the period, and 60.2 dBA 5% of the data collection period. The overall Day-Night level (DNL) at this site was 62.6 dBA.

Table 4: Average Hourly L_{eq} Levels at Long-Term Sites and Wind Speed

Time (hh:mm)	LT1	LT2	Wind Speed (mph)
0:00	50.5	54.2	11.9
1:00	50.5	51.9	14.5
2:00	48.9	50.6	7.3
3:00	49.3	50.8	10.1
4:00	50.2	53.8	6.0
5:00	55.6	55.7	10.2
6:00	51.9	56.1	8.3
7:00	52.0	57.2	8.8
8:00	53.0	58.0	8.4
9:00	56.2	63.1	12.4
10:00	61.3	64.6	16.1
11:00	58.7	63.9	16.0
12:00	56.9	60.9	17.5
13:00	57.8	65.9	16.1
14:00	58.7	63.4	15.5
15:00	58.1	65.0	18.7
16:00	58.7	64.8	18.8
17:00	57.0	58.2	12.6
18:00	56.9	59.2	13.2
19:00	55.7	57.7	7.8
20:00	52.8	56.0	13.5
21:00	52.3	57.3	10.6
22:00	50.2	54.3	14.6
23:00	50.5	54.1	13.7

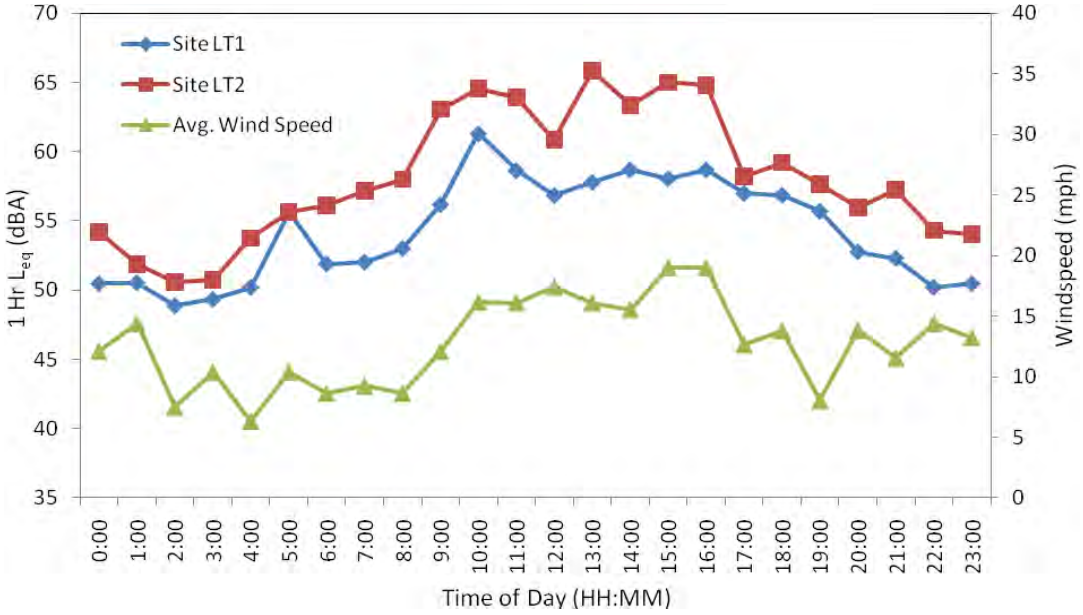


Figure 7: Average Hourly L_{eq} levels at Long-Term Sound Level Meter Sites LT1 and LT2

The SLM triggered (measurement of a sound event above level of 65 dBA) only 2.5% of the meter runtime. The SLM measured 1,071 total events. Of those 1,071 events, 905 were measured with SELs greater than 65 dBA and 453 of those events exceeded 70 dBA. The maximum SEL measured for an event was 99.5 dBA and the average L_{eq} was 69.7 dBA. The average duration of an event was approximately 5.5 seconds.

From observations made by the technician at the site during data collection, the primary source of continuous sound at this location were audible hum from the SBX Radar Vessel generator exhaust fans, and engine noise from the moored Department of Defense (DoD) Missile Defense Agency telemetry ship Pacific Collector. Intermittent noise audible at this site were noises associated with the lift operations of the SBX, vehicle and maintenance activities at the SBX location, and maintenance activities on the Pacific Collector. Wind noise and biological noise (bird calls) was also intermittently audible at this site. While these noises could be easily heard at this site, they were only 1-3 dB above the constant, which was noted by the technician to be between 47 and 49 dBA.

3.1.2 Site LT2

The SLM at Site LT2 ran for 2.6 days and recorded a minimum hourly L_{eq} of 48.9 dBA and maximum hourly L_{eq} of 68.4 dBA. The average hourly L_{eq} levels at this location ranged from a low of 50.6 to a high of 65.8 dBA. Figure 7 shows the average hourly L_{eq} for Site LT2 over the recording duration. Sound levels (Ln) exceeded 42.6 dBA during 90% of the data collection period, 51.0 dBA 50% of the period, and 66.5 dBA 5% of the data collection period. The overall DNL at this site was 63.3 dBA.

The SLM triggered (measurement of a sound event above level of 65 dB) 11.6% of the time. The SLM measured 5,162 total events. Of those 5,162 events, 4,526 were measured with SELs greater than 65 dBA and 2,291 of those events exceeded 70 dBA. The maximum SEL measured for an event was 95.3 dBA. The average duration of an event was approximately 4.61 seconds. From observations made by the technician at the site during data collection, these events seemed to correlate with vehicles and pedestrians passing the location of the SLM as well as gusts of wind lasting between 5 to 10 seconds.

Primary sources of sound at this location were audible noise from the National Oceanographic and Atmospheric Administration (NOAA) vessel R335, passing vehicles, watercraft, and personnel, fan noise from adjacent buildings, and wind. The SBX Radar Vessel and sounds associated with its presence were not readily audible during the day at this location.

3.1.3 Site LT3

The SLM at Site LT3 ran for 2.5 days and recorded an average L_{eq} of 53.6. Due to a memory fault on the SLM, discrete hourly level and event data was corrupted and not presented here. Sound levels (Ln) exceeded 46.8 dBA during 90% of the data collection period, 49.8 dBA 50% of the period, and 56.3 dBA 5% of the data collection period. The overall DNL at this site was 57.8 dBA.

At this site, noises from the SBX Radar Vessel were noted as being barely audible during site visits to the meter. From observations made by the technician at the site during data collection, elevated noise levels were correlated with engine and ship noise from the adjacent USS Sioux, wind gust noise, and passing vehicles.

3.2 SHORT-TERM MEASUREMENTS

In addition to the long-term information collected, equivalent sound levels for shorter periods (1 minute intervals over 20 to 30 minutes) were also collected at 16 additional locations. Data was collected at each location twice, with the order of data collection reversed. For example, ST1 was collected in the morning

on August 3 and in the afternoon of August 4 (Table 5). The average 1-minute L_{eq} data for each location are presented in the figure below (Figure 8).

Table 5: Average 1-minute L_{eq} Levels at Short-Term Sound Level Sites

Location	August 3, 2010	August 4, 2010	Average L_{eq}	Distance from SBX Radar Vessel
ST1	65.8	67.1	66.5	250 feet south
ST2	66.7	65.8	66.3	500 feet south/southwest
ST3	62.3	57.9	60.1	725 feet south/southwest
ST4	55.2	57.0	56.1	1,300 feet south/southwest
ST5	56.1	56.9	56.5	1,800 feet southwest
ST6	56.6	56.9	56.8	2,750 feet southwest
ST7	51.2	51.6	51.4	3,500 feet southwest
ST8	53.5	53.7	53.6	4,200 feet southwest
ST9	58.8	56.2	57.5	500 feet southeast
ST10	53.0	51.4	52.2	1,000 feet southeast
ST11	54.1	51.1	52.6	1,500 feet southeast
ST12	54.7	51.7	53.2	2,000 feet southeast
ST13	53.2	54.7	54.0	3,300 feet north/northwest
ST14	52.6	55.0	53.8	3,400 feet west
ST15	57.4	56.5	57.0	2,600 feet northwest
ST16	53.9	52.3	53.1	5,000 feet north

Figure 8: Short-Term Recording Locations and Average L_{eq} levels (dBA)

3.3 OTHER RECEIVED SOUND MEASUREMENTS

In addition to the long-term and short-term information collected, during the course of data collection, it was noted that the DoD Missile Defense Agency vessel Pacific Collector was performing occasional deck grinding activities. The noises from deck grinding were audible at short-term locations ST2, ST3, and ST4.

ST2 was located approximately 300 feet south of the Pacific Collector, perpendicular to her moored position and directly in line of sight of the deck grinding activity. At ST2 the received levels of the deck grinding were between 67 and 72 dBA.

ST3 was located approximately 350 feet southwest of the Pacific Collector, approximately 45 degrees off the stern of the vessel. At ST3 the received levels of the deck grinding were between 62 and 68 dBA.

ST4 was located approximately 800 feet southwest of the Pacific Collector, approximately in line with her position at the dock. At ST4 the received levels of the deck grinding were between 56 and 58 dBA. At this location, the noise associated with the deck grinding was only marginally above the ambient levels recorded at the site.

4 CONCLUSION

The sounds from in-port activities and operation of the Sea-Based X-Band (SBX) Radar Vessel covered in this report are not significant contributors to the noise environment on adjacent non-Navy lands as shown by relatively low equivalent sound levels values. For noise compatibility noise zones studies, a Day-Night Level (DNL) of 55 A-weighted decibels (dBA) has been established as a land use recommendation for residential areas. While intermittent and transient noises certainly contributed to hourly L_{eq} values and resulting DNLs, it is likely that the continuous noise sources, especially those occurring during nighttime hours, contributed largely to community noise levels at locations close to the SBX.

The SBX was moored with the exhaust fans of the generators facing to the southwest, and the bow of the vessel pointing to the northeast and Pearl City. Short-term data collected indicates that noise propagates further along the axis pointing away from the aft (or stern) of the ship, where the generator's exhaust fans are, than it does along axes pointing away from the starboard or port sides of the vessel. Starboard refers to the right side of a vessel as perceived by a person on board facing the bow (front). The equivalent for the left-hand side is port. As described in the above section and shown in Table 5 and Figure 8, sounds from the SBX Radar Vessel were audible above the ambient noise conditions out to ST6, approximately 2,750 feet away from the vessel. ST1 through ST8 were along a transect that was oriented on the same axis as the direction of the exhaust fans of the SBX Radar Vessel generators.

In contrast, ST9 through ST12 were oriented approximately 90 degrees off the exhaust fan axis, perpendicular to the vessel, and on the same side as dockside activities. The noise from the SBX Radar Vessel (exhaust noise and lift operations) was audible at ST9 and ST10, and just above the ambient at ST11 (1,500 feet away). No sounds from the SBX Radar Vessel were audible at ST12, which was approximately 2,000 feet away from the moored vessel. The difference in sound propagation away from the SBX Radar Vessel is dependent on its orientation while moored. If the stern was pointed to the northwest, for example, it is likely that the received levels at the victor wharf locations (ST13, ST 15, and LT 3) would have been higher, as the generator exhaust fans would be aimed directly at these locations. The distance that sounds would propagate away from the port or starboard side of the vessel would be less than those propagating away from the stern, which is the primary direction of sound propagation away from the SBX Radar Vessel.

A strong correlation between DNL and annoyance exists and, as such, there is still the likelihood of noise-induced complaints as a result of noise levels produced by the SBX Radar Vessel. This is because noise induced annoyance eludes succinct definition, is subjective, and sensitive individuals can be annoyed even at very quiet DNL levels. The DNL at Sites LT1 and LT2 were 62.6 and 63.3 dBA, respectively. Based on Figure 9, the percentage of annoyed receivers would be approximately 10% of the community at sites that are a comparable distance (and along the same axis) to LT1 and LT2.

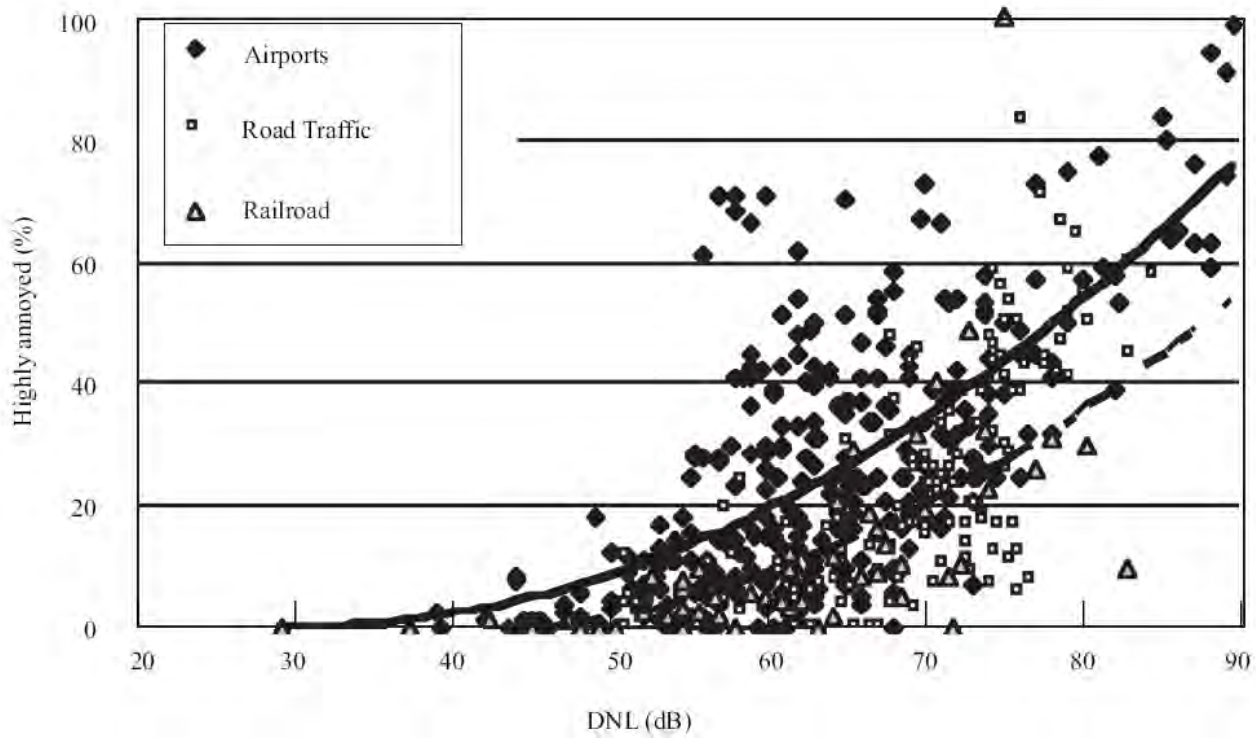


Figure 9: Relationship between DNL and Percentage of Community Highly Annoyed (Schomer 2004)

5 LITERATURE CITED

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Appendix H
Record of Non-Applicability

RECORD OF NON-APPLICABILITY (RONA)
FOR CLEAN AIR ACT CONFORMITY
Sea-Based X-Band (SBX) Radar Vessel Maintenance and Repair
Naval Station Everett, Everett, Washington

INTRODUCTION

U.S. Environmental Protection Agency (USEPA) published *Revisions to the General Conformity Regulations; Final Rule*, in the April 5, 2010 Federal Register (40 CFR Parts 51 and 93). The U.S. Navy published *Clean Air Act (CAA) General Conformity Guidance in Appendix F, OPNAVINST 5090.1C*, dated October 30, 2007. These publications provide implementing guidance to document CAA Conformity Determination requirements.

Under Section 176(c) of the Clean Air Act, Federal actions may be exempt from conformity determinations if they do not exceed designated *de minimis* levels for criteria pollutants. Table 1 lists the *de minimis* levels (in tons/year) for the air basin potentially affected by the Proposed Action.

Table 1. *De minimis* Levels for Determination of Applicability of General Conformity Rule, Naval Station Everett

Air Quality Jurisdiction	*De minimis* Emission, tons/year					
	VOC	NOx	CO	PM10	PM2.5	SOx
Puget Sound Air Basin	100	100	100	100	N/A	N/A

Source: 40 CFR 93.153

Notes:
CO = Carbon monoxide
NOx = Nitrogen oxides
PM2.5 = Particulate matter equal to or less than 2.5 microns in size
PM10 = Particulate matter equal to or less than 10 microns in size
SOx = Sulfur dioxide
VOC = Volatile organic compounds
N/A = Not Applicable

PROJECT ACTION

Action Proponent: Department of Defense, Missile Defense Agency (MDA)

Location: Naval Station Everett, Everett, Washington

Proposed Action Name: Sea-Based X-Band (SBX) Radar Vessel Maintenance and Repair

Proposed Action Summary: The MDA proposed to perform required maintenance and repair of the SBX Radar Vessel thrusters and other scheduled general maintenance activities at Naval Station Everett (NSE). The project is scheduled to occur in 2011 and would take up to 3 months to complete. Inspection, maintenance, and repair activities on the SBX Radar Vessel are similar to activities that are performed on all U.S. Navy ships at Navy shipyards. These activities include thruster maintenance, painting, welding, blasting, sanding, plasma cutting, inspections, installation of new equipment, removal of broken and obsolete equipment, equipment calibration, washing of equipment and vessel, and purging of systems (i.e., cooling, sewage, water, etc.).

These activities would occur inside the vessel, outside the vessel (topside and below the waterline), and pier-side. No radar tracking, testing, or calibration would occur during maintenance activities. The vessel does not currently have the capability to connect to shore power at a pier; therefore, while moored, the SBX vessel has to run two onboard generators for "hotel" power (to provide power for lights, temperature control, etc.). The document *SBX Radar Vessel Maintenance and Repair Environmental Assessment (EA)* is the analysis conducted under the National Environmental Policy Act.

Air Emissions Evaluation: Emissions calculations were estimated using the *U.S. Air Force Air Conformity Applicability Model (ACAM)*, Version 4.6, 2010 and USEPA's *Compilation of Air Pollution Factors, Volume I: Stationary Point and Area Sources (AP-42), Section 3.4 Large Stationary Diesel and All Stationary Duel-fuel Engines,* 1996. The proposed mooring site for the SBX vessel is Pier A, Naval Station Everett, in Everett, Washington. The following assumptions were made during the air emissions evaluation:

- *Shipboard generators:* For purposes of estimating generator emissions, 75 days of operation were used because the duration of the activity is estimated to be 2 to 3 months, with the midpoint, 2½ months, being 75 days. After the installation of the equipment to supply power to the vessel from a shore connection, shore power could be used to reduce the use of diesel generators, but it is unknown when the installation would be complete. Therefore, those reductions could not be included in the emissions impact.

    - Assumed the project would start Fiscal Year 2011, third quarter. The estimated air emissions are expected to occur all within 1 year.

    - Two of the six SBX Radar Vessel generators would be operational 24/7 at 40 percent capacity. Assumed the generators would use 3,200 gallons of diesel fuel per day while moored, for a total of 240,000 gallons of fuel throughput for both generators.

- *Added Personnel*: During the maintenance and repair period, there could be up to 307 personnel working onsite (83 SBX Radar Vessel permanent personnel, 24 shore support, and 200 shipyard workers). There would be two work shifts scheduled from 0530 to 2200, 6 days per week.

    - The 83 permanent personnel (Government contract employees) would live on the vessel during the maintenance and repair period. These personnel would use Government-owned vehicles or rental cars at some point during their 3-month stay, assumed to be 50 miles for each employee. This is called On-road Government-owned vehicle (GOV) vehicle miles traveled (VMT).

    - The 224 shipyard workers would be commuting to the site for up to 3 months with a one-way commute assumed to be 10 miles. This is called Shipyard Worker Commute-VMT.

- *Shipyard Equipment:* Shipyard equipment (e.g., air compressors, ultra high pressure (UHP) washers, welding units, and other pier-side heavy duty equipment that may support the project) would run intermittently on the deck of the SBX Radar Vessel or on the dock. Assumed 1 of each of the following

pieces of equipment would operate for 975 hours each: aerial lift, air compressor, crane, UHP washer, pump, and a welder.

- *Painting and Solvents:* Maintenance would require approximately 1,500 gallons of paint and 330 gallons of solvents. All painting would be roller or brush application to reduce air emissions and would follow standard best management practices. However, the painting and solvent activities that are part of this Proposed Action will be performed under Puget Sound Clean Air Agency's (PSCAA's) orders, therefore emissions are exempt from conformity per 40 CFR 93.153(d)(1).

Air Emissions Summary: Based on the air quality analysis for the Proposed Action, the maximum net emissions would be below *de minimis* levels for VOC, NOx, CO, and PM10 in the Puget Sound Air Basin (Table 2).

Date RONA prepared: February 16, 2011

RONA prepared by: Barbara Young, KAYA Associates, Inc. 256-713-1650

EMISSIONS EVALUATION AND CONCLUSION

Emissions associated with the maintenance and repair of the SBX Radar Vessel were calculated based on standardized methodologies. Emissions were then compared with *de minimis* thresholds for the air basins in which they would occur.

The MDA concludes that *de minimis* thresholds for applicable criteria pollutants would not be exceeded as a result of the Proposed Action. The emissions data supporting that conclusion are shown in Table 2, which provides a summary of the calculations included in Appendix D of the *SBX Radar Vessel Maintenance and Repair EA*. Therefore, the MDA concludes that further formal Conformity Determination procedures are not required, resulting in this RONA.

RONA APPROVAL

To the best of my knowledge, the information presented in this RONA is correct and accurate, and I concur in the finding that the Proposed Action is not subject to the General Conformity Rule.

Signature: Eric N Sorrells Date: 3/22/2011

Name/Rank: Eric N. Sorrells / YF-03

Title: Chief, Environmental Management

Facilities, Military Construction, and Environmental Management

Organization: Missile Defense Agency

Table 2. Estimated Air Emissions for SBX Radar Vessel Maintenance and Repair Activity

Source Type	VOC (Tons/ Year)	Nitrogen Oxides (NOx) (Tons/ Year)	Carbon Monoxide (CO) (Tons/ Year)	PM10* (Tons/ Year)	PM2.5* (Tons/ Year)	Sulfur Dioxide** (SOx) (Tons/ Year)
Two Onboard Generators	5.93	53.76	14.28	0.83	0.80	0.03
Shipyard Worker Commute-VMT	0.01	0.01	0.08	0.00	0.00	0.00
On Road Gov't -Owned Vehicles VMT	0.00	0.01	0.07	0.00	0.00	0.00
Shipyard Equipment	0.15	0.41	1.28	0.01	0.01	0.00
Net Emissions Increase	**6.09**	**54.19**	**15.71**	**0.84**	**0.81**	**0.03**
Puget Sound Air Basin Threshold	**100**	**100**	**100**	**100**	**N/A**	**N/A**
Exceeds Threshold?	**No**	**No**	**No**	**No**	**N/A**	**N/A**

Source: Emissions calculations were estimated using U.S. Air Force, ACAM, Version 4.6 (Air Force Center for Engineering and the Environment, 2010); and AP 42, Fifth Edition *Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources*, *Section 3.4 Large Stationary Diesel and All Stationary Duel-fuel Engines (*USEPA,1996)

Notes:

CO = Carbon monoxide
NOx = Nitrogen oxides
PM2.5 = Particulate matter equal to or less than 2.5 microns in size
PM10 = Particulate matter equal to or less than 10 microns in size
SOx = Sulfur dioxide
VMT= Vehicle Miles Traveled
VOC = Volatile organic compounds
N/A = Not Applicable
Emissions displayed as fixed decimal numbers. Total calculated using full numbers.

* Abrasive blasting material is not included
* * Assumed sulfur content is 0.05% by weight

RECORD OF NON-APPLICABILITY (RONA)
FOR CLEAN AIR ACT CONFORMITY
Sea-Based X-Band (SBX) Radar Vessel Maintenance and Repair
Naval Air Station, North Island, Naval Base Coronado, San Diego, California

INTRODUCTION

U.S. Environmental Protection Agency (USEPA) published *Revisions to the General Conformity Regulations; Final Rule*, in the April 5, 2010 Federal Register (40 CFR Parts 51 and 93). The U.S. Navy published *Clean Air Act (CAA) General Conformity Guidance in Appendix F, OPNAVINST 5090.1C*, dated October 30, 2007. These publications provide implementing guidance to document CAA Conformity Determination requirements.

Under Section 176(c) of the Clean Air Act, Federal actions may be exempt from conformity determinations if they do not exceed designated *de minimis* levels for criteria pollutants. Table 1 lists the *de minimis* levels (in tons/year) for the air basin potentially affected by the Proposed Action.

Table 1. *De minimis* Levels for Determination of Applicability of General Conformity Rule, Naval Air Station North Island

Air Quality Jurisdiction	*De minimis* Emission, tons/year					
	VOC	NOx	CO	PM10	PM2.5	SOx
San Diego Air Basin	100*	100*	100	N/A	N/A	N/A

Source: 40 CFR 93.153

Notes:

CO = Carbon monoxide
NOx = Nitrogen oxides
PM2.5 = Particulate matter equal to or less than 2.5 microns in size
PM10 = Particulate matter equal to or less than 10 microns in size
SOx = Sulfur dioxide
VOC = Volatile organic compounds
N/A = Not Applicable

* San Diego Air Basin may be newly designated in 2011 as a serious nonattainment area for 8-hour ozone, at which time the *de minimis* for applicability analysis would be revised to 50 tons/year for VOC and NOx emissions.

PROJECT ACTION

Action Proponent: Department of Defense, Missile Defense Agency (MDA)

Location: Naval Air Station, North Island, Naval Base Coronado, San Diego, California

Proposed Action Name: Sea-Based X-Band (SBX) Radar Vessel Maintenance and Repair

Proposed Action Summary: The MDA proposed to perform required maintenance and repair of the SBX Radar Vessel thrusters and other scheduled general maintenance activities at Naval Air Station North Island. The project is scheduled to occur in 2011 and would take up to 3 months to complete. Inspection, maintenance, and repair activities on the SBX Radar Vessel are similar to activities that are performed on all U.S. Navy ships at Navy shipyards. These activities include thruster maintenance, painting, welding, blasting, sanding, plasma cutting, inspections, installation of new equipment,

removal of broken and obsolete equipment, equipment calibration, washing of equipment and vessel, and purging of systems (i.e., cooling, sewage, water, etc.). These activities would occur inside the vessel, outside the vessel (topside and below the waterline), and pier-side. No radar tracking, testing, or calibration would occur during maintenance activities. The vessel does not currently have the capability to connect to shore power at a pier; therefore, while moored, the SBX vessel has to run two onboard generators for "hotel" power (to provide power for lights, temperature control, etc.). The document *SBX Radar Vessel Maintenance and Repair Environmental Assessment (EA)* is the analysis conducted under the National Environmental Policy Act.

Air Emissions Evaluation: Emissions calculations were estimated using the *U.S. Air Force Air Conformity Applicability Model (ACAM)*, Version 4.6, 2010 and USEPA's *Compilation of Air Pollution Factors, Volume I: Stationary Point and Area Sources (AP-42), Section 3.4 Large Stationary Diesel and All Stationary Duel-fuel Engines,* 1996. The proposed mooring site for the SBX vessel is Pier P or N, Naval Air Station North Island, San Diego, California. The following assumptions were made during the air emissions evaluation:

- *Shipboard generators:* For purposes of estimating generator emissions, 75 days of operation were used because the duration of the activity is estimated to be 2 to 3 months, with the midpoint, 2½ months, being 75 days. After the installation of the equipment to supply power to the vessel from a shore connection, shore power could be used to reduce the use of diesel generators, but it is unknown when the installation would be complete. Therefore, those reductions could not be included in the emissions impact.

    - Assumed the project would start Fiscal Year 2011, third quarter. The estimated air emissions are expected to occur all within 1 year.

    - Two of the six SBX Radar Vessel generators would be operational 24/7 at 40 percent capacity. Assumed the generators would use 3,200 gallons of diesel fuel per day while moored, for a total of 240,000 gallons of fuel throughput for both generators.

- *Added Personnel*: During the maintenance and repair period, there could be up to 307 personnel working onsite (83 SBX Radar Vessel permanent personnel, 24 shore support, and 200 shipyard workers). There would be two work shifts scheduled from 0530 to 2200, 6 days per week.

    - The 83 permanent personnel (Government contract employees) would live on the vessel during the maintenance and repair period. These personnel would use Government-owned vehicles or rental cars at some point during their 3-month stay, assumed to be 50 miles for each employee. This is called On-road Government-owned vehicle (GOV) vehicle miles traveled (VMT).

    - The 224 shipyard workers would be commuting to the site for up to 3 months with a one-way commute assumed to be 10 miles. This is called Shipyard Worker Commute-VMT.

- *Shipyard Equipment:* Shipyard equipment (e.g., air compressors, ultra high pressure (UHP) washers, welding units, and other pier-side heavy duty

equipment that may support the project) would run intermittently on the deck of the SBX Radar Vessel or on the dock. Assumed 1 of each of the following pieces of equipment would operate for 975 hours each: aerial lift, air compressor, crane, UHP washer, pump, and a welder.

- *Painting and Solvents:* Maintenance would require approximately 1,500 gallons of paint and 330 gallons of solvents. All painting would be roller or brush application to reduce air emissions and would follow standard best management practices. However, the painting and solvent activities that are part of this Proposed Action would be performed under a San Diego Air Pollution Control District permit, therefore emissions are exempt from conformity per 40 CFR 93.153(d)(1).

Air Emissions Summary: Based on the air quality analysis for the Proposed Action, the maximum net emissions would be below *de minimis* levels for VOC, NOx, and CO in the San Diego Air Basin as shown in Table 2.

Date RONA prepared: February 16, 2011

RONA prepared by: Barbara Young, KAYA Associates, Inc., 256-713-1650

EMISSIONS EVALUATION AND CONCLUSION

Emissions associated with the maintenance and repair of the SBX Radar Vessel were calculated based on standardized methodologies. Emissions were then compared with *de minimis* thresholds for the air basins in which they would occur.

The MDA concludes that *de minimis* thresholds for applicable criteria pollutants would not be exceeded as a result of the Proposed Action. The emissions data supporting that conclusion are shown in Table 2, which provides a summary of the calculations included in Appendix D of the *SBX Radar Vessel Maintenance and Repair EA*. Therefore, the MDA concludes that further formal Conformity Determination procedures are not required, resulting in this RONA.

RONA APPROVAL

To the best of my knowledge, the information presented in this RONA is correct and accurate, and I concur in the finding that the Proposed Action is not subject to the General Conformity Rule.

Signature: Eric N Sorrells Date: 3/22/2011

Name/Rank: Eric N. Sorrells / YF-03

Title: Chief, Environmental Management

Facilities, Military Construction, and Environmental Management

Organization: Missile Defense Agency

Table 2. Estimated Air Emissions for SBX Radar Vessel Maintenance and Repair Activity

Source Type	VOC (Tons/ Year)	Nitrogen Oxides (NOx) (Tons/ Year)	Carbon Monoxide (CO) (Tons/ Year)	PM10* (Tons/ Year)	PM2.5* (Tons/ Year)	Sulfur Dioxide** (SOx) (Tons/ Year)
Two Onboard Generators	5.93	53.76	14.28	0.83	0.80	0.03
Shipyard Worker Commute-VMT	0.01	0.01	0.08	0.00	0.00	0.00
On Road Gov't - Owned Vehicles VMT	0.00	0.01	0.07	0.00	0.00	0.00
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Net Emissions Increase	**6.09**	**54.19**	**15.71**	**0.84**	**0.81**	**0.03**
San Diego Air Basin Threshold	**100**	**100**	**100**	**N/A**	**N/A**	**N/A**
Exceeds Threshold?	**No**	**No**	**No**	**N/A**	**N/A**	**N/A**

Source: Emissions calculations were estimated using U.S. Air Force, ACAM, Version 4.6 (Air Force Center for Engineering and the Environment, 2010); and AP 42, Fifth Edition *Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources*, *Section 3.4 Large Stationary Diesel and All Stationary Duel-fuel Engines (*USEPA, 1996)

Notes:

CO = Carbon monoxide
NOx = Nitrogen oxides
PM2.5 = Particulate matter equal to or less than 2.5 microns in size
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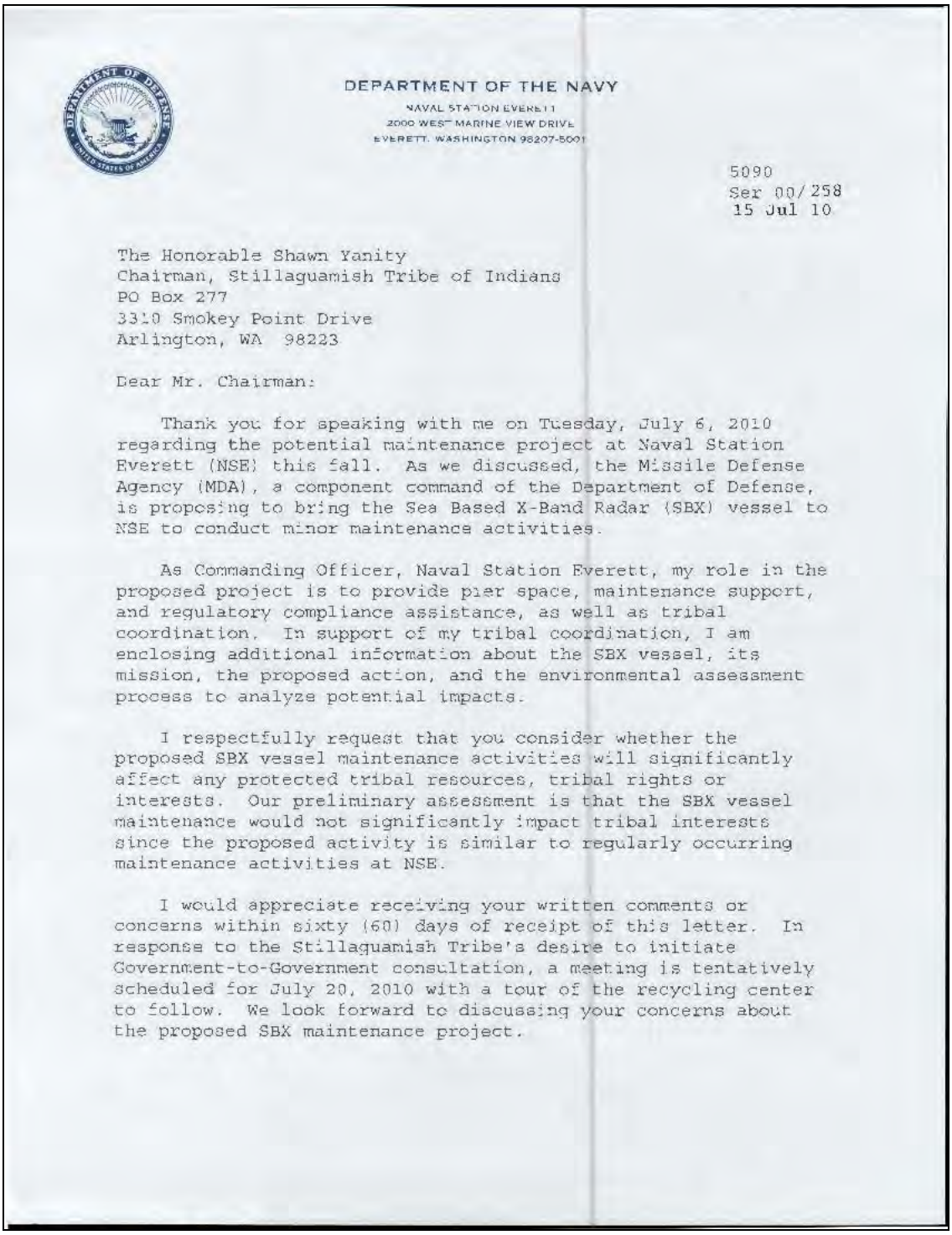
SOx = Sulfur dioxide
VMT= Vehicle Miles Traveled
VOC = Volatile organic compounds
N/A = Not Applicable
Emissions displayed as fixed decimal numbers. Total calculated using full numbers.

* Abrasive blasting material is not included
* * Assumed sulfur content of fuel is 0.05% by weight

Appendix I
Government-to-Government Correspondence

APPENDIX I
GOVERNMENT-TO-GOVERNMENT CORRESPONDENCE



DEPARTMENT OF THE NAVY
NAVAL STATION EVERETT
2000 WEST MARINE VIEW DRIVE
EVERETT, WASHINGTON 98207-5001

5090
Ser 00/258
15 Jul 10

The Honorable Shawn Yanity
Chairman, Stillaguamish Tribe of Indians
PO Box 277
3310 Smokey Point Drive
Arlington, WA 98223

Dear Mr. Chairman:

Thank you for speaking with me on Tuesday, July 6, 2010 regarding the potential maintenance project at Naval Station Everett (NSE) this fall. As we discussed, the Missile Defense Agency (MDA), a component command of the Department of Defense, is proposing to bring the Sea Based X-Band Radar (SBX) vessel to NSE to conduct minor maintenance activities.

As Commanding Officer, Naval Station Everett, my role in the proposed project is to provide pier space, maintenance support, and regulatory compliance assistance, as well as tribal coordination. In support of my tribal coordination, I am enclosing additional information about the SBX vessel, its mission, the proposed action, and the environmental assessment process to analyze potential impacts.

I respectfully request that you consider whether the proposed SBX vessel maintenance activities will significantly affect any protected tribal resources, tribal rights or interests. Our preliminary assessment is that the SBX vessel maintenance would not significantly impact tribal interests since the proposed activity is similar to regularly occurring maintenance activities at NSE.

I would appreciate receiving your written comments or concerns within sixty (60) days of receipt of this letter. In response to the Stillaguamish Tribe's desire to initiate Government-to-Government consultation, a meeting is tentatively scheduled for July 20, 2010 with a tour of the recycling center to follow. We look forward to discussing your concerns about the proposed SBX maintenance project.

5090
Ser 00/258
15 Jul 10

If you have questions or concerns, please contact me directly at 425-304-3325. For additional project information, please feel free to have your staff contact Ms. Jennifer Slavick, NSE Environmental Department, at 425-304-3464 or email, jennifer.slavick@navy.mil.

Sincerely,

M. J. COURY
Captain, U.S. Navy
Commanding Officer

Enclosure: SBX Proposed Action and Potential Affects Assessment

2

SBX Proposed Action and Environmental Assessment

1. What is the SBX?

The Sea Based X-Band Radar (SBX) is an ocean-going semi-submersible vessel that became operational in 2005. Its on-board radar is an integral part of our nation's missile defense program. The technology is designed to track, discriminate, and assess ballistic missiles in flight in order to target them with interceptor missiles prior to reentry into the Earth's atmosphere. The SBX is also an important asset for collecting data during ballistic missile tests.

SBX Vessel

USS Lincoln at NAVSTA Everett

(Photos are for informational purposes only; not at same scale)

2. Description of the Proposed Action:

SBX repairs are necessary to maintain full capability of the vessel. Thrusters propel the vessel through the water and require routine inspection and repairs. This maintenance is necessary every five years for the American Bureau of Shipping/US Coast Guard certification which is required for the vessel to operate. MDA is also proposing to upgrade the internal systems and complete other maintenance and repairs such as surface preparation, repainting, hull maintenance, and electrical upgrades.

Naval Station Everett (NSE) is one of only three West Coast locations that can accommodate the specific deep-water maintenance requirements of SBX. These actions are similar to other ongoing maintenance activities that occur on ships at NSE. The SBX would occupy the same berthing space as the USS LINCOLN (CVN 72) while the Lincoln is deployed at sea. The SBX radar would not be operated while the vessel is at NSE for repairs.

1 Enclosure (1)

The X-band radar will not emit any energy while undergoing maintenance in port. The maintenance and repairs would pose no risk to public health and safety. The proposed work at NSE would be temporary, and there is no plan for SBX homeporting in Puget Sound.

As of July 8, 2010, the SBX vessel is proposed for arrival in the fall of 2010. It is anticipated that the work would take approximately 75 days for completion. If the date changes or the scope of work is modified, the Tribe will be notified as soon as possible and provided with updated information.

Naval Station Everett and Surrounding Waters

2

3. Environmental Assessment Process:

The U.S. Navy is supporting MDA in the preparation of an Environmental Assessment (EA) for this proposed action. This assessment will comply with the requirements of the National Environmental Policy Act (NEPA). The EA will analyze potential impacts, or environmental consequences, that could result from conducting the SBX maintenance and repair activities. The following environmental factors will be analyzed in the EA: air quality; airspace; biological resources; hazardous materials and waste; noise; visual and aesthetic impacts; and water quality.

A Biological Assessment will be prepared, and submitted to the U.S. Fish and Wildlife Service (FWS) and National Marine Fisheries Service (NMFS) for consultation under the Endangered Species Act (ESA). The BA determines the effects of the proposed action on ESA-listed species, protected marine mammals, and Essential Fish Habitat as defined in the Magnuson-Stevens Act. This consultation process ensures protection of the marine mammals, fish, and other wildlife of concern in the project area. Any necessary mitigation measures will be included in the statement of work for the maintenance activities. If NSE is selected as the proposed action location, the Navy would prepare and submit a Joint Aquatic Resources Permit Application (JARPA) to Washington Department of Ecology for Clean Water Act Section 401 certification prior to arrival of the vessel.

//

Approved for Public Release
10-MDA-5652 (16 JUL 10)

3

DEPARTMENT OF THE NAVY
NAVAL STATION EVERETT
2000 WEST MARINE VIEW DRIVE
EVERETT, WASHINGTON 98207-5001

5090
Ser 00/ 259
15 Jul 10

The Honorable Leonard Forsman
Chairman, Suquamish Tribe
18490 Suquamish Way
Suquamish, WA 98392

Dear Mr. Chairman:

Thank you for speaking with me on Friday, July 2, 2010 regarding the potential maintenance project at Naval Station Everett (NSE) this fall. As we discussed, the Missile Defense Agency (MDA), a component command of the Department of Defense, is proposing to bring the Sea Based X-Band Radar (SBX) vessel to NSE to conduct minor maintenance activities.

As Commanding Officer, Naval Station Everett, my role in the proposed project is to provide pier space, maintenance support, and regulatory compliance assistance, as well as tribal coordination. In support of my tribal coordination, I am enclosing additional information about the SBX vessel, its mission, the proposed action, and the environmental assessment process.

I respectfully request that you consider whether the proposed SBX vessel maintenance activities would significantly affect any protected tribal resources, tribal rights or interests. Our preliminary assessment is that the SBX vessel maintenance would not significantly impact tribal interests since the proposed activity is similar to regularly occurring maintenance activities at NSE.

I would appreciate receiving your written comments or concerns within sixty (60) days of receipt of this letter. In response to the Suquamish Tribe's desire to initiate Government-to-Government consultation, a member of my staff will contact Tom Ostrom to arrange a mutually agreeable date and time to meet. We look forward to discussing your concerns about the proposed SBX maintenance project.

5090
Ser 00/259
15 Jul 10

If you have questions or concerns, please contact me directly at (425) 304-3325. For additional project information, please feel free to have your staff contact Ms. Jennifer Slavick, NSE Environmental Department, at (425) 304-3464 or by email, jennifer.slavick@navy.mil.

Sincerely,

M. J. COURY
Captain, U.S. Navy
Commanding Officer

Enclosure: SBX Proposed Action and Potential Affects Assessment

2

SBX Proposed Action and Environmental Assessment

1. What is the SBX?

The Sea Based X-Band Radar (SBX) is an ocean-going semi-submersible vessel that became operational in 2005. Its on-board radar is an integral part of our nation's missile defense program. The technology is designed to track, discriminate, and assess ballistic missiles in flight in order to target them with interceptor missiles prior to reentry into the Earth's atmosphere. The SBX is also an important asset for collecting data during ballistic missile tests.

SBX Vessel

USS Lincoln at NAVSTA Everett

(Photos are for informational purposes only; not at same scale)

2. Description of the Proposed Action:

SBX repairs are necessary to maintain full capability of the vessel. Thrusters propel the vessel through the water and require routine inspection and repairs. This maintenance is necessary every five years for the American Bureau of Shipping/US Coast Guard certification which is required for the vessel to operate. MDA is also proposing to upgrade the internal systems and complete other maintenance and repairs such as surface preparation, repainting, hull maintenance, and electrical upgrades.

Naval Station Everett (NSE) is one of only three West Coast locations that can accommodate the specific deep-water maintenance requirements of SBX. These actions are similar to other ongoing maintenance activities that occur on ships at NSE. The SBX would occupy the same berthing space as the USS LINCOLN (CVN 72) while the Lincoln is deployed at sea. The SBX radar would not be operated while the vessel is at NSE for repairs.

1 Enclosure (1)

The X-band radar will not emit any energy while undergoing maintenance in port. The maintenance and repairs would pose no risk to public health and safety. The proposed work at NSE would be temporary, and there is no plan for SBX homeporting in Puget Sound.

As of July 8, 2010, the SBX vessel is proposed for arrival in the fall of 2010. It is anticipated that the work would take approximately 75 days for completion. If the date changes or the scope of work is modified, the Tribe will be notified as soon as possible and provided with updated information.

Naval Station Everett and Surrounding Waters

2

3. Environmental Assessment Process:

The U.S. Navy is supporting MDA in the preparation of an Environmental Assessment (EA) for this proposed action. This assessment will comply with the requirements of the National Environmental Policy Act (NEPA). The EA will analyze potential impacts, or environmental consequences, that could result from conducting the SBX maintenance and repair activities. The following environmental factors will be analyzed in the EA: air quality; airspace; biological resources; hazardous materials and waste; noise; visual and aesthetic impacts; and water quality.

A Biological Assessment will be prepared, and submitted to the U.S. Fish and Wildlife Service (FWS) and National Marine Fisheries Service (NMFS) for consultation under the Endangered Species Act (ESA). The BA determines the effects of the proposed action on ESA-listed species, protected marine mammals, and Essential Fish Habitat as defined in the Magnuson-Stevens Act. This consultation process ensures protection of the marine mammals, fish, and other wildlife of concern in the project area. Any necessary mitigation measures will be included in the statement of work for the maintenance activities. If NSE is selected as the proposed action location, the Navy would prepare and submit a Joint Aquatic Resources Permit Application (JARPA) to Washington Department of Ecology for Clean Water Act Section 401 certification prior to arrival of the vessel.

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Approved for Public Release
10-MDA-5652 (16 JUL 10)

3

DEPARTMENT OF THE NAVY
NAVAL STATION EVERETT
2000 WEST MARINE VIEW DRIVE
EVERETT, WASHINGTON 98207-5001

5090
Ser 00/260
15 Jul 10

The Honorable Melvin R. Sheldon, Jr.
Chairman, Tulalip Tribes of Washington
6700 Totem Beach Rd
Tulalip, WA 98271-9694

Dear Mr. Chairman:

Thank you for speaking with me on Thursday, July 8, 2010 regarding the potential maintenance project at Naval Station Everett (NSE) this fall. As we discussed, the Missile Defense Agency (MDA), a component command of the Department of Defense, is proposing to bring the Sea Based X-Band Radar (SBX) vessel to NSE to conduct minor maintenance activities.

As Commanding Officer, Naval Station Everett, my role in the proposed project is to provide pier space, maintenance support, and regulatory compliance assistance, as well as tribal coordination. In support of my tribal coordination, I am enclosing additional information about the SBX vessel, its mission, the proposed action, and the environmental assessment process.

I respectfully request that you consider whether the proposed SBX vessel maintenance activities would significantly affect any protected tribal resources, tribal rights or interests. Our preliminary assessment is that the SBX vessel maintenance would not significantly impact tribal interests since the proposed activity is similar to regularly occurring maintenance activities at NSE.

I would appreciate receiving your written comments or concerns within sixty (60) days of receipt of this letter. As you indicated the Tulalip Tribe would like to initiate Government-to-Government consultation, please provide the name(s) and title(s) of the tribal officials to contact to coordinate our first meeting. We look forward to discussing your concerns about the proposed SBX maintenance project.

5090
Ser 00/260
15 Jul 10

If you have questions or concerns, please contact me directly at (425) 304-3325. For additional project information, please feel free to have your staff contact Ms. Jennifer Slavick, NSE Environmental Department, at (425) 304-3464 or by email, jennifer.slavick@navy.mil.

Sincerely,

M. J. COURY
Captain, U.S. Navy
Commanding Officer

Enclosure: SBX Proposed Action and Potential Affects Assessment

2

SBX Proposed Action and Environmental Assessment

1. What is the SBX?

The Sea Based X-Band Radar (SBX) is an ocean-going semi-submersible vessel that became operational in 2005. Its on-board radar is an integral part of our nation's missile defense program. The technology is designed to track, discriminate, and assess ballistic missiles in flight in order to target them with interceptor missiles prior to reentry into the Earth's atmosphere. The SBX is also an important asset for collecting data during ballistic missile tests.

SBX Vessel

USS Lincoln at NAVSTA Everett

(Photos are for informational purposes only; not at same scale)

2. Description of the Proposed Action:

SBX repairs are necessary to maintain full capability of the vessel. Thrusters propel the vessel through the water and require routine inspection and repairs. This maintenance is necessary every five years for the American Bureau of Shipping/US Coast Guard certification which is required for the vessel to operate. MDA is also proposing to upgrade the internal systems and complete other maintenance and repairs such as surface preparation, repainting, hull maintenance, and electrical upgrades.

Naval Station Everett (NSE) is one of only three West Coast locations that can accommodate the specific deep-water maintenance requirements of SBX. These actions are similar to other ongoing maintenance activities that occur on ships at NSE. The SBX would occupy the same berthing space as the USS LINCOLN (CVN 72) while the Lincoln is deployed at sea. The SBX radar would not be operated while the vessel is at NSE for repairs.

1 Enclosure (1)

The X-band radar will not emit any energy while undergoing maintenance in port. The maintenance and repairs would pose no risk to public health and safety. The proposed work at NSE would be temporary, and there is no plan for SBX homeporting in Puget Sound.

As of July 8, 2010, the SBX vessel is proposed for arrival in the fall of 2010. It is anticipated that the work would take approximately 75 days for completion. If the date changes or the scope of work is modified, the Tribe will be notified as soon as possible and provided with updated information.

Naval Station Everett and Surrounding Waters

2

3. Environmental Assessment Process:

The U.S. Navy is supporting MDA in the preparation of an Environmental Assessment (EA) for this proposed action. This assessment will comply with the requirements of the National Environmental Policy Act (NEPA). The EA will analyze potential impacts, or environmental consequences, that could result from conducting the SBX maintenance and repair activities. The following environmental factors will be analyzed in the EA: air quality; airspace; biological resources; hazardous materials and waste; noise; visual and aesthetic impacts; and water quality.

A Biological Assessment will be prepared, and submitted to the U.S. Fish and Wildlife Service (FWS) and National Marine Fisheries Service (NMFS) for consultation under the Endangered Species Act (ESA). The BA determines the effects of the proposed action on ESA-listed species, protected marine mammals, and Essential Fish Habitat as defined in the Magnuson-Stevens Act. This consultation process ensures protection of the marine mammals, fish, and other wildlife of concern in the project area. Any necessary mitigation measures will be included in the statement of work for the maintenance activities. If NSE is selected as the proposed action location, the Navy would prepare and submit a Joint Aquatic Resources Permit Application (JARPA) to Washington Department of Ecology for Clean Water Act Section 401 certification prior to arrival of the vessel.

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Approved for Public Release
10-MDA-5652 (16 JUL 10)

3

DEPARTMENT OF THE NAVY
NAVAL STATION EVERETT
2000 WEST MARINE VIEW DRIVE
EVERETT, WASHINGTON 98207-5001

5090
Ser 00/277
30 Jul 10

The Honorable Henry Cagey
Chairman, Lummi Nation
2616 Kwina Road
Bellingham, WA 98226

Dear Mr. Chairman:

Thank you for speaking with me on Monday, July 26, 2010, regarding the potential maintenance project at Naval Station Everett (NSE) this fall. As we discussed, the Missile Defense Agency (MDA), a component command of the Department of Defense, is proposing to bring the Sea Based X-Band Radar (SBX) vessel to NSE to conduct minor maintenance activities.

As Commanding Officer, Naval Station Everett, my role in the proposed project is to provide pier space, maintenance support and regulatory compliance assistance, as well as tribal coordination. In support of my tribal coordination, I am enclosing additional information about the SBX vessel, its mission, the proposed action and the environmental assessment process.

I respectfully request that you consider whether the proposed SBX vessel maintenance activities would significantly affect any protected tribal resources, tribal rights or interests. Our preliminary assessment is that the SBX vessel maintenance would not significantly impact tribal interests since the proposed activity is similar to regularly occurring maintenance activities at NSE.

I would appreciate receiving your written comments or concerns within sixty (60) days of receipt of this letter. Since you indicated the Lummi Nation would like to initiate government to government consultation, please provide the name(s) and title(s) of the tribal officials for contact to coordinate our first meeting. We look forward to discussing your concerns about the proposed SBX maintenance project.

5090
Ser 00/277
30 Jul 10

If you have questions or concerns, please contact me directly at 425-304-3325. For additional project information, your staff may contact Ms. Jennifer Slavick, Naval Station Everett Environmental Department, at 425 304-3464 or email jennifer.slavick@navy.mil.

Sincerely,

M. C. COURY
Captain, U.S. Navy
Commanding Officer

Enclosure: SBX Proposed Action and Potential Affects Assessment

2

SBX Proposed Action and Environmental Assessment

1. What is the Sea Based X-Band Radar SBX?

The SBX is an ocean-going semi-submersible vessel that became operational in 2005. Its on-board radar is an integral part of our nation's missile defense program. The technology is designed to track, discriminate and assess ballistic missiles in flight in order to target them with interceptor missiles prior to reentry into the Earth's atmosphere. The SBX is also an important asset for collecting data during ballistic missile tests.

SBX Vessel

USS ABRAHAM LINCOLN (CVN 72) NAVSTA Everett

(Photos are for informational purposes only; not at same scale)

2. Description of the Proposed Action:

The SBX repairs are necessary to maintain full capability of the vessel. Thrusters propel the vessel through the water and require routine inspection and repairs. This maintenance is necessary every five years for the American Bureau of Shipping/U.S. Coast Guard certification which is required for the vessel to operate. The MDA is also proposing to upgrade the internal systems and complete other maintenance and repairs such as surface preparation, repainting, hull maintenance and electrical upgrades.

Naval Station Everett (NSE) is one of only three West Coast locations that can accommodate the specific deep-water maintenance requirements of SBX. These actions are similar to other ongoing maintenance activities that occur on ships at NSE. The SBX would occupy the same berthing space as the USS ABRAHAM LINCOLN (CVN 72) while deployed at sea. The SBX radar would not

ENCL

be operated while the vessel is at NSE for repairs. The X-band radar will not emit any energy while undergoing maintenance in port. The maintenance and repairs would pose no risk to public health and safety. The proposed work at NSE would be temporary and there is no plan for SBX homeporting in Puget Sound.

As of July 8, 2010, the SBX vessel is proposed for arrival in the fall of 2010. It is anticipated that the work would take approximately 75 days for completion. If the date changes or the scope of work is modified, the Tribe will be notified as soon as possible and provided with updated information.

Naval Station Everett and Surrounding Waters

2

ENCL

3. Environmental Assessment Process:

The U.S. Navy is supporting MDA in the preparation of an Environmental Assessment (EA) for this proposed action. This assessment will comply with the requirements of the National Environmental Policy Act (NEPA). The EA will analyze potential impacts or environmental consequences, which could result from conducting the SBX maintenance and repair activities. The following environmental factors will be analyzed in the EA: air quality, airspace, biological resources, hazardous materials and waste, noise, visual and aesthetic impacts, and water quality.

A Biological Assessment will be prepared and submitted to the U.S. Fish and Wildlife Service (FWS) and National Marine Fisheries Service (NMFS) for consultation under the Endangered Species Act (ESA). The BA determines the effects of the proposed action on ESA-listed species, protected marine mammals, and Essential Fish Habitat as defined in the Magnuson-Stevens Act. This consultation process ensures protection of the marine mammals, fish, and other wildlife of concern in the project area. Any necessary mitigation measures will be included in the statement of work for the maintenance activities. If NSE is selected as the proposed action location, the Navy would prepare and submit a Joint Aquatic Resources Permit Application (JARPA) to Washington Department of Ecology for Clean Water Act Section 401 certification prior to arrival of the vessel.

3 ENCL

DEPARTMENT OF THE NAVY
NAVAL STATION EVERETT
2000 WEST MARINE VIEW DRIVE
EVERETT, WASHINGTON 98207-5001

5090
Ser 00/278
30 Jul 10

The Honorable Brian Cladoosby
Chairman, Swinomish Indian Tribal Community
11404 Moorage Way
La Conner, WA 98257

Dear Mr. Chairman:

Thank you for speaking with me on Tuesday, July 27, 2010, regarding the potential maintenance project at Naval Station Everett (NSE) this fall. As we discussed, the Missile Defense Agency (MDA), a component command of the Department of Defense, is proposing to bring the Sea Based X-Band Radar (SBX) vessel to NSE to conduct minor maintenance activities.

As Commanding Officer, Naval Station Everett, my role in the proposed project is to provide pier space, maintenance support and regulatory compliance assistance, as well as tribal coordination. In support of my tribal coordination, I am enclosing additional information about the SBX vessel, its mission, the proposed action and the environmental assessment process.

I respectfully request that you consider whether the proposed SBX vessel maintenance activities would significantly affect any protected tribal resources, tribal rights or interests. Our preliminary assessment is that the SBX vessel maintenance would not significantly impact tribal interests since the proposed activity is similar to regularly occurring maintenance activities at NSE.

I would appreciate receiving your written comments or concerns within sixty (60) days of receipt of this letter. Since you indicated the Swinomish Indian Tribal Community would like to initiate government to government consultation, please provide the name(s) and title(s) of the tribal officials for contact to coordinate our first meeting. We look forward to discussing your concerns about the proposed SBX maintenance project.

5090
Ser 00/278
30 Jul 10

If you have questions or concerns, please contact me directly at 425-304-3325. For additional project information, your staff may contact Ms. Jennifer Slavick, Naval Station Everett Environmental Department, at 425-304-3464 or email jennifer.slavick@navy.mil.

Sincerely,

M. J. COURY
Captain, U.S. Navy
Commanding Officer

Enclosure: SBX Proposed Action and Potential Affects Assessment

2

SBX Proposed Action and Environmental Assessment

1. What is the Sea Based X-Band Radar SBX?

The SBX is an ocean-going semi-submersible vessel that became operational in 2005. Its on-board radar is an integral part of our nation's missile defense program. The technology is designed to track, discriminate and assess ballistic missiles in flight in order to target them with interceptor missiles prior to reentry into the Earth's atmosphere. The SBX is also an important asset for collecting data during ballistic missile tests.

SBX Vessel

USS ABRAHAM LINCOLN (CVN 72) NAVSTA Everett

(Photos are for informational purposes only; not at same scale)

2. Description of the Proposed Action:

The SBX repairs are necessary to maintain full capability of the vessel. Thrusters propel the vessel through the water and require routine inspection and repairs. This maintenance is necessary every five years for the American Bureau of Shipping/U.S. Coast Guard certification which is required for the vessel to operate. The MDA is also proposing to upgrade the internal systems and complete other maintenance and repairs such as surface preparation, repainting, hull maintenance and electrical upgrades.

Naval Station Everett (NSE) is one of only three West Coast locations that can accommodate the specific deep-water maintenance requirements of SBX. These actions are similar to other ongoing maintenance activities that occur on ships at NSE. The SBX would occupy the same berthing space as the USS ABRAHAM LINCOLN (CVN 72) while deployed at sea. The SBX radar would not

ENCL

be operated while the vessel is at NSE for repairs. The X-band radar will not emit any energy while undergoing maintenance in port. The maintenance and repairs would pose no risk to public health and safety. The proposed work at NSE would be temporary and there is no plan for SBX homeporting in Puget Sound.

As of July 8, 2010, the SBX vessel is proposed for arrival in the fall of 2010. It is anticipated that the work would take approximately 75 days for completion. If the date changes or the scope of work is modified, the Tribe will be notified as soon as possible and provided with updated information.

Naval Station Everett and Surrounding Waters

2

ENCL

3. Environmental Assessment Process:

The U.S. Navy is supporting MDA in the preparation of an Environmental Assessment (EA) for this proposed action. This assessment will comply with the requirements of the National Environmental Policy Act (NEPA). The EA will analyze potential impacts or environmental consequences, which could result from conducting the SBX maintenance and repair activities. The following environmental factors will be analyzed in the EA: air quality, airspace, biological resources, hazardous materials and waste, noise, visual and aesthetic impacts, and water quality.

A Biological Assessment will be prepared and submitted to the U.S. Fish and Wildlife Service (FWS) and National Marine Fisheries Service (NMFS) for consultation under the Endangered Species Act (ESA). The BA determines the effects of the proposed action on ESA-listed species, protected marine mammals, and Essential Fish Habitat as defined in the Magnuson-Stevens Act. This consultation process ensures protection of the marine mammals, fish, and other wildlife of concern in the project area. Any necessary mitigation measures will be included in the statement of work for the maintenance activities. If NSE is selected as the proposed action location, the Navy would prepare and submit a Joint Aquatic Resources Permit Application (JARPA) to Washington Department of Ecology for Clean Water Act Section 401 certification prior to arrival of the vessel.

3 ENCL

DEPARTMENT OF THE NAVY
NAVAL STATION EVERETT
2000 WEST MARINE VIEW DRIVE
EVERETT, WASHINGTON 98207-5001

5090
Ser 00/ 298
2 Sep 10

The Honorable Henry Cagey
Chairman, Lummi Nation
2616 Kwina Road
Bellingham, WA 98226

Dear Mr. Chairman:

This letter is intended as an update regarding the proposed Sea Based X-Band Radar (SBX) vessel maintenance project at Naval Station Everett this fall. Our records indicate that you received my letter describing the SBX vessel project on 3 August 2010. We attempted to contact you to arrange government to government consultation, as requested, and have not been able to schedule a meeting.

As a reminder, the Missile Defense Agency (MDA), a component command of the Department of Defense, is proposing to bring the SBX vessel to Naval Station Everett to conduct minor maintenance activities. An Environmental Assessment (EA) is being prepared to analyze potential impacts from the vessel repair activities. The EA will be available for your review once completed.

I will continue to keep you informed as the proposed project progresses. I encourage you to consider whether the proposed SBX project would significantly affect any protected tribal resources, tribal rights or interests. I respectfully request a written response no later than 1 October 2010.

If you have questions or concerns, please contact me directly at 425-304-3325.

5090
Ser 00/ 298
2 Sep 10

Feel free to have your staff contact Ms. Jennifer Slavick, Naval Station Everett Environmental Department, at 425-304-3464 or email jennifer.slavick@navy.mil.

Sincerely,

M. J. CCURY
Captain, U.S. Navy
Commanding Officer

2

DEPARTMENT OF THE NAVY
NAVAL STATION EVERETT
2000 WEST MARINEVIEW DRIVE
EVERETT, WASHINGTON 98207-5001

5090
Ser 00/ 300
2 Sep 10

The Honorable Shawn Yanity
Chairman, Stillaguamish Tribe of Indians
PO Box 277
3310 Smokey Point Drive
Arlington, WA 98223

Dear Mr. Chairman:

This letter is intended as an update regarding the proposed Sea Based X-Band Radar (SBX) vessel maintenance project at Naval Station Everett this fall. My letter describing the SBX vessel project was delivered on 10 August 2010. We attempted to contact you to arrange government to government consultation, as requested, and have not been able to schedule a meeting.

As a reminder, the Missile Defense Agency (MDA), a component command of the Department of Defense, is proposing to bring the SBX vessel to Naval Station Everett to conduct minor maintenance activities. An Environmental Assessment (EA) is being prepared to analyze potential impacts from the vessel repair activities. The EA will be available for your review once completed.

I will continue to keep you informed as the proposed project progresses. I encourage you to consider whether the proposed SBX project would significantly affect any protected tribal resources, tribal rights or interests. I respectfully request a written response no later than 1 October 2010.

If you have questions or concerns, please contact me directly at 425-304-3325.

5090
Ser 00/300
2 Sep 10

Feel free to have your staff contact Ms. Jennifer Slavick, Naval Station Everett Environmental Department, at 425-304-3464 or email jennifer.slavick@navy.mil.

Sincerely,

M. J. COURY
Captain, U.S. Navy
Commanding Officer

2

DEPARTMENT OF THE NAVY
NAVAL STATION EVERETT
2000 WEST MARINE VIEW DRIVE
EVERETT, WASHINGTON 98207-5001

5090
Ser 00/301
2 Sep 10

The Honorable Brian Cladoosby
Chairman, Swinomish Indian Tribal Community
11404 Moorage Way
LaConner, WA 98257

Dear Mr. Chairman:

This letter is intended as an update regarding the proposed Sea Based X-Band Radar (SBX) vessel maintenance project at Naval Station Everett this fall. Our records indicate that you received my letter describing the SBX vessel project on 3 August 2010. We attempted to contact you to arrange government to government consultation, as requested, and have not been able to schedule a meeting.

As a reminder, the Missile Defense Agency (MDA), a component command of the Department of Defense, is proposing to bring the SBX vessel to Naval Station Everett to conduct minor maintenance activities. An Environmental Assessment (EA) is being prepared to analyze potential impacts from the vessel repair activities. The EA will be available for your review once completed.

I will continue to keep you informed as the project progresses. I encourage you to consider whether the proposed SBX project would significantly affect any protected tribal resources, tribal rights or interests. I respectfully request a written response no later than 1 October 2010.

If you have questions or concerns, please contact me directly at 425-304-3325.

5090
Ser 00/301
2 Sep 10

Feel free to have your staff contact Ms. Jennifer Slavick, Naval Station Everett Environmental Department, at 425-304-3464 or email jennifer.slavick@navy.mil.

Sincerely,

M. J. COURY
Captain, U.S. Navy
Commanding Officer

2

DEPARTMENT OF THE NAVY
NAVAL STATION EVERETT
2000 WEST MARINE VIEW DRIVE
EVERETT, WASHINGTON 98207-5001

5090
Ser 00/299
2 Sep 10

The Honorable Melvin R. Sheldon, Jr.
Chairman, Tulalip Tribes of Washington
6700 Totem Beach Road
Tulalip, WA 98271-9694

Dear Mr. Chairman:

This letter is intended as an update regarding the proposed Sea Based X-Band Radar (SBX) vessel maintenance project at Naval Station Everett this fall. Our records indicate that you received my letter describing the SBX vessel project on 22 July 2010. We attempted to contact you to arrange government to government consultation, as requested, and have not been able to schedule a meeting.

As a reminder, the Missile Defense Agency (MDA), a component command of the Department of Defense, is proposing to bring the SBX vessel to Naval Station Everett to conduct minor maintenance activities. An Environmental Assessment (EA) is being prepared to analyze potential impacts from the vessel repair activities. The EA will be available for your review once completed.

I will continue to keep you informed as the proposed project progresses. I encourage you to consider whether the proposed SBX project would significantly affect any protected tribal resources, tribal rights or interests. I respectfully request a written response no later than 20 September 2010.

If you have questions or concerns, please contact me directly at 425-304-3325.

5090
Ser 00/ 299
2 Sep 10

Feel free to have your staff contact Ms. Jennifer Slavick, Naval Station Everett Environmental Department, at 425-304-3464 or email jennifer.slavick@navy.mil.

Sincerely,

M. J. COURY
Captain, U.S. Navy
Commanding Officer

2

DEPARTMENT OF THE NAVY
NAVAL STATION EVERETT
2000 WEST MARINE VIEW DRIVE
EVERETT, WASHINGTON 98207-5001

5090
Ser 00/312
14 Sep 10

The Honorable Leonard Forsman
Chairman, Suquamish Tribe
18490 Suquamish Way
Suquamish, WA 98392

Dear Mr. Chairman:

Thank you for meeting with me on 18 August 2010. I understand your time is valuable and appreciate the time you, Mr. Wayne George and Mr. Tom Ostrom spent meeting with Navy staff members, the Missile Defense Agency (MDA) and me.

During our meeting we discussed information pertaining to the proposed Sea-Based X-Band (SBX) Radar Vessel Maintenance and Repairs project. Attached to this letter are our notes from the meeting, including responses to questions and comments raised by you and your staff. Government to government consultation can be reinitiated with regard to the SBX project at any time. The Navy will keep the Suquamish Tribe informed of the progress of the Environmental Assessment and any notable project changes will be shared for your consideration.

If you have any questions about the SBX Radar Vessel Maintenance and Repairs project or other topics, please do not hesitate to contact me or my staff at 425-304-3325. The Installation Environmental Program Manager, Mr. John Miller, can be reached at 425-304-3463 or john.a.miller4@navy.mil.

Sincerely,

M. J. COURY
Captain, U.S. Navy
Commanding Officer

Enclosures: 1. Government-to-Government Consultation with the Suquamish Tribe - Meeting Minutes of 18 Aug 10
2. Briefing on SBX In-Port Maintenance
3. Public Release Packet

GOVERNMENT-TO-GOVERNMENT CONSULTATION WITH THE SUQUAMISH TRIBE
MEETING MINUTES

Date: 18 August 2010
Time: 4:00 PM – 5:30 PM
Location: Suquamish Tribal Center

Subject: SBX Radar Vessel Maintenance and Repair Environmental Assessment

Attendees:

Suquamish:
Mr. Leonard Forsman, Tribal Chairman
Mr. Wayne George, Tribal Executive Director
Mr. Tom Ostrom, Tribal Fisheries Biologist

Navy:
Captain Michael J. Coury, Naval Station Everett Commanding Officer
Mr. John Miller, Installation Environmental Program Manager
Ms. Kristin Ching, Installation Public Affairs Officer (note-taker)
Ms. Carolyn Winters, Region Northwest Tribal Liaison

MDA:
Mr. David Fuller, Missile Defense Agency General Engineer

Discussion Points: After introductions, Mr. Fuller discussed MDA's proposed project, including the five year maintenance activities and missile test schedule. Copies of the brief and fact sheets were provided at the meeting and are attached. The following are the questions from the Suquamish Tribe and responses provided by MDA and Navy representatives:

1. Could Puget Sound Naval Shipyard (PSNS) dry docks accommodate maintenance like the USS NIMITZ?

– No, the SBX vessel needs more stability than the carrier due to its pontoons and shape, which is taller and slightly wider.

Enclosure (1)

2. Do birds fly into the dome?

- Not an issue for birds since the dome is made of a strong Mylar material.

3. What maintenance is involved?

- Replacing the seals on the thrusters. This work will take 45 days, with the remaining time necessary for electrical work and other miscellaneous repairs. If the current testing schedule holds, 31 March 2011 is the deadline to start the maintenance. Boeing and Raytheon are the operating contractors for the SBX vessel.

4. Will there be more vessels like the SBX?

- There is not enough funding right now, but MDA ideally would like to have one on the east coast and one on the west coast.

5. Where was the SBX vessel built?

- The platform was built in Russia. Boeing brought it to the U.S. and mounted radar. The SBX vessel is government owned, contractor operated. The SBX vessel is self propelled by four large thrusters, which need maintenance every five years.

6. What are the drivers for the schedule?

- If the military flight test occurs in December 2010, MDA would lose pier availability at Naval Station Everett and would go to another location. Navy will not allow the carrier to be displaced, especially a carrier returning from deployment. Todd Shipyard in Seattle is a viable option, but would need extra funding for security. A naval base is preferred. Flight test schedule will likely stay on track but decisions could change at the last moment, so will continue the environmental assessment (EA) process regardless.

2 Enclosure (1)

7. Do the thruster seals use lubricant?

- The plan is to drain 95 percent within the vessel. Mitigations are in place for a dry environment and containment (i.e. divers using a pan to capture) under the vessel. The intent is for nothing to be released into the water. The MDA plans to create a dry environment for underwater work (i.e. reverse diving bell). Nothing is to be released into the water.

8. How deep is the water at Naval Station Everett (NSE)?

- Water depth at Naval Station Everett is as deep as 60 feet. Navy ships are not allowed to let any discharge fall into the water and containment measures are applied. As clarification, per The Chief of Naval Operations instruction, OPNAVINST 5090.1C: Environmental Readiness Program Manual, to all extents practicable paint chips, rust or debris are not allowed into the waters while ships are in port. The dumping of solid waste is not allowed. Normal wash down is allowed providing debris has been swept up prior to washing. Cooling water from normal operations of the engines is allowed. Liquid discharges that would create any kind of sheen (i.e. oil, solvents and soaps) are not allowed. Although not a Navy vessel, the SBX would be required to adhere to this instruction while at NSE. Naval Station Everett has oversight of any maintenance work at the piers.

9. What are the considerations for protection of the environment at the river mouth (which is very sensitive)?

Timing is important for marine life.

10. Would the NSE security barriers be extended?

- The vessel would be moored on the inner harbor within the existing security barriers. The footprint of the SBX vessel is just slightly wider than the carrier. Security will not be expanded. There will be no additional barriers that would cause impediments to shipping or other vessel traffic in the East Waterway.

3 Enclosure (1)

The lights used at night on the SBX vessel are low wattage to dimly illuminate the dome (shielded). No lights in the water.

11. Will Naval Station Everett be a preferred alternative if flight test schedule changes to allow pier availability?

- Public perception is important. Past concerns about the potential for radiation prompt assurance that the radar will not be operating while in port. Everett is not being considered as a primary support base for the SBX vessel.

12. Will any solvents be used?

- There will be solvents used due to planned painting and cleaning activities. The Navy will ensure contractors use proper containment and disposal practices.

13. Are any further permits required for this maintenance?

- The proposed maintenance work is not expected to require further permits. Following the biological assessment (BA) process, the EA and contractual documents will describe the procedures for containment and capture of any solvents/chemicals. Booms and skimmers are currently on standby for potential spill events from Navy ships.

14. The community will ask for assurance of compliance from a neutral third party (non-MDA/Navy). Can the Navy guarantee compliance while overseeing the maintenance work?

- The NSE Environmental Division is inspected by the Environmental Protection Agency (EPA) the Washington State Department of Ecology (WDOE), National Marine Fisheries Service (NMFS) and U.S. Coast Guard (USCG) for compliance with environmental regulations on a regular basis. Last month DOE and USCG inspected the barges at NSE. Navy team would be on site during vessel maintenance.

15. According to the news, this type of maintenance would normally be done at a shipyard.

Naval Station Everett was not built for extensive industrial maintenance. Could we ensure activities are not beyond the spirit of original base permits?

- The base does some intermediate maintenance and major work is conducted at the shipyard. Naval Station Everett is not meant to support extensive industrial activities.

16. Are the Best Management Practices (BMPs) fully developed?

- The EA will address BMPs once the exact scope of work is known. The contractor will develop BMPs to capture oil, etc. and details will be spelled out in the contract. The EA will address common safety practices (i.e. ships at Pearl Harbor Naval Shipyard typically shrink wrap entire ships to ensure all materials are captured).

17. Have you talked with Tulalip and Swinomish?

- We want to make sure we don't transform Everett into a place for large scale maintenance in the future. Understand that this is a unique situation with SBX. The Navy has invited four other tribes, Lummi, Stillaguamish, Swinomish and Tulalip to initiate consultation and we are in the process of scheduling those meetings. SBX is undergoing extensive maintenance at Pearl Harbor Naval Shipyard, but needs thruster maintenance every five years. Dredging in Pearl Harbor is a potential option. Navy views Naval Station Everett as a homeport for the Carrier Strike Group NINE vessels as first priority, though we cannot guarantee that there will never be any maintenance contemplated in the future.

18. When does the final EA come out?

- MDA anticipates the public comment period for the draft EA planned for 17 December 2010 to 28 January 2011. The final EA would be completed in February 2011. There may be another public outreach event to discuss the outcome of the completed EA.

5 Enclosure (1)

19. Who are the decision-makers?

- The Director of MDA, Gen. O'Reilly is signatory in cooperation with Navy officials. The MDA projection for the final determination (re: test schedule) is the end of August. The EA will continue regardless of the decision.

20. The tribe will assume that Everett is a viable alternative and would like the opportunity to review the EA. Request a second consultation prior to final decision. The public draft EA should be available by 17 December 2010. If the test schedule slips, the EA would have to be split into two separate EAs. To accommodate arrival in Everett or Todd Shipyard, the EA would have to be completed by 1 October 2010. To clarify, if this situation would occur, a draft EA would be available for public review prior to any final decision. To accommodate arrival in San Diego, the EA would have to be completed in February 2011.

21. Could Everett still be in the running at the last minute in November?

- It is possible, and the start of maintenance could happen as late as November. Allocate 90 days to ensure we will not affect carrier schedule. We need to press forward with the EA no matter what the announcement.

If the EA is split, please let us know as soon as possible. You will be notified. All components of the project are driven by the flight test schedule. We had hoped to hear a decision by end of the month of August but now expect by the end of September.

Meeting adjourned by 5:30pm.

Briefing on SBX In-Port Maintenance

Purpose and Summary

- The purpose of today's briefing is to provide information on a critical national asset in need of maintenance– the SBX
- Contents of today's briefing
  - Description of SBX and mission
  - Proposed Actions and Suitable Locations
  - Work planned
  - Schedule Drivers
  - Environmental Discussion and Alternatives
  - Tentative Schedule and Summary

Sea- Based X-Band Radar (SBX)

- The SBX is a government owned/contractor operated X-band phased-array radar that is mounted on a mobile, ocean-going semisubmersible platform, placed into operation 5 years ago
- SBX operates at sea most of the time. SBX has been at sea more than a year as of 17 June 2010.
- SBX is an integral part of our nation's missile defense program – it tracks, discriminates and assesses ballistic missiles in flight so that intercep tor missiles can destroy them before they hit their targets

Sea- Based X-Band Radar (SBX)

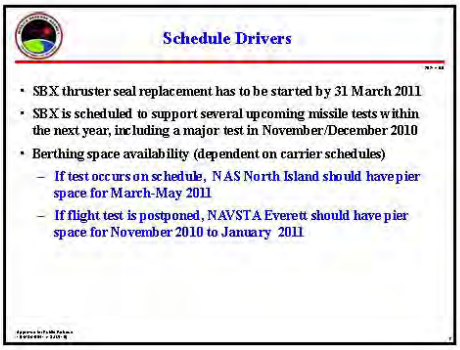
- Size:
  - SBX is 240 feet wide, 390 feet long, the top of the radar dome is 250 feet above water displaces 50,000 tons and has a crew of less than 100
  - For comparison, a Nimitz class carrier is 252 feet wide, 1,092 feet long, the top of the mast is 216 feet above water displaces 97,000 tons and has a crew of 6,000 (including the Air Wing)

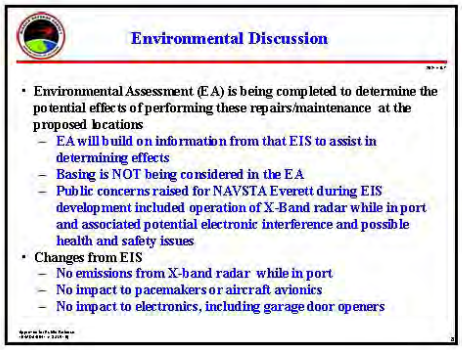
Proposed Actions

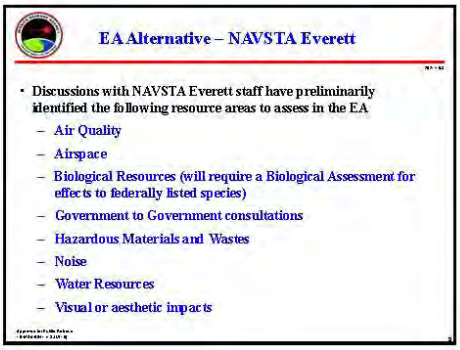
- SBX has technical oversight from the American Bureau of Shipping and US Coast Guard which includes vessel surveys for 5-year certification renewal; we can't operate the vessel at sea without the certification
- Most of the maintenance and survey work can be done in relatively shallow water, but the 5-year thruster seal replacement requires 50 feet or greater water depth. MDA received a deferral for thruster certification to March 31, 2011 to allow SBX to participate in several upcoming test flights and coordinate a suitable location for maintenance.
- To conserve money and at-sea time, SBX will repaint needed areas; inspect and repair other components as needed; upgrade several systems and install base station radio while in port . All work is similar to work performed on homeport ships and is expected to require up to 75 days in port when performed

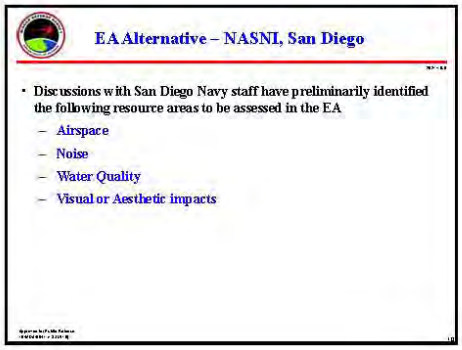
Suitable Locations for This Activity

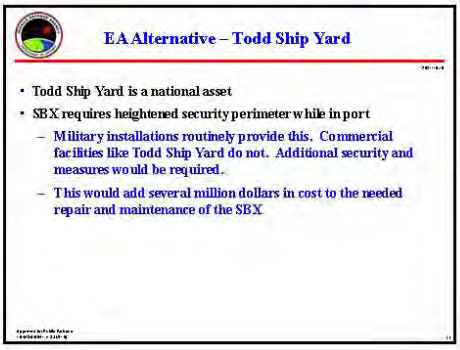
- Significant Need: A West Coast facility that has minimum 50-foot water depth to perform the thruster seal replacement
- There are no currently available US controlled dry docks large enough to accommodate the SBX
- Locations where this work can be performed
  - Naval Station (NAVSTA) Everett in Puget Sound
  - Naval Air Station (NAS), North Island in San Diego
  - Todd Shipyards in Seattle

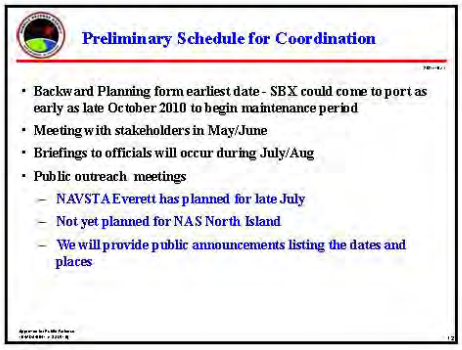

Schedule Drivers
• SBX thruster seal replacement has to be started by 31 March 2011
• SBX is scheduled to support several upcoming missile tests within the next year, including a major test in November/December 2010
• Berthing space availability (dependent on carrier schedules)
– If test occurs on schedule, NAS North Island should have pier space for March-May 2011
– If flight test is postponed, NAVSTA Everett should have pier space for November 2010 to January 2011

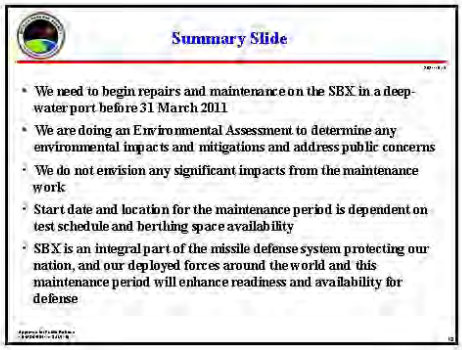

Environmental Discussion
• Environmental Assessment (EA) is being completed to determine the potential effects of performing these repairs/maintenance at the proposed locations
– EA will build on information from that EIS to assist in determining effects
– Basing is NOT being considered in the EA
– Public concerns raised for NAVSTA Everett during EIS development included operation of X-Band radar while in port and associated potential electronic interference and possible health and safety issues
• Changes from EIS
– No emissions from X-band radar while in port
– No impact to pacemakers or aircraft avionics
– No impact to electronics, including garage door openers


EA Alternative – NAVSTA Everett
• Discussions with NAVSTA Everett staff have preliminarily identified the following resource areas to assess in the EA
– Air Quality
– Airspace
– Biological Resources (will require a Biological Assessment for effects to federally listed species)
– Government to Government consultations
– Hazardous Materials and Wastes
– Noise
– Water Resources
– Visual or aesthetic impacts


EA Alternative – NASNI, San Diego
• Discussions with San Diego Navy staff have preliminarily identified the following resource areas to be assessed in the EA
– Airspace
– Noise
– Water Quality
– Visual or Aesthetic impacts


EA Alternative – Todd Ship Yard
• Todd Ship Yard is a national asset
• SBX requires heightened security perimeter while in port
– Military installations routinely provide this. Commercial facilities like Todd Ship Yard do not. Additional security and measures would be required.
– This would add several million dollars in cost to the needed repair and maintenance of the SBX


Preliminary Schedule for Coordination
• Backward Planning form earliest date - SBX could come to port as early as late October 2010 to begin maintenance period
• Meeting with stakeholders in May/June
• Briefings to officials will occur during July/Aug
• Public outreach meetings
– NAVSTA Everett has planned for late July
– Not yet planned for NAS North Island
– We will provide public announcements listing the dates and places


Summary Slide
• We need to begin repairs and maintenance on the SBX in a deep-water port before 31 March 2011
• We are doing an Environmental Assessment to determine any environmental impacts and mitigations and address public concerns
• We do not envision any significant impacts from the maintenance work
• Start date and location for the maintenance period is dependent on test schedule and berthing space availability
• SBX is an integral part of the missile defense system protecting our nation, and our deployed forces around the world and this maintenance period will enhance readiness and availability for defense

Press Release

Naval Station Everett
2000 West Marine View Drive, Everett, WA 98207-6001

Contact: Kristin Ching, Environmental Public Affairs Officer
Naval Station Everett Public Affairs
T (425) 304-3202
C (360) 340-5321

PUBLIC SERVICE ANNOUNCEMENT

Navy Community Outreach Event for SBX Vessel Proposed Maintenance and Repair Project
(30 Seconds)

July 15, 2010

FOR IMMEDIATE RELEASE

ANNOUNCER

THE NAVY INVITES THE PUBLIC TO ATTEND COMMUNITY OUTREACH EVENTS FOR A PROPOSED MAINTENANCE AND REPAIR PROJECT FOR THE SEA BASED X-BAND RADAR VESSEL.

THE OPEN HOUSE MEETINGS WILL TAKE PLACE ON JULY 27 IN EVERETT AND JULY 29 IN LANGLEY ON SOUTH WHIDBEY ISLAND FROM FIVE TO EIGHT P-M. THE PUBLIC CAN LEARN MORE ABOUT THE PROJECT AND PROVIDE COMMENTS.

FOR MORE INFORMATION VISIT W-W-W DOT G-O-V SUPPORT DOT U-S SLASH S-B-X-E-A.

ENCL (3)

Press Release

Naval Station Everett

2000 West Marine View Drive, Everett, WA 98207-5001

Contact: Kristin Ching
Naval Station Everett Public Affairs
T (425) 304-3202
C (360) 340-5321

PRESS RELEASE
Naval Station Everett Public Affairs

FOR IMMEDIATE RELEASE
July 20, 2010

Navy Hosts Community Outreach Events to Discuss Proposed SBX Vessel Maintenance and Repair Project

The U.S. Navy invites the public to attend two community outreach events on July 27, 2010, in Everett, Wash., and July 29, 2010, in Langley, Wash., to discuss a proposed maintenance and repair project at Naval Station Everett.

The Missile Defense Agency (MDA) needs to perform limited maintenance work on its Sea-Based X-Band Radar (SBX) vessel. The required maintenance can be accomplished only at a deepwater port. Three locations on the West Coast, including Naval Station Everett, have the appropriate depth to accomplish the repairs and are under consideration for use.

The type of maintenance under consideration is similar to the type of maintenance the Navy performs responsibly on Navy vessels at Navy shipyards. MDA will not operate the X-Band Radar while in port for the required maintenance.

The public is encouraged to attend the open-house style community outreach events in Everett and South Whidbey Island to learn about the proposal and to provide comments for consideration in an environmental assessment. Community input ensures that decision makers consider local knowledge, issues and concerns prior to making a decision.

Two community outreach events are scheduled at the following locations:

Date: **July 27, 2010, 5:00 to 8:00 p.m.**
Location: Everett Community College
Whitehorse Hall, Room 105
2000 Tower St.

Date: **July 29, 2010, 5:00 to 8:00 p.m.**
Location: South Whidbey Island
Langley Middle School Cafeteria
723 Camano Ave.

Information regarding the SBX Environmental Assessment can be found at the project website (www.govsupport.us/sbxea).

MEDIA AVAILABILITY: If media are interested in attending or receiving further information prior to the event, contact Kristin Ching, Public Affairs Officer, 425-304-3202.

Background Information:

The Missile Defense Agency (MDA) needs to perform limited maintenance work on its Sea-Based X-Band Radar (SBX), an integral part of the nation's Ballistic Missile Defense System. The SBX vessel's thrusters, which help move it through the water, require periodic maintenance to retain American Bureau of Shipping/U.S. Coast Guard certification, which is required for the vessel to operate. Thruster maintenance is needed in order to maintain a full suite of radars for anti-ballistic missile testing and defense.

MDA also needs to perform additional maintenance and repair on the vessel. Work includes repainting needed areas, inspecting and repairing other vessel components, and upgrading some internal systems.

-USN-

The Missile Defense Agency AND the Sea-Based X-Band Radar

The Missile Defense Agency

The Missile Defense Agency (MDA) is a research, development and acquisition agency within the Department of Defense. Its workforce includes civilians, military service members and contractor personnel in multiple locations across the United States.

The mission of MDA is to develop, test and field an integrated Ballistic Missile Defense System (BMDS). MDA works closely with U.S. military commands around the world, such as the Pacific Command and Northern Command.

The BMDS will protect the United States, deployed forces, allies and friends from ballistic missile attack. MDA works with military commanders to ensure the development of a robust BMDS technology and development program to address the challenges of an evolving threat.

The Sea-Based X-Band Radar

The Sea-Based X-Band Radar (SBX) tracks, discriminates and assesses the flight characteristics of ballistic missiles. The SBX provides an advanced capability to the overall BMDS, greatly increasing MDA's ability to conduct realistic development and operational testing of the BMDS, while providing an operational capability to U.S. military commanders.

The Sea-Based X-Band Radar *Photo Credit: Boeing*

The Ballistic Missile Defense System (BMDS)

Missile defense technology under development by the United States is designed to counter ballistic missiles of all ranges – short, medium, intermediate and long. The BMDS will include the following:

- **Networked sensors and ground- and sea-based radars for target detection and tracking;**
- **Ground- and sea-based interceptor missiles for destroying a ballistic missile using the force of a direct collision; and**
- **A command and control, battle management and communications network providing the warfighter with the needed links among the sensors and interceptor missiles.**

The Sea-Based X-Band Radar at Joint Base Pearl Harbor-Hickam in Hawaii

The Sea-Based X-Band Radar

(continued from page 1)

Overview

- The SBX is a unique combination of an advanced X-band radar mounted on a mobile, ocean-going, semi-submersible platform that provides the BMDS with an extremely powerful and capable radar that can be positioned to cover any region of the globe.
- The vessel is twin-hulled, self-propelled and stable in high winds and turbulent sea conditions.
- Its ocean spanning mobility allows the radar to be repositioned as needed to support the various BMDS test scenarios.
- It provides an advanced radar capability to:
  - Obtain missile tracking information while an incoming threat missile is in flight,
  - Discriminate between the hostile missile warhead and decoys, and
  - Provide data to interceptor missiles so that they can successfully intercept and destroy the threat missile before it can reach its target.
- The SBX is 240 feet wide, 390 feet long and 280 feet tall from its keel to the top of the radar dome.
- It houses living quarters, workspaces, storage, power generation, bridge and control rooms.

The SBX and The Boeing Company

Boeing's Defense, Space and Security business serves as prime contractor for the SBX and the Ground-based Midcourse Defense system, the primary BMDS system defending against intercontinental ballistic missile threats. Boeing supports MDA on all SBX development, test and integration activities, applying hardware and software solutions throughout the development process. Currently, Boeing oversees the operations, maintenance and continued development of the SBX vessel for MDA.

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Approved for Public Release
10-MDA-5642 (20 JUL 10)

The Sea-Based X-Band Radar Vessel
Maintenance and Repair Project

What is being proposed?

The Missile Defense Agency (MDA) needs to perform limited maintenance work on its Sea-Based X-Band Radar (SBX), an integral part of our nation's Ballistic Missile Defense System. The SBX vessel's thrusters, which help move it through the water, require periodic maintenance to retain American Bureau of Shipping/U.S. Coast Guard certification, which is required for the vessel to operate. Thruster maintenance is needed in order to maintain a full suite of radars for anti-ballistic missile testing and defense.

The required maintenance can be accomplished only at a deepwater port. Three locations on the West Coast have the appropriate depth to accomplish the repairs and are under consideration for use.

MDA also needs to perform additional maintenance and repair on the vessel. Work includes repainting needed areas, inspecting and repairing other vessel components, and upgrading some internal systems.

Maintenance to be completed is similar to the type of maintenance the U.S. Navy continues to perform responsibly on homeported Navy vessels at Navy shipyards. MDA will not operate the X-Band Radar while in port for the required maintenance.

What is the Sea-Based X-Band Radar?

An integral part of our nation's missile defense program, the SBX is a radar sensor that tracks, discriminates and assesses the flight characteristics of ballistic missiles in flight so they can be targeted with interceptor missiles. It supports testing and provides an advanced capability to the overall Ballistic Missile Defense System.

The SBX is an X-band phased-array radar that is mobile and ocean-going on a semi-submersible platform. It supports testing and provides an advanced capability to the nation's Ballistic Missile Defense System.

How big is it?

The SBX sits on a twin-hulled platform and is 240 feet wide, 390 feet long and 280 feet tall from its keel to the top of the radar dome. The vessel displaces about 50,000 tons of water. The SBX is similar in height and about one-third the length of an aircraft carrier.

Where can this maintenance be done?

To conduct thruster maintenance and seal replacement, a pierside water depth of 50 feet or more is required. There are three locations on the West Coast that could be available within the next three to nine months to facilitate the specific deep-water maintenance requirements. The locations under consideration are:

- Naval Station Everett – Everett, Washington
- Naval Air Station North Island – San Diego, California
- Todd Shipyards – Seattle, Washington

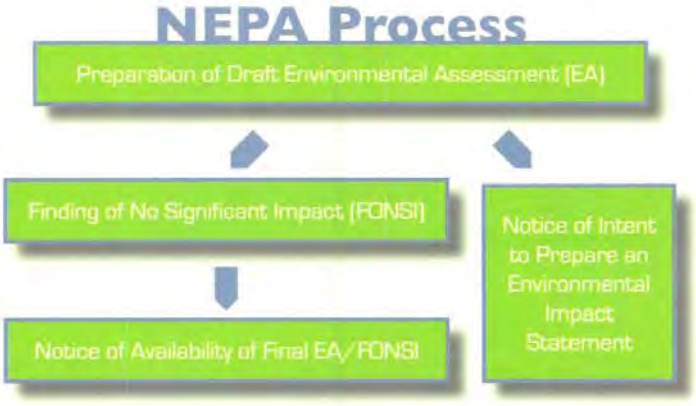
The Navy and MDA are discussing the possibility of MDA performing limited maintenance work on the SBX vessel at the two Navy locations. The proposed maintenance would be short term.

What are the next steps?

MDA will consider public and agency comments in the preparation of a draft Environmental Assessment, which will be made available for public review.

Depending on the results of the environmental analysis, the Environmental Assessment will:

- Document that the proposal will not have a significant impact, or
- Identify potentially significant impacts to be further assessed in an environmental impact statement



National Environmental Policy Act Process

How can the community stay involved?

Community involvement is an important component of environmental analyses. Community input ensures that decision makers benefit from local knowledge and consider local issues and concerns prior to making a decision. The community can stay involved by reviewing and commenting on the draft Environmental Assessment when it becomes available.

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Where can I find more information?

There is a project website for the SBX Environmental Assessment (www.govsupport.us/sbxea) where more information, including fact sheets and project documents, can be found. Project information can also be viewed at the following locations:

Seattle Central Library
1000 Fourth Ave.
Seattle, WA 98104

Everett Main Library
2702 Hoyt Ave.
Everett, WA 98201

South Whidbey Island
Langley Library
104 Second St.
Langley, WA 98260

San Diego Central Library
820 E St.
San Diego, CA 92101

Coronado Public Library
640 Orange Ave.
Coronado, CA 92118

How can I comment on this project?

Comments may be submitted via postal mail and electronic mail for consideration in the environmental analysis.

Comments may be sent to:

Deputy Chief of Staff, Engineer
U.S. Army Space and Missile Defense Command
Attention: SMDC-ENN
(Mr. David Hasley)
P.O. Box 1500
Huntsville, AL 35807

E-mail: **sbxea@govsupport.us**

Approved for Public Release
10-MDA-5642 (20 JUL 10)

The Sea-Based X-Band Radar Vessel
Maintenance and Repair Project

Environmental Resources and Considerations

The Missile Defense Agency (MDA) is considering Naval Station Everett as a potential location to perform limited maintenance work on the Sea-Based X-Band Radar (SBX) vessel. The vessel's thrusters, which help move it through the water, require periodic maintenance for the vessel to continue to operate. Thruster maintenance is needed to maintain access to a full suite of radars for anti-ballistic missile testing and defense. The proposed maintenance at Naval Station Everett would be temporary.

The Navy is supporting MDA in examining any possible concerns associated with vessel maintenance under the National Environmental Policy Act (NEPA). Similar maintenance for the carrier and other intermediate level maintenance for the battle group take place at Naval Station Everett. The work includes upgrading internal systems, repairing external structures and completing underwater thruster maintenance. The X-band radar will not emit any energy while the SBX vessel is undergoing maintenance in port. The Navy will continue to ensure all work processes comply with federal and state environmental standards and regulations.

Naval Station Everett is one of only three West Coast locations that can facilitate SBX's specific deep-water maintenance requirements. The maintenance cannot be completed at Pearl Harbor due to the required water depth. Two other possible locations being considered are Todd Shipyards in Seattle and Naval Air Station North Island in San Diego.

Naval Station Everett's first priority is to its homeported carrier and surface ships.

If the decision is made to proceed with SBX maintenance at Naval Station Everett, the Navy will ensure it maintains partnerships with regulatory agencies and communication with local Tribal leaders.

The Navy recognizes the community's concerns about the proposed project and will continue to inform and update the community throughout the process.

The USS Abraham Lincoln prepares to moor pierside at its homeport of Naval Station Everett.

Temporary Maintenance

The proposed maintenance visit at Naval Station Everett would be temporary.

Environmental Resources to be Analyzed

MDA, as the action proponent, is developing an Environmental Assessment (EA) to analyze potential impacts or environmental consequences that could result from implementation of SBX maintenance and repair activities. When complete, the draft EA will be available to the public for review and comment.

The EA will address the following areas of potential concern, as well as possible effects on the community and natural resources:

- Air quality
- Airspace
- Biological resources
- Hazardous materials and waste
- Noise
- Visual and aesthetic
- Water quality

Areas of Potential Concern

The draft EA will include assessments of the potential impacts on the community and natural resources, including impacts related to noise and lighting.

Noise

In June 2010, a noise survey was completed for residential areas close to and surrounding Naval Station Everett to measure current sound levels (to establish a baseline) and to determine how far sound travels from the base. The draft EA will further evaluate potential impacts from noise on the surrounding environment to avoid exceeding current volume levels.

Lighting

To the extent possible, maintenance will be scheduled during daylight hours. Underwater maintenance would be conducted in the day time and lighting under water would be used when needed. Effects on biological resources (including marine species) and the surrounding community will be carefully considered.

Radar

The X-band radar will not emit any energy while the SBX vessel is undergoing maintenance in port. While there may be operations from navigational radar, as with any other vessel entering the harbor, the maintenance and repairs would pose no risk to public health and safety. Since the X-band radar will not be operating, there will be no interference with cell phones, garage doors or other devices that send or receive a signal.

How can I comment on this project?

Comments may be submitted via postal mail and electronic mail for consideration in the environmental analysis. Comments may be sent to:

Deputy Chief of Staff, Engineer
U.S. Army Space and Missile Defense Command
Attention: SMDC-ENN
(Mr. David Hasley)
P.O. Box 1500
Huntsville, AL 35807
E-mail: sbxea@govsupport.us

The Sea-Based X-Band Radar will not emit any energy while the vessel is undergoing maintenance in port. The maintenance and repairs would pose no risk to public health and safety.

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Approved for Public Release
10-MDA-5667 (21 JUN 10)

Naval Station Everett
Environmental Stewardship Programs

Naval Station Everett

Naval Station Everett, located in Everett, Wash., is one of four U.S. Navy installations in the Northwest Region. Naval Station Everett is the home port for the USS Abraham Lincoln aircraft carrier and five surface ships, and it hosts the U.S. Coast Guard Cutters Blue Shark and Henry Blake.

The USS Abraham Lincoln

Naval Station Everett personnel maintain the highest level of readiness, effectiveness and efficiency to sustain unsurpassed services, programs and facilities in support of Navy and Coast Guard units.

Naval Station Everett is located on Port Gardner Bay along the Everett waterfront. Naval Station Everett also manages the following facilities:

- Jim Creek Naval Radio Station and Old Growth Forest (in the Cascades east of Arlington)
- Smokey Point Naval Complex (located in Marysville)
- Pacific Beach Recreation Area (on the Washington coast)

Naval Station Everett is committed to protecting the environment and is proud of its record of environmental protection, restoration, energy efficiency and pollution prevention.

Environmental Stewardship

The Department of Defense plays a major role in the protection and conservation of wildlife and habitat, and the Navy is an active environmental steward. It maintains and protects the land, air and sea environments within and surrounding Naval Station Everett and has implemented several successful environmental stewardship programs, some of which are profiled here. Protecting natural resources is important to the Navy and the Navy is proud of its strong record of environmental responsibility.

Naval Station Everett, the Naval Support Complex at Smokey Point, Naval Radio Station at Jim Creek and the Pacific Beach Recreation Area follow approved Integrated Natural Resources Management Plans (INRMP), which guide the management and protection of natural resources and provide outdoor recreational opportunities. The Navy works in cooperation with Federal and State Fish and Wildlife Agencies to prepare each INRMP. Jim Creek includes 262 acres of Pacific Northwest Old Growth Forest, freshwater habitat for chinook salmon and bull trout, and critical habitat for the Endangered Species Act-threatened marbled murrelet.

Environmental Stewardship continued on back page

Green Building, Energy Efficiency and Renewable Energy

Naval Station Everett's energy management program and public works department work together to ensure that energy efficiency is a priority in building design, construction, operations and maintenance. New construction provides the opportunity to include conservation methods and technologies, thus maximizing building efficiency and ensuring sustainable facilities. Green-building infrastructure has helped Naval Station Everett reduce its energy use by more than 24 percent. In fiscal year 2009, Naval Station Everett invested $68,000 in combined energy and water management projects, resulting in significant energy and water savings.

The Leadership in Energy and Environmental Design (LEED) gold rating of the new Bachelor Quarters building, the highest for current Navy facilities, is a prime example of the Navy's commitment to building in a manner that reduces energy use. LEED certification ensures a building meets and exceeds specific health and safety requirements, energy efficiency measures and other environmental criteria. The Bachelor Quarters building reduced energy use by 28 percent beyond state and federal standards. For the next two years, 70 percent of the building's electricity will be provided by renewable energy sources. The newest addition to the LEED family of buildings on the base will be the Fleet Region Readiness Center training facility which is expected to receive gold certification as well.

Central Monitoring

Naval Station Everett's Advanced Metering Infrastructure provides comprehensive energy-use data to identify where efficiency can be improved. In addition, the base will install 232 electric, gas, water and steam energy meters that will generate real-time data critical information for further reductions in energy use.

For more information, visit
www.cnic.navy.mil/everett/

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Alternative Fuels

Naval Station Everett is committed to increasing its use of alternative fuels and is proud to provide both civilian and military vehicles on base with B20 biodiesel and E85 fuel. Over 52 percent of government vehicles on base run exclusively on ethanol and all Navy-owned buses run on B20 biodiesel. Naval Station Everett's new ethanol fuel tank along with the existing B20 biodiesel tank have increased alternative fuel use by almost 4,000 gallons in fiscal year 2009.

Pollution Prevention, Recycling and Waste Reduction

Naval Station Everett recognizes the environmental impacts associated with waste generation and disposal. Naval Station Everett supports the Commander, Navy Region Northwest Environmental Policy and Environmental Management System to ensure compliance with all environmental laws and regulations. The base is committed to reducing the use of hazardous materials, decreasing overall waste generation, increasing solid waste disposal efficiency and preventing oil spills. The base's recycling program and composting efforts have diverted over 50 percent of its solid waste from landfills.

Unveiling of the new Bachelor Quarters Building

Waterfront Support

There are many standard operating procedures at Naval Station Everett designed to keep the surrounding waters clean. These procedures include best management practices for industrial work centers. Ships are boomed at all times while docked at the piers to provide immediate containment should a spill occur. During ship refueling activities, a barge collects and contains the compensated fuel ballast water instead of discharging into open water. Additionally, the stormwater collection system includes an oil/water separator that prevents oil discharges during rain events or spills.

Partnering with the Community for Environmental Protection and Restoration

Naval Station Everett works closely with the local community to promote and implement environmental stewardship programs. The base's Environmental Department works with the Snohomish County Public Works and Noxious Weed Control Board to remove noxious weeds from Naval Station Everett and Jim Creek. Naval Station Everett has collaborated with the Stillaguamish Tribe to complete a bank restoration project and build a fish-rearing facility at Jim Creek. Naval Station Everett also participated with Snohomish County, the City of Everett, the Stillaguamish Tribe and the Port of Everett in the Jetty Island Clean-up to remove invasive weeds, replant native vegetation and pick up litter along the shore.

Missile Defense Agency
The Sea-Based X-Band Radar Vessel Maintenance and Repair Project

Public Comment Form

Location: _____ **Date:** _____

Thank you for your comments on the Missile Defense Agency's Sea-Based X-Band Radar Vessel Maintenance and Repair Project

Comments may be submitted at the meeting, via e-mail to **sbxea@govsupport.us** or via U.S. Postal Service to the address below.

Please Print

1. Name _____
2. Address _____

Please give this form to one of the U.S. Navy or Missile Defense Agency representatives, place in the comment envelope or mail to:

Deputy Chief of Staff, Engineer
U.S. Army Space and Missile Defense Command
ATTN: SMDC-ENN (Mr. David Hasley)
P.O. Box 1500
Huntsville, AL 35807
E-mail: sbxea@govsupport.us

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Appendix J
Comments Received on the Draft Environmental Assessment During the 30-Day Comment Period

SBX Radar Vessel Maintenance and Repair Draft Environmental Assessment
Public Comment Period: 14 February - 16 March 2011
Comment Receipt Matrix*

Commenter	Comment#	Method of Receipt	Comment	Response
Skotdal, Andrew	#DEA0001	E-mail (website)	The satellite receivers for KRKO-AM 1380 operate in the C-band, and our studios are approximately one mile from Naval Station Everett with a line-of-sight view. If the SBX platform tests in the C-band while in port at Everett, we want to point out that operation in the C-band band is likely to interrupt our satellite delivered network feeds. We are aware that certain radar systems (possibly launch and recovery radar) caused several land-based radio stations along the Strait of Juan de Fuca to lose their network satellite feeds on C-band when an aircraft carrier was performing flight operations in the Strait. If C-band testing is necessary while the SBX is in port, we respectfully request an opportunity to know in advance of the testing. Thank you. KRKO-HD1, KRKO-AM 2707 Colby Avenue, Suite 1380 Everett, Washington 98201	Thank you for your comment and interest in the Sea-Based X-Band Radar (SBX) Vessel Maintenance and Repair Draft Environmental Assessment. Currently, MDA plans to complete the necessary work on the SBX Vessel at Todd Pacific Shipyards in Seattle, WA. However, should unseen circumstances prevent this, and as a reasonable and prudent planning measure, MDA has prepared the Draft EA to analyze performing the work at one of two contingency locations: Naval Station, Everett, WA or Naval Air Station, North Island, Coronado, CA. You expressed concern over possible interference in the C Band spectrum, possibly from an on-board radar system. The SBX vessel does not have or operate any C-Band radar systems, nor does it operate radar for launch and recovery operations. Also, as stated in the Draft EA, MDA will NOT operate or test the X-Band radar while in port. No radar tracking, testing, or calibration would occur during maintenance activities. The SBX Radar Vessel utilizes commercial satellite communications service operating in the C Band. However, the antennas are directional and are not expected to interfere with other communication systems or signals. The following statements were added to Section 2.2.1, page 2-3 of the Final EA, "The SBX vessel does not have or operate any C-Band radar systems, nor does it operate radar for launch and recovery operations. The SBX Radar Vessel utilizes commercial satellite communications service operating in the C Band. However, the antennas are directional and are not expected to interfere with other communication systems or signals.

*Full comments are listed on pages J-10 through J-22

Commenter	Comment#	Method of Receipt	Comment	Response
Vissman, Sandy (FWS- Staff Wildlife Biologist- covers the Naval Base Coronado area)	#DEA0002	E-mail (directly to Mike Terrill)	Dear Mr. Terrill, Thank you for your coordination regarding the Draft Environmental Assessment for the Sea-Based X-Band (SBX) Radar Vessel Maintenance and Repair Project. I am, however, not the Field Supervisor of our office, so wanted to provide that correction. Our Field Supervisor is Jim Bartel. I am, however the staff person who covers the Naval Base Coronado area, so will be happy to look at the EA, and am checking my availability to attend the upcoming community meeting in Coronado. We will be interested in the potential for the project to affect water quality in SD Bay, and in potential impacts to sensitive wildlife in the surrounding area. Naval Base Coronado is home to several federally listed Endangered and Threatened avian species, and also hosts nesting and roosting substrate for a substantial number of migratory birds. If you have not already done so, I suggest that you contact the Naval Base Coronado Biologist, Ms. Tiffany Shepherd, to assure adequate coordination regarding the biological resources on Naval Base Coronado. Thanks again, and I look forward to reviewing your project! Sandy Vissman USFWS	Thank you for responding to the notification about the availability of the Missile Defense Agency's Sea-Based X-band (SBX) Radar Vessel Maintenance and Repair Draft Environmental Assessment (EA). Currently, MDA is planning on doing the shipyard work at Todd Pacific Shipyards in Seattle, WA. However, should unseen circumstances prevent MDA from conducting the work at Todd, and as a reasonable and prudent planning measure, MDA has developed a Draft EA for conducting the work at two contingency locations, Naval Station, Everett (NSE) in Everett, WA and Naval Air Station, North Island (NASNI), Coronado, CA. Throughout the development of the EA, MDA worked with the resource staffs at NASNI and NSE to identify (1) the potential resources which could be affected and (2) the effects and the extent of those effects. The Commander Navy Region, Southwest, in San Diego and the NASNI staff in Coronado have been very helpful in this endeavor. For the Coronado area, working with the NASNI staff, no potential effects to wildlife or protected species were identified. MDA completed a Coastal Consistency Determination, presented it to the California Coastal Commission (CCC) and received their concurrence with the MDA's finding that the activities are compatible to the maximum extent practicable with CA coastal enforceable policies. As part of completing the consistency determination, a question similar to yours on water quality came up. MDA demonstrated to the CCC (and in an aside issue to the Regional Water Quality Control Board-San Diego) that because of the best management practices required by NASNI and MDA, and under the Uniform National Discharge Standards, there would be no issues with water quality.
Opel, Beth	#DEA0003	E-mail (website)	Hi, I noticed you have a Draft EA for Sea-Based X-Band Radar Vessel Maintenance and Repair available for viewing at the Everett, WA main library between Feb. 14 – Mar. 16, 2011. I represent a local newspaper in the Everett, WA area and wonder if you'd like to advertise that this document is available for public viewing and comment? Would you be so kind as to forward this email to the correct person If you are not the one in charge of the advertising? We direct mail our bimonthly community newspaper to over 24,000 area homes with each edition.	Comment noted. Thank you for your comments.

*Full comments are listed on pages J-10 through J-22

Commenter	Comment#	Method of Receipt	Comment	Response
			We have many active and retired navy families in our area as well as general citizens that might be interested in this information. My next issue will be published Thursday, Feb. 24th and the deadline for that issue is this Friday. If you have any questions or would like to run an ad regarding this matter in our paper please let me know. Sincerely,	
Selden, Walter	#DEA0004	E-mail (website; received postcard)	Sir, Regarding your "Proposed Action" postcard received in the mail yesterday seeking comment. We have stated here and elsewhere that the prospect of the SBX coming into Port Gardner for any reason is unacceptable. Your continued interest in Everett floors us because it was so resoundingly put off years ago and sentiments have not changed since. If it is strategic, then leave it to the west where it is supposedly effective. Seattle has already agreed to take it for whatever reason and it also has the deep (50 feet) water. http://en.wikipedia.org/wiki/List_of_deep-water_ports. Note that there are plenty of choices other than Everett. Take a look. Please, service it in an area where it can be of most use... which is NOT in Puget Sound. Now one begs the question of whether this is where you would like to mothball it. A tremendous amount of work, time, material and promotion has been, in our minds, wasted on the SBX and we have had it with the nearly surreptitious approach to getting it back in our own radar. Thank you for listening, W. Selden Everett	There are only three locations on the West Coast with sufficient water depth (50 feet or more) at dockside and which have sufficient pier space available at the time of the planned shipyards, These are Todd Pacific Shipyards, WA, Naval Station Everett, WA and Naval Air Station, North Island, CA.
Campbell, Lowell	#DEA0005	E-mail (website)	Mr. David Hasley, I live on the side of Mukilteo facing the Port of Everett. I hope that the SBX comes to visit; my family and I like to go to Harborview Park to see the Navy ships, especially the Abe Lincoln. I would guess you are being overwhelmed by people wanting to see the SBX in person. If it happened to be here during the 4th of July, I would love to take a tour of the unclassified part of the vessel. Thanks, Lowell, Deirdre, Jason & Laura Campbell	Comment noted. Thank you for your comment.

*Full comments are listed on pages J-10 through J-22

Commenter	Comment#	Method of Receipt	Comment	Response
Lee, Donna (and Gregory vonFalkenberg-Ridley)	#DEA0006	E-mail (website)	Please, we have been through this before. Please read the comments made in the past about this issue. The South Whidbey Record can help you. Whidbey Island does not want the SBX in our area for any reason. This is just an effort to get the camel's nose into the tent. Let Seattle deal with it, keep the work in Seattle. Thank you. Donna Lee & Gregory vonFalkenberg-Ridle	Comment noted. Thank you for your comment.
Laden, John	#DEA0007	E-mail (website)	Gentlemen Please find attached my comments on your environmental assessment. I was chief engineer on SBX for Boeing while it was built. While I am retired now I am still very interested in its performance. I hope my comments help. John Laden _____ Reference: SBX Draft Environmental Assessment Mr. David Hasley My name is John Laden. I was the chief SBX engineer at Boeing from the beginning Aug 2002 to May 2005 when it went to sea. I have since retired but still maintain in interest in SBX and attended your public hearing in Everett last year. Some of your folks even remembered me. I currently live in Arlington, WA which is about 20 miles from Everett. I read your preliminary environmental impact assessment with much interest and realize a lot of work has been done to generate this document. My comments are not saying that the work you have done is not good but may have some areas you might want to think about. You mentioned that you dropped all areas on the east coast, from consideration, due to the constraints of the Panama Canal. No mention was made that SBX was originally carried from the Gulf of Mexico to Hawaii by ship and could be done again. I would think it would be better to say that the time for SBX to get to the East Coast and back was the reason it was dropped. I do not think you can afford that much lost time in the program.	Thank you for your comments. The following changes were made to the Final EA based on your comments: A statement has been added to the Final EA in Section 2.3, page 2-21, stating …"Additionally, due to cost it is not feasible to carry the SBX Radar Vessel to an east coast location by ship."
			No mention was made of doing the thruster maintenance while anchored in deep sheltered water off the coast of Hawaii. That would seem to offer the least impact to the movement of SBX and the non-thruster maintenance could be done at Pearl Harbor as you have done in the past.	Please see Section 2.3, page 2-21 which states that Pearl Harbor is too shallow.

*Full comments are listed on pages J-10 through J-22

Commenter	Comment#	Method of Receipt	Comment	Response
			No mention is made about RF environment impact other than to say you would not operate the Weather radar or the SBX radar. SBX has a complex suite of communication systems, some of which may have to be operated while in port. I would be particularly concerned with the large Satellite communication links that are normally operating. Operating those in the San Diego Harbor or Everett Base could have significant impact on similar commercial systems in the area. There is no evidence in the report that the FCC has approved or reviewed your intended operations in these areas. I know in the past that was always a major concern.	Please see Section 2.2.1; Page 2-3 which was revised to state that …"Additionally, the XBR and the weather radar would not be operated while at pier-side. The SBX vessel does not have or operate any C-Band radar systems, nor does it operate radar for launch and recovery operations. The SBX Radar Vessel utilizes commercial satellite communications service operating in the C Band. However, the antennas are directional and are not expected to interfere with other communication systems or signals. No radar tracking, testing, or calibration would occur during maintenance activities."
			No mention is made of impacts to commercial and private use of the waterways adjacent to where the SBX is moored. I would expect that for security reasons you will have to restrict use of the waterway in proximity to the SBX Vessel. I think that the location in Everett will have little or no impact on use of the waterways. I am concerned that San Diego location is more of a problem since that area of the harbor gets heavy use by private and commercial ships. Because of the relatively easy access to the SBX from the water compared to a carrier you may have to a have larger no boat zone and hence impact the use of the waterway. Thank you for the opportunity to review this document and I hope my comments will help avoid any future problems. I think a few words and a reference to their basis would clear up these issues in your document. If I can help in any way in the future please let me know. Yours Truly John Laden	A statement has been added to the Final EA on page 3-40 & 3-92 …"Although a temporary security barrier (See Figure…) would be in place during the short-term mooring period (approximately 3 months) of the SBX Radar Vessel, no impacts are anticipated on commercial and private use of the waterways adjacent to Pier.
McCaull, Ann (Senior Planner-City of Coronado)	#DEA0008	E-mail (directly to Mike Terrill)	Good afternoon Leo, the City of Coronado is reviewing the EA for the above project and will providing comments shortly. Many of the comments will be the same that we raised when the California Coastal Commission considered the project, and which MDA committed to incorporate as part of the project, which the CCC approved. A question has come up, and I hope you can provide clarification. The City's understanding of this maintenance repair project was that it would be a one-time (once every 5 years) 3-month maintenance required to keep the vessel certified. One of our council members who attended the public workshop last week indicated that he spoke with someone at the meeting who indicated there will be more than one maintenance every 5 years. That the EA would allow the SBX Radar vessel to have routine maintenance work completed as necessary. In other words, that the SBX radar could have maintenance	Every five years is the major American Bureau of Shipping survey and USCG certification renewal. This five-year maintenance period includes the thruster work where we need water over 50 feet deep at the pier. The Draft Environmental Assessment out for public review at this time looks at performing this five-year interval work and other routine vessel maintenance work in the spring of 2011. Since the vessel is currently transitioning to the US Navy, Navy will be making the decision for the next five-year maintenance period, but it could be expected that NAS North Island, NAVSTA Everett and the Todd Pacific Shipyards facility to be candidate locations. As with any ocean going vessel, there is annual in-port maintenance and USCG inspection work that must be accomplished. The annual work is a week or two and does not

*Full comments are listed on pages J-10 through J-22

Commenter	Comment#	Method of Receipt	Comment	Response
			work occurring on an annual basis. This is not what we understood was the project scope, and I don't believe, what the Coastal Commission authorized with their permit approval. Can you please provide some clarification so that the City addresses this issue appropriately in our comment letter. Thanks in advance for your reply.	require any shipyard assistance. At the midpoint of the five years there is a special survey which requires shipyard or industrial support for scaffolding and divers, and SBX can conduct upgrades or heavy maintenance at the same time. In the past, MDA has done that work in Pearl Harbor, HI. During normal operations of the vessel, which is usually at sea up to 300 days a year, should unforeseen circumstances develop that require immediate vessel maintenance, the vessel would likely go the nearest port which could accomplish the necessary maintenance. That location could be the San Diego area. Much of the analysis in the Draft EA could serve as a basis for a future analysis, should it be required to accomplish the needed unplanned vessel maintenance. That was the intent of the comment made to Councilman Woiwode to which you refer.
Suquamish Tribe	#DEA0009	Telephone conversation	Questions from the Suquamish Tribe regarding the SBX project. In particular, are there more details about how and when the work would be conducted at Todd Pacific Shipyards? Following are specific items: 1) What is the depth of the waterway at Todd Pacific Shipyards? Request confirmation that the hull of the SBX vessel, the thruster well extension units, and repair activities would not impact the substrate or stir up potentially contaminated sediments. 2) The Suquamish conduct tribal fishing activities both at Everett and in Elliot Bay near the Duwamish River. The Draft EA states that the repair/maintenance work would occur in the spring of this year which is coming up soon. What is the current timeline? The Suquamish is requesting advanced notice of the arrival of the vessel in order to better schedule tribal fishing events. 3) The Suquamish is assuming a security barrier will be in place during repair/maintenance activities whether at Todd Pacific Shipyard or Everett. If this is the case, what are the dimensions of the barrier (specifically at Todd Shipyards)? The Suquamish would like to understand how this would potentially impact treaty fisheries.	The scope of work at Naval Station Everett would not change existing conditions at the base. As discussed during the Government-to-Government consultation meeting on August 18, 2010, the Sea Based X-Band (SBX) radar vessel would be moored on the inner harbor within the existing security barriers. The footprint of the SBX vessel is just slightly wider than the carrier. Security would not be expanded. There would be no additional barriers causing impediments to shipping or other vessel traffic in the East Waterway. With regard to Todd Pacific Shipyards, the following response is being sent on behalf of the Missile Defense Agency (MDA): Thank you for your continuing interest in the Sea Based X-Band Radar Vessel Maintenance and Repair Environmental Assessment (SBX EA). However, since the SBX EA looks at conducting the maintenance at two contingency locations, Naval Station Everett, WA and Naval Air Station, North Island, CA, questions about Todd Pacific Shipyards are outside the scope of the SBX EA. MDA will be providing information to the Suquamish as it is developed for the work at Todd Pacific Shipyards. Please let me know if you have any further questions.
City of Coronado	#DEA0010	Letter	Dear Mr. Hasley: The City of Coronado has received notice of the Availability of the Draft Environmental Assessment (EA) for the Sea-based X-band (SBX) Radar Vessel. While it appears that Todd Pacific Shipyards in Seattle is the preferred alternative for the maintenance project, it is noted that NASNI has	The EA addresses the five-year maintenance period required for the American Bureau of Shipping survey and United States Coast Guard certification renewal. This includes the thruster work, which must be done in water that is a minimum of 50 feet deep at the pier. The Draft Environmental Assessment recently out for

*Full comments are listed on pages J-10 through J-22

Commenter	Comment#	Method of Receipt	Comment	Response
			been analyzed as a potential contingency location for the maintenance work. The City has reviewed the Environmental Assessment and has the following comments: I. The project description contained within the Environmental Assessment is not consistent with the Coastal Consistency Determination issued for the project by the State Coastal Commission. The Consistency Determination was processed based upon a one-time, 3-month maintenance event. The Executive summary also speaks to a single maintenance and repair event in Spring 2011. However, correspondence received from Project Manager Mr. Leo Terrill indicates there would not only be a 3-month event, but annual maintenance lasting up to potentially 2 months, and a special maintenance event half-way through the 5-year certification period. The Environmental Assessment should be revised to accurately reflect the extent of the maintenance activities associated with the SBX Radar vessel.	public review (14 Feb – 16 March 2011) looks at contingency locations (NASNI & NSE) for performing this five-year thruster work and other routine vessel maintenance in 2011 only. Upon transition to the US Navy, the Navy will determine where future maintenance will occur and any necessary environmental planning.
			2. The City recognizes maintenance and repairs to the SBX Radar vessel are similar to the types of activities that occur for the aircraft carriers homeported at NASNI. However, the SBX Vessel is significantly wider and taller than a normal aircraft carrier. The dome of the radar would extend 36' higher than the top of a ship and would be 22' wider at mast. To minimize visual and noise impacts associated with this structure to adjoining residential areas, the Environmental Assessment should be revised to incorporate as a mitigation measure the commitment to moor the vessel at Pier N. The current Environmental Assessment notes the project would not significantly alter the noise environment in Coronado if moored in either orientation at Pier N. The document goes on to state there would be effects to the noise environment from the shipboard generators if moored in Orientation 2 at Pier P. To address this impact, the alignment of the generators' exhaust away from residences is suggested to mitigate this impact. It is not clear how effective this mitigation measure would be; therefore, Coronado recommends the Environmental Assessment be revised so that the vessel is moored at Pier N.	The berthing location is the responsibility of NASNI Port Operations, which factors in, among other things, port operation requirements, safety, and logistics at the pier at the time of berthing. Since the vessel could be berthed at Pier N or P, the EA looks at the effects at both locations. According to Page 3-83 of the Environmental Assessment, "Mooring at Pier N rather than at Pier P would reduce the level of noise in the nearby residential neighborhood. However, NASNI determines berthing locations based on carrier in- port schedules and logistical needs of the Port Operations." Additionally, pages ES-11, 3-85 of the Final Environmental Assessment state that, "As a means of reducing the noise from the two diesel generators, the use of the existing noise baffles and the alignment of the generators' exhaust away from residences (i.e., towards NASNI) would provide a greater buffering of the noise-sensitive areas." All of this as well as additional requirements and considerations would be used by NASNI Port Operations to make a location decision for berthing the SBX vessel, should it come to NASNI.
			3. To further address potential noise impacts, the Environmental Assessment should be revised to clarify that construction activity in the early morning hours (5:30 a.m. to 7:00 a.m.) would be limited to those internal to the SBX, similar to what is committed to within the environmental assessment for the evening hours (7:00 to 10:00 p.m.) This is also consistent with the commitments made by the MDA at the Coastal Commission hearing for the project.	The EA has been revised to better reflect the time restrictions that were concurred with by the California Coastal Commission on 15 October 2010. Those time restrictions pertained to noise-producing activities. The Final Environmental Assessment now states on Page 3-84, paragraph two that, …"Additionally, noise-producing maintenance activities between

*Full comments are listed on pages J-10 through J-22

Commenter	Comment#	Method of Receipt	Comment	Response
				the early morning hours (5:30 a.m. to 7:00 a.m.) and evening hours between (7:00 p.m. to 10:00 p.m.) would be limited to those internal to the vessel "
			4. An additional mitigation measure to address noise impacts, (and consistent with the Coastal Commission approval), is that radar warning tests would be limited to one day, several hours (at most), and only intermittently. Additionally, radar warning tests would not be conducted at night and MDA would provide the community with advance warning through local media efforts prior to conducting any such tests to minimize confusion by community members.	The Final EA has been revised to better reflect what was concurred with by the California Coastal Commission on 15 October 2010. On page 3-84, paragraph three of the Final EA the Loudspeaker Noise paragraph has been rewritten as follows: Radiate Warning System (Siren System/Loud Speaker) One of the maintenance activities to the SBX Radar Vessel while in port will be to add additional speakers to the Radiate Warning System. The system has to be audible in topside areas where high levels of noise occur when the vessel is underway. MDA conducted a survey to determine how loud the upgrade to the warning system had to be. The maximum noise level on the topside area was 97.2 dBA while the SBX Radar Vessel was at sea with all systems running (Noise Control Engineering, 2010). The system would be tested at 97.2 dBA at peak level. Data from the survey was extrapolated in Table 3.2.5-1 to show that at a distance of 0.5 mile, the sound level would be 59 dBA, an insignificant impact on surrounding residential areas. Prior to conducting tests of the Radiate Warning System's (Siren System/Loud Speaker) additional speakers, MDA, working with the local installation would provide notification to the local community of the system testing prior to conducting the test. The testing of the speakers will be limited to one day, several hours between 7:00 a.m. and 7:00 p.m., and only intermittently. The additional speakers will not be tested at night.
			5. The Environmental Assessment should be revised to address potential lighting and/or visual impacts to nearby residences by incorporating mitigation committing to using low-watt night lighting and using shielding to minimize night-lighting as required with the Coastal Consistency Determination for the project.	MDA believes that this issue was adequately addressed in the Environmental Assessment. The information in the Draft EA is consistent with what was given during the California Coastal Commission hearing. However based on the comment received during the Draft EA public Comment period, the word "low-wattage" was added to the Final EA on page 2-13 paragraph two, to identify which lights are applicable. The Final Environmental Assessment states on Page 2-13 now reads as follows: "Lights are in accordance with navigational rules, the Occupational Safety and Health Administration (OSHA), and the Federal Aviation Administration (FAA) regulations. There are four incandescent floodlights around the inside perimeter of the radar dome, and red safety-lights on the top of the radar dome. Additionally, low-wattage compact fluorescent lamps for safe

*Full comments are listed on pages J-10 through J-22

Commenter	Comment#	Method of Receipt	Comment	Response
				passage, trainable 500-watt (W) incandescent floodlights at lifeboat and raft launching stations, 300-W incandescent floodlights at each of the four mooring stations, and a number of conventional low-wattage 60-W fluorescent lamps located along inside and outside walkways. Lights are shielded to the maximum degree possible or pointed downward to minimize the attraction to birds and impacts on area residents. However, the trainable 500-W incandescent floodlights at each of the four mooring stations, and a number of conventional 60-W fluorescent lamps are not operated while in-port…." The Final EA was also revised to better reflect commitments made to the California Coastal Commission revising the "Lighting System" section on Page 3-100 to states that, "The SBX Radar Vessel operates its lighting systems 24/7. The vessel would use its external lights on the platform, the perimeter of the dome, and on top of the dome in the evening or nighttime hours. The lights on the dome are considered "incandescent floodlights" and the trainable 500-W and 300-W incandescent floodlights are not operated while in-port (see Figure 2-1). Lights are shielded to the maximum degree possible or pointed downward to minimize the impacts to area residents. Therefore, the light and glare produced from the external lights are anticipated to have a negligible effect on the visual and aesthetic resources of the area."
			6. The Environmental Assessment should be revised to address the additional number of employees that may be associated with the additional maintenance activities that may occur on a yearly or every 2.5 year maintenance period so that the cumulative impact of the entire maintenance of the SBX Radar vessel can be evaluated. Previous information provided an estimated 307 additional personnel; however, this number may not be accurate with the additional potential maintenance activities.	The estimated number of 307 personnel used in the Environmental Assessment refers to the number required for the planned SBX Radar Vessel 3-month maintenance and repair activities scheduled for Spring/Summer 2011. This Environmental Assessment does not analyze any other maintenance other than the proposed Spring/Summer 2011 event.

*Full comments are listed on pages J-10 through J-22

#DEA0001—COMMENT

From: KRKO
Sent: Monday, February 14, 2011 4:19 PM
To: sbxea@govsupport.us
Subject: SBX Comment

The satellite receivers for KRKO-AM 1380 operate in the C-band, and our studios are approximately one mile from Naval Station Everett with a line-of-sight view. If the SBX platform tests in the C-band while in port at Everett, we want to point out that operation in the C-band band is likely to interrupt our satellite delivered network feeds. We are aware that certain radar systems (possibly launch and recovery radar) caused several land-based radio stations along the Strait of Juan de Fuca to lose their network satellite feeds on C-band when an aircraft carrier was performing flight operations in the Strait. If C-band testing is necessary while the SBX is in port, we respectfully request an opportunity to know in advance of the testing. Thank you.

KRKO-HD1, KRKO-AM
2707 Colby Avenue, Suite 1380
Everett, Washington 98201

#DEA0002—COMMENT

From: Sandy Vissman, USFWS Sent: Monday, February 14, 2011 2:38 PM
To: MDA/PA
Cc: Subject: Re: Notice of Availability of the Draft Environmental Assessment (EA) for the Sea-Based X-Band (SBX) Radar Vessel Maintenance and Repair Project

Dear Mr. Terril,

Thank you for your coordination regarding the Draft Environmental Assessment for the Sea-Based X-Band (SBX) Radar Vessel Maintenance and Repair Project. I am, however, not the Field Supervisor of our office, so wanted to provide that correction. Our Field Supervisor is Jim Bartel. I am, however the staff person who covers the Naval Base Coronado area, so will be happy to look at the EA, and am checking my availability to attend the upcoming community meeting in Coronado. We will be interested in the potential for the project to affect water quality in SD Bay, and in potential impacts to sensitive wildlife in the surrounding area. Naval Base Coronado is home to several federally listed Endangered and Threatened avian species, and also hosts nesting and roosting substrate for a substantial number of migratory birds. If you have not already done so, I suggest that you contact the Naval Base Coronado Biologist, Ms. Tiffany Shepherd, to assure adequate coordination regarding the biological resources on Naval Base Coronado.

Thanks again, and I look forward to reviewing your project!
Sandy Vissman
USFWS

#DEA0003—COMMENT

From: Beth Opel
Sent: Tuesday, February 15, 2011 4:56 PM
To: sbxea@govsupport.us
Subject: Everett, WA Sea-Based X-Band Draft EA
Attachments: 2011Rates.pdf; 2011_calendar.pdf

Hi,

I noticed you have a Draft EA for Sea-Based X-Band Radar Vessel Maintenance and Repair available for viewing at the Everett, WA main library between Feb. 14 – Mar. 16, 2011. I represent a local newspaper in the Everett, WA area and wonder if you'd like to advertise that this document is available for public viewing and comment? Would you be so kind as to forward this email to the correct person if you are not the one in charge of the advertising?

We direct mail our bimonthly community newspaper to over 24,000 area homes with each edition.
We have many active and retired navy families in our area as well as general citizens that might be interested in this information.

My next issue will be published Thursday, Feb. 24th and the deadline for that issue is this Friday.
If you have any questions or would like to run an ad regarding this matter in our paper please let me know.

Sincerely,

#DEA0004—COMMENT

From: Walter Selden
Sent: Wednesday, February 16, 2011 10:53 AM
To: sbxea@govsupport.us; maria_cantwell@cantwell.senate.gov; Patty_Murray@Murray.Senate.gov; Rick.Larsen@mail.house.gov; Nick.Harper@leg.wa.gov; John.McCoy@leg.wa.gov; sells.mike@leg.wa.gov; RStephanson@ci.everett.wa.us
Subject: No to SBX in Everett

Sir,

Regarding your "Proposed Action" postcard received in the mail yesterday seeking comment.

We have stated here and elsewhere that the prospect of the SBX coming into Port Gardner for any reason is unacceptable. Your continued interest in Everett floors us because it was so resoundingly put off years ago and sentiments have not changed since.

If it is strategic, then leave it to the west where it is supposedly effective. Seattle has already agreed to take it for whatever reason and it also has the deep (50 feet) water. http://en.wikipedia.org/wiki/List_of_deep-water_ports. Note that there are plenty of choices other than Everett. Take a look.

Please, service it in an area where it can be of most use... which is NOT in Puget Sound. Now one begs the question of whether this is where you would like to mothball it. A tremendous amount of work, time, material and promotion has been, in our minds, wasted on the SBX and we have had it with the nearly surreptitious approach to getting it back in our own radar.

Thank you for listening,

W. Selden
Everett

#DEA0005—COMMENT

From on behalf of lowell
Sent: Thursday, February 17, 2011 10:03 PM
To: sbxea@govsupport.us
Cc:
Subject: SBX Radar Vessel

Mr. David Hasley,

I live on the side of Mukilteo facing the Port of Everett. I hope that the SBX comes to visit; my family and I like to go to Harborview Park to see the Navy ships, especially the Abe Lincoln. I would guess you are being overwhelmed by people wanting to see the SBX in person. If it happened to be here during the 4th of July, I would love to take a tour of the unclassified part of the vessel.

Thanks,
Lowell, Deirdre, Jason & Laura Campbell

#DEA0006—COMMENT

From: Donna Lee
Sent: Wednesday, February 23, 2011 11:28 AM
To: sbxea@govsupport.us
Subject: SBX Everett contingency site

Please, we have been through this before. Please read the comments made in the past about this issue. The South Whidbey Record can help you. Whidbey Island does not want the SBX in our area for any reason. This is just an effort to get the camel's nose into the tent. Let Seattle deal with it, keep the work in Seattle.

Thank you.
Donna Lee & Gregory vonFalkenberg-Ridle

#DEA0007—COMMENT

From: John Laden
Sent: Monday, February 28, 2011 3:43 PM
To: SBXEA@govsupport.us
Subject: SBX Environmental Assessment Comments
Attachments: SBX Comments.odt

Gentlemen

Please find attached my comments on your environmental assessment. I was chief engineer on SBX for Boeing while it was built. While I am retired now I am still very interested in its performance.

I hope my comments help.
John Laden

Reference: SBX Draft Environmental Assessment

Mr. David Hasley

My name is John Laden. I was the chief SBX engineer at Boeing from the beginning Aug 2002 to May 2005 when it went to sea. I have since retired but still maintain in interest in SBX and attended your public hearing in Everett last year. Some of your folks even remembered me. I currently live in Arlington, WA which is about 20 miles from Everett.

I read your preliminary environmental impact assessment with much interest and realize a lot of work has been done to generate this document. My comments are not saying that the work you have done is not good but may have some areas you might want to think about.

You mentioned that you dropped all areas on the east coast, from consideration, due to the constraints of the Panama Canal. No mention was made that SBX was originally carried from the Gulf of Mexico to Hawaii by ship and could be done again. I would think it would be better to say that the time for SBX to get to the East Coast and back was the reason it was dropped. I do not think you can afford that much lost time in the program.

No mention was made of doing the thruster maintenance while anchored in deep sheltered water off the coast of Hawaii. That would seem to offer the least impact to the movement of SBX and the non-thruster maintenance could be done at Pearl Harbor as you have done in the past.

No mention is made about RF environment impact other than to say you would not operate the Weather radar or the SBX radar. SBX has a complex suite of communication systems, some of which may have to be operated while in port. I would be particularly concerned with the large Satellite communication links that are normally operating. Operating those in the San Diego Harbor or Everett Base could have significant impact on similar commercial systems in the area. There is no evidence in the report that the FCC has approved or reviewed your intended operations in these areas. I know in the past that was always a major concern.

No mention is made of impacts to commercial and private use of the waterways adjacent to where the SBX is moored. I would expect that for security reasons you will have to restrict use of the waterway in proximity to the SBX Vessel. I think that the location in Everett will have little or no impact on use of the waterways. I am concerned that San Diego location is more of a problem since that area of the harbor gets heavy use by private and commercial ships. Because of the relatively easy access to the SBX from the water compared to a carrier you may have to a have larger no boat zone and hence impact the use of the waterway.

Thank you for the opportunity to review this document and I hope my comments will help avoid any future problems. I think a few words and a reference to their basis would clear up these issues in your document.

If I can help in any way in the future please let me know.

Yours Truly
John Laden

#DEA0008—COMMENT

E-mail
From: McCaull, Ann Senior Planner, City of Coronado
Sent: Monday, March 07, 2011 6:16 PM
To: Leo Terrill, MDA Public Affairs

Good afternoon Leo, the City of Coronado is reviewing the EA for the above project and will providing comments shortly. Many of the comments will be the same that we raised when the California Coastal Commission considered the project, and which MDA committed to incorporate as part of the project, which the CCC approved.

A question has come up, and I hope you can provide clarification. The City's understanding of this maintenance repair project was that it would be a one-time (once every 5 years) 3-month maintenance required to keep the vessel certified. One of our council members who attended the public workshop last week indicated that he spoke with someone at the meeting who indicated there will be more than one maintenance every 5 years. That the EA would allow the SBX Radar vessel to have routine maintenance work completed as necessary. In other words, that the SBX radar could have maintenance work occurring on an annual basis. This is not what we understood was the project scope, and I don't believe, what the Coastal Commission authorized with their permit approval.

Can you please provide some clarification so that the City addresses this issue appropriately in our comment letter.

Thanks in advance for your reply.

#DEA0009—COMMENT

Questions from the Suquamish Tribe regarding the SBX project. In particular, are there more details about how and when the work would be conducted at Todd Pacific Shipyards? Following are specific items:

1) What is the depth of the waterway at Todd Pacific Shipyards? Request confirmation that the hull of the SBX vessel, the thruster well extension units, and repair activities would not impact the substrate or stir up potentially contaminated sediments.

2) The Suquamish conduct tribal fishing activities both at Everett and in Elliot Bay near the Duwamish River. The Draft EA states that the repair/maintenance work would occur in the spring of this year which is coming up soon. What is the current timeline? The Suquamish is requesting advanced notice of the arrival of the vessel in order to better schedule tribal fishing events.

3) The Suquamish is assuming a security barrier will be in place during repair/maintenance activities whether at Todd Pacific Shipyard or Everett. If this is the case, what are the dimensions of the barrier (specifically at Todd Shipyards)? The Suquamish would like to understand how this would potentially impact treaty fisheries.

Thanks for your assistance!

#DEA0010-COMMENT

CITY OF CORONADO

1825 STRAND WAY
CORONADO, CA 92118

OFFICE OF CITY MANAGER
(619) 522-7335
FAX (619) 522-7846

March 14, 2011

Deputy Chief of Staff, Engineer
U.S. Army Space and Missile Defense Command
Attention: SMDC-ENN (Mr. David Hasley)
P.O. Box 1500
Huntsville AL 35807

Re: Environmental Assessment for Maintenance and Repair of Sea-based X-Band (SBX) Radar Vessel in Coronado, San Diego County

Dear Mr. Hasley:

The City of Coronado has received notice of the Availability of the Draft Environmental Assessment (EA) for the Sea-based X-band (SBX) Radar Vessel. While it appears that Todd Pacific Shipyards in Seattle is the preferred alternative for the maintenance project, it is noted that NASNI has been analyzed as a potential contingency location for the maintenance work.

The City has reviewed the Environmental Assessment and has the following comments:

1. The project description contained within the Environmental Assessment is not consistent with the Coastal Consistency Determination issued for the project by the State Coastal Commission. The Consistency Determination was processed based upon a one-time, 3-month maintenance event. The Executive summary also speaks to a single maintenance and repair event in Spring 2011. However, correspondence received from Project Manager Mr. Leo Terrill indicates there would not only be a 3-month event, but annual maintenance lasting up to potentially 2 months, and a special maintenance event half-way through the 5-year certification period. The Environmental Assessment should be revised to accurately reflect the extent of the maintenance activities associated with the SBX Radar vessel.

2. The City recognizes maintenance and repairs to the SBX Radar vessel are similar to the types of activities that occur for the aircraft carriers homeported at NASNI. However, the SBX Vessel is significantly wider and taller than a normal aircraft carrier. The dome of the radar would extend 36' higher than the top of a ship and would be 22' wider at mast. To minimize visual and noise impacts associated with this structure to adjoining residential areas, the Environmental Assessment should be revised to incorporate as a mitigation measure the commitment to moor the vessel at Pier N. The current Environmental Assessment notes the project would not significantly alter the noise environment in Coronado if moored in either orientation at Pier N. The document goes on to state there would be effects to the noise environment from the shipboard generators if moored in Orientation 2 at Pier P. To address this impact, the alignment of the generators'

exhaust away from residences is suggested to mitigate this impact. It is not clear how effective this mitigation measure would be; therefore, Coronado recommends the Environmental Assessment be revised so that the vessel is moored at Pier N.

3. To further address potential noise impacts, the Environmental Assessment should be revised to clarify that construction activities in the early morning hours (5:30 a.m. to 7:00 a.m.) would be limited to those internal to the SBX, similar to what is committed to within the environmental assessment for the evening hours (7:00 to 10:00 p.m.) This is also consistent with the commitments made by the MDA at the Coastal Commission hearing for the project.

4. An additional mitigation measure to address noise impacts, (and consistent with the Coastal Commission approval), is that radar warning tests would be limited to one day, several hours (at most), and only intermittently. Additionally, radar warning tests would not be conducted at night and DMA would provide the community with advance warning through local media efforts prior to conducting any such tests to minimize confusion by community members.

5. The Environmental Assessment should be revised to address potential lighting and/or visual impacts to nearby residences by incorporating mitigation committing to using low-watt night lighting and using shielding to minimize night-lighting as required with the Coastal Consistency Determination for the project.

6. The Environmental Assessment should be revised to address the additional number of employees that may be associated with the additional maintenance activities that may occur on a yearly or every 2.5 year maintenance period so that the cumulative impact of the entire maintenance of the SBX Radar vessel can be evaluated. Previous information provided an estimated 307 additional personnel; however, this number may not be accurate with the additional potential maintenance activities.

Thank you in advance for your attention to issues raised within this letter.

Sincerely,

Blair King
City Manager

BK/mlc
cc: Capt. Yancy B. Lindsey, Commanding Officer, Naval Base Coronado
Mayor and City Councilmembers

OFFICE OF THE CITY MANAGER
CITY OF CORONADO
1825 STRAND WAY
CORONADO, CALIFORNIA 92118-3005

045J83089161
neopost
$0.44
03/16/2011
Mailed From 92118
US POSTAGE

Deputy Chief of Staff, Engineer
U.S. Army Space and Missile Defense Command
Attention: SMDC-ENN (Mr. David Hasley)
P.O. Box 1500
Huntsville AL 35807

35807$3801 B050