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

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

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

Mr. Brad Thompson
Division Manager, U.S. Fish & Wildlife Service, Washington Fish and Wildlife Office

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

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 Representative

Honorable John McCoy
Representative- 38th District, Washington State House of Representative

Honorable Mike Sells
Representative- 38th District, Washington State House of Representative

Honorable Norma Smith
Representative- 10th District, Washington State House of Representative

Honorable Jean Berkey
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

Mr. John Dean
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. Dave Gossett
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

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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

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).

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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

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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,

for 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,

Cynthia Wanzer for

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
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MISSILE DEFENSE AGENCY
BLDG 5222 MARTIN RD
REDSTONE ARSENAL AL 35898

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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.

<u>Bull trout</u>

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.

John Miller 5

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 C. 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	**Department of Ecology** Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608
Pollution Control Hearings Board 1111 Israel Rd SW STE 301 Tumwater, WA 98501	**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.

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.

California Coastal Commission
October 12, 2010
Page 2

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

Page 2

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

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, the Council on Environmental Quality recently 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

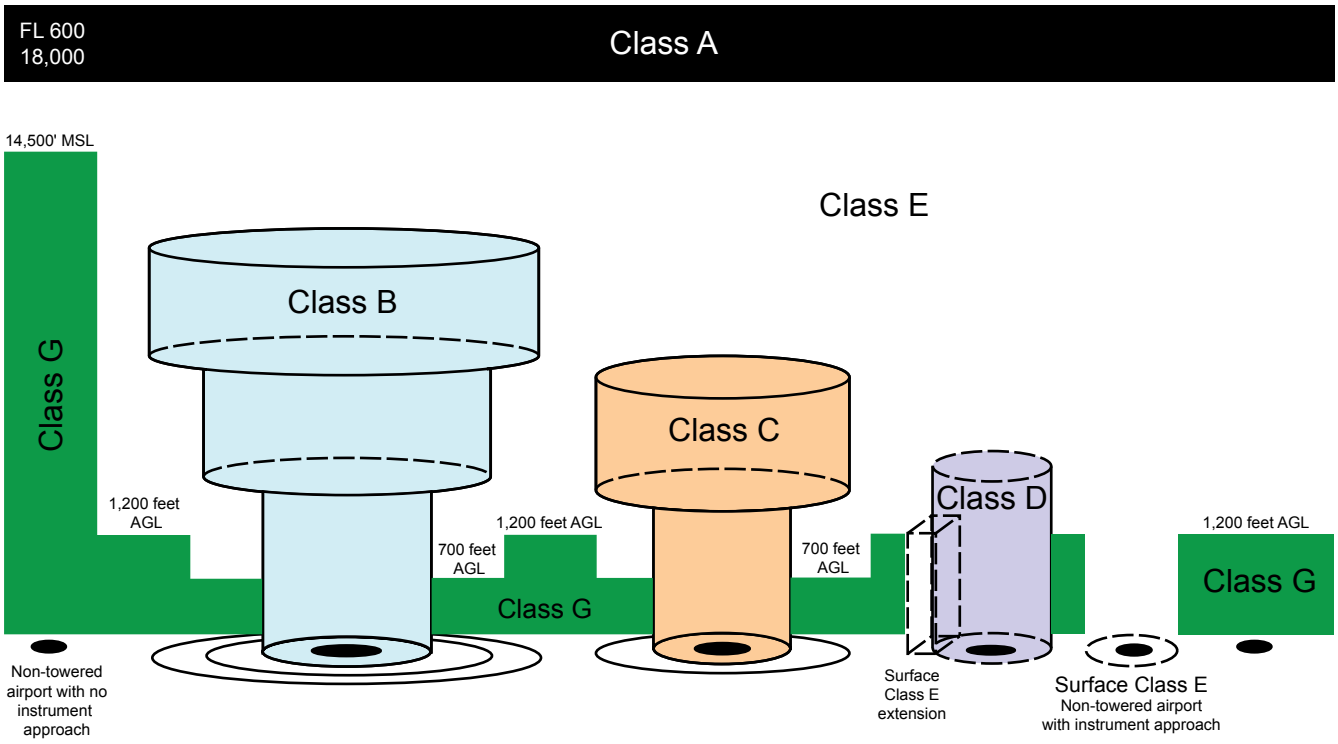
Airspace, or that space which lies above a nation and comes under its jurisdiction, is generally viewed as being unlimited. However, it is a finite resource that can be defined vertically and horizontally, as well as temporally, when describing its use for aviation purposes.

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 shipyard 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, 1998) and using a screening-level air quality model called U.S. Air Force's Air Conformity Applicability Model (ACAM), Version 4.5. Emissions from onboard generators were derived using the USEPA emission factors and formulas. Emissions from shipyard equipment and added personnel were derived using algorithms described within the ACAM software Technical Documentation (U.S. Air Force, 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, 1998):

$$Ep = EFp \times \text{Fuel use}/2000$$

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, 1998
* 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 proportional to the additional 83 employees. 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>

$$Ep = F \times N \times 2 \times COMDIST \times EFp / 454 / 2{,}000$$

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

<u>On-road GOV VMT:</u>

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 Shipyard Equipment

Shipyard 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. Shipyard 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:
EPA: Tier 1 through 4 Non-Road Diesel Engine Emission Standards
EPA: Tier 1 through 4 Non-Road Diesel Engine Emission Standards, assumed NO_x equivalent to NMHC+NO_x
AP-42: 3.3-1 and AP-42: 3.4-1
South Coast Air Quality Management District: "Final - Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds"

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 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).

D.1.5 Compliance Analysis

Table D-5 shows the estimated emission levels for generators, shipyard worker commute, Government use of vehicles, and shipyard 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
Shipyard Equipment	1.28	0.41	0.00	0.15	0.01	0.01	
Net Emissions	**15.71**	**54.19**	**0.03**	**6.09**	**0.84**	**0.81**	**2,777.83**

Source: Emissions calculations were estimated using ACAM, Version 4.5 (U.S. Air Force, 2010) and AP-42 (USEPA, 1998)

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

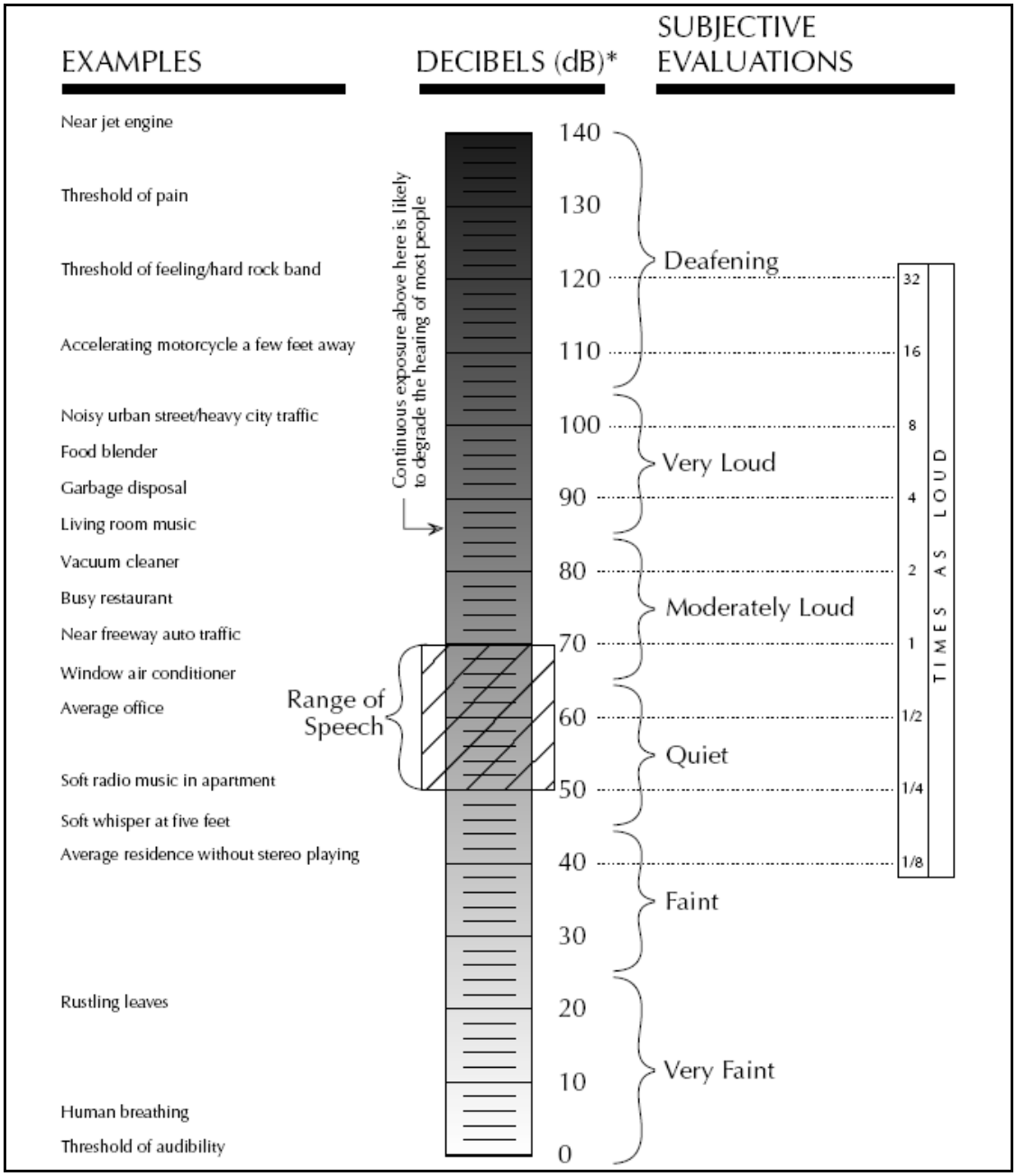
Source: ManTech, 2010b

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.

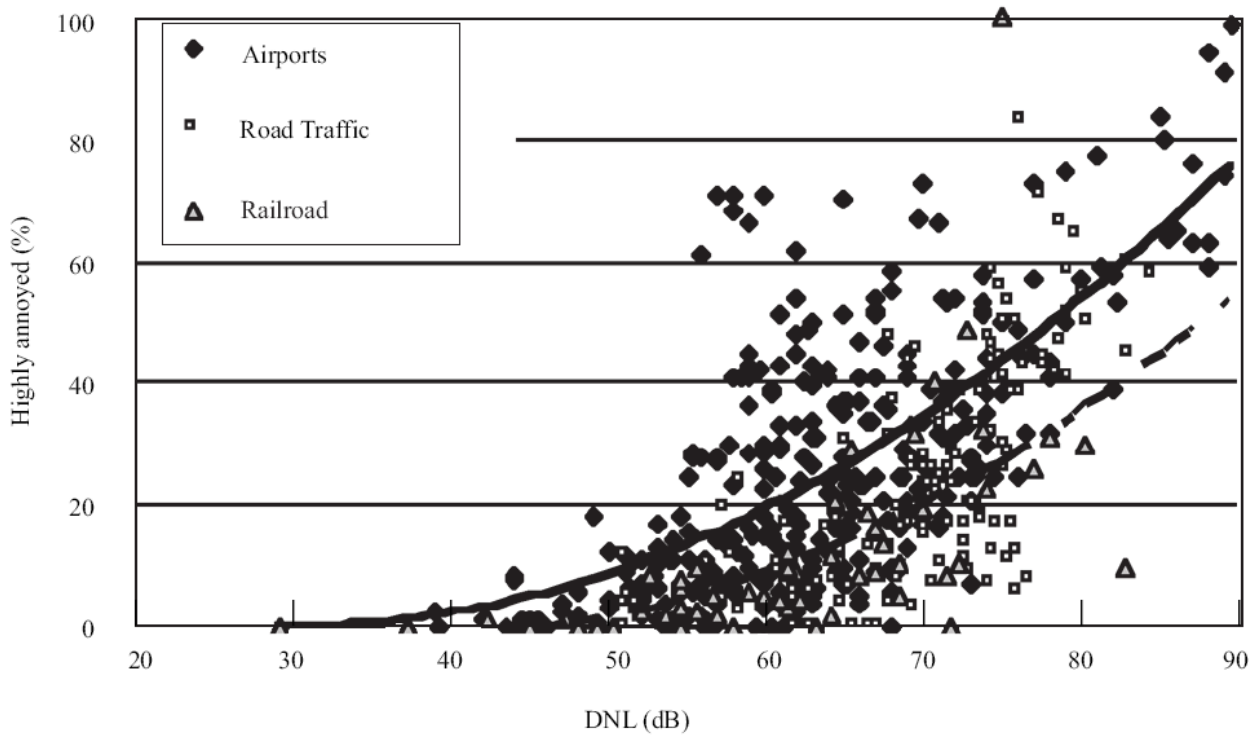
Table D-8 shows examples of A-weighted noise levels for various common noise sources.

Table D-8. Sound Levels of Typical Noise Sources and Environments



Source: U.S. Department of Housing and Urban Development, 1985 and Others
*dBA

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: Schomer, P.D. 2005.

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. (College of Engineering at the University of Washington, 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 boarder 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:
ManTech International Corporation
440 Stevens Ave, Suite 200
Solana Beach, CA 92075

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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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).

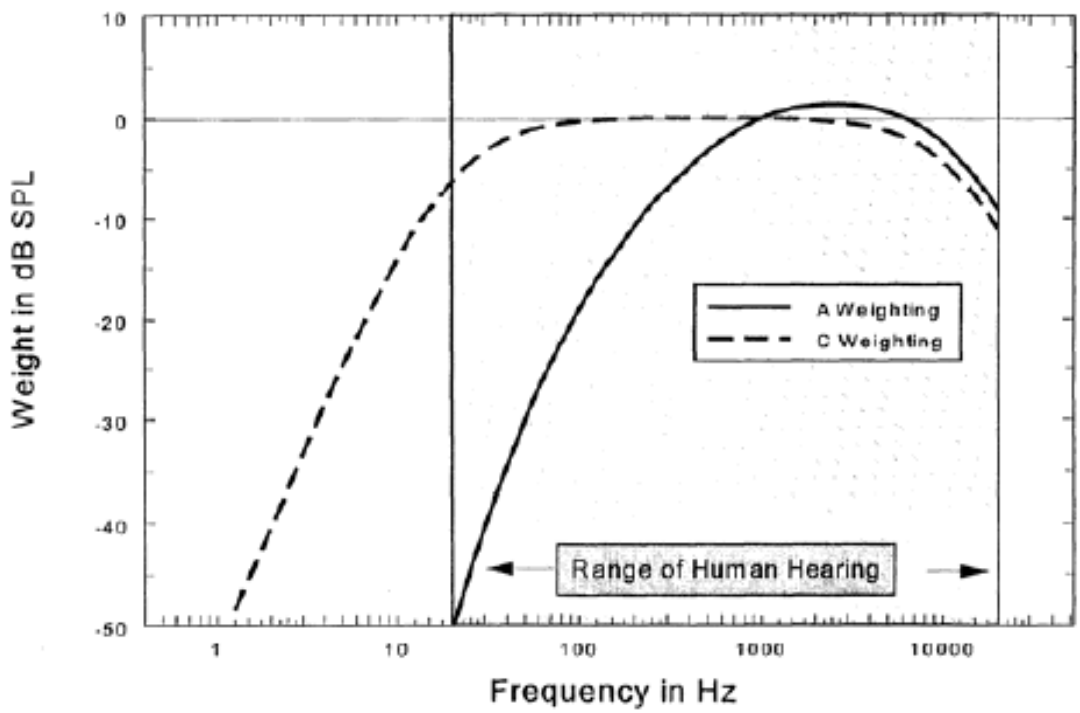
A sound level of zero "0" dB is scaled such that it is defined as the threshold of human hearing and would be barely audible to a human of normal hearing under extremely quiet listening conditions and would correspond to a sound pressure level equal to the reference level of 20 μPa. Such conditions can 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

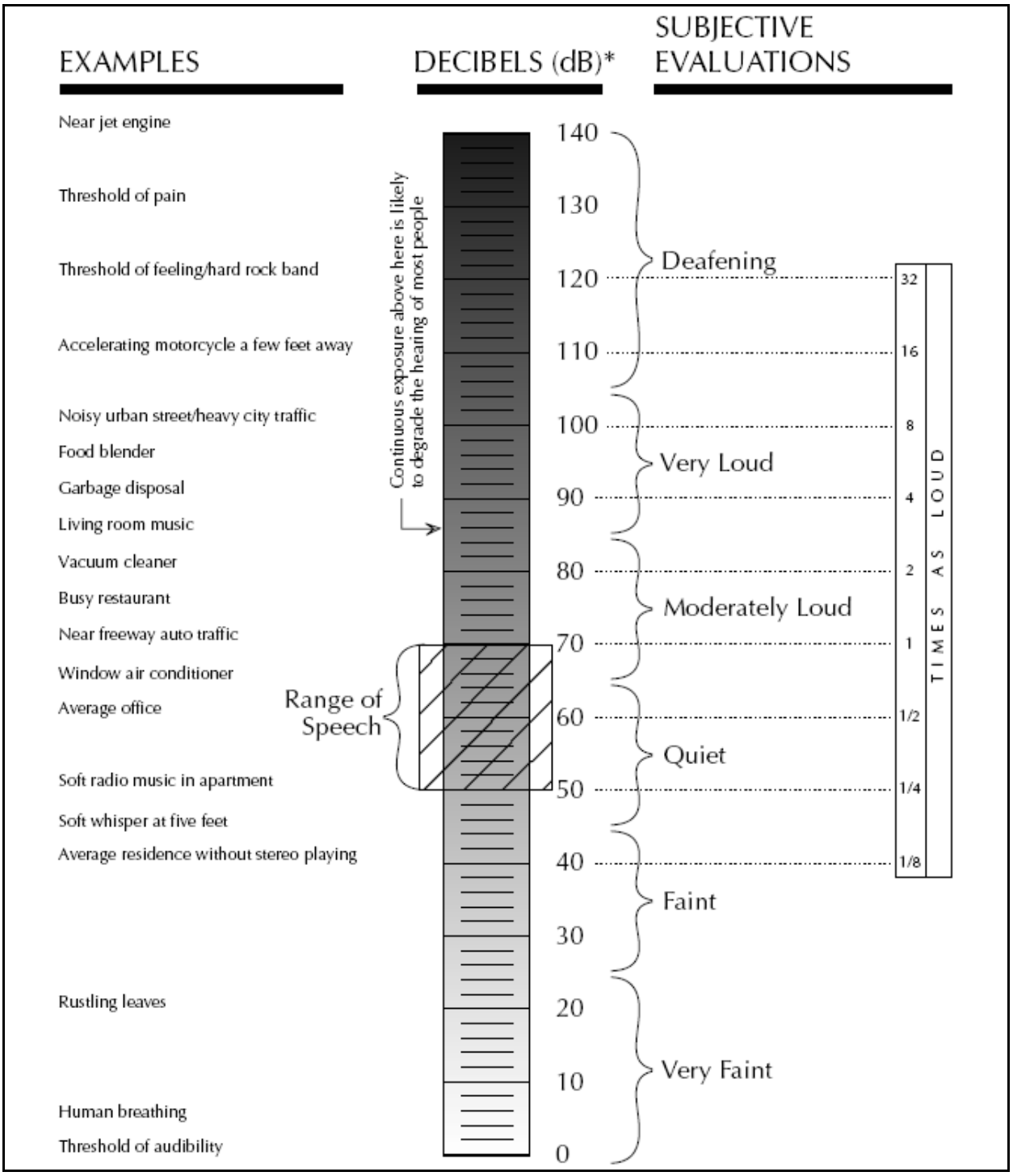
The most common acoustical metrics used to describe transient noises, such as an aircraft overflight, individual train, or automobile transits, are sound exposure level (SEL), maximum fast sound level (L_{max}), L_{eq}, peak sound pressure level (dBP), and unweighted Peak Level. The L_{max}, usually 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.

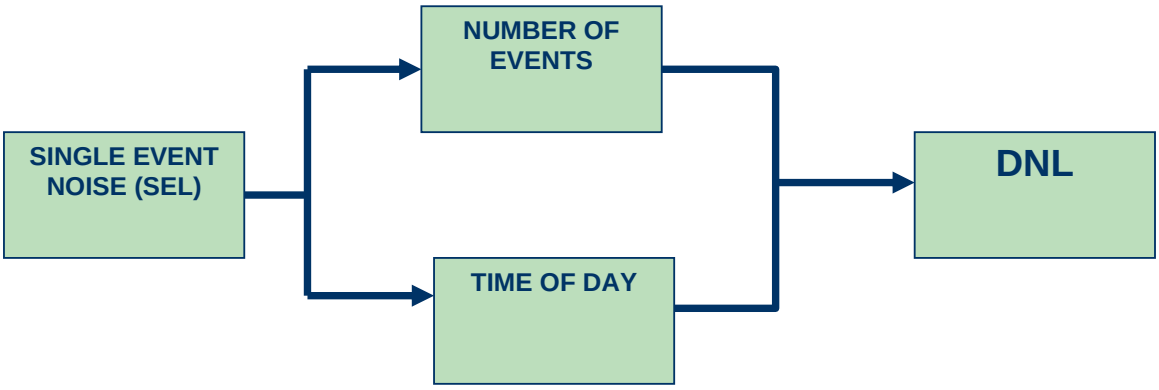


Figure 3: Day-Night Average A-Weighted Sound Level

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

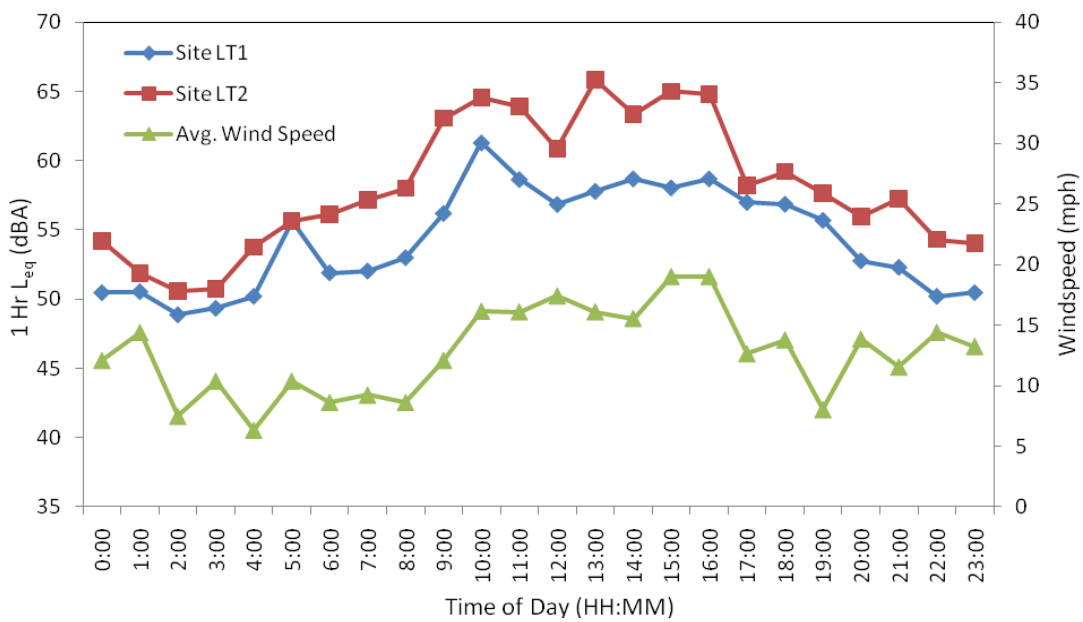


Figure 7: Average Hourly L_{eq} levels at Long-Term Sound Level Meter Sites LT1 and LT2

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.

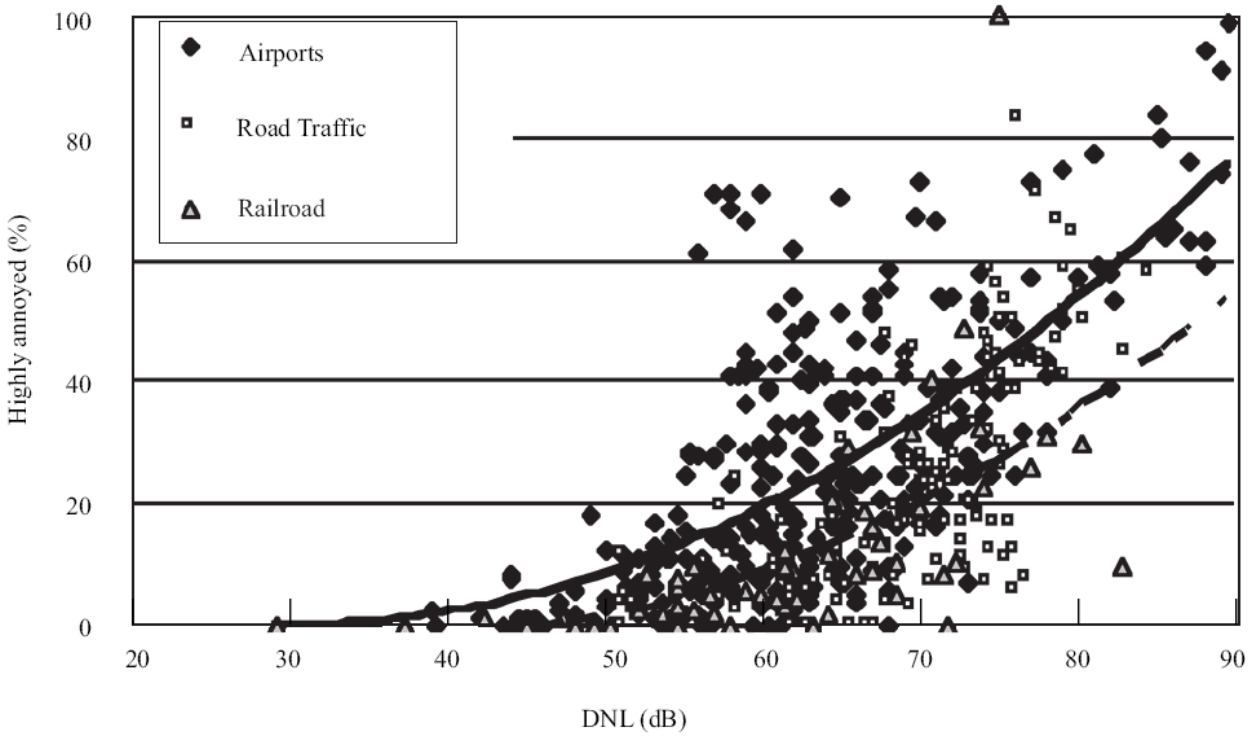


Figure 9: Relationship between DNL and Percentage of Community Highly Annoyed (Schomer 2004)

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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

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

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 4.5, 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,* 1998 version. 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, second 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 of the 83 employees. 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: November 15, 2010

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 findings that the Proposed Action is not subject to the General Conformity Rule.

Signature: _____

Name/Rank: _____ Date: _____

Position: _____Activity: _____

Table 2 Estimated Air Emissions for SBX Radar Vessel Maintenance and Repair Activity

Source Type	Carbon Monoxide (CO) (Tons/ Year)	Nitrogen Oxides (NOx) (Tons/ Year)	Sulfur Dioxide** (SOx) (Tons/ Year)	VOC (Tons/ Year)	PM10 (Tons/ Year)	PM2.5 (Tons/ Year)	CO2 (Tons/ Year)
Two Onboard 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 Gov't -Owned Vehicles VMT	0.07	0.01	0.00	0.00	0.00	0.00	2.80
Shipyard Equipment	1.28	0.41	0.00	0.15	0.01	0.01	
Net Emissions Increase	**15.71**	**54.19**	**0.03**	**6.09**	**0.84**	**0.81**	**2,777.83**
Puget Sound Air Basin threshold	**100**	**100**	**N/A**	**100**	**100**	**N/A**	**N/A**
Exceeds threshold?	**No**	**No**	**N/A**	**No**	**No**	**N/A**	**N/A**

Source: Emissions calculations were estimated using U.S. Air Force, ACAM, Version 4.5, 2010; and USEPA, AP-42, 1998

Notes:

CO = Carbon monoxide
CO2 = Carbon dioxide—greenhouse gas
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

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

* By early in 2011, San Diego Air Basin 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.

PROJECT ACTION

Action Proponent: Department of Defense, Missile Defense Agency (MDA)

Location: Naval Air Station, North Island, Naval Air 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 4.5, 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,* 1998 version. 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, second 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 of the 83 employees. 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 (Table 2).

Date RONA prepared: November 19, 2010

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 findings that the Proposed Action is not subject to the General Conformity Rule.

Signature: _____

Name/Rank: _____ Date: _____

Position: _____ Activity: _____

Table 2 Estimated Air Emissions for SBX Radar Vessel Maintenance and Repair Activity

Source Type	Carbon Monoxide (CO) (Tons/ Year)	Nitrogen Oxides (NOx) (Tons/ Year)	Sulfur Dioxide** (SOx) (Tons/ Year)	VOC (Tons/ Year)	PM10 (Tons/ Year)	PM2.5 (Tons/ Year)	CO2 (Tons/ Year)
Two Onboard 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 Gov't -Owned Vehicles VMT	0.07	0.01	0.00	0.00	0.00	0.00	2.80
Shipyard Equipment	1.28	0.41	0.00	0.15	0.01	0.01	
Net Emissions Increase	**15.71**	**54.19**	**0.03**	**6.09**	**0.84**	**0.81**	**2,777.83**
San Diego Air Basin threshold	**100**	**100**	**N/A**	**100**	**N/A**	**N/A**	**N/A**
Exceeds threshold?	**No**	**No**	**N/A**	**No**	**N/A**	**N/A**	**N/A**

Source: Emissions calculations were estimated using U.S. Air Force, ACAM, Version 4.5, 2010; and USEPA, AP-42, 1998

Notes:

CO = Carbon monoxide
CO2 = Carbon dioxide—greenhouse gas
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

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.

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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 00/259
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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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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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

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USS ABRAHAM LINCOLN (CVN 72) NAVSTA Everett

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ENCL

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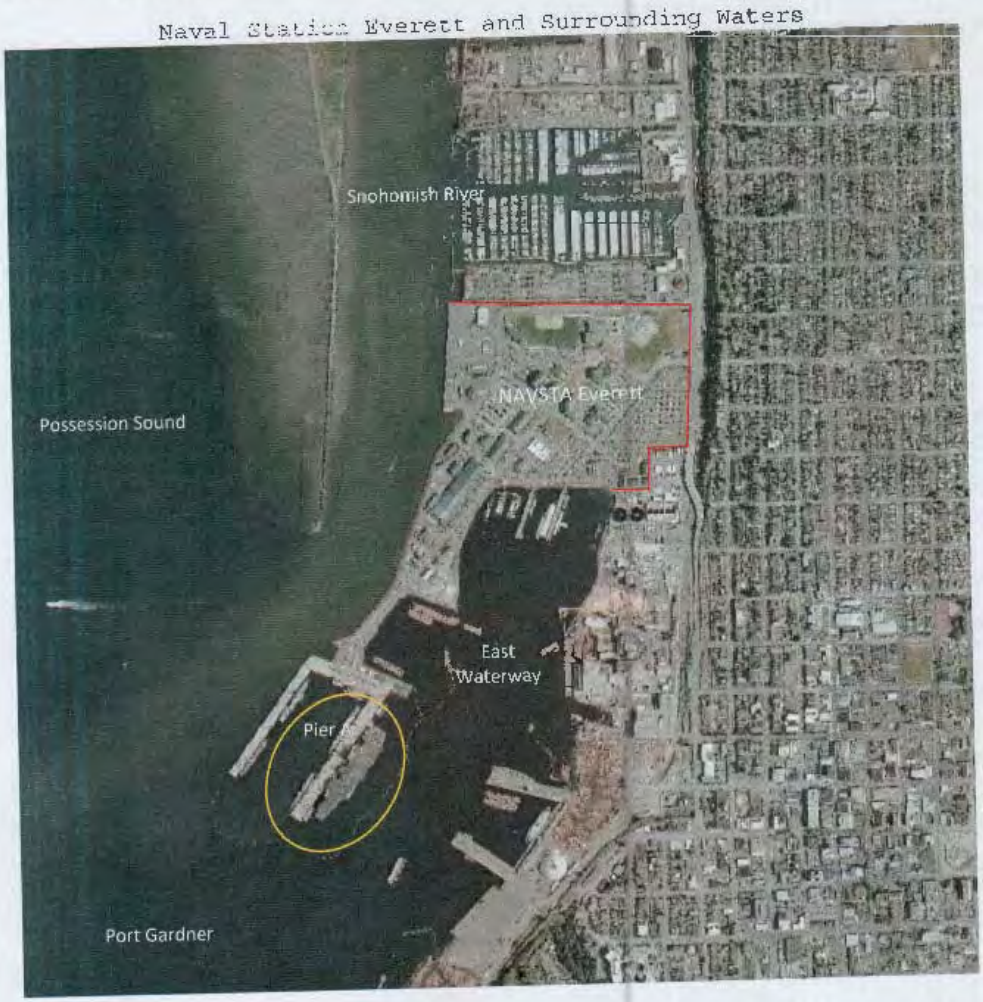
As of July 8, 2010, the SBX vessel is proposed for arrival in the fall of 2010. It is anticipated that the work would take approximately 75 days for completion. If the date changes or the scope of work is modified, the Tribe will be notified as soon as possible and provided with updated information.

Naval Station Everett and Surrounding Waters



2

ENCL

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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. 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/ 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.

4 Enclosure (1)

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 interceptor 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

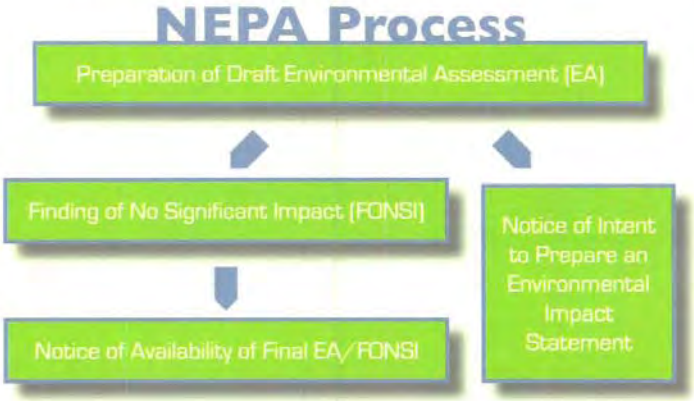
The Navy and MDA are discussing the possibility of MDA performing limited maintenance work on the SBX vessel at the two Navy locations. The proposed maintenance would be short term.

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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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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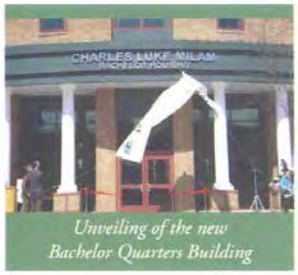
Alternative Fuels

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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