



***FINAL***  
Programmatic Environmental Assessment  
*For*  
Use of the LA51 during Operations and Training  
In Waters of the U.S.

Prepared by:  
United States Coast Guard  
CG-7211, Office of Specialized Capabilities

September 2011


**FINAL FINDING OF NO SIGNIFICANT IMPACT  
NATIONWIDE USE OF LA51 FOR TRAINING AND OPERATIONS**

Under Alternative A (Proposed Action), the U.S. Coast Guard would acquire 50,000 LA51 rounds annually to augment U.S. Coast Guard security and law enforcement missions for use in U.S. waterways. The LA51 is a joint non-lethal 12-gauge warning munition that will be used by the U.S. Coast Guard onboard surface assets (small boats and cutters) within areas under U.S. Coast Guard jurisdiction along the U.S. continental coastline and inland operation areas. The inland operating areas will include existing harbor infrastructure and adjacent inland waters including the St. Lawrence Seaway, Great Lakes, and western and inland river systems. Use of the LA51 in Alaska will be limited to the south-central and southeast regions, and the southern coast of the southwestern region. The LA51 will not be used in the Beaufort, Bering or Chukchi Seas. The LA51 will not be fired with the intention of striking or injuring personnel or damaging their vessels or other property. Rather, it will be used during training and for port security missions during routine operations (i.e., determining intent of unidentified vessels, and enforcing security zones.) As such, the LA51 will be used only from a U.S. Coast Guard vessel toward a target on the water, and it will not be used intentionally toward land.

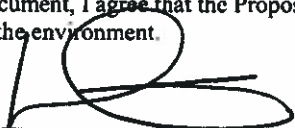
Each LA51 cartridge is comprised of a pyrotechnic projectile with a pyrotechnic time delay. The LA51 will be fired from the deck of a U.S. Coast Guard vessel, leaving behind a casing. The projectile will then airburst at a fixed point 100 meters downrange, at which point a bright flash and loud report will occur. Smoke may also be observed briefly 100 meters downrange. As stated previously, the LA51 will only be used from water toward a target on water; however, sound and light from the bright flash and loud report of the LA51 could reach coastal natural resources, including those on land.

The U.S. Coast Guard plans to use up to 50,000 LA51 rounds per year spread out over all U.S. waters mentioned above. Four units were equipped with the LA51 since April 2010 as part of a year-long pilot study, during which no situation required use of the LA51; hence the estimate of 50,000 rounds per year is likely to be high. For the 92 units that will have the munition and are conducting port security missions, we estimate an average of 144 escort missions per year per station, and two rounds per engagement. During operation, a U.S. Coast Guard vessel would carry no more than 10 rounds of the LA51, thus limiting the possible rounds per engagement to 10 or less. Training with the LA51 would take place as often as practicable on existing DOD or other training ranges (i.e., local law enforcement). When training on water outside of DOD training ranges, several units that would be equipped with the LA51 have access to U.S. Coast Guard permanent training areas (33 CFR 165) for which environmental clearances have already been obtained. Where it is not possible to train on an existing U.S. Coast Guard or DOD training range on water, the unit would follow established procedures to set up a temporary weapons training area (WTA), following U.S. Coast Guard policy (ALCOAST 632/05).

This project has been thoroughly reviewed by the U.S. Coast Guard and it has been determined, by the undersigned, that this project will have no significant effect on the human environment. This Finding of No Significant Impact (FONSI) is based on the attached PEA, which has been independently evaluated by the U.S. Coast Guard and determined to adequately and accurately discuss the environmental issues and impacts of the proposed project and provides sufficient evidence and analysis for determining that an Environmental Impact Statement is not required. The U.S. Coast Guard takes full responsibility for the accuracy, scope, and content of the attached PEA.

<u>10/3/2011</u> Date	 Environmental Reviewer	<i>Chief, Office of Environmental Management (CG-47)</i> Title/Position
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I have considered the information contained in the PEA, which is the basis for this FONSI. Based on the information in the PEA and this FONSI document, I agree that the Proposed Action as described above, and in the PEA, will have no significant impact on the environment.


<u>11 OCT 2011</u> Date	 Environmental Reviewer	<i>Chief, Office of Specialized Capabilities (CG-721)</i> Title/Position
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**U.S. Coast Guard**  
**FINAL PROGRAMMATIC ENVIRONMENTAL ASSESSMENT**  
**FOR**  
**NATIONWIDE USE OF LA51 FOR TRAINING AND OPERATIONS**

This U.S. Coast Guard Programmatic Environmental Assessment (PEA) was prepared in accordance with Commandant's Instruction M16475.1D and the National Environmental Policy Act of 1969 (Public Law [P.L.] 91-190) and the Council of Environmental Quality Regulations dated 28 November 1978 (40 Code of Federal Regulations [CFR] Parts 1500-1508).

This PEA is a public document intended to provide decisionmakers within the U.S. Coast Guard with concise but sufficient evidence and analyses to understand potential environmental consequences and to determine whether there is a need to prepare an environmental impact statement or a finding of no significant impact.

This PEA describes the Proposed Action, the need for the proposal, the alternatives considered, and the potential environmental impacts associated with the Proposed Action and alternatives. This PEA also contains a comparative analysis of the Proposed Action and alternatives, a statement of the environmental significance of the preferred alternative, and a list of the agencies and persons consulted during the preparation of this PEA.

<u>26 Sept 2011</u>		<i>U.S. Coast Guard Environmental Protection Specialist</i>
Date	Preparer/Environmental Project Manager	Title/Position

<u>10/3/2011</u>		<i>Chief, Office of Environmental Management (CG-47)</i>
Date	Environmental Reviewer	Title/Position

In reaching my decision on the U.S. Coast Guard's Proposed Action, I will consider the information contained in this PEA on environmental impacts.

<u>11 OCT 2011</u>		<i>Chief, Office of Specialized Capabilities (CG-721)</i>
Date	Responsible Official	Title/Position

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## SECTION 1: INTRODUCTION

The National Environmental Policy Act (NEPA) requires that Federal agencies consider potential environmental consequences of a proposed action in their decision-making process. The Council on Environmental Quality (CEQ) was established under NEPA for the purpose of implementing and overseeing federal policies as they relate to this process. In 1978, the CEQ issued “Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act” (40 Code of Federal Regulations [CFR] §1500-1508 [CEQ 1978]). The U.S. Coast Guard policies and procedures for implementing NEPA are in Commandant Instruction M16475.1C, *National Environmental Policy Act Implementing Procedures and Policy for Considering Environmental Impacts*. An Environmental Assessment (EA) is prepared to:

- Provide sufficient analysis and evidence for determining whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI);
- Aid in an agency's compliance with NEPA when no EIS is deemed necessary; and
- Facilitate EIS preparation when one is necessary.

Further, all agencies are encouraged to integrate NEPA requirements with other environmental review and consultation requirements. Examples of such other environmental requirements are: the Safe Drinking Water Act, the Endangered Species Act, the National Historic Preservation Act, and the Clean Air Act. Therefore, the decision-making process for the proposed acquisition of the LA51 by the U.S. Coast Guard for use during both training and operations on inland and coastal waterways of the U.S. involves a thorough examination of all environmental issues pertinent to the proposed acquisition.

### 1.1 Background

The U. S. Coast Guard is charged with numerous responsibilities to protect inland and coastal waterways. Missions include maritime law enforcement, search and rescue, marine environmental response, protection of marine sanctuaries, alien migration interdiction, drug interdiction, boating safety, port safety and security, and military support.

To help execute and enforce these missions when encountering a non-compliant vessel (NCV) the U.S. Coast Guard employs a Use of Force Continuum. This continuum consists of a series of escalating steps that range from the command presence of the U.S. Coast Guard asset up to and including disabling fire. Furthermore, if an imminent threat of death or serious physical injury exists at any point, then deadly force may be used by the U.S. Coast Guard in order to eliminate that threat. For vessels encountered during security zone violations, it can be difficult to determine the intent, and subsequently apply the appropriate use of force step, given the compressed amount of time available.

The time it can take to go from one step to another varies from seconds to minutes, and depending upon the perceived threat, some steps may be skipped. During operation, only two rounds per engagement are needed because two rounds provide enough signal to ensure that the boater clearly understands that there is a U.S. Coast Guard law enforcement presence trying to get their attention. For training, it will take 6 rounds per person to qualify for the year. Training for qualification may take place anywhere, but most often on land in established law enforcement training areas or on established U.S. Navy training ranges on water. The U.S. Coast Guard will occasionally conduct on-water simulations with additional vessels for training with the LA51.

The scope of this EA is limited to training with the LA51 and operation of LA51 as part of the Use of Force Continuum described above. It is the intention of the U.S. Coast Guard to perform an environmental review and prepare NEPA documentation for the broader Use of Force Continuum in the near future.

## 1.2 Purpose and Need for the Proposed Action

The intent of this action is to improve law enforcement capability by providing a means short of lethal force to hail and warn, determine intent of an operator suspected of one or more violations of law, or encroaching upon a designated security zone (static, or moving). The U.S. Coast Guard conducts static or moving security zone enforcement in ports and inland waterways nationwide, including HVA, cruise ships, or surrounding facilities designated as such by federal or local government agencies or actors. The U.S. Coast Guard is actively looking for a way to hail, warn and determine intent in the safest way for both the boater and U.S. Coast Guard personnel. Presently, the U.S. Coast Guard has a very limited ability to do this without potentially using lethal weapons, systems or munitions in a less lethal way (which is not the recommended course of action). During operation, the proposed action will allow the U.S. Coast Guard to utilize a 12-gauge shotgun munition (LA51) to help hail, warn or determine intent in multiple mission sets agency-wide. Training with the LA51 will support operational capabilities such that the current use of lethal weapons in a non-lethal mode can be avoided. This will provide greater flexibility and capability for the U.S. Coast Guard and improved safety for the boating public.

## 1.3 NEPA Analysis and Documentation

The U.S. Coast Guard is preparing this programmatic environmental assessment (PEA) on the proposed action to facilitate the acquisition and use of the LA51. A Programmatic Environmental Assessment (PEA) is typically prepared when an agency is proposing to carry out a broad action or program. In this context, the proposed action is considered programmatic because the use of the LA51 would have a wide geographic scope with potential effects along the U.S. coast and inland waterways. The U.S. Coast Guard is following guidance in the "Council on Environmental Quality's Regulations on the National Environmental Policy Act", that requests that Federal agencies "integrate [the environmental process] with other planning at the earliest possible time to ensure that planning and decisions reflect environmental values," and "involve environmental agencies, applicants, and the public, to the extent practicable, in preparing [environmental] assessments." This PEA is written in accordance with the U.S. Coast Guard instruction COMDTINST M16475.1C, National Environmental Policy Act: *Implementing Procedures and Policy for Considering Environmental Impacts*.

The purpose of this PEA is to provide general environmental information on the proposed action and alternatives to U.S. Coast Guard decision-makers, expert agencies, and the interested and affected public. It is also used to determine whether the proposed action and its alternatives have the potential for significant environmental impacts. The benefits of compliance with NEPA, and the purpose for obtaining the information in the PEA, is to ensure that the U.S. Coast Guard decision-makers are fully informed before choosing the final course of action.

## 1.4 Public Outreach

Public outreach for the Draft Programmatic Environmental Assessment was accomplished via the following:

- On 18 August, 2011, the Draft Programmatic Environmental Assessment (PEA) was placed on the U.S. Coast Guard's Homeport website ([www.homeport.uscg.mil](http://www.homeport.uscg.mil)) and the U.S. Coast Guard's environmental office's public website ([www.uscg.mil/hq/cg4/cg47/](http://www.uscg.mil/hq/cg4/cg47/)) which is accessed by the boating community nationwide, and parties directly interested in the U.S. Coast Guard activities with regard to operations and the environment. The availability of the Draft PEA was reported on Bryant's Maritime Blog (<http://bryantsmaritimeblog.blogspot.com>) on 19 Aug 2011. In addition, gCaptain, an online blog covering maritime issues, saw the PEA on Homeport, and published an interview during the comment period regarding the LA51.
- From 19 August, 2011 to 2 September, 2011 the public, as notified by posts on the websites in the above bullet, were invited to formally comment on the Draft PEA. Subsequently, the public comment period on the Draft PEA was extended to 15 September 2011.

No comments were received on the Draft PEA during the comment period.



## SECTION 2: ALTERNATIVES INCLUDING THE PROPOSED ACTION

### 2.1 Alternative A: Use of LA51 (Proposed Action)

Under Alternative A, the U.S. Coast Guard would acquire 50,000 LA51 rounds annually to augment U.S. Coast Guard security and law enforcement missions for use in U.S. waterways.

The LA51 is a joint non-lethal 12-gauge warning munition that will be used by the U.S. Coast Guard onboard surface assets (small boats and cutters) within areas under U.S. Coast Guard jurisdiction along the U.S. continental coastline and inland operation areas. The inland operating areas will include existing harbor infrastructure and adjacent inland waters including the St. Lawrence Seaway, Great Lakes, and western and inland river systems. Use of the LA51 in Alaska will be limited to the south-central and eastern maritime regions, and the southern coast of the western maritime region (see Figure 2-a). The LA51 will not be used in the Beaufort, Bering or Chukchi Seas. The LA51 will not be fired with the intention of striking or injuring personnel or damaging their vessels or other property. Rather, it will be used during training and for port security missions during routine operations (i.e., determining intent of unidentified vessels, and enforcing security zones.) As such, the LA51 will be used only from a U.S. Coast Guard vessel toward a target on the water, and it will not be used intentionally toward land.

Figure 2-a. Climatic regions of Alaska



Each LA51 cartridge (see Figure 2-b) is comprised of a pyrotechnic projectile with a pyrotechnic time delay. The LA51 will be fired from the deck of a U.S. Coast Guard vessel, leaving behind a casing. The projectile will then airburst at a fixed point 100 meters downrange, at which point a bright flash and loud report will occur. Smoke may also be observed briefly 100 meters downrange. The use of LA51 by the U.S. Coast Guard will be cumulative with the use of the LA51 and LA52 by the U.S. Navy (see Table 3-d). The LA52 is the same as the LA51, except that the projectile airbursts at a fixed 200 meters downrange rather than 100 meters. As stated previously, the LA51 will only be used from water toward a target on water; however, sound and light from the bright flash and loud report of the LA51 could reach coastal natural resources, including those on land.

The U.S. Coast Guard plans to use up to 50,000 LA51 rounds per year spread out over all U.S. waters mentioned above. Four units were equipped with the LA51 since April 2010 as part of a year-long pilot study, during which no situation required use of the LA51; hence the estimate of 50,000 rounds per year is likely to be high. For the 92 units that will have the munition and are conducting port security missions, we estimate an average of 144 escort missions per year per station, and two rounds per engagement. During operation, U.S. Coast Guard vessels would carry no more than 10 rounds of the LA51, thus limiting the possible rounds per engagement to 10 or less.

Training with the LA51 would take place as often as practicable on existing DOD or other training ranges (i.e., local law enforcement). When training on water outside of DOD training ranges, several units that would be equipped with the LA51 have access to U.S. Coast Guard permanent training areas (33 CFR 165) for which environmental clearances have already been obtained. Where it is not possible to train on an existing U.S. Coast Guard or DOD training range on water, the unit would follow established procedures to set up a temporary weapons training area (WTA), following policy and guidelines detailed in the U.S. Coast Guard's ALCOAST 632/05. Among other things, ALCOAST 632/05 states that when establishing a new WTA, commanders will ensure that it is:

- located at least 3 nm (5 nm for 50 caliber rounds) from public drinking water intakes;
- situated so that all ordnance will be deposited in at least 20 feet of water;
- not in a known heavily contaminated area (e.g., Superfund sites);
- not established at times and in places known to be heavily used by the boating public or within popular fishing or diving sites;
- outside environmentally sensitive areas such as coral reefs, wildlife refuges, marine sanctuaries, designated wildernesses, Wild and Scenic rivers, conservation areas, and other designated natural areas;
- located at least 3 nm (5 nm for 50 caliber rounds) from a national natural landmark, a national historic landmark, a national monument designated under the Antiquities Act, or any object or site listed or proposed to be listed on the National Register of Historic Places or as a protected marine archeological site (e.g., the final resting site of the M/V Edmund Fitzgerald).

In addition, ALCOAST 632/05 states that unit commanders conducting weapons testing or training shall:

- cease testing or training if it has the significant potential to injure a migratory bird or injure or harass a marine mammal or sea turtle, including disruption of migration, surfacing, nursing, breeding, feeding, or sheltering to a point where such behavioral patterns are abandoned or significantly altered;
- make reasonable efforts to ensure that muzzle reports are not audible from the shore above ambient background noise; and,
- pick up all recoverable target debris and avoid discharging associated material (e.g., shell casings and links) to the extent practicable.

## **2.2 Alternative B: Other Non-Lethal Means**

Maneuvering the U.S. Coast Guard asset out to the TOI/NCV up to the point of touching craft was an alternative considered, but deemed too dangerous for certain missions given speed and potential for catastrophic effects to both the TOI/NCV and the U.S. Coast Guard asset.

## **2.3 Alternative B: No Action Alternative**

Under the No Action Alternative, the U.S. Coast Guard would continue to train for and operate using the current Use of Force Continuum. Presently, the only way that the U.S. Coast Guard has the ability to warn a TOI/NCV is to either maneuver towards the TOI/NCV and verbally convey this message (this is not recommended and could be dangerous) or fire a warning shot from a lethal weapon. This may result in U.S. Coast Guard enforcement officers escalating to Step 5 of the Use of Force Continuum (deadly force) faster than they would need to if they had a non-lethal weapon such as the LA51 available. Without the LA51, the ability of the Coast Guard to conduct its security and law enforcement missions would be limited to using lethal means or techniques that potentially put the boater and U.S. Coast Guard at greater risk.



Figure 2-b. LA51 Fact Sheet (note that only the 12-gauge, 100-meter range cartridges will be used by U.S. Coast Guard).

 **Joint Non-Lethal Weapons Program** *Joint Non-Lethal Warning Munition (JNLWM) Fact Sheet*

**What is it?**

Joint Non-Lethal Warning Munitions (JNLWM) are non-lethal, small arms cartridges capable of projecting clear, unambiguous warning signals out to distances of 300 meters. The JNLWM projectiles are not intended to strike downrange targets but to be employed as warning signals that can enable service members to determine the intent of unidentified vessels, vehicles or personnel.

Two 12-gauge cartridges are being evaluated:

- 100-meter range
- 200-meter range

Three 40mm cartridges are being evaluated:

- 100-meter range
- 200-meter range
- 300-meter range

**How Does It Work?**

JNLWM cartridges are shoulder-fired with standard military 12-gauge shotguns or 40mm launchers. Each cartridge has a pyrotechnic projectile with a pyrotechnic time delay. The projectile airbursts at a fixed distance downrange to provide a light flash, loud report (bang) and smoke.

**Human Effects Testing**

Exposure to flash-bang devices may result in startle reactions, innate escape behavior, distraction behaviors from sound, distraction from glare, and aversion reactions from light. All of the intended human effects are temporary, whether the stunning or incapacitation of personnel through impulsive noise (bang), or by integrated illuminance (flash). Flash-bang devices temporarily incapacitate through the induction of temporary flash blindness (or scotoma), temporary hearing loss, and general disorientation that may occur when the senses of sight and hearing are simultaneously overwhelmed.



JNLWM fired from the deck of a ship. Official Department of Defense Images



40mm non-lethal cartridge



12-gauge non-lethal cartridge

**System Evolution**

The US Navy awarded contracts for the production of 12-gauge and 40mm cartridges. Final Joint Services qualification 12-gauge testing will be completed in FY06. The 40mm joint Services qualification testing will be completed in early FY07.

**Organizations Involved**

The following organizations have participated and plan to continue involvement in the JNLWM program:

- Department of Defense
  - US Navy (lead Service)
  - US Army
- Department of Homeland Security
  - US Coast Guard

Approved for Public Release



For further information, contact HQMC PA Phone: 703-614-4309  
Web: <https://www.jnlwp.com>

May 2006



## **SECTION 3: AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES**

This section provides a general or programmatic level discussion of the resource-specific environmental impacts that could potentially occur as a result of implementation of any of the analyzed alternatives. This is followed by discussion of cumulative impacts and environmental justice. Finally, this section provides measures that the U.S. Coast Guard would employ to reduce impacts.

Potential impacts on environmental resources may be long-term or short-term; negligible, minor, moderate, or major; adverse or beneficial; direct or indirect; or significant. As used in this analysis, these characteristics are defined below.

### **Long-Term or Short-Term**

These characteristics are determined on a case-by-case basis and do not refer to a rigid time period. In general, long-term impacts would occur when either the action is continuous, or the impacts of an activity would last for years after an activity has occurred. Short-term impacts are those that would occur only during a short phase of the action. The use of the LA51 during both training and operations can be considered short-term, as firing each round lasts seconds at most, and only 2 rounds per engagement would be fired. Thus the only time impacts would be described as long-term for the LA51 is in the case that impacts from the use last much longer than the use itself.

### **Negligible, Minor, Moderate, or Major**

These relative terms are used to characterize the magnitude of an impact. Negligible impacts are generally impacts that are immeasurable and unnoticeable, or if they are noticed, are at the lower level of detection. A minor impact is slight, but detectable, although may be too low to be immeasurable. Moderate impacts are those that are more perceptible, typically are more amenable to quantification or measurement, and may approach major or significant thresholds. Major or significant impacts are those that, in their context, and due to their intensity (severity), have the potential to meet the thresholds for significance set forth in CEQ regulations.<sup>1</sup> Such impacts warrant heightened attention and examination for potential means for mitigation in order to fulfill the policies set forth in NEPA.

### **Adverse or Beneficial**

An adverse impact would cause unfavorable or undesirable outcomes on the natural or human environment. A beneficial impact would cause positive outcomes on the natural or human environment. A single act might result in adverse impacts on one environmental resource and beneficial impacts on another resource. For example, sediment disturbance could expose benthic invertebrates to predation, which would adversely impact the benthic community, but would result in a beneficial impact on fish by increasing prey availability.

### **Direct or Indirect**

Direct impacts can be identified and assessed with more certainty than indirect impacts because they occur at the same time and the same place as the proposed action. Direct impacts can be short-term or long-term. Indirect impacts are more difficult to identify and assess because they occur in the near and distant future and involve dynamic variables. Indirect impacts are limited to those impacts that would not occur but for implementation of the proposed action. In this PEA, all impacts are considered to be direct impacts unless stated otherwise.

## **3.1 Resource Areas Determined to be Unaffected**

The LA51 will be used on water, off of U.S. Coast Guard vessels toward other vessels in the water. Effects on land would be limited to those caused by indirect noise and flashes of light. Effects on resources connected with water would include effects from sound, light, trace amounts of residuals, and lost casings. Training with the LA51 would take place on existing law enforcement training ranges inland, or when on

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<sup>1</sup> 40 CFR 1508.27

water, in existing U.S. Coast Guard or U.S. Navy training ranges when possible, or in temporary WTAs (see [Section 2.1](#)). When training takes place on an existing DOD range, the U.S. Coast Guard follows all conditions imposed by the DOD agency responsible for those ranges. If training with the LA51 takes place on land, it would be within existing federal, state or local training ranges, and the U.S. Coast Guard would follow all conditions imposed by the entities responsible for those training areas. This action would not involve activities that create jobs, use local emergency support (i.e., local firefighters or police) or community resources (i.e., housing, schools), nor would this action affect resources important to the economy (i.e., recreational and commercial fisheries, tourism) to the extent that socioeconomics on a national, state or local level would be affected. Although water quality might be very minimally and very locally affected by immeasurable amounts of residuals and stray casings during operations, these would not be expected to have any effect upon submerged habitats or resources. Therefore, due to the very limited use and duration of the LA51, adverse impacts on the following resources are not expected, and therefore have not been analyzed further in this PEA: terrestrial biological resources not located either at the coast or directly adjacent to inland rivers, cultural resources; marine transportation, socioeconomics, marine areas and land use; geological resources, and terrestrial soils.

## 3.2 Potentially Affected Resources Areas

### 3.2.1 Biological Resources

Biological resources include native and/or naturalized plants and animals, and the habitats in which they occur, (including wetland habitats). Sensitive biological resources are defined as those plant and animal species that are listed as threatened or endangered by the U.S. Fish and Wildlife Service (USFWS) or National Marine Fisheries Service (NMFS). Preservation of sensitive biological resources is accomplished through many means, most notably by compliance with environmental laws. The most pertinent environmental laws to this proposed action are: the Endangered Species Act (ESA), which protects federally listed threatened and endangered species and their designated critical habitats; the Marine Mammal Protection Act (MMPA), which protects all marine mammals; the Magnuson-Stevens Fisheries Management and Conservation Act (MSFMCA), which protects managed fisheries and their essential fish habitat (EFH); the Clean Water Act (CWA), which among many other things, protects wetlands and regulates discharges into U.S. waterbodies; and, the National Marine Sanctuaries Act (NMSA), which protects marine habitats deemed to be important, unique or sensitive.

#### 3.2.1.1 *Marine, Coastal and Riverine Habitats, Including Protected Habitats*

The LA51 would be used in areas of operation for units that have port security and law enforcement missions, and these areas include a wide array of marine, coastal and riverine habitats. Federally designated critical habitat, EFH, wetlands and national marine sanctuaries can be found throughout the coastal United States, and overlap with the areas of operation for units that would be equipped with the LA51. Use of the LA51 in Alaska will be limited to the south-central and southeast regions, and the southern coast of the southwestern region. The LA51 will not be used in the Beaufort, Bering or Chukchi Seas.

The proposed action does not include construction or changes in normal vessel operations of the U.S. Coast Guard. The proposed action adds the use of the LA51 to a Use of Force Continuum that has been part of normal U.S. Coast Guard operations for units charged with missions having to do with port security, law enforcement and protection of high value assets. Although the use of the LA51 during normal U.S. Coast Guard operations may take place in a wide array of coastal and oceanic sensitive habitats that are protected under ESA, NMSA, MSFMCA and CWA, the LA51 is expected to have a negligible and very localized impact, if any, on a few of these environments. The only aspect of LA51 use that could physically affect habitats is the accidental loss of LA51 casings.

Since the LA51 will be used onboard a vessel, the casings will most likely fall onto the deck of that vessel and be captured for proper disposal onshore. If casings accidentally fall into the water, they would not be expected to adversely affect marine mammals or water quality. Casings in the water would be few, since only 2 rounds per engagement with a maximum of 10 rounds per mission would be possible. If casings entered the water, they would sink into the sediment, possibly become encrusted by marine biota, and have

negligible effects, if any, on the marine environment (USN 2011). Therefore, the use of the LA51 during operations is expected to have a negligible, short-term, adverse impact, if any, on marine, coastal and riverine habitats, including protected habitats, and use of LA51 during training is expected to have no adverse impact.

### *3.2.1.2 Terrestrial, Coastal and Marine Birds, Including Federally Listed Threatened and Endangered Birds*

As stated previously, the LA51 will only be used from water toward a target on water; however, sound and light from the bright flash and loud report of the LA51 could reach coastal land. Impacts on terrestrial resources would be more likely to occur when the LA51 is used on inland waterways where land might be closer in proximity to its use. Coastal birds that could be affected those that spend time foraging from or resting on the surface of the ocean or on lakes and navigable rivers, bird species that have rookeries and nesting sites close to navigable water, and terrestrial bird species that nest at the coast. Many common birds forage and nest at the coast, including landbirds, shorebirds and seabirds. Bird species federally listed as threatened or endangered under ESA, such as piping plover (threatened), roseate tern (endangered) and marbled murrelet (endangered) also could be affected.

Coastal and marine birds could be affected by use of the LA51 under very limited scenarios, as follows.

- The scenario with the highest potential for impact is during operation, if the LA51 is used close to a nesting area or rookery, and is loud enough or bright enough to disturb nesting birds off the nest for a long enough period of time to cause nest failure, thus lowering productivity.
- Disturbance off water surface while feeding or resting;
- Although highly unlikely, the LA51 cartridge hitting waterfowl that had been flushed off the water's surface within the 100 meters from the U.S. Coast Guard vessel and prior to airburst.
- Adverse impacts on waterfowl could occur if use of the LA51 impairs the water quality from either residuals or lost casings.

With strict adherence to measures designed to reduce the potential for adverse impact on wildlife (see [Section 3.6](#)), none of these scenarios would occur during training with the LA51. During operation, it is considered very unlikely that most of these scenarios would occur, because the activity associated with Step 1 of the Use of Force Continuum (see [Section 1.1](#)) would likely have flushed waterfowl away from the entire area between a U.S. Coast Guard vessel and a TOI/NCV, which is where the LA51 would be used. In addition, sound and light from the airburst LA51 would be loudest in front of the TOI/NCV, which would be on water. Nesting sites and rookeries on land could be located quite close to water. However, sound in air and light dissipate quite quickly, thus it is expected that although sound and light from the LA51 might be detectable by wildlife at the immediate coast, they would not be intense enough to disturb wildlife. Thus, use of the LA51 during training and operation would result in negligible, short-term, minor adverse impacts on terrestrial, marine and coastal birds.

### *3.2.1.3 Sea Turtles*

Six sea turtle species are found in U.S. waters, and all are federally listed under ESA as either threatened or endangered (see Table 3-a).

Sea turtle hearing is not well documented, with more information known about underwater hearing than in air hearing. In general, guidelines to protect marine mammals from effects of underwater noise are thought to be protective of sea turtles in the ocean also, but there are no known guidelines for in air noise protective of nesting sea turtles.

Artificial lighting on or near nesting sites on beaches can adversely affect both nesting and hatchling sea turtles. Specifically, artificial lighting on beaches can stop adult female turtles from emerging from the ocean to nest and can disorient or misorient emerging hatchlings away from the ocean. Hatchlings have a tendency to orient toward the brightest direction, which on natural, undeveloped beaches is commonly toward the broad open horizon of the sea. However, on developed beaches, artificial lights can make the brightest direction away from the ocean and toward lighted structures. Hatchlings unable to find the ocean, or delayed in reaching it, are likely to incur high mortality from dehydration, exhaustion, or predation. (NMFS 2011).

**Table 3-a. Sea Turtle Species in the Areas of Operation for Units Equipped with the LA51.**

Sea Turtle Species	ESA status (T = threatened; E = endangered)	Nesting Locations in the U.S. and Territories	Critical Habitat
Green ( <i>Chelonia mydas</i> )	E - Florida and Mexico (Pacific coast) breeding colonies; T – everywhere else	Central and southeast coast of Florida	Designated in coastal waters around Culebra Island, Puerto Rico
Hawksbill	E – throughout its range	Throughout the Caribbean, with the majority of nesting occurring in Mexico and Cuba.	Designated in coastal waters surrounding Mona and Monito Islands, Puerto Rico
Kemp’s Ridley	E – throughout its range	Majority of nesting occurs in Mexico. In the U.S., most nesting occurs in Texas, and occasional nesting has been documented in North Carolina, South Carolina, and the Gulf and Atlantic coasts of Florida.	A February 2010 petition to designate nesting beaches along the Texas coast and marine habitats in the Gulf of Mexico and Atlantic Ocean is under review.
Leatherback	E – throughout its range	U.S. Caribbean, primarily Puerto Rico and the U.S. Virgin Islands, and southeast Florida	Designated in coastal waters adjacent to Sandy Point, St. Croix, U.S. Virgin Islands. Proposed critical habitat in coastal California, Oregon and Washington (FR 75[2]:319). A November 2010 petition to designate coastal Puerto Rico is under review.
Loggerhead	T (current); 9 proposed Distinct Population Segments (DPS) with different proposed status for each DPS. For the 4 proposed DPSs in U.S. waters, proposed status is E, except for South Atlantic Ocean, which is proposed T.	North Carolina through southwest Florida	None
Olive Ridley	T – throughout its range except for Mexico breeding colonies, which are E	None	None

Source: NMFS 2011.

Sea turtle nesting habitats include beaches in the U.S. on coasts of the southern Atlantic, Gulf, and Pacific states. As discussed in [Section 3.2.1.6](#) for marine mammals, in-air noise from the LA51 is not expected to be heard by marine life underwater. It is highly unlikely that noise from the LA51, which would occur over water, would carry far enough inland at a high enough intensity to disturb nesting sea turtles or disorient hatchlings. The light flash from the LA51 would also be far enough from nesting sites such that, if they were detected at all, their effect would be similar to that of a flash of lightning. Even if the light were detected and served as an attractant, the light would be over water and not toward land, and thus would attract hatchling sea turtles toward water where they would naturally go. Therefore, the LA51 would have a negligible, short-term, adverse effect, if any, on nesting and hatchling sea turtles, and no effect on sea turtles in the water.

#### *3.2.1.4 Coastal Wildlife, Including Federally Listed Threatened and Endangered Species*

It is conceivable that terrestrial wildlife at the coast could hear or see the LA51 upon airburst. Coastal wildlife that could be at the extreme coast that could be affected by noise and light from the LA51 potentially include nesting turtles (see [Section 3.2.1.3](#)), foraging and nesting birds (see [Section 3.2.1.2](#)), and small mammals such as the federally listed Alabama beach mouse. However, as with other species groups on the coast, if noise is detected, it would be faint and not intense enough to cause a disturbance or behavioral change. Similarly, the flash of light, if seen at all, would be no more disturbing than a flash of lightning. Therefore, no adverse impacts on coastal wildlife are expected.

#### *3.2.1.5 Fish, Including Federally Listed Threatened and Endangered Fish*

No adverse effects on fish, either marine/coastal fish or fish that are found within inland waterways, are expected. Although fish hearing and underwater noise effects on fish is a recent topic of scientific inquiry, any noise generated from the LA51 would be in air, and would not likely be heard underwater at intensities that could be interpreted as disturbing or harassing to fish or other underwater wildlife. Therefore, the proposed action is expected to have no adverse impacts on fish.

#### *3.2.1.6 Marine Mammals, Including Federally Listed Threatened and Endangered Marine Mammals*

Marine mammals that may be present in the areas of operation for units equipped with the LA51 but would not be affected include all species that do not haul out, i.e., whales, dolphins, porpoises, and manatees. Polar bears do haul out, but are not expected to be affected by the LA51 because no units that would be equipped with the LA51 have areas of operation that overlap with polar bear distribution.

Marine mammals that haul out and thus that have the potential for being affected by use of the LA51 are presented in Table 3-b. Species that could be affected include six phocids (earless seals or true seals): gray seal, harbor seal, harp seal, Hawaiian monk seal, hooded seal, and northern elephant seal; three otariids (eared seals or fur seals and sea lions): northern fur seal, California sea lion, and Steller sea lion; and two otters: southern sea otter and northern sea otter.

**Table 3-b. Marine mammals in areas of operation where U.S. Coast Guard vessels will be equipped with the LA51.**

Common/ Scientific Name <sup>2</sup>	Status <sup>3</sup>	General Distribution	Map #s of U.S. Coast Guard Area of Operation (see figures in <a href="#">Appendix A</a> )	Most Recent Minimum Population Estimate <sup>4</sup>	Current Population Trend	Primary threat(s) to population	Potential Biological Removal (PBR)
Phocids (earless seals or true seals)							
Gray Seal ( <i>Halichoerus grypus</i> ): Western North Atlantic Stock		New England to Labrador and is centered in the Sable Island region of Nova Scotia	2, 3	unknown	increasing	fishery bycatch	unknown
Harbor Seal (California Stock) ( <i>Phoca vitulina richardsi</i> )		Baja California, Mexico, to the Pribilof Islands in Alaska	21, 22, 23, 34, 35, 36, 27, 28, 29, 30	31,600	increase has slowed, and population may have reached optimal sustainable population level (carrying capacity)	fishery bycatch, boat strikes, oil spill exposure, chemical contaminants, power plant entrainment, and disturbance while hauled out	1,896

<sup>2</sup> Species not included

- Species inhabiting only the Bering, Beaufort and Chukchi Seas, including: Bearded Seal, Harbor Seal (Bering Sea Stock), Ribbon Seal, Ringed Seal, Spotted Seal, Polar Bear (Alaska Chukchi/Bering Seas and Alaska Southern Beaufort Sea Stocks), and Pacific Walrus (Alaska Stock) because Coast Guard units in those areas would not be equipped with the LA51 and there are no current or foreseeable missions in those areas requiring the LA51.
- West Indian Manatee (Florida and Puerto Rico Stocks), because although manatee are often observed at the surface and studies have shown that their hearing is acute, they would likely still be hearing noise produced in the air while underwater, as they do not haul out. It is considered unlikely that noise produced by the LA51 would propagate underwater at sound pressure levels that would be disturbing to a marine mammal.
- Northern Fur Seal (San Miguel Island Stock) and Guadalupe Fur Seal, because although Station Channel Island Harbor would be equipped with the LA51, their operating area does not include San Miguel Island (see Map #21).
- Mediterranean Monk Seal and Saimaa Seal, because their distributions do not overlap with operating areas of Coast Guard units that will be equipped with the LA51.

<sup>3</sup> E = "endangered" under the Endangered Species Act; T = "threatened" under the Endangered Species Act; D = "depleted" under the Marine Mammal Protection Act

<sup>4</sup> Sources: The most recent (as of March 2011) stock assessment reports (SAR) were accessed at: <http://www.nmfs.noaa.gov/pr/sars/species.htm>.



Common/ Scientific Name <sup>2</sup>	Status <sup>3</sup>	General Distribution	Map #s of U.S. Coast Guard Area of Operation (see figures in <a href="#">Appendix A</a> )	Most Recent Minimum Population Estimate <sup>4</sup>	Current Population Trend	Primary threat(s) to population	Potential Biological Removal (PBR)
Harbor Seal (Gulf of Alaska) ( <i>Phoca vitulina richardsi</i> )		from Cape Suckling to Unimak Pass, including animals throughout the Aleutian Islands	29, 30	44,453	generally declining with some increase seen in Kodiak		1,334
Harbor Seal (Oregon-Washington Coastal) ( <i>Phoca vitulina richardsi</i> )		outer coast of Oregon and Washington	24, 25, 26	22,380	no longer increasing and assumed to have reached optimal sustainable population level (carrying capacity)		1,343
Harbor Seal (Southeast Alaska) ( <i>Phoca vitulina richardsi</i> )		from the Alaska/British Columbia border to Cape Suckling, Alaska (144EW)	27, 28, 29	108,670	variable across stock		3,260
Harbor Seal (Washington Inland) ( <i>Phoca vitulina richardsi</i> )		inland waters of Washington state (including Hood Canal, Puget Sound, and the Strait of Juan de Fuca out to Cape Flattery)	25, 26	12,844	population is thought to be stable		771
Harbor Seal (Western North Atlantic) ( <i>Phoca vitulina richardsi</i> )		New Jersey and north; however stranding records go as far south as Virginia	2, 3, 4, 5, 6	91,546	increasing		2,746

Common/ Scientific Name <sup>2</sup>	Status <sup>3</sup>	General Distribution	Map #s of U.S. Coast Guard Area of Operation (see figures in <a href="#">Appendix A</a> )	Most Recent Minimum Population Estimate <sup>4</sup>	Current Population Trend	Primary threat(s) to population	Potential Biological Removal (PBR)
Harp Seal (Western North Atlantic) ( <i>Phoca groenlandica</i> )		The southern limit of the harp seal's habitat extends into the U.S. Atlantic Exclusive Economic Zone (EEZ) during winter and spring, with occasional extralimital appearances from Maine to New Jersey.	2, 3, 4	288,000 (includes non-U.S. waters)	stabilized or increasing in U.S. waters	hunting, boat strikes, fishing gear interactions, power plant entrainment, oil spills, harassment, and shooting. Loss of sea ice is a potential threat to their habitat.	unknown for U.S. waters

Common/ Scientific Name <sup>2</sup>	Status <sup>3</sup>	General Distribution	Map #s of U.S. Coast Guard Area of Operation (see figures in <a href="#">Appendix A</a> )	Most Recent Minimum Population Estimate <sup>4</sup>	Current Population Trend	Primary threat(s) to population	Potential Biological Removal (PBR)
Hawaiian Monk Seal ( <i>Monachus schauinslandi</i> )	E/D	Predominantly on the six Northwestern Hawaiian Islands (NWHI) with subpopulations at French Frigate Shoals, Laysan and Lisianski Islands, Pearl and Hermes Reef, and Midway and Kure Atoll. Small numbers also occur at Necker, Nihoa, and the main Hawaiian Islands (MHI). Critical habitat has been designated under the ESA to include all beach areas, sand spits and islets, including all beach vegetation to its deepest extent inland, and lagoon waters out to a depth of 20 fathoms in designated areas of use.	19, 20	1,183	declining	food limitations, entanglement in marine debris, bycatch in fishing gear, mother-pup disturbance on beaches, and exposure to disease, loss of haul-out and pupping beaches due to erosion, disease outbreaks, male aggression towards females, low genetic diversity	undetermined
Hooded Seal ( <i>Cystophora cristata</i> )		from New Jersey and further north, primarily north of the Gulf of St. Lawrence	2, 3, 4	512,000 (but unknown for U.S. waters)	may be increasing	illegal harvesting and fishery bycatch	15,360 (but unknown for U.S. waters)

Common/ Scientific Name <sup>2</sup>	Status <sup>3</sup>	General Distribution	Map #s of U.S. Coast Guard Area of Operation (see figures in <a href="#">Appendix A</a> )	Most Recent Minimum Population Estimate <sup>4</sup>	Current Population Trend	Primary threat(s) to population	Potential Biological Removal (PBR)
Northern Elephant Seal (California Breeding Stock) ( <i>Mirounga angustirostris</i> )		California to eastern Aleutian Islands and the Gulf of Alaska	21, 22, 23, 24, 25, 26, 27, 28, 29, 30	74,913	increasing	entanglement in marine debris, fishery interactions, and boat collisions	4,382
Otariids (eared seals or fur seals and sea lions)							
Northern Fur Seal ( <i>Callorhinus ursinus</i> ): Eastern Pacific Stock	D	from southern California (except for San Miguel Island) north to the Bering Sea	21, 22, 23, 24, 25, 26, 27, 28, 29, 30	676,416	recent slight increase but generally declining	predation; changes in the availability of prey; bycatch in fishing gear; habitat change; entanglement in marine debris; disturbance from vessels and humans; climate change; environmental pollutants	14,543
California Sea Lion ( <i>Zalophus californianus californianus</i> ): U.S. Stock		from the U.S./Mexico border extending northward into Canada	21, 22, 23, 24, 25, 26	141,842	rebounds from El Niño events slow due to the effects on breeding female survivorship and environmental factors	incidental catch and entanglement in fishing gear, such as gillnets	8,511

Common/ Scientific Name <sup>2</sup>	Status <sup>3</sup>	General Distribution	Map #s of U.S. Coast Guard Area of Operation (see figures in <a href="#">Appendix A</a> )	Most Recent Minimum Population Estimate <sup>4</sup>	Current Population Trend	Primary threat(s) to population	Potential Biological Removal (PBR)
Steller Sea Lion ( <i>Eumetopias jubatus</i> ): Eastern U. S. Stock	T/D	east of Cape Suckling, Alaska (144EW), Oregon and California	21, 22, 23, 24, 25, 26, 27, 28, 29	44,404	generally stable or increasing, except for central and southern California populations, which are declining	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	1,998
Steller Sea Lion ( <i>Eumetopias jubatus</i> ): Western U. S. Stock	E/D	west of Cape Suckling, Alaska (144EW), with centers of abundance and distribution in the Gulf of Alaska and Aleutian Islands	29, 30	41,197	stable or possibly declining slightly	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	253
<b>Marine Mammals Under the Jurisdiction of the U.S. Fish and Wildlife Service (USFWS)</b>							
Southern Sea Otter ( <i>Enhydra lutris nereis</i> )		nearshore waters along the mainland coastline of California from San Mateo County to Santa Barbara County	21, 22	2723	increasing	entanglement and drowning in gill nets	8

Common/ Scientific Name <sup>2</sup>	Status <sup>3</sup>	General Distribution	Map #s of U.S. Coast Guard Area of Operation (see figures in <a href="#">Appendix A</a> )	Most Recent Minimum Population Estimate <sup>4</sup>	Current Population Trend	Primary threat(s) to population	Potential Biological Removal (PBR)
Northern Sea Otter ( <i>Enhydra lutris kenyoni</i> ): Southcentral Alaska Stock		from Cape Yakataga to Cook Inlet including Prince William Sound, the Kenai Peninsula coast, and Kachemak Bay	29, 30	12,774	increasing or stable	competition for shellfish, mariculture, oil and gas transport, logging activities in coastal areas, and commercial fishing	1,277
Northern Sea Otter ( <i>Enhydra lutris kenyoni</i> ): Southeast Alaska Stock		from Dixon Entrance to Cape Yakataga	27, 28	9,136	stable		914
Northern Sea Otter ( <i>Enhydra lutris kenyoni</i> ): Southwest Alaska Stock	T	includes the Alaska Peninsula and Bristol Bay coasts, and the Aleutian, Barren, Kodiak, and Pribilof Islands	30	38,703	declining		387
Sea Otter ( <i>Enhydra lutris kenyoni</i> ): Washington Stock		marine waters of Washington State	25, 26	1,125	approaching equilibrium	drowning in gillnets, shooting, boat strikes, capture and relocation efforts, oil spills, and possibly elevated levels of polychlorinated biphenyls and other toxic contaminants	11

The potential stressors on marine mammals are the following: light and sound from the LA51's bright flash and loud report, and residuals that reach the water, and casings that accidentally reach the water. Both the bright flash and loud report from the LA51, like a single gunshot, will last less than 1 second per round.

The LA51 report could reach up to 170 dB peak (177 dB maximum) in air at the source, which is a sound level similar to a 0.357 caliber revolver, and is expected to attenuate rapidly over relatively short distances. Multiple tests of the 12-gauge LA51 were made at 15 and 30 feet from the source. At 15 feet from the source, received noise levels ranging from 120 – 122 dB were detected. At 30 feet from the source, received noise levels ranging from 113 – 117 dB were detected (TERA 2007 - FOUO). Under normal operating procedures, up to two rounds per engagement will be used, and each vessel will carry no more than 10 rounds, so there will be no possibility of more than 10 repetitions of the use of LA51 within a single mission. Noise attenuation from the 12-gauge LA51 was tested at 15 and 30 feet from the source. At 15 feet from the source, received noise levels ranging from 120 – 122 dB were detected. At 30 feet from the source, received noise levels ranging from 113 – 117 dB were detected (TERA 2007 - FOUO). In general, noise attenuation in air will decrease 6 dB per distance doubled (Richardson et al. 1995). Using these measured sound levels with a simple spherical spreading noise attenuation equation<sup>5</sup>, noise produced by the LA51 would attenuate to 100 dB (the Level B harassment threshold for most pinnipeds) at a maximum of 212 ft and affect a maximum area of 3.24 acres. Attenuation to 90 dB (the Level B harassment threshold for harbor seals) would be at a maximum of 672 ft and affect a maximum area of 32.55 acres (see Table 3-c). It should be noted that the equation used to solve for these distances from the noise source does not take into account topography, wind, wave and weather conditions, or any other parameters that might result in more rapid noise attenuation. Therefore, the distances used here are considered very conservative. It is likely that distances to the limit of Level B impacts are much shorter, and corresponding areas of impact around the noise source much smaller than reported in Table 3-c.

U.S. Coast Guard protocol for using the LA51 stipulates that up to two rounds per engagement be used. Sound and light from the bright flash and loud report of the LA51 would last less than 1 second per round (TERA 2007 - FOUO). Since the LA51 would be fired from a U.S. Coast Guard vessel, the majority, if not entirety, of the areas reported in Table 3-c are expected to be comprised of open water and not of hauled out pinnipeds. As stated previously, the LA51 will not be used intentionally toward land. In addition, the surface area of the U.S. Coast Guard vessel from which the LA51 would be fired and/or any unidentified vessels could be within this total area. Marine mammals that may be underwater within this area would not likely be affected by noise or light in air. Regarding noise in particular, sound produced in air that enters water would travel much faster than in air, but only a portion of the sound waves would enter the water, while another portion would be reflected back into the air. Under calm sea conditions, airborne sound can be reflected entirely and not enter the water at all (Richardson et al. 1995). Since it is likely that only a portion of sound waves produced in air would enter the water, its intensity would be expected to be much reduced, and thus is not expected to exceed Level B harassment thresholds for marine mammals underwater.

Pinniped haulouts could be contained in the Level B sphere, however, if the U.S. Coast Guard vessel were located close enough and fired the LA51. Haulout areas tend to be beaches, rock outcroppings, or man-made structures such as boat docks and jetties. In order for the zone of Level B sound to touch a haulout area, the LA51 fired from the U.S. Coast Guard vessel would have to be closer than 496 feet (0.081 nm) from a haulout for most pinnipeds, and closer than 956 ft (0.157 nm) from a haulout for harbor seals. In addition, it should be noted that with a 30 degree angle, the noise from the LA51 (which would occur 328 ft downstream of the firing) would be located approximately 164 ft above the height of the firing location. This means that even in the unlikely event that the LA51 would airburst directly over pinnipeds that are hauled out (this would be the closest that the bright flash and loud report would be to pinnipeds), the edge of the Level B zone of influence (based upon 100 dB) would likely not reach them, given that a conservative calculation of Level B distance from source is between 134 and 212 feet (see Table 3-c).

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<sup>5</sup>  $S_{\text{new}} = S_{\text{ref}} + (20 \cdot \log[D_{\text{ref}}/D_{\text{new}}])$  where  $D_{\text{ref}}$  = reference distance,  $D_{\text{new}}$  = new distance,  $S_{\text{ref}}$  = reference sound level, and  $S_{\text{new}}$  = new sound level



**Table 3-c. Distance from source and area affected at pinniped Level B thresholds.**

Level B threshold	Distance (range) from source	Surface area affected	Sound source's closest distance to a potential pinniped haulout from firing location (assumption: 30 degree angle of launch) <sup>6</sup>	Sound source's minimum height above level of potential pinniped haulout from firing location (assumptions: 30 degree angle of firing; pinniped haulout height above sea level equal to firing location's height above sea level) <sup>7</sup>
90 dB (harbor seals)	424 – 672 ft	564,497 – 1,417,974 square feet (12.96 – 32.55 acres)	705 – 953 ft	164 ft
100 dB (pinnipeds other than harbor seals)	134 – 212 ft	56,382 – 141,124 square feet (1.29 – 3.24 acres)	415 – 493 ft	

Considering the function of the LA51, to hail and warn unidentified vessels on the water, it seems very unlikely that the LA51 would be fired to airburst over a pinniped haulout. Based on this analysis, the use of the LA51 will not result in a take of a marine mammal by injury or death, and it is unlikely that harassment would occur. Therefore, adverse impacts on hauled out marine mammals are expected to be short-term and minor.

The pyrotechnic burst (flash) from the LA51 will occur slightly prior to the report, and will at its brightest, be approximately 50,000 effective candlepower (TERA 2007 - FOUO<sup>8</sup>), which is light intensity similar to a strong flashlight or lamp turned on and off very quickly.

Common plastic and metal alloys used in the LA51 are not generally known as problematic environmental contaminants or regulatory concerns, except where debris from large numbers of rounds is allowed to accumulate (Kansas State University and M2T 2007). Since the LA51 will be used onboard a vessel, the casings will most likely fall onto the deck of that vessel and be captured for proper disposal onshore. If casings accidentally fall into the water, they would not be expected to adversely affect marine mammals or water quality. Casings in the water would be few, since only two rounds per engagement with a maximum of 10 rounds per mission would be possible. If casings entered the water, they would sink into the sediment, possibly become encrusted by marine biota, and have negligible effects, if any, on the marine environment (USN 2011). The chemicals used for the LA51's pyrotechnic flash include aluminum powder, magnesium powder, and potassium perchlorate. Modeling results predict the following by-products of combustion: aluminum, aluminum monochloride radical, potassium, potassium chloride, magnesium, magnesium chloride, and magnesium oxide. All of these products are solids, except for the aluminum monochloride radical that is expected to be in a gas form. Based upon projected use patterns, any solid residuals that may

<sup>6</sup> Assuming conservatively that the LA51 is fired at a 30 degree angle, and given that the airburst and report would occur approximately 328 ft (100 m) from the firing site, the following equation was used to solve for the closest length to a pinniped haulout that Level B noise zone would occur:

$$\text{min length to haulout} = \text{distance from source} + \text{COS}(30 \text{ deg}) * \text{distance to airburst.}$$

A steeper angle than 30 degrees would yield shorter length to a pinniped haulout, and vice versa.

<sup>7</sup> Assuming conservatively that the LA51 is fired at a 30 degree angle, and given that the airburst and report would occur approximately 328 ft (100 m) from the firing site, the following equation was used to solve for the minimum height above the level of a pinniped haulout that Level B noise zone would occur:

$$\text{Height above firing} = \text{SIN}(30 \text{ deg}) * \text{distance to airburst.}$$

A steeper angle than 30 degrees would yield a greater height above the firing, and vice versa.

<sup>8</sup> FOR OFFICIAL USE ONLY (FOUO). Information cited from TERA 2007 is FOUO. Distribution authorized to U.S. Government and their contractors (administrative or operational use, August 2007). Other requests for this document shall be referred to AFRL/HEDJ, 8355 Hawks Road, Brooks City-Base, Texas 78235-5147.

fall into the water would be in trace amounts unlikely to be measurable or impact water quality. Modeling did not generate predictions of PAH or perchlorate releases, and thus assumes that they are consumed during combustion (TERA 2007 - FOUO).

### Impact on species or stocks of marine mammals for subsistence uses

Although some stocks of pinnipeds taken in subsistence harvest may co-occur with areas where the LA51 will be used, no adverse impacts on availability of species or stocks of marine mammals used for subsistence are anticipated. Many of the pinniped species harvested for subsistence uses would not be affected by this action because they are out of the areas of operation of units that would be equipped with the LA51, i.e., certain ice seals (bearded seal, ringed seal ribbon seal, and spotted seal), polar bear, and walrus. Although the eastern pacific stock of northern fur seal coincides with the action area for the LA51, subsistence harvest of northern fur seal takes place only on the Pribilof Islands in the Bering Sea (Angliss and Allen 2008), which is outside of the LA51 action area. Distribution of some harbor seal, sea lion and sea otter stocks would coincide with areas of operation of units that will be equipped with the LA51; in particular, stocks that occur within the Gulf of Alaska, and off southeastern Alaska.

Oil, meat and skins of harbor seal, sea lion and sea otter are harvested and used by Alaska Natives for food and raw materials. In recent years subsistence harvest of these marine mammals has generally declined, a trend thought to be caused by fewer hunters, which may be linked to local scarcities of seals and sea lions.

In 2004 in Alaska, 1,822 harbor seals were taken by Alaska Natives, and of that number about 93% came from stocks that coincide with areas of operation for units that will be equipped with the LA51 (845 from the Southeast Alaska stock and 858 from the Gulf of Alaska stock). Angliss and Allen (2008) report that based on data from Alaska Department of Fish and Game for the years 2000 to 2004, the annual number of harbor seal taken from the Gulf of Alaska stock is 795 animals.

In 2004 in Alaska, 216 sea lions were taken by Alaska Natives (Wolfe et al. 2005). The mean annual take for subsistence harvest between 2002 and 2006 is estimated to have been 198 animals in the western DPS (Angliss and Allen 2009).

Sea otters reported as harvested by Alaska Native subsistence hunters (USFWS 2010) show a general decline in harvest since 1989. In the 7 years between 1989 and 2005, average annual harvest was over 1,000 sea otters, compared with 2006 through 2010, when the average annual harvest was about 600. Based upon tagged numbers from 1989-2010 (USFWS 2010), approximately 74% of sea otter harvest in Alaska takes place in areas of operation for units that will be equipped with the LA51.

However, pinnipeds, including harbor seal, sea lion and sea otter, that may be within the areas of operation for the LA51 would be unlikely to be adversely affected due to the very brief nature of potential impacts if the LA51 is used, and the expected low frequency of use of the LA51 under normal operations. In addition, training will not take place in pinniped critical habitat, marine sanctuaries, or in close proximity to known or observed pinniped haulout areas. Most of the LA51 rounds fired will likely be those used during training. All attempts will be made to conduct training with the LA51 on designated DOD land and water ranges (USN 2011) and areas designated by local law enforcement. Wherever training with the LA51 takes place, current training protocol requires that boats conduct a visual and radar search to ensure no surface or aircraft are within a 500 yard radius prior to commencing the training exercise. A cease fire will be called at any point a vessel or aircraft enters the training area.

### 3.2.1.7 Consultations Under the Endangered Species Act and the Marine Mammal Protection Act

Under the Marine Mammal Protection Act, the U.S. Coast Guard determined that an incidental harassment authorization (IHA) would not be warranted for the use of the LA51 during training and operations, and the National Marine Fisheries Service (NMFS) concurred with that determination. Under the Endangered Species Act, the U.S. Coast Guard determined that the use of the LA51 during training and operations *may affect but would not likely adversely affect* federally listed species under the jurisdiction of NMFS, and NMFS concurred with that determination. [Appendix B](#) contains letters of concurrence from the National Marine Fisheries Service.

## 3.2.2 Water Quality and Sediments

Water resources are defined in this document as the physical and chemical characteristics of a waterbody that affect its ability to maintain, support, and benefit ecosystems. In coastal and marine environments, water resources are affected by the natural processes of river drainage and the constituents and materials conveyed in such drainage; currents and circulation patterns; wet (e.g., precipitation) and dry (e.g., dust) atmospheric deposition; and the amount of solar radiation and evaporation.

Within the areas of operation for units that would be equipped with the LA51, a broad array of water resource types exist, from offshore marine and nearshore brackish estuarine waters, to freshwater inland rivers and lakes.

Since the LA51 will be used onboard a vessel, the casings will most likely fall onto the deck of that vessel and be captured for proper disposal onshore. If casings accidentally fall into the water, they would not be expected to adversely affect marine mammals or water quality. Casings in the water would be few, since only two rounds per engagement with a maximum of 10 rounds per mission would be possible. If casings entered the water, they would sink into the sediment, possibly become encrusted by marine biota, and have negligible effects, if any, on the marine environment (USN 2011). The chemicals used for the LA51's pyrotechnic flash include aluminum powder, magnesium powder, and potassium perchlorate. Modeling results predict the following by-products of combustion: aluminum, aluminum monochloride radical, potassium, potassium chloride, magnesium, magnesium chloride, and magnesium oxide. All of these products are solids, except for the aluminum monochloride radical that is expected to be in a gas form. Based upon projected use patterns, any solid residuals that may fall into the water would be in trace amounts unlikely to be measurable or impact water quality. Modeling did not generate predictions of PAH or perchlorate releases, and thus assumes that they are consumed during combustion (TERA 2007 - FOUO). U.S. Coast Guard would handle all hazardous materials and wastes in accordance with applicable state and Federal regulations, including the Comprehensive Environmental Response, Compensation, and Liability Act and Resource Conservation and Recovery Act.

## 3.2.3 Recreation and Aesthetics

Aesthetics are defined as the natural and manufactured features that give a particular setting or area its aesthetic qualities. These features define the landscape character of an area and form the overall impression that an observer receives of that area. Landforms, water surfaces, vegetation, and manufactured features are considered characteristic of an area if they are inherent to the structure and function of the landscape. The significance of visual character and visual quality is influenced by social considerations, including public value placed on the resource, public awareness of the area, and general community concern for visual resources in an area. Recreation areas are often valued because of their high aesthetic quality.

Within the areas of operation for units that would be equipped with the LA51, aesthetics vary from low to high quality. It is assumed that many of the areas considered to be high quality aesthetically are also valued recreation areas.

The bright flash of light and potential small and brief smoke cloud is the only aspect of use of the LA51 that would affect aesthetics. The flash is only likely to be seen by other vessels in the area, but could be perceptible some distance from the intended viewers during operation, especially during dusk and

nighttime lighting conditions. The smoke cloud, if any occurs upon airburst, is expected to dissipate quickly, and if seen, would only affect visual aesthetics for a few minutes or less. During training with the LA51, which will use the majority of the LA51 rounds annually, care will be taken to train away from sensitive receptors for whom visual resources are important, i.e., scenic areas important for tourism, and known sacred areas for federally-recognized Native American tribes. Given the limited duration of LA51, minor, short-term, adverse impacts on visual quality or character of any particular site are expected.

### 3.2.4 Noise

Noise is generally defined as unwanted sound and can be any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, or is otherwise annoying. Responses to noise by sensitive receptors (i.e., wildlife species, residential developments, hospitals, schools) vary depending on the type and characteristics of the noise, distance between the noise source and receptor, receptor sensitivity, and time of day. [Section 3.2.1](#) presents an analysis of noise impacts on non-human biological resources.

Noise environments are expected to vary among the areas of operation for the units that would be equipped with the LA51. Coastal environments, and especially port areas where much of the use of LA51 during operation can be expected to occur, are noisy environments, both naturally (i.e., wave action in relatively shallow waters and against coastal features) and anthropogenically (i.e., shipping and coastal industry). However, some areas that could be affected, such as inland rivers and their surroundings, can be expected to be relatively quiet environments.

Use of the LA51 is intended to occur on water only, from a U.S. Coast Guard vessel toward an unidentified vessel on water. Although the LA51 may be used close enough to the coast for its loud report to be heard on land, noise in air attenuates rapidly, and thus it is doubtful that the sound would be loud enough by the time it reaches the coast to have anything but short-term, negligible, adverse effects on sensitive receptors.

Sensitive receptors on water may include recreational boaters, and in fact, some recreational boaters that have entered a safety zone or otherwise secured area and are not responsive to radio or other forms of communication may become targets for which use of the LA51 is intended. However, other non-government vessels that are not intended targets may be aware of noise from the LA51, but are unlikely to suffer anything more than short-term, negligible, adverse effects.

### 3.2.5 Air Quality

Air quality in a given location is described by the concentrations of various pollutants in the atmosphere. National Ambient Air Quality Standards (NAAQS) have been established by the U.S. Environmental Protection Agency (USEPA) under the Clean Air Act for criteria pollutants including: ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, particulate matter equal to or less than ten micrometers in diameter, and lead. Recently particulate matter equal to or less than 2.5 micrometers in diameter was added to this list. NAAQS represent maximum levels of background pollution that are considered acceptable, with an adequate margin of safety, to protect public health and welfare.

Use of the LA51 for operations and training can occur in any areas of operation for units that will be equipped with the LA51 (see project location maps, [Appendix A](#)), and thus includes areas with varying air quality, and potentially areas that have been identified as nonattainment or maintenance areas. If the air quality in a geographic area meets or does better than the national standard, it is called an attainment area; areas that don't meet the national standard are called nonattainment areas. Once a nonattainment area meets the standards and additional redesignation requirements in the CAA [Section 107(d)(3)(E)], EPA will designate the area as a "maintenance area."

Use of the LA51 during training exercises and operation may result in some smoke in some cases, but the smoke would be expected to clear within minutes of airburst. Potential combustion by-products of the flashbang formulations include: aluminum, boron, magnesium, potassium, sodium, strontium, nitrate, nitrite, perchlorate, and polynuclear aromatic hydrocarbons (PAHs). Tests done on air emissions relevant to OSHA standards showed that air quality from the use of multiple rounds of LA51 would not be expected

to pose health problems for intended users (see [Section 3.2.6.3](#)). We do not have available environmental air quality testing relevant to NAAQS, and it is problematic to equate NAAQS with OSHA 8-hr standards. However, given that testing reported in KSU and M2T (2007) showed that beyond 15 feet of the airburst, lead would not exceed OSHA 8-hr standard for lead ( $50 \mu\text{g}/\text{m}^3$ ) after the use of 100+ rounds, it is reasonable to extrapolate that it would be unlikely that the NAAQS for lead,  $0.15 \mu\text{g}/\text{m}^3$  (rolling 3-month average) would be exceeded after using 2 rounds during operation, or less than 100 rounds at one time during training.

We do not have information on other criteria pollutants, but others may be relevant as well, i.e., particulate matter, nitrogen dioxide. The NAAQS for criteria pollutants are all measured over time with specified averaging times. The shortest averaging time (one hour) is used for high level ozone, sulfur dioxide, nitrogen dioxide and carbon monoxide. For lower level outputs longer averaging times (most commonly 8 or 24 hours) are in place. Even given the shortest averaging time (1 hour), it is difficult to imagine that an airburst, or series of airbursts that takes less than a few seconds to occur, would result in emissions exceeding the NAAQS when averaged over one hour or longer.

Therefore, any air quality changes resulting from the use of the LA51 is expected to be undetectable. Given the extremely limited duration of LA51 airburst when used and the anticipated low frequency of use, the LA51 would be expected to have a negligible, short-term adverse impact on air quality when used.

### 3.2.6 Public Health and Safety

Public health and safety refers to any aspect of training or operation with the LA51 that might affect health or safety of the general public, including concerns about hearing, eyesight, and air quality. Health and safety of the intended users and participants is protected under Occupational Safety and Health Administration (OSHA) laws, and the tests summarized in this section were conducted pursuant to OSHA requirements for intended users.

Use of the LA51 for operations and training can occur in any areas of operation for units that will be equipped with the LA51 (see project location maps, [Appendix A](#)), but most likely will take place in ports and areas with high value assets. Many of these areas have limited or restricted access to the public. During training either on land or water, the U.S. Coast Guard will ensure that access to the public is restricted. Training on land will take place within existing U.S. Coast Guard, other federal, state, or local law enforcement training areas. Training on water will either take place on U.S. Coast Guard or U.S. Navy established training ranges, or within WTAs (see [Section 2.1](#)), thus ensuring no access to recreational boaters or other marine-going public.

The LA51 can temporarily incapacitate through the induction of temporary flash blindness, temporary hearing loss, and general disorientation that may occur when the senses of sight and hearing are simultaneously overwhelmed (KSU and M2T, 2007). The following analysis is based upon existing test results intended to assess safety for the intended user. Results are then extrapolated to the general public, and are considered very conservative.

#### 3.2.6.1 Hearing

Results of testing reported in TERA (2007) estimate that “no more than 0.001% of individuals will suffer permanent hearing loss from any of the scenarios or munitions”, based upon an estimated “4% risk of small degree of permanent hearing loss from 166-177dB exposure.” It was also estimated that use of the 12-gauge munition would likely result in lower probabilities for injury.

This study used a threshold of 150 dB to for permanent hearing loss in humans. Sound in air attenuates quite rapidly from the source; thus 150 dB would be expected to occur quite close to the source, and quite far from the general public and unintended receptors. In fact, multiple tests of the 12-gauge LA51 were made at 15 and 30 feet from the source. At 15 feet from the source, received noise levels ranging from 120 – 122 dB were detected. At 30 feet from the source, received noise levels ranging from 113 – 117 dB were detected (TERA 2007 - FOUO). These are well below the limit for permanent hearing loss (150 dB) set in the TERA (2007) report.

### 3.2.6.2 Ocular hazard

Similarly, the TERA (2007) results had low concern for ocular hazard for the intended user. Modeling calculated nominal occupational hazard distance (NOHD) threshold values for no effect at 0.63 m for the 40mm and 0.28 m for the 12-gauge LA51. This means that the light output generated in the flash (which would be 100 m from the intended user who launched it) is not considered hazardous beyond 0.28 m for the 12-gauge munition, according to adapted occupational safety criteria. Model results also predicted that no retinal lesions would be caused by exposure to the light from the LA51 at any distance. It is highly unlikely that an unintended receptor of light from the LA51 would be within 0.28 m of the airburst location.

### 3.2.6.3 Air quality

The Nonlethal Environmental Evaluation and Remediation (NEER) Center performed air emission studies on 10 developmental and 7 commercially available flashbang formulations for non-lethal flashbang grenades (including 2 samples each of the 12-gauge and 40mm JNLWMs) (NEER, 2004, as reported in TERA et al. 2007). Ten components were identified as being potential combustion by-products of the flashbang formulations: aluminum, boron, magnesium, potassium, sodium, strontium, nitrate, nitrite, perchlorate, and polynuclear aromatic hydrocarbons (PAHs). Three types of samples were collected: metals and total dust, respirable dust, and PAHs. Replicate samples were collected and analyzed for total and respirable dusts to increase the robustness of the data and confidence in the results. Samples were collected following National Institute for Occupational Safety and Health (NIOSH) collection and analysis methods for each sample type. All three sampling devices were mounted on a wooden pole and placed approximately 8 ft (2.4 m) from the airburst point. The filter-containing cassettes were attached at approximately breathing-zone height (5 ft). All samples were taken from the same location, but due to varying wind directions at times of collection, not all samples were taken downwind of the airburst. Analysis of the air samples showed that for all the components measured, the levels were not above 8-hour time-weight average occupational standards recommended by NIOSH or standards promulgated by Occupational Safety and Health Administration (OSHA).

Based upon review of several studies on the LA51 and similar munitions, KSU and M2T (2007) have concluded that human health risks to the intended user, including risks of permanent hearing loss, ocular hazard, and risks from impaired air quality are minimal, especially in a light use scenario such as this proposed action (see [Section 2.1](#)). Based upon the results reported in TERA (2007) and KSU and M2T (2007), the U.S. Coast Guard concludes that there are minimal health risks to those involved in using the LA51, and no health risks to people outside the immediate area of LA51 use (i.e., the general public).

## 3.3 Cumulative Impacts

NEPA requires an analysis of the incremental effects of an action that are cumulatively considered when viewed in connection with other closely related recent past, present, planned, and reasonably foreseeable future actions.

The U.S. Navy also plans to use the LA51 and LA52 in U.S. waters. As stated previously, the LA52 is the same as the LA51, except that the projectile airbursts at a fixed 200 meters downrange rather than 100 meters. The U.S. Coast Guard has met with the U.S. Navy to assess the number of rounds that will potentially be used by them in U.S. waters, and have presented them in Table 3-d. However, we do not expect any overlap of the use of the LA51 on a local level.

The U.S. Navy's use of the LA51 and LA52 coincides with the same geographic areas where the LA51 will be used by the U.S. Coast Guard. This proposed action does not involve construction, additional vessels, additional missions, or augmentation of the U.S. Coast Guard's normal area of operation.

**Table 3-d. Estimated Annual Use of the LA51 and LA52 in U. S. Waters**

Agency	Within 3 nm (includes inland waters)	Outside of 3 nm	Within 12 nm (does not include inland waters)	Outside of 12 nm	Total Annual Use in All U.S. Waters (including inland waters and out to 200 nm)
U.S. Coast Guard	approximately 26,496 rounds	approximately 23,500 rounds	Not known	Not known	50,000 rounds
U.S. Navy	Not known	Not known	1,500 rounds	6,500 rounds	8,000 rounds

Cumulative impacts analysis generally focuses on the resource(s) that have been found throughout the analysis of impacts to have the potential to sustain adverse impacts. For the LA51, negligible to minor impacts were found for marine mammals that haul out, seabirds on the water surface and in flight, and coastal fauna, primarily in conjunction with noise and light impacts. Therefore cumulative effects analysis must consider what other impacts from noise and light could occur to this same group of fauna. Natural sources of noises and light include: noise from ocean waves at the coast; lightening flashes. Anthropogenic sources of noise and light include: vessel traffic noise, lights from coastal residences, offshore platforms and vessels, noise from hunting at the coast, noise and vibration from pile driving and other coastal construction techniques. Considered cumulatively, operation of the LA51 is expected to have a negligible, short-term contribution to cumulative adverse effects on hauled out marine mammals whenever it is used.

### 3.4 Environmental Justice

The action area for the proposed action is generally nationwide (see [Appendix A](#) for project location maps). Guidance developed by the Interagency Federal Working Group on Environmental Justice recommends evaluating three criteria: (1) whether health or other environmental impacts of a project or alternative are above generally accepted norms (as measured by risks and rates), (2) whether the risk or rate of hazard or other environmental exposure appreciably exceeds or is likely to appreciably exceed those of the general population, and (3) whether health or other environmental impacts occur as a result of cumulative or multiple exposures. Analysis of potential impacts from the proposed action show that use of the LA51 during operation and training would not impose health or other environmental impacts above generally accepted norms, and would not impose hazards or exposures appreciably higher than those of the general population. Since use of the LA51 would have no socioeconomic impact (see [Section 3.1](#)), there would be no disproportionately high and adverse impacts on low-income or minority populations.

### 3.5 Comparison of Alternatives

Table 3-e summarizes and compares the environmental impacts of each of the alternatives discussed in this PEA. Under the No Action Alternative, potential adverse impacts associated with the use of the LA51 would not occur, and the current use of lethal weapons in a non-lethal manner for the purposes of giving unambiguous warning to TOI/NCV would continue. Thus, under the No Action Alternative, the U.S. Coast Guard's ability to perform its law enforcement missions would be compromised, and the process of giving unambiguous warning would be more dangerous to public health in comparison with the proposed action.



**Table 3-e. Alternatives Comparison - Summary of Environmental Impacts**

<b>Resource</b>	<b>Alternative A: Proposed Action)</b>	<b>Alternative B: No Action Alternative</b>
Geology and Soils; Marine Areas and Land Use; Cultural Resources; Marine Transportation; and Socioeconomics	No impacts anticipated.	No impacts anticipated.
Biological Resources	Minor, short-term adverse impacts	Minor, short-term adverse impacts
Water Quality and Sediments	Minor, short-term adverse impacts	Minor, short-term adverse impacts
Marine Areas and Land Use	No impacts anticipated	No impacts anticipated
Air Quality	Negligible, short-term, adverse impacts.	Negligible, short-term, adverse impacts.
Noise	Minor, short-term, adverse impacts	Minor, short-term, adverse impacts
Recreation and Aesthetics	Negligible, short-term, adverse impacts.	Negligible, short-term, adverse impacts.
Public Health and Safety	No impacts anticipated.	Risk of major adverse impacts from use of lethal weapon for non-lethal purposes.
Cumulative Impacts	Contribution to adverse impacts on all resources negligible, if any.	Contribution to adverse impacts on all resources negligible, if any.
Environmental Justice	No environmental justice concerns.	No environmental justice concerns.

### **3.6 Measures to Reduce Potential Impacts**

The U.S. Coast Guard is committed to using all measures practicable to reduce the potential for adverse environmental impact, and places great emphasis on impact avoidance if possible. If impacts cannot be avoided, then specific planned mitigation will be implemented to reduce the potential for adverse impact. If for some unforeseen reason mitigation is not feasible or this programmatic EA does not cover a future impact at a specific site, follow-on site specific NEPA analyses of an appropriate level will be prepared by the U.S. Coast Guard before implementation.

The majority of LA51 rounds will be used during training. All attempts will be made to conduct training on existing DOD or other law enforcement training ranges; however, some training may take place outside of DOD ranges. The training manual for the LA51 shall state: "Prior to conducting any live fire on any body of water, the U.S. Coast Guard District Legal staff that has responsibility for the area of operation where the training will be conducted shall be consulted prior to the training in order to ensure compliance with all applicable federal, state and local environmental laws and regulations." In addition, the training manual for the LA51 shall state that wherever training takes place, the U.S. Coast Guard commits to the following mitigation measures:

1. Care shall be taken during training exercises to keep track of empty casings from the LA51 cartridges; casings are expected to fall on the deck of the vessel, and during training exercises shall be captured for proper disposal onshore.
2. The LA51 shall not be used for training within the limits of pinniped critical habitat, marine sanctuaries, or in close proximity to known or observed pinniped haulout areas.

3. If marine mammals, including pinnipeds are observed in the water in a training area, training shall cease or be delayed until the marine mammals have moved on. U.S. Coast Guard members involved in training shall be advised that federal law prohibits pursuit of marine mammals. U.S. Coast Guard members shall not offer food in any form (i.e., including fish) to marine mammals, or touch or swim with them. In no case shall the U.S. Coast Guard do anything to hasten the departure of marine mammals observed to be in the area.
4. The LA51 shall never intentionally be aimed toward a marine mammal in the water or hauled out, or at a bird on the water or in flight.
5. The LA51 shall not train with the LA51 near known sensitive human receptors, areas important for tourism based upon aesthetic values, or known tribal sacred sites for federally recognized tribes.

## **SECTION 4: OTHER NEPA CONSIDERATIONS**

### **4.1 Irreversible or Irretrievable Commitment of Resources**

NEPA regulations (40 Code of Federal Regulations [CFR] 1502.16) require an analysis of significant irreversible or irretrievable effects resulting from implementation of proposed actions. Resources that are irreversibly or irretrievably committed to a project are those that are typically used on a long-term or permanent basis. However, those resources used on a short-term basis that cannot be recovered (such as metal, wood, fuel, paper, and other natural resources) are also irretrievable. Human labor is also considered an irretrievable resource. These resources are irretrievable in that they would be used for one project when they could have been used for other purposes. Another impact that falls under the category of irretrievable commitment of resources is the destruction of natural resources that could limit the range of potential uses of that particular environment. Implementation of the proposed action would not require commitment of non-renewable resources for construction or long-term operation/ maintenance.

### **4.2 Relationship Between Local Short Term Uses of the Environment and the Maintenance and Enhancement of Long Term Productivity**

NEPA regulations (40 CFR 1502.16) require that the relationship between short-term use of the environment and the impacts that such use may have on the maintenance and enhancement of long-term productivity of the affected environment are addressed. Impacts that narrow the range of beneficial uses of the environment are of particular concern. It is anticipated that implementation of the proposed action would not result in any impacts that would significantly narrow the range of future beneficial uses of the environment. There will be no long-term risks to health, safety, or the general welfare of the public.

## SECTION 5: REFERENCES

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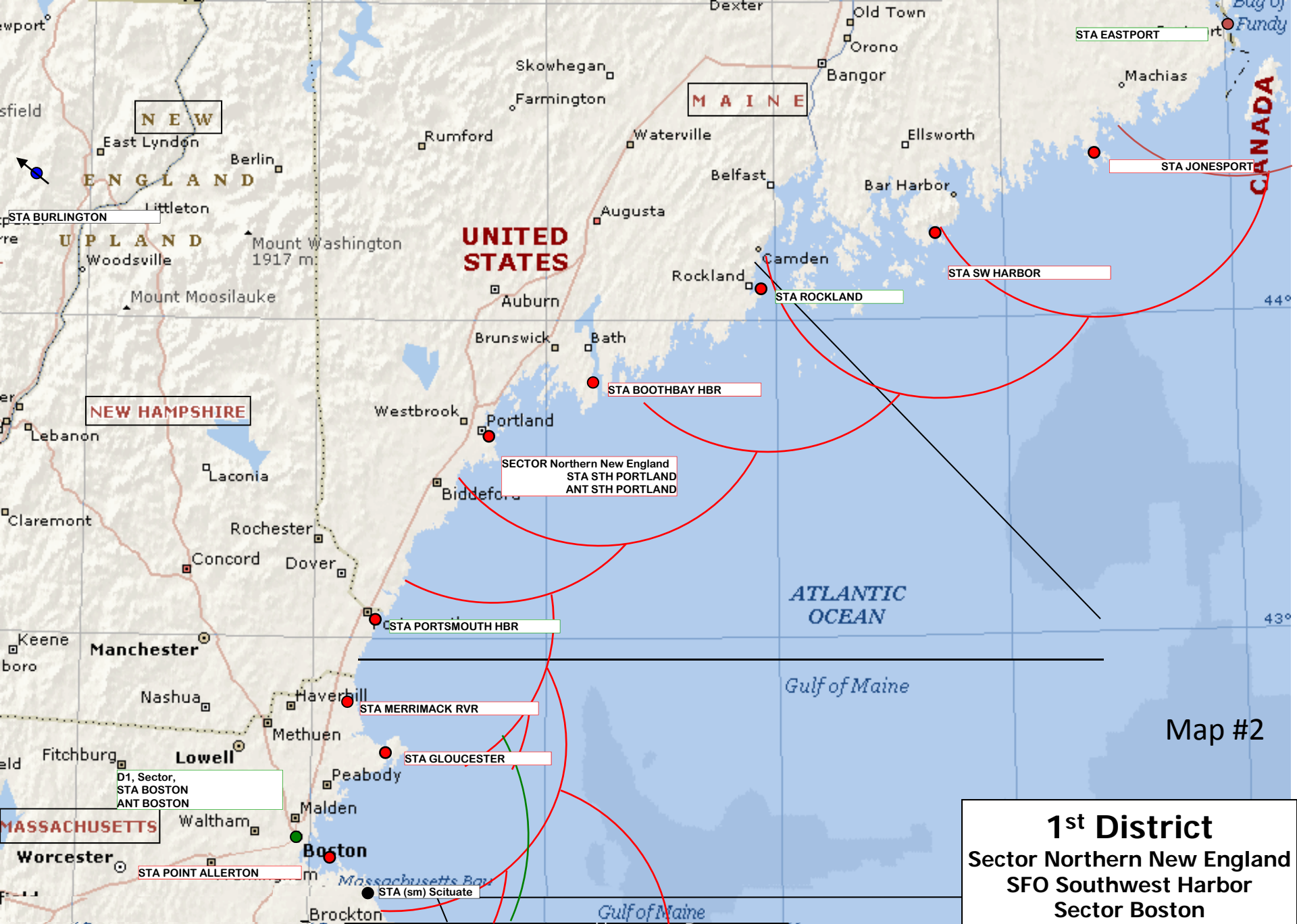
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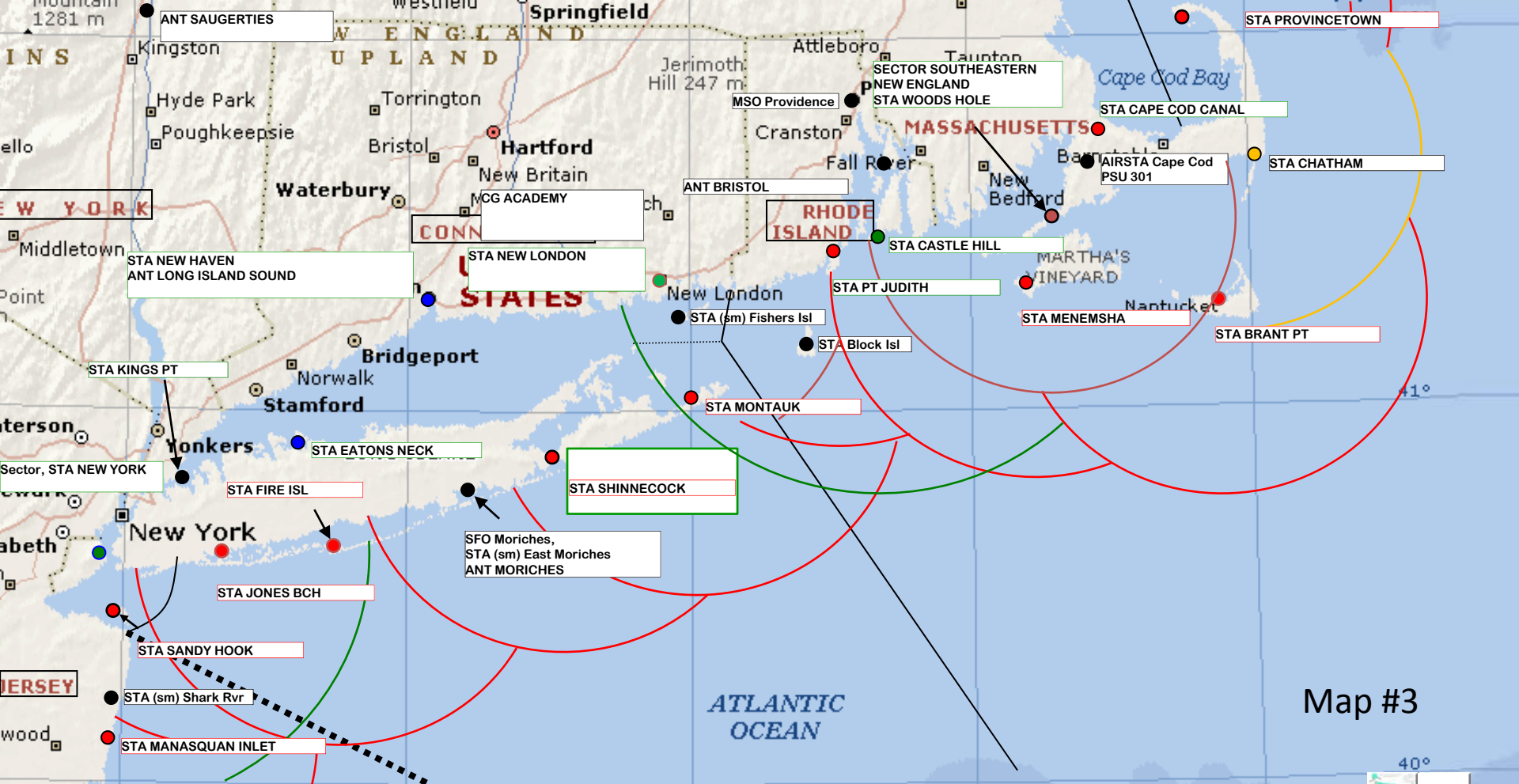
## **Appendix A: Project Location Maps**



**1<sup>st</sup> District**  
 Sector Northern New England  
 SFO Southwest Harbor  
 Sector Boston

Map #2





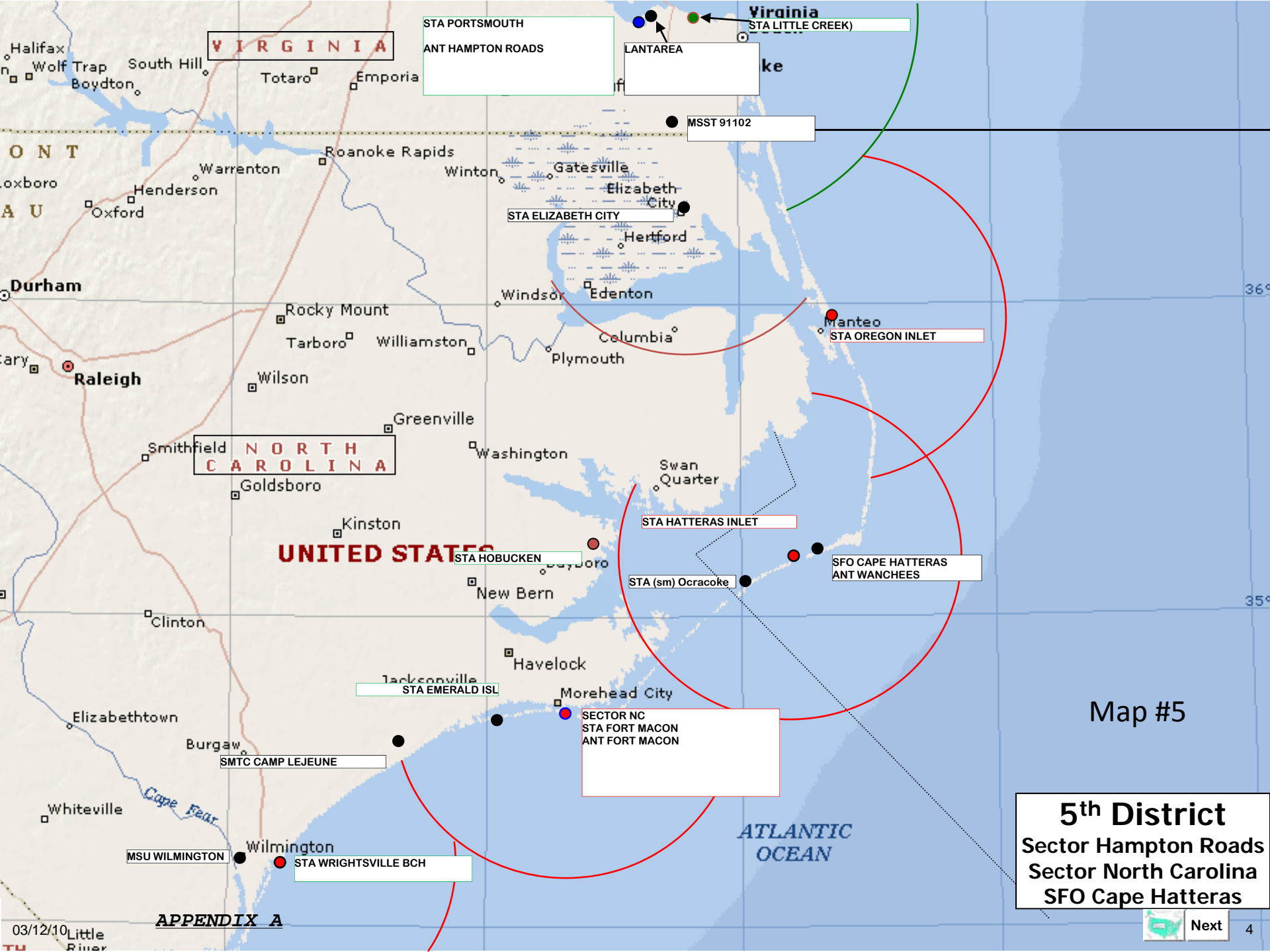
**APPENDIX A**

**1<sup>st</sup> District**  
 Sector Southeastern New England  
 Sector Long Island Sound  
 SFO Moriches  
 Sector New York



Map #4

**5<sup>th</sup> District**  
 Sector Delaware Bay  
 SFO Atlantic City  
 SFO Eastern Shore  
 Sector Baltimore



**VIRGINIA**

**NORTH CAROLINA**

**UNITED STATES**

**ATLANTIC OCEAN**

STA PORTSMOUTH  
ANT HAMPTON ROADS

LANTAREA

STA LITTLE CREEK

MSST 91102

STA ELIZABETH CITY

STA OREGON INLET

STA HATTERAS INLET

SFO CAPE HATTERAS  
ANT WANCHEES

STA (sm) Ocracoke

STA HOBUCKEN

SECTOR NC  
STA FORT MACON  
ANT FORT MACON

STA EMERALD ISL

SMTc CAMP LEJEUNE

STA WRIGHTSVILLE BCH

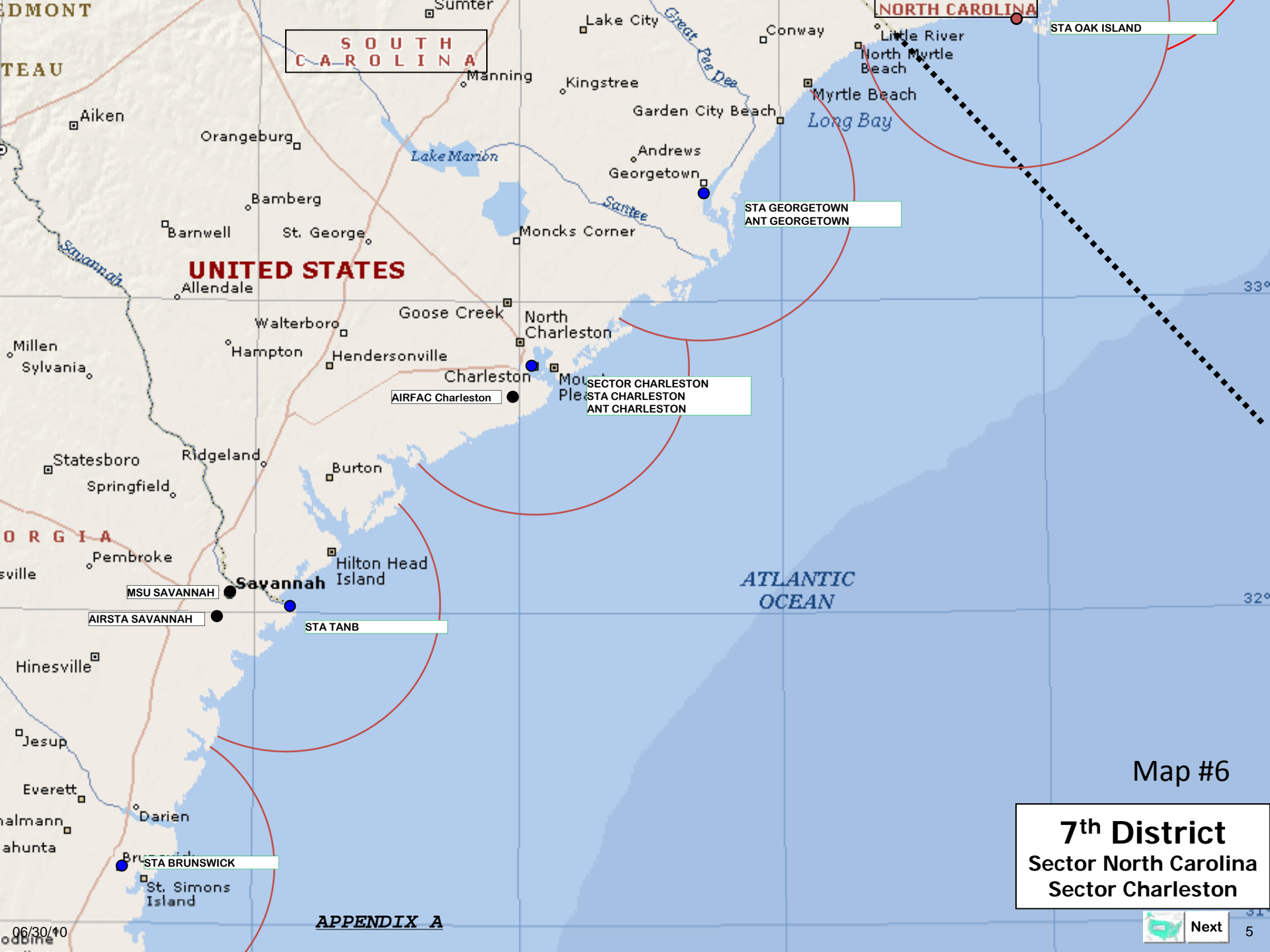
MSU WILMINGTON

Map #5

**5th District**  
Sector Hampton Roads  
Sector North Carolina  
SFO Cape Hatteras

**APPENDIX A**

03/12/10 Little River



**SOUTH CAROLINA**

**NORTH CAROLINA**

**UNITED STATES**

**GEORGIA**

**ATLANTIC OCEAN**

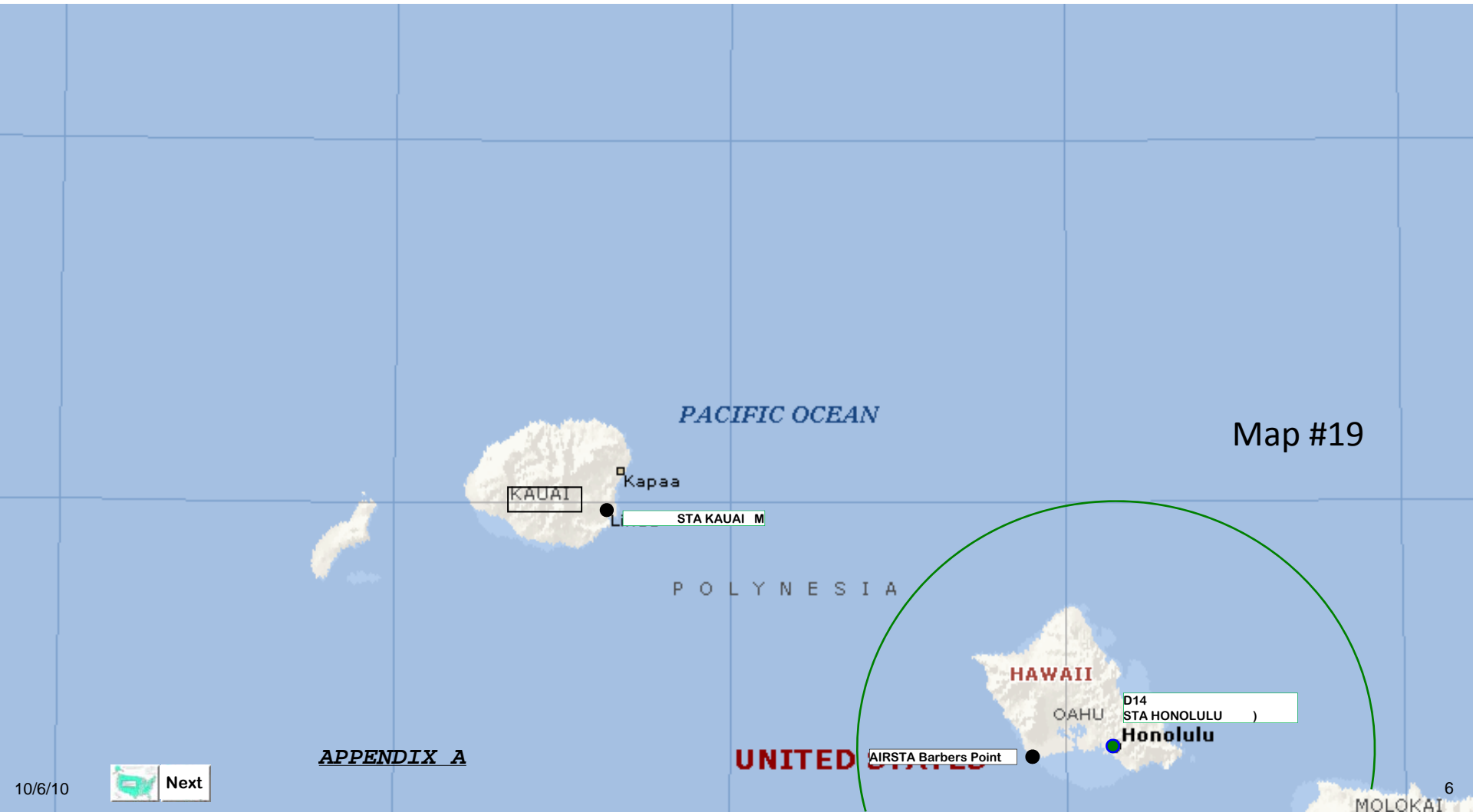
Map #6

**7th District**  
Sector North Carolina  
Sector Charleston

**APPENDIX A**

# 14<sup>th</sup> District

Sector Honolulu







Map #20

**14<sup>th</sup> District**  
**Sector Honolulu**  
**Sector Guam**

# 11th District

## Sector San Diego

### Sector Los Angeles/Long Beach

STA MORRO BAY



CALIFORNIA

UNITED STATES

Lancaster

Palmdale

Santa Clarita

Simi Valley

Oxnard

STA CHANNEL ISL HBR

Oaks

Los Angeles

Pasadena

Pomona

Ontario

East Los Angeles

Torrance

Huntington Beach

Irvine

SANTA CATALINA ISLAND

Oceanside

San Diego

SECTOR, AIRSTA,  
STA SAN DIEGO  
ANT SAN DIEGO  
MSST 91109

Vista

Escondido

El Cajon

Tecate

Pijuán

Next

Map #21

APPENDIX A

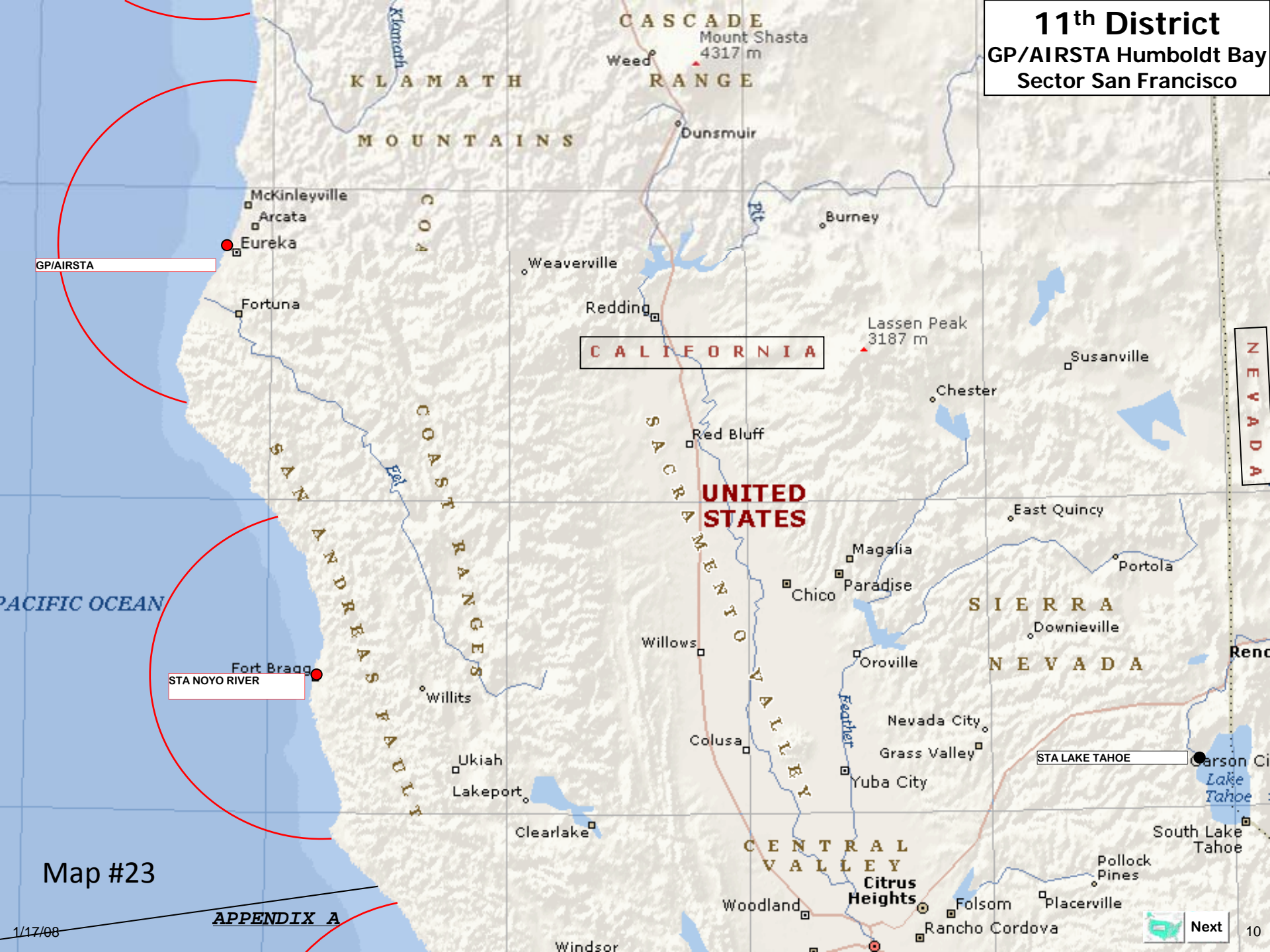
12/15/10

# 11<sup>th</sup> District Sector San Francisco





**11th District**  
**GP/AIRSTA Humboldt Bay**  
**Sector San Francisco**



GP/AIRSTA

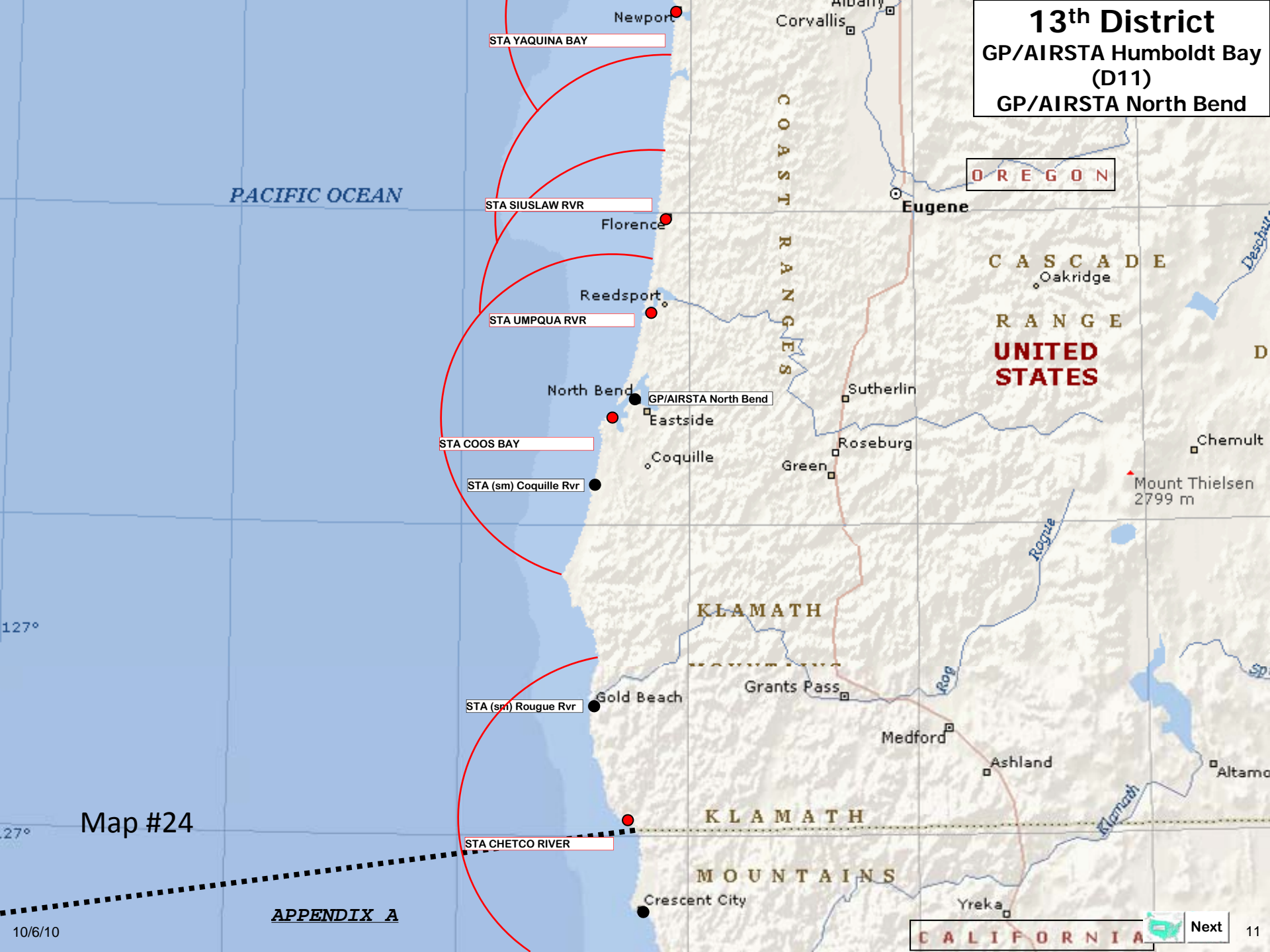
STANOYO RIVER

Map #23

APPENDIX A

1/17/08

**13<sup>th</sup> District**  
**GP/AIRSTA Humboldt Bay**  
**(D11)**  
**GP/AIRSTA North Bend**



Map #24

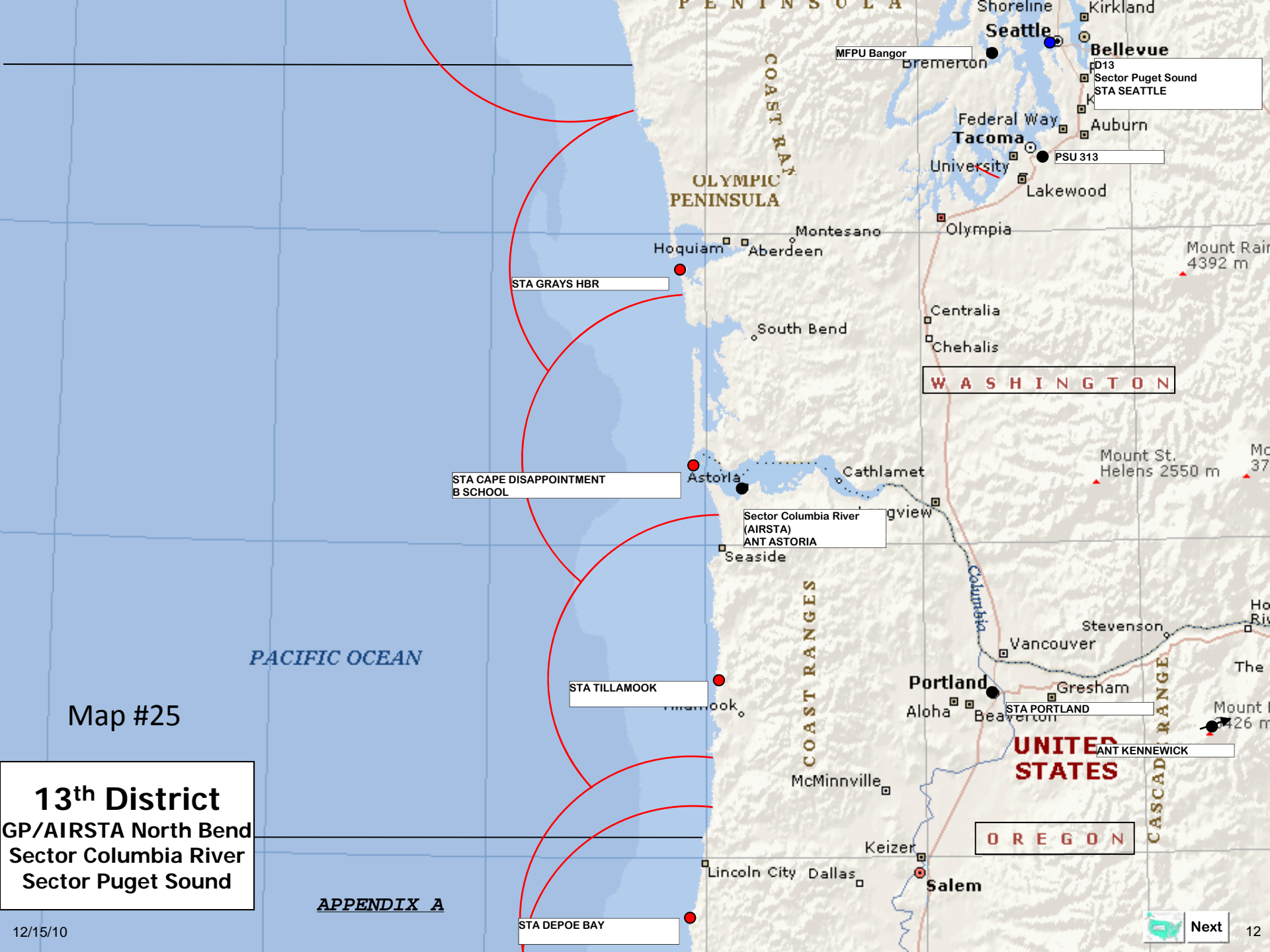
APPENDIX A

10/6/10

Next

11





Map #25

**13<sup>th</sup> District**  
 GP/AIRSTA North Bend  
 Sector Columbia River  
 Sector Puget Sound

*APPENDIX A*

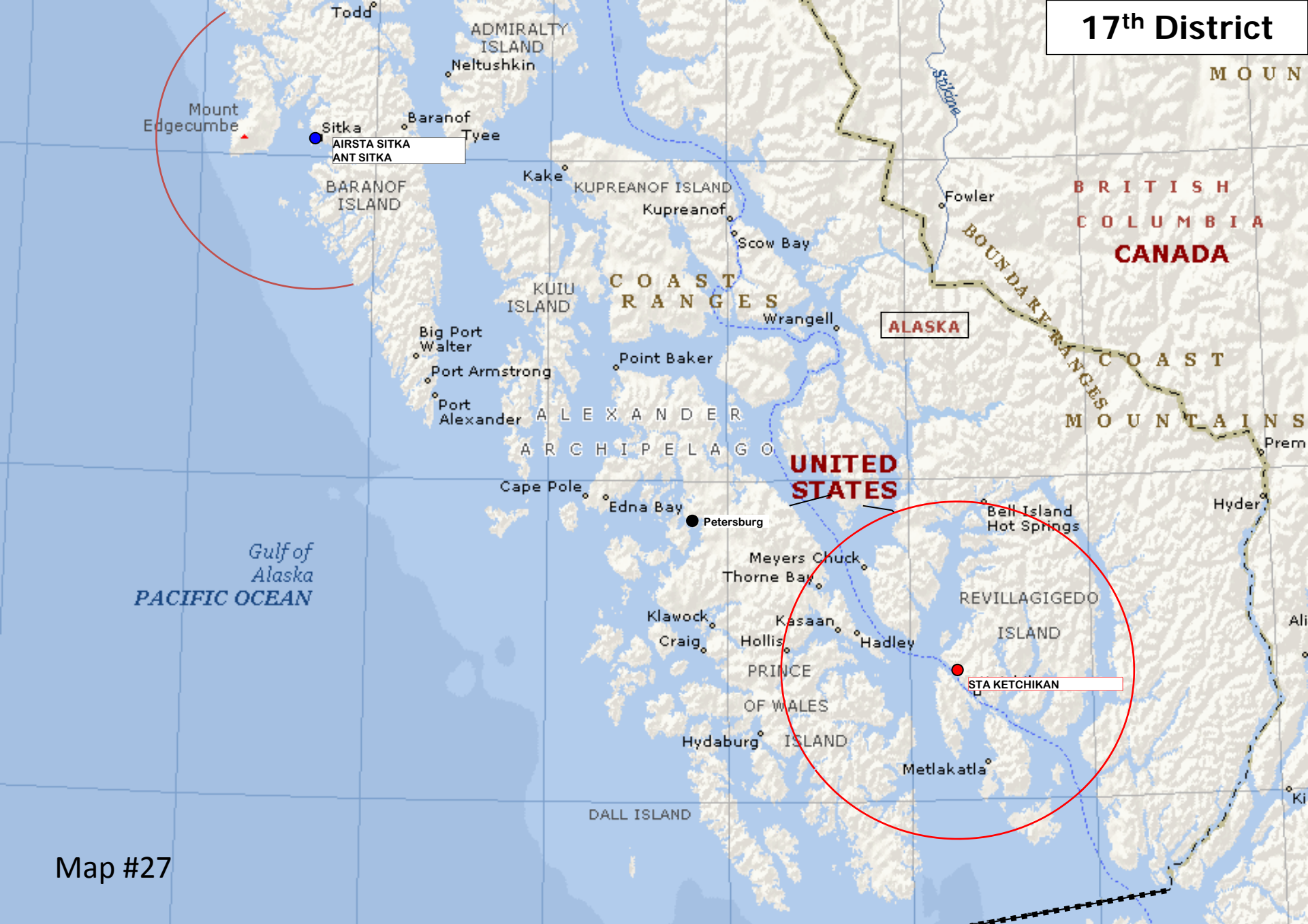
# 13th District Sector Puget Sound SFO Port Angeles



Map #26

APPENDIX A





Map #27



Map #28



# 17th District



AMSST91111

STA VALDEZ

ALASKA

UNITED STATES

Map #29

# 17th District



Map #30

## APPENDIX A



**Appendix B: Consultation Letters Regarding Endangered Species Act and  
Marine Mammal Protection Act**

From: Perera, Melissa  
Sent: Friday, April 15, 2011 4:50 PM  
To: 'Shane.Guan@NOAA.GOV'  
Cc: Cashell, Sean LCDR; McCabe, Francis CTR; Kelley, Kebby  
Attachments: MMPA\_LA51\_15Apr11.pdf; LA51 Sites\_MMPA.pptx

Shane,

The attached is the USCG's request for a Letter of Concurrence from NMFS for use of the LA51, a joint non-lethal 12-gauge warning munition that will be used by the Coast Guard onboard small boats and cutters within areas under Coast Guard jurisdiction along the U.S. continental coastline and inland operation areas. As we discussed in our meeting with you on Feb 9, 2011, we are hoping to consult with NMFS under ESA and MMPA concurrently, and we understand that NMFS concurrence under MMPA is the first step. We would appreciate any feedback that you may have on the attached documents, and would be happy to meet with you in order to keep this process moving.

Thanks,

Melissa

M. Perera  
Environmental Protection Specialist  
Deepwater Ports Standards Division

U.S. Coast Guard Headquarters  
Commandant (CG-5225) Stop 7126  
2100 2nd Street, SW  
Washington, DC 20593-7126  
Ph:202-372-1446  
E-mail: [Melissa.E.Perera@uscg.mil](mailto:Melissa.E.Perera@uscg.mil)  
Website: <http://www.uscg.mil/hq/cg5/cg522/cg5225/default.asp>

**(1) A detailed description of the specific activity or class of activities that can be expected to result in incidental taking of marine mammals;**

The LA51 is a joint non-lethal 12-gauge warning munition that will be used by the Coast Guard onboard surface assets (small boats and cutters) within areas under Coast Guard jurisdiction along the U.S. continental coastline and inland operation areas. The inland operating areas will include existing harbor infrastructure and adjacent inland waters including the St. Lawrence Seaway, Great Lakes, and western and inland river systems. The LA51 will not be fired with the intention of striking or injuring personnel or damaging their vessels or other property. Rather, it will be used during training and for port security missions during routine operations (i.e., determining intent of unidentified vessels, and enforcing security zones.) As such, the LA51 will be used only from a Coast Guard vessel toward a target on the water, and it will not be used intentionally toward land.

Each LA51 cartridge (see Figure MMPA-Q1) is comprised of a pyrotechnic projectile with a pyrotechnic time delay. The LA51 will be fired from the deck of a Coast Guard vessel, leaving behind a casing. The projectile will then airburst at a fixed point 100 meters downrange, at which point a bright flash and loud report will occur. Smoke may also be observed briefly 100 meters downrange. The use of LA51 by the Coast Guard will be cumulative with the use of the LA51 and LA52 by the U.S. Navy (see Table MMPA-Q1). The LA52 is the same as the LA51, except that the projectile airbursts at a fixed 200 meters downrange rather than 100 meters. As stated previously, the LA51 will only be used from water toward a target on water; however, sound and light from the bright flash and loud report of the LA51 could reach coastal land.

The Coast Guard plans to use up to 50,000 LA51 rounds per year spread out over all U.S. waters mentioned above. Four units have been equipped with the LA51 since April, 2010 as part of a pilot study, and since that time until present, no situation has required use of the LA51; hence the estimate of 50,000 rounds per year is likely to be high. For the 92 units that will have the munition and are conducting port security missions, we estimate an average of 144 escort missions per year per station, and two rounds per engagement. The Navy’s use of the LA51 and LA52 coincides with the same geographic areas where the LA51 will be used by the Coast Guard. This proposed action does not involve construction, additional vessels, additional missions, or augmentation of the Coast Guard’s normal area of operation.

Table MMPA-Q1. Estimated Annual Use of the LA51 and LA52 in U. S. Waters

Agency	Within 3 nm (includes inland waters)	Outside of 3 nm	Within 12 nm (does not include inland waters)	Outside of 12 nm	Total Annual Use in All U.S. Waters (including inland waters and out to 200 nm)
Coast Guard	approximately 26,496 rounds	approximately 23,500 rounds	Not known	Not known	50,000 rounds
Navy	Not known	Not known	1,500 rounds	6,500 rounds	8,000 rounds

The potential stressors on marine mammals are the following: light and sound from the LA51’s bright flash and loud report, and residuals that reach the water, and casings that accidentally reach the water. The pyrotechnic burst (flash) from the LA51 will occur slightly prior to the report, and

will at its brightest, be approximately 50,000 effective candlepower (HERC 2007 - FOUO<sup>1</sup>), which is light intensity similar to a strong flashlight or lamp turned on and off very quickly. The LA51 report could reach up to 170 dB peak (177 dB maximum) in air at the source, which is a sound level similar to a 0.357 caliber revolver, and is expected to attenuate rapidly over relatively short distances. Multiple tests of the 12-gauge LA51 were made at 15 and 30 feet from the source. At 15 feet from the source, received noise levels ranging from 120 – 122 dB were detected. At 30 feet from the source, received noise levels ranging from 113 – 117 dB were detected (HERC 2007 - FOUO). Under normal operating procedures, up to two rounds per engagement will be used, and each vessel will carry no more than 10 rounds, so there will be no possibility of more than 10 repetitions of the use of LA51 within a single mission. Both the bright flash and loud report from the LA51, like a single gunshot, will last less than 1 second per round. Common plastic and metal alloys used in the LA51 are not generally known as problematic environmental contaminants or regulatory concerns, except where debris from large numbers of rounds is allowed to accumulate (Kansas State University and M2T 2007). Since the LA51 will be used onboard a vessel, the casings will most likely fall onto the deck of that vessel and be captured for proper disposal onshore. If casings accidentally fall into the water, they would not be expected to adversely affect marine mammals or water quality. Casings in the water would be few, since only 2 rounds per engagement with a maximum of 10 rounds per mission would be possible. If casings entered the water, they would sink into the sediment, possibly become encrusted by marine biota, and have negligible effects, if any, on the marine environment (USN 2011). The chemicals used for the LA51's pyrotechnic flash include aluminum powder, magnesium powder, and potassium perchlorate. Modeling results predict the following by-products of combustion: aluminum, aluminum monochloride radical, potassium, potassium chloride, magnesium, magnesium chloride, and magnesium oxide. All of these products are solids, except for the aluminum monochloride radical that is expected to be in a gas form. Based upon projected use patterns, any solid residuals that may fall into the water would be in trace amounts unlikely to be measurable or impact water quality. Modeling did not generate predictions of PAH or perchlorate releases, and thus assumes that they are consumed during combustion (HERC 2007 - FOUO).

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<sup>1</sup> FOR OFFICIAL USE ONLY (FOUO). Information cited from HERC 2007 is FOUO. Distribution authorized to U.S. Government and their contractors (administrative or operational use, August 2007). Other requests for this document shall be referred to AFRL/HEDJ, 8355 Hawks Road, Brooks City-Base, Texas 78235-5147.

Figure MMPA-Q1. LA51 Fact Sheet (note that only the 12-gauge, 100-meter range cartridges will be used by Coast Guard).

 **Joint Non-Lethal Weapons Program** **Joint Non-Lethal Warning Mmunition (JNLWM) Fact Sheet**

**What is it?**

Joint Non-Lethal Warning Munitions (JNLWM) are non-lethal, small arms cartridges capable of projecting clear, unambiguous warning signals out to distances of 300 meters. The JNLWM projectiles are not intended to strike downrange targets but to be employed as warning signals that can enable service members to determine the intent of unidentified vessels, vehicles or personnel.

Two 12-gauge cartridges are being evaluated:

- 100-meter range
- 200-meter range

Three 40mm cartridges are being evaluated:

- 100-meter range
- 200-meter range
- 300-meter range

**How Does It Work?**

JNLWM cartridges are shoulder-fired with standard military 12-gauge shotguns or 40mm launchers. Each cartridge has a pyrotechnic projectile with a pyrotechnic time delay. The projectile airbursts at a fixed distance downrange to provide a light flash, loud report (bang) and smoke.

**Human Effects Testing**

Exposure to flash-bang devices may result in startle reactions, innate escape behavior, distraction behaviors from sound, distraction from glare, and aversion reactions from light. All of the intended human effects are temporary, whether the stunning or incapacitation of personnel through impulsive noise (bang), or by integrated illuminance (flash). Flash-bang devices temporarily incapacitate through the induction of temporary flash blindness (or scotoma), temporary hearing loss, and general disorientation that may occur when the senses of sight and hearing are simultaneously overwhelmed.



JNLWM fired from the deck of a ship.  
*Official Department of Defense Images*



40mm non-lethal cartridge



12-gauge non-lethal cartridge

**System Evolution**

The US Navy awarded contracts for the production of 12-gauge and 40mm cartridges. Final Joint Services qualification 12-gauge testing will be completed in FY06. The 40mm joint Services qualification testing will be completed in early FY07.

**Organizations Involved**

The following organizations have participated and plan to continue involvement in the JNLWM program:

- Department of Defense
  - US Navy (lead Service)
  - US Army
- Department of Homeland Security
  - US Coast Guard

Approved for Public Release



For further information, contact HQMC PA Phone: 703-614-4309  
Web: <https://www.jnlwp.com>

May 2006



**(2) The date(s) and duration of such activity and the specific geographical region where it will occur;**

The Coast Guard expects to equip selected units throughout the U.S. with the LA51 starting as early as FY11 Q3 for use in training and continuing Coast Guard operations. See attached maps (Figure MMPA-Q2) of the selected units' operating areas. Most of the 50,000 rounds that the Coast Guard plans to use annually would be used during training. If a situation does require use of LA51, the duration of the engagement would likely last several minutes. No more than two rounds would be fired per engagement under normal operating procedures for LA51 use. Both rounds may be fired in one location, or they may be fired while moving in pursuit of an unidentified vessel. The vessel would carry no more than 10 rounds of the LA51 on board, thus limiting the possible use to 10 rounds per mission. The LA51 will not be shot into the water, and will not be shot intentionally toward land. Sound and light from the bright flash and loud report of the LA51 would last less than 1 second per round.

Figure MMPA-Q2. Maps showing areas of operation for units that will be equipped with the LA51.

Please see attached file.

**(3) The species and numbers of marine mammals likely to be found within the activity area;**

The sources of potential environmental impact from the LA51 are the bright light flash and the short loud report in air that follows. No light or noise would be generated under water or directly at the water surface, and it is unlikely that light and noise produced in air would propagate underwater. Residuals from the LA51 airburst under normal operating protocols (two rounds per engagement) and maximum possible use per mission (based upon 10 rounds on board), would be too low to be detectable, and would not be expected to have an adverse effect upon water quality or have direct or indirect effects on marine mammals underwater. As such, use of the LA51 has potential adverse effects only on marine mammals that spend substantial time out of water, i.e., pinnipeds and sea otters. Other marine mammals may surface briefly, but the likelihood of surfacing at the exact place and moment that an LA51 round is used is small enough to be discountable. Please see further discussion under Question (7).

Species that have the potential for being affected by use of the LA51 are presented in Table MMPA-Q3, and maps in the attached Figure MMPA-Q2 depict operating areas for units that would be equipped with the LA51. Species that could be affected include six phocids (earless seals or true seals): gray seal, harbor seal, harp seal, Hawaiian monk seal, hooded seal, and northern elephant seal; three otariids (eared seals or fur seals and sea lions): northern fur seal, California sea lion, and Steller sea lion; and two otters: southern sea otter and northern sea otter.



Table MMPA-Q3. Marine mammals in areas of operation where Coast Guard vessels will be equipped with the LA51.

Common/ Scientific Name <sup>2</sup>	Status <sup>3</sup>	General Distribution	Map #s of USCG Area of Operation (See attached Figure MMPA-Q2)	Most Recent Minimum Population Estimate <sup>4</sup>	Current Population Trend	Primary threat(s) to population	Potential Biological Removal (PBR)
Phocids (earless seals or true seals)							
Gray Seal ( <i>Halichoerus grypus</i> ): Western North Atlantic Stock		New England to Labrador and is centered in the Sable Island region of Nova Scotia	2, 3	unknown	increasing	fishery bycatch	unknown
Harbor Seal (California Stock) ( <i>Phoca vitulina richardsi</i> )		Baja California, Mexico, to the Pribilof Islands in Alaska	21, 22, 23, 34, 35, 36, 27, 28, 29, 30	31,600	increase has slowed, and population may have reached optimal sustainable population level (carrying capacity)	fishery bycatch, boat strikes, oil spill exposure, chemical contaminants, power plant entrainment, and disturbance while hauled out	1,896

<sup>2</sup> Species not included

- Species inhabiting only the Bering, Beaufort and Chukchi Seas, including: Bearded Seal, Harbor Seal (Bering Sea Stock), Ribbon Seal, Ringed Seal, Spotted Seal, Polar Bear (Alaska Chukchi/Bering Seas and Alaska Southern Beaufort Sea Stocks), and Pacific Walrus (Alaska Stock) because Coast Guard units in those areas would not be equipped with the LA51 and there are no current or foreseeable missions in those areas requiring the LA51.
- West Indian Manatee (Florida and Puerto Rico Stocks), because although manatee are often observed at the surface and studies have shown that their hearing is acute, they would likely still be hearing noise produced in the air while underwater, as they do not haul out. It is considered unlikely that noise produced by the LA51 would propagate underwater at sound pressure levels that would be disturbing to a marine mammal.
- Northern Fur Seal (San Miguel Island Stock) and Guadalupe Fur Seal, because although Station Channel Island Harbor would be equipped with the LA51, their operating area does not include San Miguel Island (see Map #21).
- Mediterranean Monk Seal and Saimaa Seal, because their distributions do not overlap with operating areas of Coast Guard units that will be equipped with the LA51.

<sup>3</sup> E = "endangered" under the Endangered Species Act; T = "threatened" under the Endangered Species Act; D = "depleted" under the Marine Mammal Protection Act

<sup>4</sup> Sources: The most recent (as of March 2011) stock assessment reports (SAR) were accessed at: <http://www.nmfs.noaa.gov/pr/sars/species.htm>.

Common/ Scientific Name <sup>2</sup>	Status <sup>3</sup>	General Distribution	Map #s of USCG Area of Operation (See attached Figure MMPA-Q2)	Most Recent Minimum Population Estimate <sup>4</sup>	Current Population Trend	Primary threat(s) to population	Potential Biological Removal (PBR)
Harbor Seal (Gulf of Alaska) ( <i>Phoca vitulina richardsi</i> )		from Cape Suckling to Unimak Pass, including animals throughout the Aleutian Islands	29, 30	44,453	generally declining with some increase seen in Kodiak		1,334
Harbor Seal (Oregon-Washington Coastal) ( <i>Phoca vitulina richardsi</i> )		outer coast of Oregon and Washington	24, 25, 26	22,380	no longer increasing and assumed to have reached optimal sustainable population level (carrying capacity)		1,343
Harbor Seal (Southeast Alaska) ( <i>Phoca vitulina richardsi</i> )		from the Alaska/British Columbia border to Cape Suckling, Alaska (144EW)	27, 28, 29	108,670	variable across stock		3,260
Harbor Seal (Washington Inland) ( <i>Phoca vitulina richardsi</i> )		inland waters of Washington state (including Hood Canal, Puget Sound, and the Strait of Juan de Fuca out to Cape Flattery)	25, 26	12,844	population is thought to be stable		771
Harbor Seal (Western North Atlantic) ( <i>Phoca vitulina richardsi</i> )		New Jersey and north; however stranding records go as far south as Virginia	2, 3, 4, 5, 6	91,546	increasing		2,746

Common/ Scientific Name <sup>2</sup>	Status <sup>3</sup>	General Distribution	Map #s of USCG Area of Operation (See attached Figure MMPA-Q2)	Most Recent Minimum Population Estimate <sup>4</sup>	Current Population Trend	Primary threat(s) to population	Potential Biological Removal (PBR)
Harp Seal (Western North Atlantic) ( <i>Phoca groenlandica</i> )		The southern limit of the harp seal's habitat extends into the U.S. Atlantic Exclusive Economic Zone (EEZ) during winter and spring, with occasional extralimital appearances from Maine to New Jersey.	2, 3, 4	288,000 (includes non-U.S. waters)	stabilized or increasing in U.S. waters	hunting, boat strikes, fishing gear interactions, power plant entrainment, oil spills, harassment, and shooting. Loss of sea ice is a potential threat to their habitat.	unknown for U.S. waters

Common/ Scientific Name <sup>2</sup>	Status <sup>3</sup>	General Distribution	Map #s of USCG Area of Operation (See attached Figure MMPA-Q2)	Most Recent Minimum Population Estimate <sup>4</sup>	Current Population Trend	Primary threat(s) to population	Potential Biological Removal (PBR)
Hawaiian Monk Seal ( <i>Monachus schauinslandi</i> )	E/D	Predominantly on the six Northwestern Hawaiian Islands (NWHI) with subpopulations at French Frigate Shoals, Laysan and Lisianski Islands, Pearl and Hermes Reef, and Midway and Kure Atoll. Small numbers also occur at Necker, Nihoa, and the main Hawaiian Islands (MHI). Critical habitat has been designated under the ESA to include all beach areas, sand spits and islets, including all beach vegetation to its deepest extent inland, and lagoon waters out to a depth of 20 fathoms in designated areas of use.	19, 20	1,183	declining	food limitations, entanglement in marine debris, bycatch in fishing gear, mother-pup disturbance on beaches, and exposure to disease, loss of haul-out and pupping beaches due to erosion, disease outbreaks, male aggression towards females, low genetic diversity	undetermined
Hooded Seal ( <i>Cystophora cristata</i> )		from New Jersey and further north, primarily north of the Gulf of St. Lawrence	2, 3, 4	512,000 (but unknown for U.S. waters)	may be increasing	illegal harvesting and fishery bycatch	15,360 (but unknown for U.S. waters)

Common/ Scientific Name <sup>2</sup>	Status <sup>3</sup>	General Distribution	Map #s of USCG Area of Operation (See attached Figure MMPA-Q2)	Most Recent Minimum Population Estimate <sup>4</sup>	Current Population Trend	Primary threat(s) to population	Potential Biological Removal (PBR)
Northern Elephant Seal (California Breeding Stock) ( <i>Mirounga angustirostris</i> )		California to eastern Aleutian Islands and the Gulf of Alaska	21, 22, 23, 24, 25, 26, 27, 28, 29, 30	74,913	increasing	entanglement in marine debris, fishery interactions, and boat collisions	4,382
Otariids (eared seals or fur seals and sea lions)							
Northern Fur Seal ( <i>Callorhinus ursinus</i> ): Eastern Pacific Stock	D	from southern California (except for San Miguel Island) north to the Bering Sea	21, 22, 23, 24, 25, 26, 27, 28, 29, 30	676,416	recent slight increase but generally declining	predation; changes in the availability of prey; bycatch in fishing gear; habitat change; entanglement in marine debris; disturbance from vessels and humans; climate change; environmental pollutants	14,543
California Sea Lion ( <i>Zalophus californianus californianus</i> ): U.S. Stock		from the U.S./Mexico border extending northward into Canada	21, 22, 23, 24, 25, 26	141,842	rebounds from El Niño events slow due to the effects on breeding female survivorship and environmental factors	incidental catch and entanglement in fishing gear, such as gillnets	8,511

Common/ Scientific Name <sup>2</sup>	Status <sup>3</sup>	General Distribution	Map #s of USCG Area of Operation (See attached Figure MMPA-Q2)	Most Recent Minimum Population Estimate <sup>4</sup>	Current Population Trend	Primary threat(s) to population	Potential Biological Removal (PBR)
Steller Sea Lion ( <i>Eumetopias jubatus</i> ): Eastern U. S. Stock	T/D	east of Cape Suckling, Alaska (144EW), Oregon and California	21, 22, 23, 24, 25, 26, 27, 28, 29	44,404	generally stable or increasing, except for central and southern California populations, which are declining	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	1,998
Steller Sea Lion ( <i>Eumetopias jubatus</i> ): Western U. S. Stock	E/D	west of Cape Suckling, Alaska (144EW), with centers of abundance and distribution in the Gulf of Alaska and Aleutian Islands	29, 30	41,197	stable or possibly declining slightly	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	253
<b>Marine Mammals Under the Jurisdiction of the U.S. Fish and Wildlife Service (USFWS)</b>							
Southern Sea Otter ( <i>Enhydra lutris nereis</i> )		nearshore waters along the mainland coastline of California from San Mateo County to Santa Barbara County	21, 22	2723	increasing	entanglement and drowning in gill nets	8

Common/ Scientific Name <sup>2</sup>	Status <sup>3</sup>	General Distribution	Map #s of USCG Area of Operation (See attached Figure MMPA-Q2)	Most Recent Minimum Population Estimate <sup>4</sup>	Current Population Trend	Primary threat(s) to population	Potential Biological Removal (PBR)
Northern Sea Otter ( <i>Enhydra lutris kenyoni</i> ): Southcentral Alaska Stock		from Cape Yakataga to Cook Inlet including Prince William Sound, the Kenai Peninsula coast, and Kachemak Bay	29, 30	12,774	increasing or stable	competition for shellfish, mariculture, oil and gas transport, logging activities in coastal areas, and commercial fishing	1,277
Northern Sea Otter ( <i>Enhydra lutris kenyoni</i> ): Southeast Alaska Stock		from Dixon Entrance to Cape Yakataga	27, 28	9,136	stable		914
Northern Sea Otter ( <i>Enhydra lutris kenyoni</i> ): Southwest Alaska Stock	T	includes the Alaska Peninsula and Bristol Bay coasts, and the Aleutian, Barren, Kodiak, and Pribilof Islands	30	38,703	declining		387
Sea Otter ( <i>Enhydra lutris kenyoni</i> ): Washington Stock		marine waters of Washington State	25, 26	1,125	approaching equilibrium	drowning in gillnets, shooting, boat strikes, capture and relocation efforts, oil spills, and possibly elevated levels of polychlorinated biphenyls and other toxic contaminants	11

**(4) A description of the status, distribution, and seasonal distribution (when applicable) of the affected species or stocks of marine mammals likely to be affected by such activities;**

See Table MMPA-Q3.

**(5) The type of incidental taking authorization that is being requested (i.e., takes by harassment only; takes by harassment, injury and/or death) and the method of incidental taking;**

Based upon our response to Question (7), use of the LA51 will not result in a take by injury or death, and it is unlikely that harassment will occur. Therefore, we are requesting concurrence with our determination that neither an IHA nor LOA are required. Note that we are consulting with NMFS regarding threatened and endangered species concurrently with this consultation under MMPA.

**(6) By age, sex, and reproductive condition (if possible), the number of marine mammals (by species) that may be taken by each type of taking identified in paragraph (a)(5) of this section, and the number of times such takings by each type of taking are likely to occur;**

Based upon our response to Question (7), we do not feel that use of the LA51 will result in a take by injury or death. The potential for harassment to occur from use of the LA51 is small, keeping in mind that most of the rounds will be used for training as stated in our response to Question (2), during which mitigation measures would be used to reduce the likelihood of encountering hauled out marine mammals (see responses to Questions (11) and (13)). In addition, under normal operating procedures only two rounds per engagement would be used, with a maximum possible use of 10 rounds per engagement. Therefore, we are requesting concurrence with our determination that neither an IHA nor LOA are required. Note that we are consulting with NMFS regarding threatened and endangered species concurrently with this consultation under MMPA.

**(7) The anticipated impact of the activity upon the species or stock;**

Noise attenuation from the 12-gauge LA51 was tested at 15 and 30 feet from the source. At 15 feet from the source, received noise levels ranging from 120 – 122 dB were detected. At 30 feet from the source, received noise levels ranging from 113 – 117 dB were detected (HERC 2007 - FOUO). In general, noise attenuation in air will decrease 6 dB per distance doubled (Richardson et al. 1995). Using these measured sound levels with a simple spherical spreading noise attenuation equation<sup>5</sup>, noise produced by the LA51 would attenuate to 100 dB (the Level B harassment threshold for most pinnipeds) at a maximum of 212 ft and affect a maximum area of 3.24 acres. Attenuation to 90 dB (the Level B harassment threshold for harbor seals) would be at a maximum of 672 ft and affect a maximum area of 32.55 acres (see Table MMPA-Q7). It should be noted that the equation used to solve for these distances from the noise source does not take into account topography, wind, wave and weather conditions, or any other parameters that

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<sup>5</sup>  $S_{\text{new}} = S_{\text{ref}} + (20 * \log[D_{\text{ref}}/D_{\text{new}}])$  where  $D_{\text{ref}}$  = reference distance,  $D_{\text{new}}$  = new distance,  $S_{\text{ref}}$  = reference sound level, and  $S_{\text{new}}$  = new sound level



might result in more rapid noise attenuation. Therefore, the distances used here are considered very conservative. It is likely that distances to the limit of Level B impacts are much shorter, and corresponding areas of impact around the noise source much smaller than reported in Table MMPA-Q7.

Table MMPA-Q7. Distance from source and area affected at pinniped Level B thresholds.

Level B threshold	Distance (range) from source	Surface area affected	Sound source's closest distance to a potential pinniped haulout from firing location (assumption: 30 degree angle of launch) <sup>6</sup>	Sound source's minimum height above level of potential pinniped haulout from firing location (assumptions: 30 degree angle of firing; pinniped haulout height above sea level equal to firing location's height above sea level) <sup>7</sup>
90 dB (harbor seals)	424 – 672 ft	564,497 – 1,417,974 square feet (12.96 – 32.55 acres)	705 – 953 ft	164 ft
100 dB (pinnipeds other than harbor seals)	134 – 212 ft	56,382 – 141,124 square feet (1.29 – 3.24 acres)	415 – 493 ft	

Coast Guard protocol for using the LA51 stipulates that up to two rounds per engagement be used. Sound and light from the bright flash and loud report of the LA51 would last less than 1 second per round (HERC 2007 - FOUO). Since the LA51 would be fired from a Coast Guard vessel, the majority, if not entirety, of the areas reported in Table MMPA-Q7 are expected to be comprised of open water and not of hauled out pinnipeds. As stated previously, the LA51 will not be used intentionally toward land. In addition, the surface area of the Coast Guard vessel from which the LA51 would be fired and/or any unidentified vessels could be within this total area. Marine mammals that may be underwater within this area would not likely be affected by noise or light in air. Regarding noise in particular, sound produced in air that enters water would travel much faster than in air, but only a portion of the sound waves would enter the water, while another portion would be reflected back into the air. Under calm sea conditions, airborne sound can be reflected entirely and not enter the water at all (Richardson et al. 1995). Since it is likely that only a portion of sound waves produced in air would enter the water, its intensity would be expected to be much reduced, and thus is not expected to exceed Level B harassment thresholds for marine mammals underwater.

<sup>6</sup> Assuming conservatively that the LA51 is fired at a 30 degree angle, and given that the airburst and report would occur approximately 328 ft (100 m) from the firing site, the following equation was used to solve for the closest length to a pinniped haulout that Level B noise zone would occur:

$$\text{min length to haulout} = \text{distance from source} + \text{COS}(30 \text{ deg}) * \text{distance to airburst.}$$

A steeper angle than 30 degrees would yield shorter length to a pinniped haulout, and vice versa.

<sup>7</sup> Assuming conservatively that the LA51 is fired at a 30 degree angle, and given that the airburst and report would occur approximately 328 ft (100 m) from the firing site, the following equation was used to solve for the minimum height above the level of a pinniped haulout that Level B noise zone would occur:

$$\text{Height above firing} = \text{SIN}(30 \text{ deg}) * \text{distance to airburst.}$$

A steeper angle than 30 degrees would yield a greater height above the firing, and vice versa.

Pinniped haulouts could be contained in the Level B sphere, however, if the Coast Guard vessel were located close enough and fired the LA51. Haulout areas tend to be beaches, rock outcroppings, or man-made structures such as boat docks and jetties. In order for the zone of Level B sound to touch a haulout area, the LA51 fired from the Coast Guard vessel would have to be closer than 496 feet (0.081 nm) from a haulout for most pinnipeds, and closer than 956 ft (0.157 nm) from a haulout for harbor seals.

In addition, it should be noted that with a 30 degree angle, the noise from the LA51 (which would occur 328 ft downstream of the firing) would be located approximately 164 ft above the height of the firing location. This means that even in the unlikely event that the LA51 would airburst directly over pinnipeds that are hauled out (this would be the closest that the bright flash and loud report would be to pinnipeds), the edge of the Level B zone of influence (based upon 100 dB) would likely not reach them, given that a conservative calculation of Level B distance from source is between 132 and 212 feet (see Table MMPA-Q7). Considering the function of the LA51, to hail and warn unidentified vessels on the water, it seems very unlikely that the LA51 would be fired to airburst over a pinniped haulout.

As stated previously in the response to Question (6), use of the LA51 will not result in a take by injury or death, and it is unlikely that harassment will occur.

**(8) The anticipated impact of the activity on the availability of the species or stocks of marine mammals for subsistence uses;**

Although some stocks of pinnipeds taken in subsistence harvest may co-occur with areas where the LA51 will be used, no adverse impacts on availability of species or stocks of marine mammals used for subsistence are anticipated. Many of the pinniped species harvested for subsistence uses would not be affected by this action because they are out of the areas of operation of units that would be equipped with the LA51, i.e., certain ice seals (bearded seal, ringed seal ribbon seal, and spotted seal), polar bear, and walrus. Although the eastern pacific stock of northern fur seal coincides with the action area for the LA51, subsistence harvest of northern fur seal takes place only on the Pribilof Islands in the Bering Sea (Angliss and Allen 2008), which is outside of the LA51 action area. Distribution of some harbor seal, sea lion and sea otter stocks would coincide with areas of operation of units that will be equipped with the LA51; in particular, stocks that occur within the Gulf of Alaska, and off southeastern Alaska.

Oil, meat and skins of harbor seal, sea lion and sea otter are harvested and used by Alaska Natives for food and raw materials. In recent years subsistence harvest of these marine mammals has generally declined, a trend thought to be caused by fewer hunters, which may be linked to local scarcities of seals and sea lions.

In 2004 in Alaska, 1,822 harbor seals were taken by Alaska Natives, and of that number about 93% came from stocks that coincide with areas of operation for units that will be equipped with the LA51 (845 from the Southeast Alaska stock and 858 from the Gulf of Alaska stock). Angliss and Allen (2008) report that based on data from Alaska Department of Fish and Game for the years 2000 to 2004, the annual number of harbor seal taken from the Gulf of Alaska stock is 795 animals.

In 2004 in Alaska, 216 sea lions were taken by Alaska Natives (Wolfe et al. 2005). The mean annual take for subsistence harvest between 2002 and 2006 is estimated to have been 198 animals in the western DPS (Angliss and Allen 2009).

Sea otters reported as harvested by Alaska Native subsistence hunters (USFWS 2010) show a general decline in harvest since 1989. In the 7 years between 1989 and 2005, average annual harvest was over 1,000 sea otters, compared with 2006 through 2010, when the average annual harvest was about 600. Based upon tagged numbers from 1989-2010 (USFWS 2010), approximately 74% of sea otter harvest in Alaska takes place in areas of operation for units that will be equipped with the LA51.

However, pinnipeds, including harbor seal, sea lion and sea otter, that may be within the areas of operation for the LA51 would be unlikely to be adversely affected, as stated previously in our response to Question (6), due to the very brief nature of potential impacts if the LA51 is used, and the expected low frequency of use of the LA51 under normal operations. In addition, as stated in our responses to Questions (11) and (13), training will not take place in pinniped critical habitat, marine sanctuaries, or in close proximity to known or observed pinniped haulout areas. As stated in our response to Question (2), most of the LA51 rounds fired will likely be those used during training. All attempts will be made to conduct training with the LA51 on designated Department of Defense (DOD) land and water ranges (USN 2011) and areas designated by local law enforcement. Wherever training with the LA51 takes place, current training protocol requires that boats conduct a visual and radar search to ensure no surface or aircraft are within a 500 yard radius prior to commencing the training exercise. A cease fire will be called at any point a vessel or aircraft enters the training area.

**(9) The anticipated impact of the activity upon the habitat of the marine mammal populations, and the likelihood of restoration of the affected habitat;**

As the only substantive impacts from the LA51 are noise and light (both in air), no adverse impact on marine mammal habitat due to the use of the LA51 is expected.

**(10) The anticipated impact of the loss or modification of the habitat on the marine mammal populations involved;**

As the only substantive impacts from the LA51 are noise and light (both in air), no loss or modification of marine mammal habitat due to the use of the LA51 is expected.

**(11) The availability and feasibility (economic and technological) of equipment, methods, and manner of conducting such activity or other means of effecting the least practicable adverse impact upon the affected species or stocks, their habitat, and on their availability for subsistence uses, paying particular attention to rookeries, mating grounds, and areas of similar significance;**

As stated in our response to Question (2), the majority of LA51 rounds will be used during training. All attempts will be made to conduct training on existing DOD training ranges; however, some training may take place outside of DOD ranges. The training manual for the

LA51 shall state: "Prior to conducting any live fire on any body of water, the Coast Guard District Legal staff that has responsibility for the area of operation where the training will be conducted shall be consulted prior to the training in order to ensure compliance with all applicable federal, state and local environmental laws and regulations." In addition, the training manual for the LA51 shall state that wherever training takes place, the Coast Guard commits to the following mitigation measures:

- a. Care shall be taken during training exercises to keep track of empty casings from the LA51 cartridges; casings are expected to fall on the deck of the vessel, and during training exercises shall be captured for proper disposal onshore.
- b. The LA51 shall not be used for training within the limits of pinniped critical habitat, marine sanctuaries, or in close proximity to known or observed pinniped haulout areas.
- c. If marine mammals, including pinnipeds are observed in the water in a training area, training shall cease or be delayed until the marine mammals have moved on. Coast Guard members involved in training shall be advised that federal law prohibits pursuit of marine mammals. Coast Guard members shall not offer food in any form (i.e., including fish) to marine mammals, or touch or swim with them. In no case shall the Coast Guard do anything to hasten the departure of marine mammals observed to be in the area.
- d. The LA51 shall never intentionally be aimed toward a marine mammal in the water or hauled out, or at a bird on the water or in flight.

**(12) Where the proposed activity would take place in or near a traditional Arctic subsistence hunting area and/or may affect the availability of a species or stock of marine mammal for Arctic subsistence uses, the applicant must submit either a "plan of cooperation" or information that identifies what measures have been taken and/or will be taken to minimize any adverse effects on the availability of marine mammals for subsistence uses.**

Use of the LA51 is not expected to adversely affect Arctic subsistence hunting areas and will not affect species used for Arctic subsistence uses, primarily because the Coast Guard does not plan to equip units in the Arctic with the LA51 at this time.

**(13) The suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species, the level of taking or impacts on populations of marine mammals that are expected to be present while conducting activities and suggested means of minimizing burdens by coordinating such reporting requirements with other schemes already applicable to persons conducting such activity. Monitoring plans should include a description of the survey techniques that would be used to determine the movement and activity of marine mammals near the activity site(s) including migration and other habitat uses, such as feeding. Guidelines for developing a site-specific monitoring plan may be obtained by writing to the Director, Office of Protected Resources; and**

As stated in our response to Question (2), the majority of LA51 rounds will be used during training. All attempts will be made to conduct training on existing DOD training ranges; however, some training may take place outside of DOD ranges. The training manual for the

LA51 shall state: “Prior to conducting any live fire on any body of water, the Coast Guard District Legal staff that has responsibility for the area of operation where the training will be conducted shall be consulted prior to the training in order to ensure compliance with all applicable federal, state and local environmental laws and regulations.” In addition, the training manual for the LA51 shall state that wherever training takes place, the Coast Guard commits to the following mitigation measures:

- a. Care shall be taken during training exercises to keep track of empty casings from the LA51 cartridges; casings are expected to fall on the deck of the vessel, and during training exercises shall be captured for proper disposal onshore.
- b. The LA51 shall not be used for training within the limits of pinniped critical habitat, marine sanctuaries, or in close proximity to known or observed pinniped haulout areas.
- c. If marine mammals, including pinnipeds are observed in the water in a training area, training shall cease or be delayed until the marine mammals have moved on. Coast Guard members involved in training shall be advised that federal law prohibits pursuit of marine mammals. Coast Guard members shall not offer food in any form (i.e., including fish) to marine mammals, or touch or swim with them. In no case shall the Coast Guard do anything to hasten the departure of marine mammals observed to be in the area.
- d. The LA51 shall never intentionally be fired toward a marine mammal in the water or hauled out, or at a bird on the water or in flight.

**(14) Suggested means of learning of, encouraging, and coordinating research opportunities, plans, and activities relating to reducing such incidental taking and evaluating its effects.**

The U.S. Navy also plans to use the LA51 and LA52 in U.S. waters. As stated previously, the LA52 is the same as the LA51, except that the projectile airbursts at a fixed 200 meters downrange rather than 100 meters. We have met with them to assess the number of rounds that will potentially be used by them in U.S. waters, and have presented them in our response to Question (1). However, we do not expect any overlap of the use of the LA51 on a local level.

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**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL MARINE FISHERIES SERVICE  
Silver Spring, MD 20910

**JUL 06 2011**

Capt. Robert A. Stohlman  
Chief, Office of Specialized Capabilities  
United States Coast Guard  
2100 Second Street SW  
Washington, D.C. 20593-0001

Dear Capt. Stohlman:

On April 15, 2011, the National Marine Fisheries Service (NMFS), Office of Protected Resources, received a request from the United States Coast Guard (USCG) for a Letter of Concurrence (LOC) documenting that the taking of marine mammals is not likely to occur incidental to the use of the joint non-lethal 12-gauge warning munition (JNLWM), the LA51, during training and for routine operations associated with port security missions (i.e., determining intent of unidentified vessels and enforcing security zones). After review of the LOC request and related documents, we concur with USCG's determination that an incidental take authorization, pursuant to the Marine Mammal Protection Act (MMPA), is not necessary provided that all planned monitoring and mitigation measures, as described in the LOC request and this letter, are implemented.

#### Project Description and Purpose

The USCG proposes to use a joint non-lethal 12-gauge warning munition (JNLWM), the LA51, during training and for routine operations associated with port security missions (i.e., determining intent of unidentified vessels and enforcing security zones). These activities occur year round with no seasonal restrictions. Although the USCG plans to use up to 50,000 LA51 rounds per year, the majority of these would be used during training on terrestrial ranges where co-occurrence with marine mammals would be unlikely.

The LA51 cartridges are shoulder-fired at an elevated angle with standard military 12-gauge shotguns or 40 mm launchers. Each LA51 cartridge is comprised of a pyrotechnic projectile with a pyrotechnic time delay. The projectile detonates approximately 100 meters downrange, at which point a bright flash and loud bang occurs to alert the vessel's operators to the presence of USCG personnel attempting to determine the vessel's intentions. Smoke may also be observed briefly 100 meters downrange. The use of the LA51 during encounters with unidentified vessels would be limited to two rounds per encounter and, based upon USCG records, encounters would likely be limited to less than 200 per year.

#### Marine Mammals in Area of Interest

The use of the LA51 only has the potential to affect marine mammals that spend a substantial amount of time out of the water (i.e., pinnipeds and sea otters). The sea otters that may be found within the activity area are under the jurisdiction of the U.S. Fish and Wildlife Service and will not be discussed further in this letter. Marine mammal species under NMFS'



jurisdiction that could be affected by the use of the LA51 include the following nine species of pinnipeds:

#### Phocids

- gray seal
- harbor seal
- harp seal
- Hawaiian monk seal
- hooded seal
- northern elephant seal

#### Otariids

- northern fur seal
- California sea lion
- Steller sea lion

#### Potential Impacts to Marine Mammals

NMFS and USCG have identified several potential impacts associated with the use of LA51 warning munitions. The discharge of the LA51 presents the possibility of directly impacting marine mammals; however, the probability of this occurring is considered remote because the standard procedure is to fire the munition at an elevated angle (at least 45° to the horizon), and the munition will detonate in the air before reaching the surface of the water. In addition, the bright light and loud bang produced upon detonation could disturb marine mammals near the point of detonation. The amount of sound energy entering the water is expected to be very small, and the bright flash would be very similar to a naturally occurring lighting flash at night, which would not be easily visible underwater during daytime. These effects would be discernable above water to pinnipeds that may be hauled-out near the detonation, but NMFS agrees with USCG that the 170 dB in-air source level will attenuate rapidly to the point that hauled-out pinnipeds are not expected to be affected by the sound source. NMFS does not anticipate any response by hauled-out pinnipeds to the flash produced by the detonation. After detonation, the remains of the exploded munition fall into the water, and there is a possibility that marine mammals could ingest this debris and become poisoned by toxic components, enter respiratory distress, or experience gastrointestinal blockage. NMFS acknowledges that chemical residues and debris from detonated munitions could potentially impact marine mammals, but due to the minute amounts of contaminants entering the water column, their rapid dilution upon entering the marine environment, and implementation of mitigation and monitoring measures, the taking of marine mammals is not likely to occur.

#### Mitigation and Monitoring

As a precaution, the USCG shall implement the following mitigation and monitoring measures to ensure that taking of marine mammals would not occur during the use of the JNLWM:

- Care shall be taken during training exercises to keep track of empty casings from the LA51 cartridges; casings are expected to fall on the deck of the vessel, and during the training exercise shall be captured for proper disposal onshore.



- The LA51 shall not be used for training within the limits of designated pinniped critical habitat, marine sanctuaries, or in close proximity to known or observed pinniped haulouts.
- If marine mammals, including pinnipeds are observed in the waters of a training area, training shall cease or be delayed until the marine mammals have moved on. USCG members involved in training shall be advised that federal law prohibits pursuit of marine mammals.

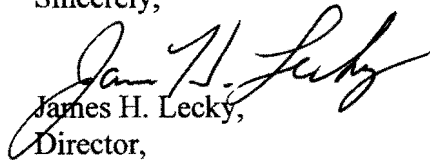
All marine mammal sightings associated with range sweeps shall be documented by noting date, time, number, species, location, and direction. Any action taken related to suspension of training activities will be noted. If no marine mammal or other protected species (e.g., sea turtles) are sighted, a negative report shall be submitted with all of the above information except species data.

- The LA51 shall never intentionally be aimed toward a marine mammal in the water or hauled out.

#### Determination

Based on the description of the specified activities and implementation of the proposed mitigation and monitoring measures, NMFS concurs with the USCG's determination that marine mammal take, including Level B harassment, is unlikely to occur as a result of the specified activities; thus, an MMPA incidental take authorization is not necessary. If the USCG does not implement the aforementioned mitigation and monitoring measures, then NMFS' concurrence does not apply. Should it be determined that during operations involving the use of LA51 munitions, harassment to marine mammals does occur despite implemented mitigation, then NMFS recommends the USCG re-initiate discussions with NMFS' Office of Protected Resources to implement further mitigation to avoid take or apply for an incidental take authorization under section 101(a)(5)(A) or (D) of the MMPA. For additional information on this action, please contact Brian D. Hopper at 301-713-2289.

Sincerely,

  
James H. Lecky,  
Director,  
Office of Protected Resources,  
National Marine Fisheries Service.

U.S. Department of  
Homeland Security

United States  
Coast Guard



Commandant  
United States Coast Guard

2100 Second Street, S.W.  
Washington, DC 20593-0001  
Staff Symbol: CG-721  
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Email: Robert.A.Stohlman@uscg.mil

16613  
May 26, 2011

Mr. James H. Lecky, Director  
Office of Protected Resources  
NOAA Fisheries Service  
1315 East-West Highway, 13<sup>th</sup> Floor  
Silver Spring, MD 20910

**Subject: LA51 – Request for Concurrence on Our Determinations of Effect Under the Endangered Species Act and 50 CFR Part 402**

Dear Mr. Lecky:

I am writing to request concurrence with our determinations of effect, and thereby complete consultation under the Endangered Species Act (ESA) and ESA regulations at 50 CFR Part 402 for the U.S. Coast Guard's (USCG) use of the LA51. On August 10, 2010, the USCG requested a list of threatened and endangered species and critical habitats under the National Marine Fisheries Service's (NMFS) jurisdiction that may be affected in the areas where the USCG is proposing to use the LA51. On August 12, 2011, the USCG received a species list via e-mail from NMFS (Jason Kahn). Pre-consultation assistance then progressed through a series of meetings with NMFS (January 7, February 9 and May 24, 2011) during which the LA51 was described in more detail and potential effects on listed species were discussed.

The LA51 is a joint non-lethal 12-gauge warning munition that will be used by the Coast Guard onboard surface assets (small boats and cutters) within areas under Coast Guard jurisdiction along the U.S. continental coastline and inland operation areas. The inland operating areas will include existing harbor infrastructure and adjacent inland waters including the St. Lawrence Seaway, Great Lakes, and western and inland river systems. The LA51 will not be fired with the intention of striking or injuring personnel or damaging their vessels or other property. Rather, it will be used during training and for port security missions during routine operations (i.e., determining intent of unidentified vessels, and enforcing security zones.) As such, the LA51 will be used only from a Coast Guard vessel toward a target on the water, and it will not be used intentionally toward land.

Each LA51 cartridge is comprised of a projectile with a pyrotechnic time delay. The LA51 will be fired from the deck of a Coast Guard vessel, leaving behind a casing. The projectile will then airburst at a fixed point 100 meters downrange, at which point a bright flash and loud report will occur. Smoke may also be observed briefly 100 meters downrange. The use of LA51 by the Coast Guard will be cumulative with the use of the LA51 and LA52 by the U.S. Navy (see Table 1). The LA52 is the same as the LA51, except that the projectile airbursts at a fixed 200 meters downrange rather than 100 meters. As stated

**Subject: Request for Concurrence under ESA – LA51**

previously, the LA51 will only be used from water toward a target on water; however, sound and light from the bright flash and loud report of the LA51 could reach coastal land.

The Coast Guard plans to use up to 50,000 LA51 rounds per year spread out over all U.S. waters mentioned above. Four units have been equipped with the LA51 since April, 2010 as part of a pilot study, and since that time until present, no situation has required use of the LA51; hence the estimate of 50,000 rounds per year is likely to be high. For the 92 units that will have the munition and are conducting port security missions, we estimate an average of 144 escort missions per year per station, and two rounds per engagement. The Navy's use of the LA51 and LA52 coincides with the same geographic areas where the LA51 will be used by the Coast Guard. This proposed action does not involve construction, additional vessels, additional missions, or augmentation of the Coast Guard's normal area of operation.

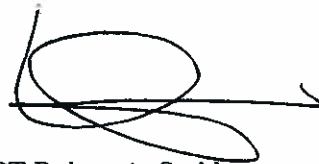
Table 1. Estimated Annual Use of the LA51 and LA52 in U. S. Waters

Agency	Within 3 nm (includes inland waters)	Outside of 3 nm	Within 12 nm (does not include inland waters)	Outside of 12 nm	Total Annual Use in All U.S. Waters (including inland waters and out to 200 nm)
Coast Guard	approximately 26,496 rounds	approximately 23,500 rounds	Not known	Not known	50,000 rounds
Navy	Not known	Not known	1,500 rounds	6,500 rounds	8,000 rounds

On April 14, 2011, the USCG submitted a request for a Letter of Concurrence (LOC) under the Marine Mammal Protection Act (MMPA) to NMFS (Shane Guan). On May 13, 2011 the USCG was told via e-mail that NMFS concurs with the USCG's determination that a take permit under the MMPA is not warranted. The request for a LOC submitted by USCG included a detailed analysis of the potential effects of the LA51 on marine mammals in the action area, including species listed under the ESA. We believe that this document contains an evaluation of potential impacts on federally threatened and endangered species sufficient to be in accordance with the provisions of the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and associated regulations at 50 CFR Part 402. Based on the analysis detailed in our April 14, request to NMFS for an LOC, we have determined that our proposed use of the LA51 *may affect, but is not likely to adversely affect* federally listed threatened and endangered species. We request your concurrence on this determination.

If you have any questions, please contact Melissa Perera at [Melissa.E.Perera@uscg.mil](mailto:Melissa.E.Perera@uscg.mil), or (202) 372-1446. Thank you for your assistance.

Very respectfully,



CAPT Robert A. Stohlman  
Chief, Office of Specialized Capabilities

cc: Mr. Brian Bloodworth, Endangered Species Division



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL MARINE FISHERIES SERVICE  
Silver Spring, MD 20910

**JUN 22 2011**

CAPT Robert A. Stohlman  
Chief, Office of Specialized Capabilities  
United States Coast Guard  
2100 Second Street SW  
Washington, D.C. 20593-0001

Dear CAPT Stohlman:

This letter responds to your request for concurrence on the use of LA51 warning munition, in accordance with Section 7 of the Endangered Species Act (ESA) of 1973, as amended. After review of information provided by the U.S. Coast Guard (USCG) through informal consultation, the National Marine Fisheries Service (NMFS) believes no listed species or critical habitats under its jurisdiction will be adversely affected by the nationwide annual use of up to 50,000 rounds of LA51 munition (mostly in association with training activities that do not co-occur with listed species or their critical habitats).

The purpose of the LA51 munition deployment is to determine the intent of unidentified vessels. The munition would be deployed from USCG vessels in association with the approach of a vessel whose intentions have not been determined. Discharge would occur from a 12-gauge shotgun at an elevated angle with detonation approximately 100 m away. Detonation would result in a bright white flash and loud sound that are designed to alert the vessel's operators to the presence of USCG personnel attempting to determine the vessel's intentions. Although up to 50,000 rounds may be deployed annually, the vast majority of these would be used during training on terrestrial ranges that would not co-occur with listed resources. The use of LA51 munition during encounters with unidentified vessels would be limited to two rounds per encounter and, based upon USCG's records, encounters would likely be limited to less than 200 per year.

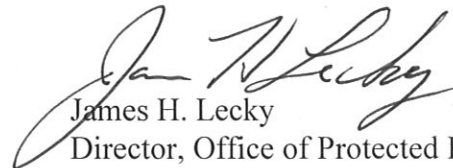
NMFS and USCG considered several potential stressors associated with the use of LA51 munition. The discharge of LA51 presents the possibility listed species being struck by the munition. The probability of this occurring is insignificant given that standard procedure is to discharge the munition at a 45° angle to the horizon and that the munition detonates before potentially reaching sea level. The detonation of the munition would produce a loud bang and a bright flash that could harass listed individual animals near the detonation. The amount of sound energy entering the ocean is expected to be very small and the bright flash is expected to be similar to a lighting flash at night or not easily visible underwater during daytime. However, these effects would be discernable above water to pinnipeds (Steller sea lions and Hawaiian monk seals) hauled-out near the detonation. We agree with USCG that the 170 dB source level in air will attenuate rapidly to the point that we do not expect listed pinnipeds to be hauled-out close enough to be affected by the sound source. We do not anticipate any response to the flash



by hauled-out pinnipeds. Once the remains of the detonated munition fall into the water, there is the possibility that listed individuals could ingest remaining parts and either be poisoned by toxic components, enter respiratory distress by ingesting parts, or experience gastrointestinal blockage by ingested parts. NMFS considered each of these possibilities and believes the possibility of each is insignificant. Remains of the detonated munition would contain chemical residues, and several critical habitats have designated primary constituent elements related to water quality which significant amounts of chemicals can impair. NMFS acknowledges that chemical residues from detonated munitions may affect, but are not likely to adversely affect critical habitat due to the minute amounts of contamination and rapid dilution when chemicals from LA51 expended munition enter the marine environment.

Based on the best available information, NMFS concurs with USCG that deployment of LA51 munition may affect both the eastern and western DPSs of Steller sea lions and Hawaiian monk seals, listed under the ESA, but is not likely to adversely affect these or any other listed resources under its jurisdiction. This concludes consultation for this proposed project in accordance with 50 C.F.R. §402.14(b)(1). Consultation must be reinitiated if new information becomes available revealing the effects of the action on listed resources in a manner or to an extent not previously considered, the project plans change, if the action is subsequently modified in a manner that causes an effect to listed resources that was not considered, or if a new species or critical habitat is designated that may be affected by this action.

Sincerely,



James H. Lecky  
Director, Office of Protected Resources