

FINAL

**ENVIRONMENTAL ASSESSMENT OF THE
STAND-UP AND OPERATIONS OF THE
MARITIME SAFETY AND SECURITY TEAM
GALVESTON, TEXAS**



**COMMANDANT
UNITED STATES COAST GUARD (G-OPD)**

FEBRUARY 2003

ABBREVIATIONS AND ACRONYMS

%HA	Percent Highly Annoyed	MPA	Marine Protected Area
°F	degrees Fahrenheit	MSST	Marine Safety and Security Team
ANSI	American National Standards Institute	NAAQS	National Ambient Air Quality Standards
AQCR	Air Quality Control Region	NEPA	National Environmental Policy Act
CAA	Clean Air Act	NMFS	National Marine Fisheries Service
CEPRA	Coastal Erosion, Planning, and Response Act	NO ₂	Nitrogen Dioxide
CEQ	Council on Environmental Quality	NO _x	Nitrogen Oxides
CERCLA	Comprehensive, Environmental, Response, Compensation, and Liability Act	NRHP	National Register of Historic Places
		NWR	National Wildlife Refuge
		O ₃	Ozone
CFR	Code of Federal Regulations	P.L.	Public Law
CO	Carbon Monoxide	Pb	Lead
COMDTINS	Coast Guard Commandant Instruction	PM ₁₀	particulate Matter ≤ 10 microns in diameter
CWA	Clean Water Act	ppm	parts per million
dB	decibel	PSD	Prevention of Significant Deterioration
dBA	A-weighted decibel	PSU	Port Security Unit
DNL	Day-Night Average Sound Level	RBS	Response Boat-Small
DoD	Department of Defense	ROI	Region of Influence
DOT	Department of Transportation	SAR	Search and Rescue
EA	Environmental Assessment	SARA	Superfund Amendments and Reauthorization Act
EEZ	Exclusive Economic Zone		
EFH	Essential Fish Habitat	SIP	State Implementation Plan
EIS	Environmental Impact Statement	SO ₂	Sulfur Dioxide
EO	Executive Order	TNRCC	Texas Natural Resources Conservation Commission
EPA	Environmental Protection Agency		
ESA	Endangered Species Act	U.S.	United States
FEMA	Federal Emergency Management Agency	U.S.C	United States Code
		USACE	U.S. Army Corps of Engineers
HAPC	Habitat Area of Particular Concern	USCG	United States Coast Guard
H.R.	House Resolution	USFWS	United States Fish Wildlife Service
Hz	Hertz	USS	United States Ship
lbs	pounds	VOC	Volatile Organic Compound
mg/m ³	milligrams per cubic meter	µg/m ³	micrograms per cubic meter
MMPA	Marine Mammal Protection Act	µPa	microPascal
MOA	Memorandum of Agreement		
MOU	Memorandum of Understanding		

USCG
ENVIRONMENTAL ASSESSMENT

FOR

COAST GUARD LOCATION AND OPERATION OF MARITIME SAFETY AND
SECURITY TEAM IN GALVESTON, TEXAS

This USCG environmental assessment was prepared in accordance with Commandant's Manual Instruction M16475.1D and is in compliance with the National Environmental Policy Act of 1969 (P.L. 91-190) and the Council of Environmental Quality Regulations dated 28 November 1978 (40 CFR Parts 1500-1508).

This environmental assessment serves as a concise public document to briefly provide sufficient evidence and analysis for determining the need to prepare an environmental impact statement or a finding of no significant impact.

This environmental assessment concisely describes the proposed action, the need for the proposal, the alternatives, and the environmental impacts of the proposal and alternatives. This environmental assessment also contains a comparative analysis of the 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 the environmental assessment.

3/6/03 Date	<u>Ms. Kelly Kelley</u> Preparer/ <u>Environmental Project Manager</u> (as applicable)	<u>Env. Protection Specialist</u> Title/Position
6 MARCH 03 Date	<u>[Signature]</u> **Environmental Reviewer	<u>CHIEF - SEC-3</u> Title/Position

In reaching my decision/recommendation on the USCG's proposed action, I have considered the information contained in this environmental assessment on the potential for environmental impacts.

10/4/03 Date	<u>[Signature]</u> , CAPT Responsible Official	<u>[Signature]</u> Title/Position
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* The USCG preparer signs for NEPA documents prepared in-house. The USCG environmental project manager signs for NEPA documents prepared by an applicant, a contractor, or another outside party.

** Signature of the Environmental Reviewer for the Bridge Administration Program may be that of the preparer's.

USCG

FINDING OF NO SIGNIFICANT IMPACT

FOR

U.S. COAST GUARD LOCATION AND OPERATIONS OF THE MARITIME SAFETY AND SECURITY TEAM IN GALVESTON, TEXAS

The proposed action includes the standing up and operations of one Maritime Safety and Security Team (MSST) located at 7707 Harborside Drive, Galveston, Texas. The MSST will consist of 71 active duty personnel and 33 reserve personnel, and six Response Boats-Small (RBS). All six RBS can, but will not necessarily, be operating at once. The RBS will have outboard motors, will be no larger than 25 feet, will be highly maneuverable, will be capable of quickly reaching and sustaining high speeds (in excess of 40 knots), and will carry between three and six crewmembers. Other requirements will include, but not be limited to, communication equipment, protection for the crew, and defensive weaponry. When not in use, RBS may be placed on trailers.

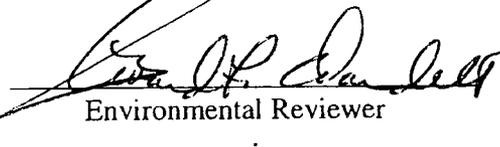
The MSST will normally conduct operations in the Port of Galveston and the Intra Coastal Waterway from Port Arthur to approximately Texas City. The MSST is intended for domestic operations, in support of the Group or Captain of the Port (COTP). Operations will closely parallel existing USCG traditional port security operations, but will provide complementary, non-redundant capabilities that will be able to close significant readiness gaps in our nation's strategic ports. The MSST will escort a variety of vessels and maintain specific security zones in the Port of Galveston and the Intra Coastal Waterway. They will be capable of operating seven days a week, 24 hours a day, in all weather conditions. They will also operate with, and be supported by, both military and civilian government organizations, commercial and non-government entities. The MSST will be transportable via land transportation, USCG cutter, and USCG or other military aircraft.

This project has been thoroughly reviewed by the U.S. Coast Guard (USCG) 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 contractor prepared environmental assessment which has been independently evaluated by the USCG 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 USCG takes full responsibility for the accuracy, scope, and content of the attached environmental assessment.

6 MARCH '03

Date


Environmental Reviewer

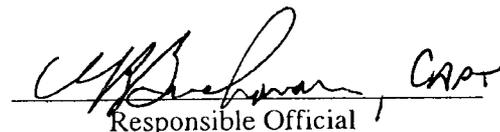
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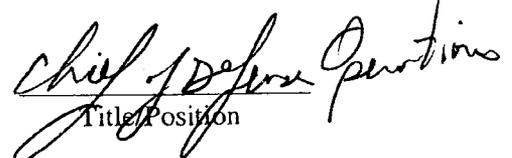
Title/Position

I have considered the information contained in the EA, which is the basis for this FONSI. Based on the information in the EA and this FONSI document, I agree that the proposed action as described above, and in the EA, will have no significant impact on the environment.

10 MAR '03

Date


Responsible Official


Chief of Defense Operations
Title/Position

FINAL

**ENVIRONMENTAL ASSESSMENT OF THE
STAND-UP AND OPERATIONS
OF THE
MARITIME SAFETY AND SECURITY TEAM
GALVESTON, TEXAS**

Contract No.: DTUSCG23-00-D-ADW141
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1. Purpose of and Need for the Action

1.1 Introduction

The United States Coast Guard (USCG) is this nation's oldest maritime agency. Throughout its long history, the USCG (and its predecessors) has responded when called upon to perform its many and varied missions: from its earliest days as a "tax-collector" for the newly formed United States (U.S.), through its role in every major military conflict, to its activities to stop illegal aliens and narcotics, and its long history of search and rescue of people from the sea. The USCG's multi-mission responsibilities stem from the combined goals of its five core-founding agencies now joined under one agency. The former agencies include: the Revenue Cutter Service, the Lighthouse Service, the Steamboat Inspection Service, the Bureau of Navigation, and the Life-saving Service. Prompted by economics, maritime disasters, and war, a series of laws were passed defining each former agency's missions and authority.

Today, the USCG operates in all maritime regions:

- Approximately 95,000 miles of U.S. coastlines, including inland waterways and harbors
- More than 3.36 million square miles of Exclusive Economic Zone (EEZ) and U.S. territorial seas
- International waters and other maritime regions of importance to the U.S. for missions such as search and rescue, law enforcement, alien migrant interdiction, and national defense

In October 1995, the Secretaries of Transportation and the Department of Defense (DoD), the Chief of Naval Operations, and the Commandant of the USCG signed a Memorandum of Agreement (MOA) identifying the unique national defense capabilities of the USCG:

- Military Environmental Response Operations
- Peacetime Military Engagement
- Maritime Interception Operations
- Coastal Sea Control Operations
- Port Operations, Security and Defense

Domestic port security and protection has long been a core USCG mission. After the end of the Cold War, and in the wake of Desert Shield/Desert Storm, Combatant Commanders recognized a need for deployable Port Security and Harbor Defense units. The USCG's Maritime Defense Zone mission was expanded to include overseas ports and Port Security Units (PSUs) were formed to meet that need. The PSU's missions can be divided into three broad categories:

- Sea Control and Harbor Approach
- Harbor Approach Defense
- Harbor Defense/Port Security

Over the past several years, the PSUs have been deployed multiple times. Last year, PSUs were deployed to the Arabian Gulf in the wake of the United States Ship (USS) Cole incident.

The events of September 11, 2001 significantly changed the nation's homeland security posture. Terrorism is a clear and present danger to the U.S. The USCG and DoD are currently partners in two major actions: Operation Enduring Freedom and Operation Noble Eagle.

Operation Enduring Freedom generally refers to U.S. military operations associated with the war on terrorism outside the U.S. USCG PSUs have deployed in support of this operation.

Operation Noble Eagle generally refers to U.S. military operations associated with homeland defense and civil support to federal, state, and local agencies in the U.S., and includes the increased security measures taken after the September 11, 2001 terrorist attacks. The operation involves joint agency coordination and cooperation to ensure our nation and borders are protected from future attacks. An increased USCG maritime security presence will prevent and deter those who would cause harm to innocent Americans.

The USCG has dramatically shifted its mission activity to reflect its role as a leader in Maritime Homeland Security. The USCG's heightened maritime security posture will remain in place indefinitely.

1.2 Coast Guard Missions

The USCG is unique in that it is the only maritime service with regulatory and law enforcement authority, military capabilities, and humanitarian operations. These missions may occur 24 hours a day in severe environments, from arctic to tropical, whenever and wherever the USCG's presence is required. USCG tasks in the maritime aspects of major theater warfare encompass critical elements of naval operations in littoral regions, including port security and safety, military environmental response, maritime interception, coastal control, and force protection. More than two centuries of littoral warfare operations at home and overseas have honed the USCG's skills most needed in support of the nation's military and naval strategies for the 21st century. The USCG's missions can be described in four general categories: maritime law enforcement, maritime safety, national defense, and marine environmental protection.

1.2.1 Maritime Law Enforcement

Since its creation in 1790 to enforce tariff laws, law enforcement has been a primary responsibility of the USCG. Section 14 United States Code (U.S.C.) 89(a) specifically gives USCG officers and petty officers

the unique authority to make inspections, searches, seizures, and arrests for violations of laws of the U.S. The USCG engages in several areas of law enforcement:

- Living Marine Resources Law Enforcement
- Drug Interdiction
- Alien Migrant Interdiction Operations
- General Law Enforcement

As a lead federal agency for at-sea enforcement of national fisheries and marine resource laws and international treaties, the USCG conducts a number of at-sea enforcement activities. Enforcement is carried out to benefit fisheries, to protect important marine habitat, and to protect threatened and endangered species, including: the northern right whale, Kemp's Ridley sea turtle, Hawaiian monk seal, Steller sea lion, and harbor porpoise. Between September 11, 2001 and September 10, 2002, the USCG responded to over 4,000 oil and chemical spills, interdicted 3,876 illegal immigrants, seized 111,903 pounds (lbs) of cocaine, and seized 37,772 lbs of marijuana (USCG News 2002).

1.2.2 Maritime Safety

The USCG's Search and Rescue (SAR) and International Ice Patrol services are essential to protecting human lives and property. The USCG averages 50,000 calls for assistance each year and saved approximately 4,009 lives in 2001 (Fact File 2002). Between September 11, 2001 and September 10, 2002, the USCG conducted over 31,500 SAR missions, assisted over 39,000 people in distress, and saved 3,281 human lives (Fact File 2002). The USCG responds to all calls of distress, whether from fishing and recreational boats, downed aircraft, or freighters and tankers. Additionally, the USCG continues to support programs to ensure that boats are safe for public use and that they contain appropriate safety equipment.

1.2.3 National Defense

Today, although included within the Department of Transportation (DOT), the USCG remains an armed force with a national defense mission. Examples of this national defense mission include providing peacetime presence, crisis-response, and combat operations across the spectrum of military engagement scenarios, from small-scale contingencies to major theater wars. These missions are essential military components to support joint forces in peacetime, crisis, and war:

- Military Environmental Response Operations
- Peacetime Military Engagement
- Maritime Interception Operations

- Coastal Sea Control Operations
- Port Operations, Security and Defense

Ninety-five percent of the U.S. annual commerce passes through our ports and maritime industries contribute \$742 billion per year to the gross national product (USCG 2002a). Between September 11, 2001 and September 10, 2002, the USCG conducted approximately 11,000 Port State Control boardings of foreign flagged vessels (annual average) (Fact File 2002). In addition, the USCG conducted boat and air patrols, escorted vessels in to and out of ports, and established security zones (USCG 2002b).

1.2.4 Marine Environmental Protection

The USCG protects critical natural resources in the 2.25 million square mile U.S. EEZ and provides a wide range of prevention, protection, containment, and recovery activities and operations. The USCG also responds to oil spills of all sizes, funds and often directs their cleanup, and assists in identifying the responsible parties. In the post September 11, 2001 era, an increase in the need for pollution response activities is likely because it is suspected that terrorist targets and tactics will focus on water supply and infrastructure. Between September 11, 2001 and September 10, 2002, the USCG responded to 4,000 oil and chemical spills (USCG News 2002).

1.3 Purpose and Need for the Action

In addition to meeting its other mandated missions, the USCG's role in homeland security has recently received extra emphasis. As noted, this mission is not new for the USCG. While it is more visible today than it was prior to the tragic events of September 11, 2001, it remains just as important as when the USCG first began protecting our national sovereignty 212 years ago (USCG 2002a).

As part of Operation Noble Eagle, the USCG is at a heightened state of alert, protecting more than 361 ports and 95,000 miles of coastline, America's longest border. The USCG continues to play an integral role in maintaining the operations of our ports and waterways by providing a secure environment in which mariners and the American people can safely go about the business of living and working (USCG 2002a).

In the wake of the September 11, 2001 terrorist attacks, the USCG immediately mobilized more than 2,000 reservists in the largest homeland defense and port security operation since World War II. Between September 11, 2001 and June 7, 2002, the USCG Auxiliary (i.e., trained volunteers) has contributed approximately 210,000 volunteer hours to support USCG missions (USCG 2002a). The USCG has increased its vigilance, readiness, and patrols to protect the country's 95,000 miles of coastline, including the Great Lakes and inland waterways.

The USCG has several roles in defense of homeland security:

- Protect ports, the flow of commerce, and the marine transportation system from terrorism
- Maintain maritime border security against illegal drugs, illegal aliens, firearms, and weapons of mass destruction
- Ensure that U.S. military assets can be rapidly deployed and re-supplied, both by keeping USCG units at a high state of readiness, and by keeping marine transportation open for the transit assets and personnel from other branches of the armed forces
- Protect against illegal fishing and indiscriminate destruction of living marine resources, prevention and response to oil and hazardous material spills, both accidental and intentional
- Coordinate efforts and intelligence with federal, state, and local agencies

The Maritime Safety and Security Team (MSST) proposal is a direct response to September 11, 2001. The MSSTs are urgently needed to improve existing domestic port security capabilities. While the MSSTs will be used similarly to the PSUs to augment existing USCG forces in the U.S., the MSSTs will not duplicate existing protective measures. They will provide complimentary, non-redundant capabilities that will be able to close significant readiness gaps in our nation's strategic ports (USCG 2002c; USCG 2002d).

Under Public Law (P.L.) 107-87, an emergency response supplemental enacted by Congress, monies were appropriated to fund USCG anti-terrorist activities, including the mandated establishment and operation of four mobile MSSTs (funds are available until September 30, 2003). Congress considered this issue carefully. Initially, the Senate suggested six MSSTs:

“While the President's request includes ‘funding’ for the establishment of two active duty Maritime Safety and Security Teams, the Committee finds this request to be insufficient. The request would provide for only one team for both the Atlantic and Pacific operating areas, providing little permanent relief to regular operating units so that they can, once again, pursue all of their multi-mission responsibilities. As such, the Committee has provided ‘funding’ and 522 full-time permanent staff years for the establishment of six such teams. This appropriation will allow for one team with area-wide responsibilities on both the East and West coast. In addition, the Committee directs that the four remaining teams be located in those Port areas that present the greatest Port Security challenges, especially those ports with a substantial concentration of critical Department of Defense facilities and a shortage of alternative floating assets. Those units will be responsible solely to the Port Security needs in those ports and should allow the other operating units in those regions to return to their other critical responsibilities” (Congress 2001a).

The final version of the law (P.L. 107-117 [House Resolution (H.R.) 3338]) contained a compromise reached in the conference committee. The report states:

“Maritime safety and security teams. The conferees agree that funding for maritime safety and security teams is for establishment of 348 full-time permanent positions for four new teams, including two teams with area-wide operating responsibility (one each for the Atlantic and Pacific operating areas) and two teams to exclusively serve those port areas presenting the greatest port security challenges, especially those ports with a substantial concentration of critical Department of Defense facilities and a shortage of alternative floating assets. The Senate bill included funds for two area-wide teams and four teams for specific ports. The conferees have no objection to the Commandant co-locating the area-wide teams with the port specific teams if he believes that economies of scale and programmatic benefits will result” (Congress 2001b).

In order to determine which ports required additional protection, the USCG, working with other agencies, developed a matrix to assess and “grade” each U.S. port to aid in the selection of the four most critical ports to stand up. The elements (presented in alphabetical order) that were assessed included (but were not limited to) (USCG 2002c):

- Cargo Value
- Cargo Volume
- Domestic Cargo
- Hazardous Cargo
- Military Presence
- Population

As a result, the first four ports to be assigned MSSTs are Seattle, Washington; Chesapeake, Virginia; San Pedro, California; and Galveston, Texas. This Environmental Assessment (EA) analyzes the potential impacts of the stand-up and operations of the MSST, Galveston, Texas.

1.4 Project Scope and Area

This EA addresses the MSST to be located in Galveston, Texas. The MSST will be located at 7707 Harborside Drive, Galveston (see Figure 1-1). This is a light industrial area between the Causeway and the City of Galveston. The building is primarily modular with a brick face. There is a detached shed and parking area behind the main building where the boat engines will receive light maintenance. A large boat shelter (i.e., canopy) will be placed in front of the existing shed. This canopy will provide shade for a boat and the crew while performing minor maintenance activities. The parking lot can be positively controlled through an automated entrance gate and the building has its own security system.

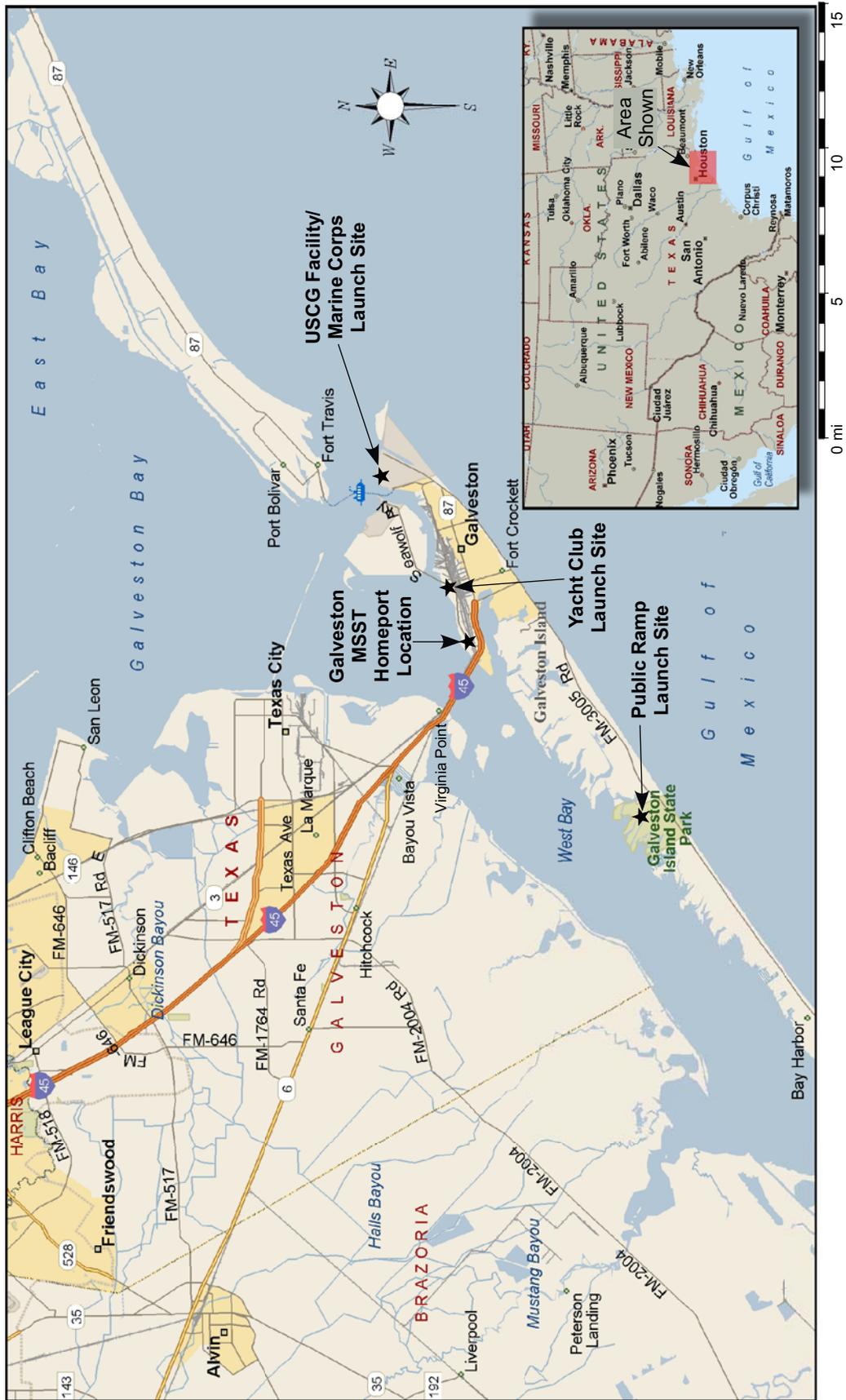


Figure 1-1. Galveston MSST Location Map

The MSST will operate in the Port of Galveston. The Port of Galveston is a natural deepwater harbor located on the north side of Galveston Island at the entrance to Galveston Bay, and alongside the Gulf Intra Coastal Waterway, with property and facilities on adjacent Pelican Island. It is approximately nine miles from the open sea or 30 minutes sailing time on a year-round, ice-free harbor. The Galveston Channel has an authorized minimum depth of approximately 40 feet. It is 1,200 feet wide at its narrowest point and provides direct access to the open Gulf of Mexico. The 2001 statistics for the Port of Galveston are: 4,270,734 total tonnage, 625 ships and 265 barges and 148,805 cruise passengers with 94 cruise ship calls. The top five-import/inbound trading partners in 2001 were Guatemala, Belgium, Peru, England, and South Korea. The top five-export/outboard trading partners in 2001 were Egypt, Israel, Mexico, Nigeria, and Jordan (Port 2002a).

The Response Boats-Small (RBS) will be launched from the Galveston Yacht Club, a public ramp at the southern end of Galveston Island, and a shared ramp with the U.S. Marine Corps, located adjacent to USCG Base Galveston. The MSST will normally conduct operations in the harbor or port to which it is assigned. However, the MSST will also be transportable via land transportation, USCG Cutter, and USCG or other military aircraft. In an emergency, the MSST could be re-located to another port. The location and duration of this relocation is impossible to predict and would depend on a number of currently unknown circumstances. Therefore, potential impacts from these types of operations will also be speculative in nature. There are too many variables to adequately assess all potential ports, however, it is expected that the MSST would operate a majority of the time in its homeport. Therefore, this EA focuses on the potential impacts in the Port of Galveston and the Intracoastal Waterway, approximately from Port Arthur to Texas City.

1.5 Public Involvement Process

An advertisement in The Galveston County Daily News on May 13, 2002 announced the USCG's intent to prepare an EA, giving information on the proposal and seeking comments. Letters to interested parties also were mailed to appropriate federal, state, and local agencies (see Appendix A [Interested Party Letter]; Appendix B [Interested Party Mailing List]; Appendix C [Newspaper Announcement]; and Appendix D [Responses to Interested Party Letter]). The USCG will accept comments on this proposed action throughout the environmental process and an announcement on the availability of the Final EA also will be placed in The Galveston County Daily News.

1.6 Organization of the EA

Acronyms and abbreviations are used throughout the document to avoid unnecessary length. A list of acronyms and abbreviations used throughout this document can be found on the inside cover of this EA.

Chapter 1: Purpose and Need for the Action. As a NEPA-required discussion, this chapter provides an overview of the action, describes the area in which the Proposed Action would occur, and explains the public involvement process.

Chapter 2: Proposed Action and Alternatives. This chapter describes the Proposed Action, alternatives considered, and the No Action Alternative.

Chapter 3: Affected Environment. This chapter describes the existing environmental conditions in the area in which the Proposed Action would occur.

Chapter 4: Environmental Consequences. Using the information in Chapter 3, this chapter identifies the potential for significant environmental impacts on each resource area under both the Proposed Action and No Action Alternative. Direct and indirect impacts are identified on a broad scale as appropriate in an EA.

Chapter 5: Cumulative Impacts. This chapter discusses the potential cumulative impacts that may result from the impacts of the Proposed Action, combined with foreseeable future actions.

Chapters 6 and 7: These chapters provide references and a list of this document's preparers.

Appendices: This EA includes six appendices that provide additional information. Appendix A includes a copy of the Interested Party Letter and its attachment. Appendix B is a copy of the mailing list that provides the names of those to whom the Interested Party Letter was sent. Appendix C is a copy of the language used in the newspaper announcement. Appendix D includes the written responses to the Interested Party Letter. Appendix E, the General Noise Conformity Analysis, provides an explanation of the air quality analysis and presents the results. Appendix F provides further explanation of the terminology and methodology used in the noise resource section. Finally, Appendix G presents a description of the USCG's Ocean Steward program.

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2. Proposed Action and Alternatives

2.1 Proposed Action

The U.S. Coast Guard (USCG) proposes to stand-up and operate four Maritime Safety and Security Teams (MSST), one of which will be located in the Port of Galveston. The term “stand-up” is defined as establishing a new activity. The MSST will improve the existing Port of Galveston and the Intracoastal Waterway, including Texas City and Port Arthur, security capabilities on an on-going basis. The MSST will not duplicate existing protective measures, but will provide complimentary, non-redundant capabilities that will be able to close significant readiness gaps in our nation’s strategic ports.

The MSST will include 71 active duty personnel augmented by 33 reservists, a support building (the Harborside Drive location) for personnel, and six RBS. Personnel will consist of mostly reassigned personnel, although there may be some newly recruited personnel. It is anticipated that newly recruited personnel will reside in Galveston County. USCG personnel will possess the specialized skills, capabilities, and expertise to perform a broad range of port security and harbor defense missions that may be required. Each team will be equipped with six armed RBSs powered by outboard motors that can reach speeds of 40 knots in a short period. Depending on operational requirements, there may be two to six boats operating at any one time. The MSST will be capable of operating on a continuous basis, 24 hours per day, seven days per week. The RBS and their personnel can be moved by aircraft or other means in order to respond to events in ports other than the Port of Galveston and the surrounding areas, should an increased presence be required at another port. The MSST will be interoperable with, and supported by, military and civilian government organizations, commercial, and non-government entities.

USCG personnel will follow procedures already familiar to them: establishing port security/port safety zones, moving security zones, and escorting vessels. The USCG performs these traditional port security operations on a daily basis. The MSST will have additional responsibilities:

- Enhance port security and security law enforcement capabilities at economic or military significant ports where they are based
- Deploy for specific episodic events that require an increased security posture of a limited duration
- Exercise security contingency plans in major ports
- Augment the Captain of the Port capabilities

The MSST will be prepared to conduct operations without the need for supplemental training or additional outfitting within all maritime security levels, and will be capable of operating under the threat of chemical, biological, or radiological attack. The MSST will have limited ability to detect chemical,

biological, or radiological attack, and must be able to evacuate a contaminated environment. They will have the ability to conduct emergency gross decontamination of personnel and equipment. In the U.S., the local emergency response agency is responsible for mitigating incidents involving chemical, biological, and radiological hazardous materials. Overseas support is provided through a Memorandum of Understanding (MOU) with other service branches.

2.2 No Action Alternative

National Environmental Policy Act (NEPA) implementing regulations require that a No Action Alternative be analyzed to provide a baseline for comparison with the Proposed Action and alternatives. The No Action Alternative identifies and describes the potential environmental impacts if the proponent agency does not implement the Proposed Action or one of the alternatives, if applicable.

Congress and the Executive Branch must respond to the recent and critical demand for homeland defense. Port security measures, such as MSSTs, must be created immediately. In the case of the stand-up and operations of the MSSTs, Congress strongly indicated its desire that the USCG establish MSSTs on a priority basis. Public Law (P.L.) 107-117 provided money for the express purpose of having the USCG (in consultation with other agencies) establish four MSSTs. In yet another indication of the urgency Congress assumed to be the situation, funds for the first four MSSTs expire at the end of September 2003.

Congress directed the Commandant of the USCG to establish four MSSTs to be “located in those Port areas that present the greatest Port Security challenges, especially those ports with a substantial concentration of critical Department of Defense (DoD) facilities and a shortage of alternative floating assets these units will be responsible solely to the Port Security needs and provide permanent relief to regular operating units so that they can, once again, pursue all of their multi-mission responsibilities” (Congress 2002b). Funding for personnel and equipment was appropriated, but funds for the first four MSSTs expire at the end of the fiscal year. The Commandant of the USCG clearly has no choice, but to stand up the MSSTs as directed by Congress.

The No Action Alternative, as used in this Environmental Assessment (EA), will not fulfill the USCG’s purpose and need to provide additional security to these four ports. Therefore, the No Action Alternative will only be analyzed in this EA to provide a baseline with which to compare environmental impacts of the Proposed Action. If a No Action Alternative was acceptable, several consequences might occur. Under current operations, vessels and manpower are being diverted from other missions in order to provide the additional security for the nation’s ports. Under the No Action Alternative, this disruption of other missions would continue. The result would be further strain on manpower and current assets. This

scenario of vessels and manpower being stretched to their limit could make it easier for an attack to occur in one of the “critical” ports. The result might be a potential for significant adverse environmental impacts. Terrorists could strike at military or commercial facilities in these ports creating health and safety hazards for the surrounding populace, impacting appropriate emergency responses, employment and trade, marine life. The impacts could be immediate (loss of life) or long lasting (disruption of commerce activities that could impact the long-term economy). Recovery time would be dependent on the severity and extent of the loss.

Other consequences will flow from the USCG being unable to fully perform enforcement missions. For example, the USCG is also responsible for drug and alien interdiction and protection of the nation’s Exclusive Economic Zone (EEZ). Without adequate vessels and manpower, the USCG will not be able to maintain its high level of effectiveness in stopping illegal aliens and drugs from reaching the nation’s shores. The environmental resources in the EEZ, for example, fishing, may also suffer from the USCG’s diminished ability to protect fishing areas from illegal catches, as discussed in Ocean Guardian. In addition, the nation might experience some loss to threatened and endangered species without the full attention of the USCG protection of these species as expressed in Ocean Steward (USCG 2000). A copy of the Ocean Steward Program is included as Appendix G.

2.3 Comparison of Alternatives

The Proposed Action to stand-up and operate a MSST in Galveston, Texas has the potential for significant positive impacts from both a security and safety viewpoint, as well as, an environmental viewpoint. First, the additional response boats will provide added security from terrorist attack for the safety of ships entering/leaving the Port of Galveston and the Intracoastal Waterway, including Port Arthur and Texas City, for the numerous commercial interests and for the general population who work and live in and near the port. Second, the Proposed Action will add additional protection from potentially significant environmental damage. While the possibility of standing up six boats may appear to be a large increase, when compared to the number and size of vessels that visit Galveston Bay, Port of Galveston, and the Intracoastal Waterway everyday, this is actually a small number. It is unlikely that all six boats will be in use at any one time. The boats will usually cruise at 10 to 12 knots, resulting in a small wake that should not negatively impact the surrounding shores. Therefore, no mitigation activities should be necessary for the stand-up and operation of the MSST at Galveston.

Under the No Action Alternative, the additional safety and security provided by the MSST would not be available. While the USCG will continue with their current level of protection, this level has already been determined to be less than is required for the Port of Galveston and the surrounding area. The potential

environmental damage from a terrorist attack may be significantly adverse. The No Action Alternative will meet neither Congress's directive nor the USCG's homeland security mission requirements.

2.4 Alternatives Considered but Eliminated

The emergency response supplemental, enacted by Congress to address the emergency situation of a very plausible threat of terrorist attack on our country's ports, effectively directs the USCG to establish and operate four mobile MSSTs in four of the U.S.'s "most critical ports." Congress recognized, as did the USCG, that these teams are critical to this country's homeland security and defense, and it is urgent that they be stood-up quickly. The direction and intent of this legislation and Congressional conference language allows for little in the way of viable alternatives that would meet the purpose and need. Different ports were examined as alternative locations for the stand-up of the first four MSSTs as discussed in Section 1.3 of this EA. However, based on the criteria used to determine the "most critical ports," these locations were not chosen as one of the first four most critical locations.

Other agencies besides the USCG could have been considered for the Proposed Action. However, domestic port security has been a core mission of the USCG for over 200 years. The Memorandum of Agreement (MOA), signed in October 1995 by the Secretaries of Transportation and Defense, the Chief of Naval Operations, and the Commandant of the USCG, identified those unique national defense capabilities of the USCG as a force provider. In addition, the USCG is the only U.S. maritime agency with regulatory and law enforcement authority, also having U.S. military capabilities. The USCG has been using the same tactics for harbor defense and port security procedures that the MSSTs will be using in the Port of Galveston and the Intracoastal Waterway and other U.S. ports. This recognition of the USCG's unique capabilities, coupled with the long-time advantage of providing security for U.S. ports, makes the USCG the natural choice to fulfill this mission.

3. Affected Environment

3.1 Introduction

3.1.1 Resources for Analysis

This chapter describes the environmental and socioeconomic conditions most likely to be affected by the Proposed Action and serves as a baseline from which to identify and evaluate potential impacts from implementation of the Proposed Action. In compliance with National Environmental Policy Act (NEPA) and Council on Environmental Quality (CEQ) regulations, the description of the affected environment focuses on those conditions and resource areas that are potentially subject to impacts. These resources include soils and land use, water resources, socioeconomics, environmental justice, cultural resources, hazardous materials and hazardous waste, biological resources, air quality and climate, noise, and public safety. Some environmental resources and conditions that are often analyzed in an Environmental Assessment (EA) have been omitted from this analysis. The following paragraphs identify the omitted resource areas and the basis for such exclusions:

- *Soils and Land Use.* The Proposed Action would not involve any physical disturbances, earth moving, or construction activities (beyond the erection of a boat shelter [canopy]), nor would it involve any actions inconsistent with present and foreseeable land use patterns on Galveston Island. Implementation of the Proposed Action would not alter the existing land use at these locations. The State of Texas' Coastal Plan Management Act is based on the Coastal Coordination Act of 1991 (33 Texas Natural Resources Code Sections 201 et. seq.). Although federal lands are excluded, they are subject to the consistency requirement, however, special considerations were identified for "National Interest and Activities of Regional Benefit." Specifically, for the U.S. Coast Guard (USCG), this includes "national defense and port safety and security" (TCMP 2002). Accordingly, the USCG has omitted detailed examination of land use.
- *Water Resources.* The Proposed Action does not involve any activities that would significantly increase the demand for water resources or affect surface water and groundwater. No physical disturbances, earth moving, or construction activities would occur; therefore, the Proposed Action would not affect surface water quantity or quality. Accordingly, the USCG has omitted detailed analysis of water resources. A detailed discussion of wetlands and floodplains is included in Sections 3.2 and 4.2, "Biological Resources." Emissions from outboard engines will impact water quality in the Region of Influence (ROI). However, the overall condition of the Gulf Coast estuaries is fair to poor (USCG 1996). The National Coastal Condition Report describes the condition of the nation's coastal waters, including the Gulf of Mexico. The Gulf of Mexico has fair water clarity, hypoxic conditions in Galveston Bay, a high loss of wetlands, highly eutrophic conditions, a high concentration of sediment contaminants, and degraded benthic resources (USCG 1996). The addition of six Response Boats-Small (RBS) would not adversely affect the water quality of Galveston Bay

and the Gulf of Mexico. Accordingly, the USCG has omitted further discussion on water quality.

- *Socioeconomics.* The Proposed Action does not involve any activities that would contribute to changes in socioeconomic resources. The 33 reservists are currently in the Galveston area. The majority of the 71 active duty personnel would be reassigned personnel and, therefore, are already in the Galveston area. Any additional personnel would be located in Galveston County, which has a current population of 250,158. It is unlikely that the addition of 71 personnel would have a significant adverse impact on the region, due to the relative size of the population affected and the low unemployment rate of the region. Accordingly, the USCG has omitted detailed examination of socioeconomics.
- *Environmental Justice.* Implementation of the Proposed Action would not result in adverse impacts in any environmental resource area that would disproportionately affect minority and low-income populations. Therefore, there are no significant impacts. Accordingly, the USCG has omitted detailed examination of environmental justice.
- *Cultural Resources.* The Proposed Action does not involve any activities that would impact cultural resources. There would be no ground disturbing activities; therefore, there would be no impact to archaeological sites. The leased building, designated for the Maritime Safety and Security Team (MSST), was constructed in the early 1990's on top of landfill from previous channel dredging. No other construction is required (beyond the boat shelter [canopy]). Therefore, no potential visual impacts would occur. The introduction of six RBS would not adversely affect setting, qualities of integrity, or jeopardize a property's eligibility on the National Register of Historic Places (NRHP). Accordingly, the USCG has omitted detailed examination of cultural resources.
- *Hazardous Materials and Hazardous Wastes.* The Proposed Action will involve only minor maintenance and repair work, which will be performed by MSST personnel at the Harborside Drive location. Major maintenance and repair work will occur at a commercial marine facility that would have an appropriate management plan. The Proposed Action will not require or add a significant amount of hazardous materials or wastes. One interior room will be converted to a weapons storage and cleaning vault. Prior to use, an appropriate ventilation system will be installed. Two lockers for flammable and inflammable materials will be required. In addition, a drum and berm or an over-packed drum will be placed adjacent to the shed for the holding of hazardous wastes. A similar arrangement will be developed for waste oil. As a small waste generator, the MSST will apply for a conditional exemption from the State of Texas. Wastes will be disposed by the Defense Reutilization and Marketing Office, probably through an independent contractor. In addition, the MSST will have one person trained as a Hazardous Waste Management Officer. The MSST will follow the USCG's procedures as described in the Hazardous Waste Management Manual (Commandant Instruction [COMDTINST] M 16478.1B), internally known as the "Red Book." This manual is a compilation of standard operating procedures for employees handling hazardous materials and hazardous wastes, asbestos, polychlorinated biphenyls, fuel tanks, lead, and biohazardous waste (USCG 1992). Accordingly, the USCG has omitted detailed examination of hazardous materials and hazardous wastes.

3.1.2 Region of Influence

The MSST will be homeported at 7707 Harborside Drive, Galveston (see Figure 1-1). The RBS will be launched from three different locations: Galveston Yacht Club, a public ramp at the southern end of Galveston Island, and a shared ramp with the United States (U.S.) Marine Corps, which is located adjacent to the USCG Base Galveston. The ROI for the Proposed Action and the No Action Alternative is geographically defined as that area of Galveston Bay and the Galveston Channel including the City of Galveston and the Intracoastal Waterway, from Texas City up the Texas coastline to the border with the state of Louisiana (approximately opposite Port Arthur). This region encompasses the area where the MSST will spend the majority of its operating time. The MSST can be deployed temporarily in emergencies to other ports or overseas as needed.

3.1.3 Environmental Regulations, Laws, and Executive Orders

Table 3-1 presents environmental regulations, laws, and executive orders (EOs) that may reasonably be expected to apply to the Proposed Action. It is not intended to be a complete description of the entire legal framework under which the USCG conducts its missions.

Table 3-1. Applicable Environmental Regulations, Laws, and Executive Orders

Environmental Regulations, Laws, and EOs		Impact on the Proposed Action
<i>EO 11593, Protection and Enhancement of the Cultural Environment</i>	All federal agencies are required to locate, identify, and record all cultural and natural resources. Cultural resources include sites of archaeological, historical, or architectural significance. Natural resources include the presence of endangered species, critical habitat, and areas of special biological significance.	No cultural or historical sites have been identified that would be impacted by the Proposed Action.
<i>EO 11990, Protection of Wetlands</i>	Requires federal agencies to avoid undertaking or providing assistance for new construction located in wetlands unless there is no practicable alternative, and all practicable measures to minimize harm to wetlands has been implemented.	Proposed Action would not involve new construction in wetlands.
<i>EO 11988, Floodplain Management</i>	Provides direction regarding actions of federal agencies in floodplains, and requires permits from state and federal review agencies for any construction within a 100-year floodplain.	Proposed Action would not involve construction in floodplains.

Table 3-1. Applicable Regulations, Laws, and Executive Orders

Executive Orders		Impact on the Proposed Action
<i>EO 12372, Intergovernmental Review of Federal Programs (as amended by EO 12416)</i>	Requires federal agencies to consult with state and local governments when proposed federal financial assistance or direct federal development has an impact on interstate metropolitan urban centers or other interstate areas.	No federal financial assistance would be provided to Galveston because of this action. No development that might have an impact on Galveston would occur as part of the Proposed Action. Appropriate state and local officials invited to comment during scoping.
<i>EO 12856, Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements</i>	Requires federal agencies to plan for chemical emergencies. Facilities that store, use, or release certain chemicals are subject to various reporting requirements. Reported information is made available to the public.	The regulated chemicals that will be used or stored as a result of the Proposed Action will be reported as required by Group Galveston.
<i>EO 12898, Environmental Justice</i>	Requires certain federal agencies, including the Department of Defense (DoD), to the greatest extent practicable and permitted by law, to make environmental justice part of their missions by identifying and addressing disproportionately high and adverse health or environmental effects on minority and low-income populations.	The Proposed Action will not result in adverse health or environmental effects on minority and low-income populations.
<i>EO 13007, Indian Sacred Sites</i>	Requires federal agencies to accommodate access to, and ceremonial use of, sacred sites by practitioners and avoid adversely affecting the physical integrity of such sites.	No Indian sacred sites have been identified and, therefore, none will be impacted by the Proposed Action.
<i>EO 13045, Protection of Children from Environmental Health and Safety Risks</i>	Makes it a high priority to identify and assess environmental health and safety risks that may disproportionately affect children. It also directs agencies to ensure that policies, programs, activities, and standards address such risks if identified.	The Proposed Action will not create environmental health and safety risks to children.
<i>EO 13158, Marine Protected Areas</i>	Requires federal agencies whose actions affect the natural and cultural resources protected by a marine protected area (MPA) to identify such actions, and, to the extent practicable and permitted by law, to avoid harming the natural and cultural resources that are protected by an MPA.	No MPAs identified within the ROI.

Table 3-1. Applicable Regulations, Laws, and Executive Orders

Executive Orders		Impact on the Proposed Action
<i>EO 13175, Consultation and Coordination with Indian Tribal Governments</i>	Requires federal agencies to have an accountable process to ensure meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications.	No Indian Tribes were identified within the ROI.
<i>EO 13186, Responsibilities of Federal Agencies to Protect Migratory Birds</i>	Requires federal agencies to take steps to protect migratory birds, including restoring and enhancing habitat, preventing or abating pollution affecting birds, and incorporating migratory bird conservation into agency planning processes whenever possible.	The Proposed Action will not impact migratory birds or their habitats.
<i>American Indian Religious Freedom Act, 42 United States Code (U.S.C.) 1996, Public Law (P.L.) 95-341</i>	Protects and preserves the rights of American Indians, Eskimos, Aleuts, and Native Hawaiians to exercise their traditional religions. These rights include, but are not limited to, access to sites, use and possession of sacred objects, and the freedom to worship through ceremony and tradition rites.	No such rights or concerns were raised as a result of scoping.
<i>Antiquities Act of 1906, 16 U.S.C. 431-433, P.L. 59-209</i>	Provides for the protection of historic and prehistoric ruins and objects of antiquity on lands owned or controlled by the federal government. Authorizes scientific investigation of antiquities on federal lands, and the establishment of national landmarks.	No historic and prehistoric ruins and objects of antiquity were identified; therefore, the Proposed Action will not result in impacts.
<i>Archaeological and Historical Preservation Act, 16 U.S.C. 469</i>	Protects and preserves historical and archaeological data. Requires federal agencies to identify and recover data from archaeological sites threatened by their actions.	The Proposed Action will not result in construction and therefore will not impact historical and archaeological data.
<i>Archaeological Resources Protection Act of 1979, 16 U.S.C. 470 et seq., P.L. 96-95</i>	Enacted to preserve and protect resources and sites on federal and Indian lands. Fosters cooperation between governmental authorities, professionals, and the public. Prohibits the removal, sale, receipt, and interstate transportation of archaeological resources obtained illegally from public or Indian lands.	No protected resources or sites identified. No construction will occur as a result of the Proposed Action.

Table 3-1. Applicable Regulations, Laws, and Executive Orders

Executive Orders		Impact on the Proposed Action
<i>Clean Air Act, 42 U.S.C. 7401-7671q, July 14, 1955, as amended</i>	This Act, as amended, is known as the Clean Air Act (CAA) of 1970. The amendments made in 1970 established the core of the clean air program. The primary objective is to establish federal standards for air pollutants. It is designed to improve air quality in areas of the country that do not meet federal standards, and to prevent significant deterioration in areas where air quality exceeds those standards.	The Proposed Action meets the conformity criterion for not exceeding <i>de minimis</i> thresholds in the affected area. Furthermore, the reasonably foreseeable project emissions of CO, PM ₁₀ , NO _x , and VOCs would not exceed the <i>de minimis</i> thresholds at MSST Galveston.
<i>Coastal Zone Management Act of 1972, 16 U.S.C. 1451-1464, P.L. 92-583</i>	Establishes a policy to preserve, protect, develop, and, where possible, restore and enhance the resources of the nation's coastal zone. Encourages and assists states through the development and implementation of coastal zone management programs.	The Proposed Action does not appear to be in conflict with the state's Coastal Management Zone. No comments have been received from that agency.
<i>Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), 42 U.S.C. 9601-9675, P.L. 96-510, amended by Superfund Amendments and Reauthorization Act of 1986 (SARA), P.L. 99-499</i>	Also known as "Superfund," provides for liability, compensation, cleanup, and emergency response for hazardous substances released into the environment and cleanup of inactive hazardous substances disposal sites. Also established a fund financed by hazardous waste generators to support cleanup and response actions.	The MSST will establish its own Spill Prevention, Control, and Countermeasure Plan in compliance with federal, state and USCG regulations.
<i>Department of Transportation Act, Section 4(f)</i>	Requires the Department of Transportation (DOT) to avoid or mitigate impacts to public parks, wildlife areas, and historic properties when approving transportation programs or projects.	The Proposed Action will not impact public parks or historic properties nor result in significant impacts to wildlife areas
<i>Endangered Species Act of 1973, as amended, 16 U.S.C. 1531 et seq., P.L. 93-205</i>	Protects threatened, endangered, and candidate species of fish, wildlife, and plants and their designated critical habitats. Under this law, no federal action is allowed to jeopardize the continued existence of an endangered or threatened species. The Endangered Species Act (ESA) also requires consultation with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) and the preparation of a biological assessment when such species are present in an area that is affected by government activities.	Threatened and endangered species occur in the ROI. No significant impacts are expected as a result of the Proposed Action.

Table 3-1. Applicable Regulations, Laws, and Executive Orders

Executive Orders		Impact on the Proposed Action
<i>Federal Property and Administrative Services Act of 1949</i>	Guides the process for transferring government property.	The Proposed Action will not result in the transfer of government property.
<i>Federal Records Act</i>	Requires federal agencies to preserve federal records of potential historic value.	No federal records will be impacted as a result of the Proposed Action.
<i>Federal Water Pollution Control Act (Clean Water Act), 33 U.S.C. 1251-1387</i>	The Clean Water Act (CWA) is a comprehensive statute aimed at restoring and maintaining the chemical, physical, and biological integrity of the nation's waters. Primary authority for the implementation and enforcement rests with the U.S. Environmental Protection Agency (EPA).	No significant impacts are expected as a result of the Proposed Action.
<i>Fish and Wildlife Conservation Act Coordination Act, 16 U.S.C. 661 et seq., P.L. Chapter 55</i>	The purpose of this act is to ensure that wildlife conservation receives equal consideration and be coordinated with other features of water-resources development programs.	No waters or channels will be modified as a result of the Proposed Action.
<i>Historic Sites Act of 1935, 16 U.S.C. 461-467, P.L. Chapter 593</i>	Establishes a national policy to preserve for public use, historic sites, buildings, and objects of national significance.	No historic sites have been identified.
<i>Historical and Archaeological Data-Preservation, 16 U.S.C. 469 et seq., P.L. 93-291</i>	Protects and preserves historical and archaeological data caused as a result of federal construction projects. Directs federal agencies to notify the Secretary of the Interior when the construction project may cause irreparable loss or destruction of significant resources or data. Provides a mechanism through which resources can be salvaged from a construction site.	No construction will occur as a result of the Proposed Action.
<i>Lacey Act of 1900, 16 U.S.C. 701, 702; 31 Stat. 187, 32 Stat. 285</i>	Under this law, it is unlawful to import, export, sell, acquire, or purchase fish, wildlife, or plants taken, possessed, transported, or sold: 1) in violation of U.S. or Indian law, or 2) in interstate or foreign commerce involving any fish, wildlife, or plants taken, possessed, or sold in violation of state or foreign law.	The Proposed Action will not impact the enforcement of this law.
<i>Magnuson-Stevens Fishery Conservation and Management Act, as amended through October 11, 1996, 16 U.S.C. 1801 et seq., P.L. 94-265</i>	Establishes regional fisheries councils that set fishing quotas and restrictions in U.S. waters. Federal agencies must consult with NMFS on all actions, authorized, funded, or undertaken by the agency that may adversely affect essential fish habitat (EFH).	Galveston Bay is within EFHs. The Proposed Action is not likely to significantly impact fisheries.

Table 3-1. Applicable Regulations, Laws, and Executive Orders

Executive Orders		Impact on the Proposed Action
<i>Marine Mammal Protection Act of 1972, 16 U.S.C. 1361 et seq., 1401-1407, 1538, 4107</i>	Establishes a moratorium on the taking and importation of marine mammals including harassment, hunting, capturing, collecting, or killing or attempting the above actions. Requires permits for taking marine mammals. Requires consultations with USFWS and NMFS if impacts to marine mammals are possible.	The Proposed Action is not likely to result in the taking of a marine mammal. This does not mean that a strike will never occur.
<i>Marine Protection, Research, and Sanctuaries Act of 1972, 33 U.S.C. 1401-1445, P.L.92-532</i>	Regulates the dumping of materials into ocean waters. Provides for a permitting process to control the ocean dumping of dredged materials. Establishes the marine sanctuaries program.	Galveston Bay is in the National Estuary Program. No dumping will be required as a result of the Proposed Action.
<i>Migratory Bird Treaty Act 16 U.S.C. 703-712</i>	The Migratory Bird Treaty Act implements various treaties and is for the protection of migratory birds. Under the act, taking, killing, or possessing migratory birds is unlawful.	The Proposed Action will not impact migratory birds nesting, feeding, or migration habits.
<i>National Environmental Policy Act of 1969 (NEPA), as amended; P.L. 91-190, 42 U.S.C. 4321 et seq.</i>	Requires federal agencies to utilize a systematic approach when assessing environmental impacts of government activities. NEPA proposes an interdisciplinary approach in a decision-making process designed to identify unacceptable or unnecessary impacts to the environment.	The scope of the Proposed Action requires an EA.
<i>National Historic Preservation Act, 16 U.S.C. 470 et seq.</i>	Requires federal agencies to take account of the effect of any federally assisted undertaking or licensing on any district, site, building, structure, or object eligible or listed for inclusion in the NRHP. Provides for the nomination, identification (through listing on the National Register), and protection of historical and cultural properties of significance.	The Harborside Drive location is not eligible for inclusion. No other buildings will be affected as a result of the Proposed Action.
<i>National Invasive Species Act of 1996, 16 U.S.C. 4701 et seq., P.L. 104-332</i>	Reauthorizes and amends the Nonindigenous Aquatic Nuisance Prevention Control Act of 1990. Establishes ballast water information and requires guidelines to be issued for the Great Lakes.	RBS will not require ballast water.
<i>Noise Control Act of 1972, 42 U.S.C. 4901-4918, P.L. 92-574</i>	Establishes a national policy to promote an environment free from noise that jeopardizes their health and welfare. Authorizes the establishment of federal noise emissions standards and provides information to the public.	No significant impacts are anticipated as a result of the Proposed Action.

Table 3-1. Applicable Regulations, Laws, and Executive Orders

Executive Orders		Impact on the Proposed Action
<i>Nonindigenous Aquatic Nuisance Prevention Control Act of 1990, 16 U.S.C. 4701 et seq., P.L. 101-646</i>	Establishes aquatic nuisance species.	The RBSs will not require ballast water.
<i>Occupational Safety and Health Act</i>	Establishes standards to protect workers, including standards on industrial safety, noise, and health standards.	The USCG has an equivalent protective measures program for personnel.
<i>Port and Waterways Safety Act</i>	Sets vessel operating and towing safety requirements and sets out enforcement provisions.	The Proposed Action will not impact the enforcement of this act.
<i>Resource Conservation and Recovery Act, 42 U.S.C. 6901, P.L. 94-580</i>	Establishes requirements for safely managing and disposing of solid and hazardous waste and underground storage tanks. Federal agencies must comply with waste management requirements.	The Proposed Action will comply with all federal and state laws and USCG manuals.

Source: USCG 2002e; USCG 2002f

3.2 Biological Resources

3.2.1 Definition of the Resource

Biological resources include native or naturalized plants and animals, and the habitats, such as wetlands, forests, and grasslands, in which they exist. Sensitive and protected biological resources include plant and animal species listed as threatened or endangered by the U.S. Fish and Wildlife Service (USFWS) National Marine Fisheries Service (NMFS) or a state. Determining which species occur in an area affected by a proposed action may be accomplished through literature reviews and coordination with appropriate federal and state regulatory agency representatives, resource managers, and other knowledgeable experts.

Protected and Sensitive Habitats

Protected and sensitive habitats are usually defined as those regions identified as marine sanctuaries, critical habitats, fisheries management areas, national parks, wildlife refuges, and estuarine research reserve sites. These regions and areas can be under federal, state, and in some cases, local jurisdictions.

The USCG has a number of long-standing missions relating to protected and sensitive habitats:

- National Marine Sanctuary Law Enforcement Program: among other activities, provides routine surveillance of marine sanctuaries concurrently with other USCG operations and provides specific, targeted, or dedicated law enforcement as appropriate

- Ocean Guardian: a long-range fisheries law enforcement strategy to support national goals for fisheries resource management and conservation
- Ocean Steward: the USCG's national strategy to help the recovers and maintenance of healthy populations of marine protected species
- Sea Partners: is an environmental and outreach program designed to develop community awareness of maritime pollution issues and to improve compliance with marine environmental protection laws and regulations (USCG 2002f)

Marine Mammals

Marine mammals are an important consideration for USCG activities. A number of factors may impact the distribution of marine mammals, including environmental, biotic, and impacts generated by humans. Environmental factors may include chemical, climate, or physical (those related to the characteristics of a location). Biotic factors include the distribution and abundance of prey, competition for prey, reproduction, natural mortality, catastrophic events (e.g., die-offs), and predation. Human impacts include noise, hunting pressure, pollution and oil spills, habitat loss and degradation, shipping traffic, recreational and commercial fishing, oil and gas development and production, and seismic exploration. It is the interrelationships of these factors that can affect the location and temporary distribution of prey species. This, in turn, is the major influence on diversity, abundance, and distribution of marine mammals.

The USCG has a long-standing role in protecting marine mammals. It enforces all U.S. laws on all U.S. waters, including laws protecting marine mammals and sensitive species. The USCG enforces the Endangered Species Act (ESA), the Marine Mammal Protection Act (MMPA), the National Marine Sanctuaries Act, a number of maritime EOs, and federal and international laws as applicable. The USCG's Commandant Instructions (COMDTINSTs) include a number of policies, directions, and procedures that include specific rules to ensure avoidance with marine mammals and avoid impacts whenever possible. The USCG's Ocean Steward and Ocean Guardian programs also support these goals (USCG 2002a).

Under the ESA, an "endangered species" is defined as any species in danger of extinction throughout all or a significant portion of its range. A "threatened species" is defined as any species likely to become an endangered species in the foreseeable future. USFWS maintains a list of species considered candidates for possible listing under the ESA. Although candidate species receive no statutory protection under the ESA, the USFWS has attempted to advise government agencies, industry, and the public that these species are at risk and may warrant protection under the act.

Fish

Living Marine Resource Protection is an important USCG mission. The USCG undertakes such activities as enforcing domestic fisheries laws, and ensuring the development of practical enforcement plans to protect, conserve, and manage these resources. The USCG enforces several laws pertaining to fish and fisheries management:

- Magnuson-Stevens Fisheries Conservation Act
- Endangered Species Act
- Marine Protection, Research and Sanctuaries Act
- National Fishery Management Program
- Fish and Wildlife Conservation Act
- Lacey Act Amendments of 1981

The USCG also has two initiatives related to fish and fisheries management:

- Ocean Steward
- Ocean Guardian (includes the Fisheries Enforcement Strategic Plan)

Coastal and Other Birds

In enforcing the ESA, the USCG also protects endangered and threatened bird species. The USCG must also comply with the Migratory Bird Treaty Act and EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*.

Wetlands and Floodplains

Biological resources also include wetlands. Wetlands are an important natural system and habitat because of the diverse biologic and hydrologic functions they perform. These functions include water quality improvement, groundwater recharge and discharge, pollution mitigation, nutrient cycling, wildlife habitat provision, unique flora and fauna niche provision, storm water attenuation and storage, sediment detention, and erosion protection. Wetlands are protected as a subset of the “waters of the U.S.” under Section 404 of the Clean Water Act (CWA). The term “waters of the United States” has a broad meaning under the CWA and incorporates deep-water aquatic habitats and special aquatic habitats (including wetlands). The U.S. Army Corps of Engineers (USACE) defines wetlands as “those areas that are inundated or saturated with ground or surface water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas” (33 Code of Federal Regulations [CFR] 328).

Section 404 of the CWA authorizes the Secretary of the Army, acting through the Chief of Engineers, to issue permits for the discharge of dredged or fill materials into the waters of the U.S., including wetlands. In addition, Section 404 of the CWA also grants states with sufficient resources the right to assume these responsibilities.

Floodplains are areas of low-level ground along a river or stream channel. These lands may be subject to periodic or infrequent inundation due to rain or melting snow. Risk of flooding is influenced by local topography, the frequency of precipitation events, and the size of the watershed above the floodplain. Flood potential is evaluated by the Federal Emergency Management Agency (FEMA), which evaluates the floodplain for 100- and 500-year flood events. Federal, state, and local regulations often limit floodplain development to passive uses such as recreational and preservation activities in order to reduce the risks to human health and safety and minimize cost to replace or repair repetitively damaged infrastructure.

3.2.2 Affected Environment

Protected and Sensitive Habitats

While the Gulf Coast itself is an area of high ecological value, several formally protected areas have been singled out due to their ecological diversity. The Galveston Bay National Estuary Program was established under the Water Quality Act of 1987 to develop a Comprehensive Conservation Management Plan for Galveston Bay. The Galveston Bay Plan was created in 1994 and approved by the Governor of Texas and the Administrator of EPA in March 1995 (GMFMC 1998).

The West Galveston Bay Conservation Area is located within the 600-square-mile Galveston Bay estuary system (see Figure 3-1), one of the most productive estuaries in Texas and a prized locale for commercial and recreational activity. The conservation area extends from the northeast end of West Bay, just southwest of Interstate 45, westward, and ends just west of Drum Bay. This 77,273-hectare (190,943-acre) area is part of a larger system of connected bays (open water estuaries) and associated habitats within the Galveston Bay watershed. This watershed serves not only native plants and wildlife but also the Houston metroplex and numerous surrounding cities and towns. The myriad of habitats within West Galveston Bay plays a role in maintaining the health of the ecosystem. Upland prairies slow rainwater and runoff, trapping some sediment and contaminants within plant roots. Marsh plants continue the work: filtering more sediments and pollutants, and helping to keep the bay waters clear and pollutants and excess nutrients to a minimum. Freshwater marshes reduce the frequency and severity of flooding, and their ability to store and slowly release water helps maintain stable salinity in the estuary system. Both freshwater and saltwater marshes slow erosion and even contribute to soil accretion, actually building new land along the shoreline. Submerged aquatic grasses in the bay and in wetlands act as refuge and nursery

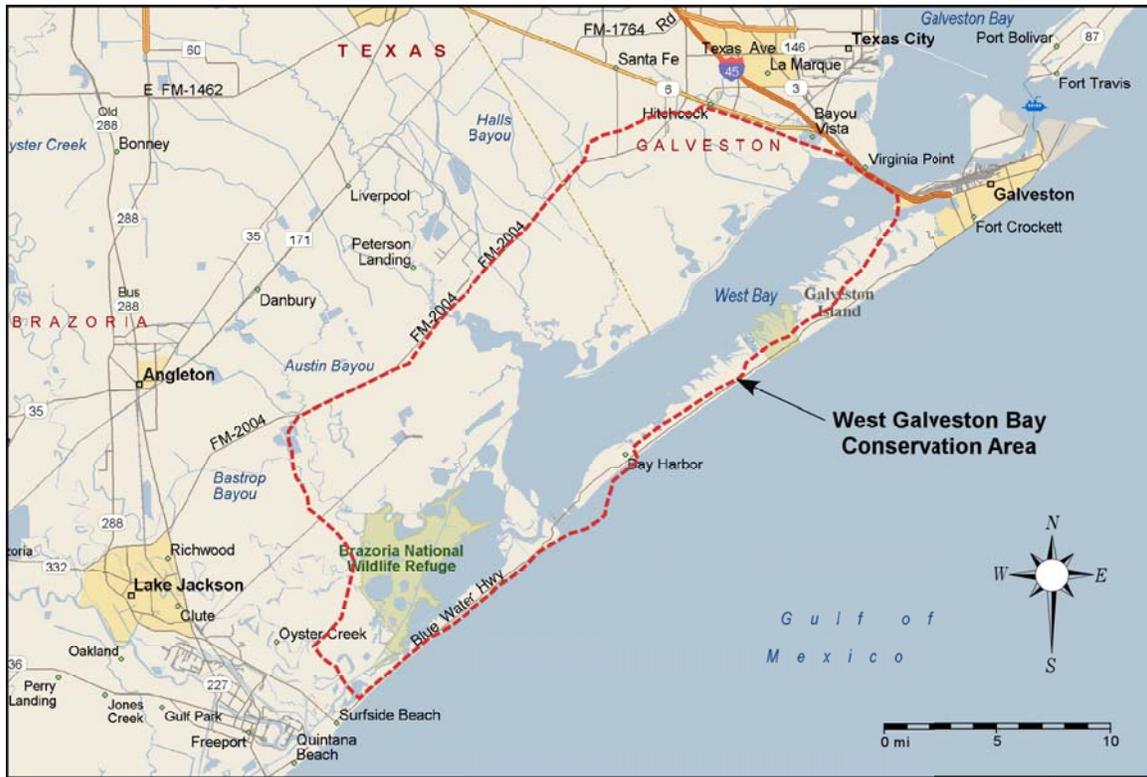


Figure 3-1. Location of West Galveston Bay Conservation Area

areas for estuarine and marine species. The bay and wetlands serve as nursery grounds for more than 95 percent of the recreational and commercial fish species found in the Gulf of Mexico, helping Galveston Bay rank second nationally in seafood production. The conservation area is well known for its excellent birding. Three-quarters of the bird species found in North America use some part of Galveston Bay as a migratory stopover site or breeding area. The shoreline of the conservation area has been identified as critical habitat by the Western Hemisphere Reserve Shorebird Network, and its wetlands are the winter home for large duck populations. The federally endangered piping plover nests in the bay area, as do state-listed white-faced ibises and reddish egrets. The uplands of West Galveston Bay are a mosaic of salty prairie, sandy prairie, and coastal tallgrass prairie. Kemp Ridley's sea turtles (*Lepidochelys kempi*) and juvenile loggerhead sea turtles (*Caretta caretta*), both federally and state-listed species are known to feed in numerous areas of Galveston Bay.

Additional protected habitats in the ROI include a state park and two National Wildlife Refuges (NWR):

- Anahuac NWR
- Brazoria NWR

- Galveston Island State Park

Marine Mammals

This section includes a brief description of marine mammals within the ROI. Several endangered species of marine mammals are known to occur in the waters off the Texas coast. These species frequently occur in the ROI of the Proposed Action. Due to the habitat requirements of these species, they do not occur directly west of Galveston Island. Federally endangered marine mammals have the potential to occur off the Texas coast in the Gulf of Mexico:

- Sperm whale (*Physeter macrocephalus*)
- Fin whale (*Balaenoptera physalus*)
- West Indian manatee (*Trichechus manatus*)

The head of the sperm whale is blunt and squared off, and has a small, underslung jaw. The large head accounts for 1/3 its total body length and more than 1/3 of its mass. A single blowhole is located forward on the left side of the head, and the blow is projected forward rather than straight up as it is with other whales. Its body has a wrinkled, shriveled appearance, particularly behind the head. The sperm whale is usually a dark, brownish gray with light streaks, spots, and scratches. The skin around its mouth, particularly near the corners, is white. The ventral (underside) of the body is a lighter gray and may have white patches. Adult males reach lengths of 49-59 feet (15-18 meters) and weigh up to 35-45 tons (31,750-40,800 kilograms). Adult females are much smaller, growing to about 36 feet (11 meters) and a maximum weight of 13-14 tons (12,000-12,700 kilograms). Its main source of food is medium-sized deep-water squid, which are not found in the ROI. Sperm whales also feeds on species of fish, skate, octopus, and smaller squid, which they will not eat in shallow waters. Sperm whales are found in all oceans of the world. The males, alone or in groups, are found in higher latitudes during summers. In winter, they migrate toward lower latitudes, and only the physically mature males appear to enter the breeding grounds close to the equator. Females, calves, and juveniles remain in the warmer tropical waters of the Pacific, Atlantic, and Indian Oceans year round (ACS 2002a).

The sperm whale, the deepest diver of the great whales, can descend to depths of over 3,300 feet (1000 meters) and stay submerged for over an hour. Average dives are 20-50 minutes long to a depth of 980-1,970 feet (300-600 meters). At these depths, there is little or no solar light. However, organisms at these depths may produce biochemical light (bioluminescence). Sperm whales use their highly developed echolocation ability to locate food and to navigate, making nearly constant clicking sounds that pulse through the water. Sperm whales communicate using “Morse-code” like patterns of clicks called codas (ACS 2002a).

The fin whale is long, sleek, and streamlined, with a V-shaped head, which is flat on top. A single ridge extends from the blowhole to the tip of the rostrum (upper jaw). There is a series of 56-100 pleats or grooves on the underside of its body extending from under the lower jaw to the navel. This whale is light gray to brownish-black on its back and sides. Two lighter “colored” chevrons begin midline behind the blowhole and slant down the sides toward the fluke (tail) on a diagonal upward to the dorsal fin, sometimes recurving forward on the back. It is never posterior to the dorsal fin. The underside of its body, flippers, and fluke are white. The lower jaw is gray or black on the left side and creamy white on the right side. This asymmetrical coloration extends to the baleen plates and is reversed on the tongue. Adult males measure up to 78 feet (24 meters) in the northern hemisphere, and 88 feet (26.8 meters) in the southern hemisphere. Females are slightly larger than males. Weight for both sexes is between 50-70 tons (45,360-63,500 kilograms). Fin whales feed mainly on small shrimp-like creatures called krill or euphausiids and schooling fish. They have been observed circling schools of fish at high speed, rolling the fish into compact balls then turning on their right side to engulf the fish. Their color pattern, including their asymmetrical jaw color, may somehow aid in the capture of such prey. They can consume up to two tons (1,814 kilograms) of food a day. Similar to a baleen whale, the fin whale has a series of 262-473 fringed overlapping plates hanging from each side of the upper jaw, where teeth might otherwise be located. Adult males reach sexual maturity between 6-10 years of age. As in some other whales, sexual maturity is reached before physical maturity. Gestation is 12 months, and calves are born at 3-year intervals. At birth, calves measure between 14-20 feet (5.5-6.5 meters) in length and weigh approximately two tons (1,814 kilograms). Calves nurse for six months and are weaned when they are 30-40 feet (10-12 meters) in length. Fin whales are found in all oceans of the world. They may migrate to subtropical waters for mating and calving during the winter months and to the colder areas of the Arctic and Antarctic for feeding during the summer months; although recent evidence suggests that during winter fin whales may be dispersed in deep ocean waters as opposed to migrating between wintering and summering regions (ACS 2002b).

Gulf population numbers of fin whales are uncertain. Fin whales are typically found in Atlantic coastal waters in fall and spring and offshore in winter, however their distribution in Gulf waters is under review.

The West Indian Manatee is a large gray or brown aquatic mammal. Adults average about 10 feet long and weigh 1,000 pounds. They have no hindlimbs, and their forelimbs are modified as flippers. Manatee tails are flattened horizontally and rounded. Their body is covered with sparse hairs and their muzzles with stiff whiskers. Sexes are distinguished by the position of the genital openings and presence or absence of mammary glands. Manatees will consume any aquatic vegetation available to them and sometimes even shoreline vegetation. Although primarily herbivorous, they will occasionally feed on fish. Manatees may spend about 5 hours a day feeding, and may consume 4 to 9 percent of their body weight a

day. Births occur during all months of the year with a slight drop during winter months. Manatee cows usually bear a single calf, but 1.5 percent of births are twins. Calves reach sexual maturity at 3 to 6 years of age. Mature females may give birth every 2 to 5 years. Weaning generally occurs between 9 and 24 months of age, although a cow and calf may continue to associate with each other for several more years. During the winter months, the U.S.' manatee population confines itself to the coastal waters of the southern half of peninsular Florida and to springs and warm water outfalls as far north as southeast Georgia. Manatees also winter in the St. Johns River near Blue Spring State Park. During summer months, they may migrate as far north as coastal Virginia on the east coast and the Louisiana coast on the Gulf of Mexico. Manatees inhabit both salt and fresh water of sufficient depth (1.5 meters to usually less than 6 meters) throughout their range. They may be encountered in canals, rivers, estuarine habitats, saltwater bays, and on occasion have been observed as much as 3.7 miles off the Florida Gulf coast. Between October and April, Florida manatees concentrate in areas of warmer water. When water temperatures drop below about 21 to 22 degrees Centigrade, they migrate to south Florida or form large aggregations in natural springs and industrial outfalls. During warmer months, they appear to choose areas based on an adequate food supply, water depth, and proximity to fresh water. Manatees may not need fresh water but they are frequently observed drinking fresh water from hoses, sewage outfalls, and culverts (USFWS 2003).

Marine mammals not designated as threatened or endangered by the USFWS or the NMFS have been observed off the Texas coast. Wide varieties of marine mammals visit and inhabit the Gulf of Mexico (TMMSN 2001):

- Atlantic bottlenose dolphin (*Tursiops truncatus*)
- Atlantic spotted dolphin (*Stenella frontalis*)
- Blainville's beaked whale (*Mesoplodon densirostris*)
- Clymene dolphin (*Stenella clymene*)
- Cuvier's beaked whale (*Ziphius cavirostris*)
- Dwarf sperm whale (*Kogia simus*)
- False killer whale (*Pseudorca crassidens*)
- Fraser's dolphin (*Lagenodelphis hosei*)
- Gervais' beaked whale (*Mesoplodon europaeus*)
- Killer whale (*Orcinus orca*)
- Melonheaded whale (*Peponocephala electra*)
- Pantropical spotted dolphin (*Stenella attenuata*)
- Pygmy killer whale (*Feresa attenuata*)
- Pygmy sperm whale (*Kogia breviceps*)
- Risso's dolphin (*Grampus griseus*)

- Rough toothed dolphin (*Steno bredanensis*)
- Short-finned pilot whale (*Globicephala macrorhynchus*)
- Spinner dolphin (*Stenella longirostris*)
- Striped dolphin (*Stenella coeruleoalba*)

Fish

NMFS and the Gulf of Mexico Fishery Management Council (Gulf Council) manage the fisheries of eight species. While the Gulf Council did not designate Habitat Areas of Particular Concern (HAPC) for individual species, they identified several HAPC to benefit all species under Gulf Council jurisdiction. Thirteen of these species' fisheries have been designated as essential fish habitat (EFH) within the ROI. Table 3-2 lists the species and its life stage(s) that are protected as part of the EFH within the ROI.

Coastal areas are essential breeding, nursery, and feeding areas for many marine fish and shellfish. In 1996, Congress amended the Magnuson-Stevens Fishery Conservation and Management Act to require that fishery management plans identify the EFH of each fishery and the major threats to that habitat. All fishery management plans must address the impacts of fishing activities on EFH and, to the extent practicable, minimize adverse impacts. Federal agencies also must consult with fishery managers concerning actions (including the issuance of permits for private activities) that may adversely impact EFH.

Table 3-2. Species of Marine Life and Life Stages Found in the EFH

Common Name	Species	Life Stage	
		Juveniles	Adults
Brown shrimp	<i>Penaeus aztecus</i>	X	X
Gray snapper	<i>Lutjanus griseus</i>	X	X
Gulf stone crab	<i>Menippe adina</i>	X	X
Pink shrimp	<i>Penaeus duorarum</i>	X	X
Red drum	<i>Sciaenops ocellatus</i>	X	X
Spanish mackerel	<i>Scomberomorus maculatus</i>	X	X
Spiny lobster	<i>Panulirus argus</i>	X	X
Stone crab	<i>Menippe mercenaria</i>	X	X
White shrimp	<i>Penaeus setiferus</i>	X	X

Source: NMFS 2002

Coastal and Other Birds

A variety of bird species lives in shoreline habitats. Birds are not specifically tied as intimately to their habitats as benthic species such as blue crabs or oysters, but they require similarly protective nesting sites, nursery grounds, and foraging habitats. Bird populations in Galveston Bay and the surrounding areas have significant commercial, recreational, ecological, and aesthetic values. In addition, many bird species are predators on fish, shellfish, or benthic organisms and, therefore, are important indicators of the health of the food web and the status of different bay habitats.

Of the over 130 species of birds known to breed in the Galveston Bay region, eighteen species of state or federally listed species are known to use the estuary. Table 3-3 provides a summary of these species.

Many species of raptors occur in the region. Bald eagles (*Haliaeetus leucocephalus*), federally threatened, migrate through and nest in the area. Peregrine falcons, state endangered, also migrate through the region.

Several species of wading birds, including snowy egrets (*Egretta thula*), roseate spoonbills (*Platalea ajaja*), tricolored herons (*Egretta tricolor*), black skimmers (*Rynchops niger*), and great egrets (*Casmerodius albus*) hunt in the shallows, feeding mainly on small fish, amphibians and arthropods. These species breed in the Gulf of Mexico, using tall trees or forested areas for nesting habitat. None of these birds is known to nest at the stationing site or any of the MSST launch sites.

Table 3-3. Avian Species Known to Breed in the Galveston Bay Region and their Status

Species	State Status	Federal Status
Waterbirds		
Eastern brown pelican, <i>Pelecanus occidentalis</i>	E	E
Reddish egret, <i>Egretta rufescens</i>	T	
White-faced ibis, <i>Plegadis chibi</i>	T	
Wood stork, <i>Mycteria americana</i>	T	
Whooping crane, <i>Grus americana</i>	E	E
Raptors		
Swallow-tailed kite, <i>Elanoides forficatus</i>	T	
Bald eagle, <i>Haliaeetus leucocephalus</i>	T	T
Common black-hawk, <i>Buteogallus anthracinus</i>	T	
Gray hawk, <i>Asturina nitidus plagiata</i>	T	
White-tailed hawk, <i>Buteo albicaudatus</i>	T	
Zone-tailed hawk, <i>Buteo albonotatus</i>	T	
Northern aplomado falcon, <i>Falco femoralis septentrionalis</i>	E	E
Peregrine falcon, <i>Falco peregrinus</i>	E	
Cactus ferruginous pygmy-owl, <i>Glaucidium brasilianum cactorum</i>	T	
Mexican spotted owl, <i>Strix occidentalis lucida</i>	T	T
Shorebirds		
Piping plover, <i>Charadrius melodus</i>	T	T
Eskimo curlew, <i>Numenius borealis</i>	E	E
Interior least tern, <i>Sterna antillarum athalassos</i>	E	E
Sooty tern, <i>Sterna fuscata</i>	T	

Source: TPW 2002

A wide variety of waterfowl species live in or visit the Galveston Bay area. The most commonly observed species are the green-winged teal (*Anas crecca*), ring-necked duck (*Aythya collaris*), lesser scaup (*Aythya affinis*), red-breasted merganser (*Mergus serrator*), and ruddy duck (*Oxyura jamaicensis*).

Many other species inhabit the Chesapeake Bay region, including other “aerial gleaners” that consume fish or insects, such as gulls (*Larus sp.*), terns (*Sterna sp.*), brown pelicans (*Pelecanus occidentalis*), and olivaceous cormorants (*Phalacrocorax olivaceus*). Other open-water birds include royal terns (*Sterna maxima*), Caspian terns (*Sterna caspia*), Forster’s terns (*Sterna forsteri*), and Sandwich terns (*Sterna sandvicensis*). These species depend primarily upon fish caught from open-bay habitats.

The most common shorebirds are the black-bellied plover (*Pluvialis squatarola*), American avocet (*Recurvirostra americana*), willet (*Catoptrophorus semipalmatus*), sanderling (*Calidris alba*), western sandpiper

(*Calidris mauri*), dunlin (*Calidris alpina*), and dowitchers (*Limnodromus sp.*). Piping plover (*Charadrius melodus*), federally and state-listed as threatened, are also known to occur in the area. However, they do not occur at the stationing site or MSST launch sites.

Wetlands

As a result of the previously cited federal and state regulations, the USCG is responsible for identifying and locating jurisdictional waters of the U.S. (including wetlands) occurring on USCG installations where these resources have the potential to be impacted by mission activities. Such impacts could include construction of roads, buildings, navigation aids, and other appurtenant structures or activities as simple as culvert crossings of small intermittent streams, rip-rap placement in stream channels to curb accelerated erosion, and incidental fill and grading of wet depressions.

Wetlands common to the area consist of isolated depressional wetlands and estuarine wetlands. Wetland plants in the region may be herbs (grasses and leafy plants without woody tissue), shrubs, or trees. Submerged wetlands, seagrasses, are found in shallow water at a few secluded areas where the water is warm and clear. Emergent wetlands extend from the shore inland as a narrow band of fringing smooth cordgrass (*Spartina alterniflora*) salt marsh or as larger expanses of higher salt, brackish, or fresh marsh. Brackish marshes are normally saltmeadows of marshhay cordgrass (*Spartina patens*) with or without varying amounts of bulrushes (*Scirpus sp.*), shortgrasses and flowering plants. Most forested wetlands are associated with tidal-influenced rivers.

There are no wetlands on Galveston Yacht Club, at the proposed public ramp, or at the shared ramp with the U.S. Marine Corps at the eastern end of the island. However, the Seabrook Wetlands are located within the ROI. These wetlands encompass the western portion of Galveston Bay and the West Bay between the mainland and most of the south side of Galveston Island. Within this area are brackish, intermediate, and fresh wetlands, including forested wetlands, estuarine bays, and bayous. Although this area has been designated a wetlands conservation area by Texas, there are no local shoreline protection or wetland conservation policies (SWCP 2000). As 97 percent of land is privately owned and managed, Texas has created a volunteer wetland preservation program for private landowners. The *Wetlands Assistance Guide for Landowners* is a comprehensive guide to federal, state, and private programs offering technical and/or financial assistance to private wetland owners within the State of Texas. The programs are designed to enhance, create, and conserve wetlands in Texas by providing technical, financial, and educational assistance to private landowners. In some cases, payments are made at fair market rates for permanent protection of wetland areas (WAGL 2002). Since such a large amount of Texas' land is in private ownership, identification of wetlands beyond the comparatively small number of state projects, is extremely difficult and will not be attempted in this EA.

Floodplains

Much of the ROI has been designated by FEMA to fall within the *Special Flood Hazard Areas Inundated by a 100-year Flood Event* (USACE 2001).

3.3 Air Quality and Climate

3.3.1 Definition of the Resource

The Clean Air Act Amendments (CAAA) of 1990 require Federal agencies to ensure that their actions conform to the applicable State Implementation Plan (SIP). The SIP is a U.S. Environmental Protection Agency (EPA)-approved plan that provides for implementation, maintenance, and enforcement of the National Ambient Air Quality Standards (NAAQS). The SIP includes emission limitations, rules, schedules, and specific control measures to attain and maintain the NAAQS. Conformity to a SIP, as defined in the CAAA, means conforming to the SIP's purpose of reducing the severity and number of violations of the NAAQS to achieve attainment of such standards.

Federal regulations (40 CFR 81) have defined Air Quality Control Regions (AQCRs), or airsheds, for the entire U.S. AQCRs are based on population and topographic criteria for groups of counties within a state, or counties from multiple states that share a common geographical or pollutant concentration characteristic. Table 3-4 presents the primary and secondary NAAQS.

As a Federal agency and proponent of a "Federal action," the USCG must complete a conformity analysis to determine whether the Proposed Action (stand-up, operations, and associated regulated pollutant emissions with the introduction of six 25-foot Boston Whaler watercraft in Galveston) will conform to the State of Texas SIP. Other elements of the Proposed Action include the introduction of 71 active-duty staff and 33 reservists and increased vehicle emissions due to the additional commuting by new personnel. All elements of the Proposed Action could impact areas within the Houston-Galveston-Brazoria Ozone Non-attainment Area. Therefore, a conformity analysis is required.

The CAA prohibits federal agencies from undertaking projects that do not conform to an EPA-approved SIP. In 1993, EPA developed the General Conformity Rule, which specifies how federal agencies must determine CAA conformity for sources of non-attainment pollutants in designated non-attainment areas. Through the Conformity Determination process specified in the final rule, any federal agency must analyze increases in pollutant emissions directly or indirectly attributable to a proposed action, and may need to complete a formal evaluation that includes modeling for NAAQS impacts, provision of emission offsets, and potential mitigation for any significant increases in non-attainment pollutants.

Table 3-4. National Ambient Air Quality Standards

Pollutant	Standard Value		Standard Type
Carbon Monoxide (CO)			
8-hour Average	9 ppm ^a	(10 mg/m ³) ^{b, c}	Primary & Secondary
1-hour Average	35 ppm	(40 mg/m ³) ^c	Primary
Nitrogen Dioxide (NO₂)			
Annual Arithmetic Mean	0.053 ppm	(100 µg/m ³) ^{b, d}	Primary & Secondary
Ozone (O₃)			
1-hour Average ^e	0.12 ppm	(235 µg/m ³) ^e	Primary & Secondary
8-hour Average ^e	0.08 ppm	(157 µg/m ³) ^e	Primary & Secondary
Lead (Pb)			
Quarterly Average		1.5 µg/m ³	Primary & Secondary
Particulate ≤ 10 microns (PM₁₀)			
Annual Arithmetic Mean		50 µg/m ³	Primary & Secondary
24-hour Average		150 µg/m ³	Primary & Secondary
Sulfur Dioxide (SO₂)			
Annual Arithmetic Mean	0.03 ppm	(80 µg/m ³) ^e	Primary
24-hour Average	0.14 ppm	(365 µg/m ³) ^e	Primary
3-hour Average	0.50 ppm	(1300 µg/m ³) ^e	Secondary

Notes:

^a ppm – parts per million

^b Parenthetical value is an approximately equivalent concentration.

^c mg/m³ – milligrams per cubic meter

^d µg/m³ – micrograms per cubic meter

^e In July of 1997, the 8-hour ozone standard was promulgated and the 1-hour ozone standard was remanded for all areas, excepting areas that were designated non-attainment with the 1-hour standard when the ozone 8-hour standard was adopted. In July of 2000, the ozone 1-hour standard was re-instated as a result of the federal lawsuits that were preventing the implementation of the new 8-hour ozone standard. As of December of 2001, EPA estimated that the revised 8-hour ozone standard rules will be promulgated in 2003-2004. In the interim, no areas can be deemed to be definitively non-attainment with the new 8-hour standard.

In 1997, EPA initiated work on new General Conformity rules and guidance to reflect the new 8-hour ozone, PM_{2.5}, and regional haze standards that were promulgated in that year. However, because of pending litigation and resulting delay in implementation of the new ozone and PM_{2.5} ambient air quality standards, these new conformity requirements have not been completed by EPA, and draft rule language is not yet available (USEPA 2001).

The General Conformity Rule and the promulgated regulations found in 40 CFR Part 93, exempt certain federal actions from the Conformity Determination process (e.g., contaminated site clean-up and natural emergency response activities). Other federal actions are assumed to be in conformity if total indirect and direct project emissions of non-attainment pollutants are below *de minimis* levels established under 40 CFR Part 93.153. The threshold levels (in tons of pollutant per year) depend upon the severity of the non-

attainment area as designated by EPA. To evaluate whether a proposed action is in conformity, the net change in non-attainment pollutants are calculated, then compared to the *de minimis* thresholds

The General Conformity Rule requires that any federal action meet the requirements of a SIP or Federal Implementation Plan (FIP). More specifically, CAA Conformity is assured when a federal action *does not*:

- Cause a new violation of a NAAQS
- Contribute to an increase in the frequency or severity of violations of NAAQS
- Delay the timely attainment of any NAAQS, interim progress milestones, or other milestones toward achieving compliance with the NAAQS

The General Conformity Rule applies only to actions in non-attainment or maintenance areas and considers both direct and indirect emissions. The rule applies only to federal actions that are considered “regionally significant” or where the total emissions from the action meet or exceed the *de minimis* thresholds. An action is regionally significant when the total non-attainment pollutant emissions exceed 10 percent of the Air Quality Control Regions (AQCR) total emissions inventory for that non-attainment pollutant. If a federal action meets the *de minimis* threshold requirements and is not considered regionally significant, then a full Conformity Determination is not required.

Federal Prevention of Significant Deterioration (PSD) regulations also define air pollutant emissions from proposed major stationary sources or modifications to be “significant” if: 1) a proposed project is within 10 kilometers of any Class I area; and 2) regulated pollutant emissions would cause an increase in the 24-hour average concentration of any regulated pollutant in the Class I area of 1 µg/m³ or more (40 CFR 52.21(b)(23)(iii)).

3.3.2 Affected Environment

Nearly all of the motor vehicle commutes and boat patrol activities associated with the MSST operation in Galveston will occur within the Houston-Galveston-Brazoria area. Based on historical ambient air quality monitoring records, the Houston-Galveston-Brazoria Area has been designated by the EPA as a “severe” non-attainment area for ozone. As an international port and business center, Houston is the source of 51 percent of the area’s NO_x emissions and 23 percent of VOC emissions. Forty-nine percent of NO_x emissions and 14 percent of VOC emissions stem from on- and off-road mobile sources (TLC 2002). The Houston-Galveston-Brazoria Area is in attainment for all other criteria pollutants, which include CO, SO_x, PM₁₀, NO₂, and Pb.

The reservists will contribute a small fraction of the commute emissions from outside the Houston-Galveston-Brazoria Non-attainment Area. Boat patrols will occasionally be required in the Port Arthur

area, which is in the Beaumont-Port Arthur Ozone Non-attainment Area. However, because the Proposed Action-related emissions are lower and the *de minimis* thresholds higher for these remote emissions, it is necessary only to evaluate conformity for the Houston-Galveston-Brazoria Non-attainment Area.

Climate

The Galveston area enjoys a sub tropical climate moderated by the warm waters of the Gulf of Mexico. Average yearly high temperature is 67.4 degrees Fahrenheit (°F), average low is 51°F. The overall percentage of sunshine is 62 percent. Annual precipitation for Galveston is approximately 44 inches. Table 3-5 presents the monthly temperature and precipitation data for Galveston, Texas.

Table 3-5. Local Climate Summary for the City of Galveston

Month	Mean Temperature (°F)	Median Precipitation (Inches)
January	47.7	4.08
February	57.9	2.61
March	64.1	2.75
April	70.0	2.56
May	76.8	3.70
June	82.2	4.04
July	84.3	3.45
August	84.4	4.22
September	81.1	5.76
October	74.1	3.49
November	65.4	3.64
December	58.1	3.53

Source: NOAA 1990

3.4 Noise

3.4.1 Definition of the Resource

This section defines noise standards and methodology, discusses the impacts of noise on humans and marine mammals, and describes the existing noise environment in the ROI. The ROI for the noise environment is the Galveston Bay, the Galveston Ship Channel, and the Intracoastal Waterway from Port Arthur to Texas City.

Webster’s dictionary defines noise as “sound or a sound that is loud, disagreeable, or unwanted.” However, the definition of noise is highly subjective. To some people the roar of an engine is satisfying

or thrilling; to others it is an annoyance. Loud music may be enjoyable, depending on the listener and the circumstances. While no absolute standards define the threshold of “significant adverse impact,” there are common precepts about what constitutes adverse noise in certain settings, based on empirical studies. Noise is “adverse” in the degree to which it interferes with activities such as speech, sleep, and listening to the radio and television and the degree to which human health may be impaired. Noise can also cause “adverse impacts” to marine mammals, depending on the type of noise and duration. Noise can result in stressful situations that disrupt sleep, reproduction, feeding habits, and communication.

Overview of Noise Standards and Terminology

Noise is customarily measured in decibels (dB), a logarithmic unit that accounts for large variations in amplitude and is the accepted standard unit measurement of sound. In order to evaluate the total community noise environment, a time-averaged noise level, or day-night average A-weighted sound level (DNL), has been developed. DNL is the average acoustical energy during a 24-hour period with a 10 dB penalty added to nighttime levels (between 10 p.m. and 7 a.m.). The 10 dB penalty gives extra sensitivity to events occurring during this period when ambient noise levels are generally low. EPA and DoD, as well as all other federal agencies having non-occupational noise regulations, use the DNL as their principal noise descriptor for community assessments (Cowan 1994).

Ambient sound levels vary based upon the setting in which they are measured. For example, in a wilderness setting, ambient sound levels range from DNL 20 to 30 dB; in residential areas, they range between DNL 30 to 50 dB; and in urban residential areas, they range between DNL 60 to 70 dB (FICON 1992). When sound levels are DNL 55 dB or less in outdoor areas, where the absence of noise is important for functional land use, there is no reason to suspect that the general population would be at risk from any of the identified effects of noise (i.e., activity interference or annoyance) (EPA 1978). The American National Standards Institute (ANSI) has also suggested that land uses in “extensive natural wildlife and recreation areas” are likely to be considered compatible with DNL 60 dB or less (ANSI 1990). The methodology employing DNL and percent highly annoyed (%HA) has been successfully used throughout the U.S. in a variety of settings, ranging from urban to rural (see Appendix F for further explanation on noise metrics).

Regulatory Framework for Noise and Standard Operating Procedures

For homeport facilities, USCG NEPA Implementing Procedures (COMDTINST M16475.1-D) require a discussion of the existing conditions in the surrounding communities, including noise regulations. Additionally, the USCG Safety and Environmental Health Manual (COMDTINST M5100.47) establishes requirements for noise, which includes compliance with local noise ordinances, and the identification and assessment of hazardous noise sources. Therefore, noise produced by USCG watercraft or USCG facility

operations would comply with USCG, state, and local guidelines. The USCG recommends 86 A-weighted decibels (dBA) as the maximum noise level that watercraft may generate (PWIA 2002).

Most states and territories have developed land use plans and regulations that incorporate noise thresholds and standards in accordance with the Federal Noise Control Act of 1972 (42 U.S.C. 4901, 4918). No ordinances or provisions for watercraft requiring boat engine muffling devices are contained in the Administrative and Legislative Codes of Texas. Furthermore, no codes relating to nuisance noises could be located on the Texas Legislature's website.

The USCG's Reference Guide to State Boating Laws, 6th edition, 2000, states that the State of Texas does not have a maximum operational noise level for watercraft, confirming the regulatory records review. Although the State of Texas has not, most states have established a maximum noise level operating range of 75 dBA to 90 dBA at 50 feet, which incorporates the Society of Automotive Engineers tests: SAE J-2005 (stationary test) and SAE J-1970 (shoreline test). Furthermore, EPA uses 75 dBA as an acceptable noise level to protect public health and welfare (PWIA 2002).

The USCG also cooperates with local governments or the host agency to ensure that the facilities comply with local noise standards and land use regulations, where applicable. The City of Galveston, Texas has a general noise ordinance that "prohibits the creation of any unreasonably loud, disturbing or unnecessary noise, or noise of such kind, intensity or duration as to be detrimental to the life or health of any natural person." The code considers the source of the noise and limits noise during the hours of 10:30 p.m. and 7:00 a.m. (City of Galveston 1960).

Human Response to Noise

Human response to noise varies according to the type and characteristics of the noise-producing source, distance between source and receptor, receptor sensitivity, and time of day. Most people are exposed to sound levels of 50 to 55 dB (DNL) or higher on a daily basis. Studies specifically conducted to determine noise impacts on various human activities show that about 90 percent of the population is not significantly bothered by outdoor sound levels below 65 dB (DNL) (USDOT 1980). Studies of community annoyance in response to numerous types of environmental noise show that DNL correlates well with impact assessments and that there is a consistent relationship between DNL and the level of annoyance.

Human hearing varies in sensitivity for different sound frequencies. The ear is most sensitive to sound frequencies between 800 and 8,000 Hertz (Hz) and is least sensitive to sound frequencies below 400 Hz or above 12,500 Hz. Several different frequency-weighting metrics have been developed using different dB adjustment values. The most commonly used decibel weighting schemes are the A-weighted and

C-weighted scales. The characteristics of sound include parameters such as amplitude, frequency, and duration (Cowan 1994).

Marine Mammal Response to Noise

Marine mammals spotted in the Gulf of Mexico include: Sperm whale, Fin whale, Atlantic bottlenose dolphin, Atlantic spotted dolphin, Blainville's beaked whale, Clymene dolphin, Cuvier's beaked whale, Dwarf sperm whale, False killer whale, Fraser's dolphin, Gervais' beaked whale, Killer whale, Melonheaded whale, Pantropical spotted dolphin, Pygmy killer whale, Pygmy sperm whale, Risso's dolphin, Rough toothed dolphin, Short-finned pilot whale, Spinner dolphin, Striped dolphin, and West Indian Manatee. They are protected under the MMPA. Noise is recognized as a disturbance to whales. Increasingly, attention is being paid to the impacts on whales of anthropogenic (human-generated) noise sources, especially those associated with the military (ONR 2000), as these sources tend to be much louder and can be widespread (Richardson, et al. 1995). In addition to human-generated noise, there are numerous natural sound sources in the world's oceans, such as earthquakes, lightening strikes, sea ice activity, precipitation, and waves.

In ocean acoustics, the convention chosen for a reference pressure level is one microPascal (1 μ Pa) (ONR 2000; Richardson, et al. 1995). This unit differentiates dB in water rather than air. The total ambient noise in the open ocean is about 74 dB-referenced 1 μ Pa (ONR 2000). This ambient noise level is composed of natural and human-generated sounds. Human-generated sound comes from a variety of sources, including vessel traffic, geologic exploration, military projects, and aircraft. Sound radiated by the many large ships throughout the world's oceans is the single largest contributor to the increased sound levels (ONR 2000). The effects of these vessels are both local, affecting specific limited areas, and global, contributing to an overall increase in ambient noise. Noise levels throughout the world's ocean at frequencies below 500 Hz have increased over the last three decades (Richardson, et al. 1995).

Existing Noise Outputs for Ships

Noise generated from water vessels has an effect on both above-water and underwater noise receptors. Vessels vary greatly in their noise output. Vessel size, hull construction, speed, maintenance, and other factors all affect the noise a vessel produces.

Above-water Noise. Generally, as the size, load, and speed of a vessel increases, so does the noise it generates. Although the USCG Group Galveston currently operates a variety of vessel types, the type of watercraft currently used for patrolling operations is a Coastal Control Boat, also known as a "Boston Whaler." This patrol boat has a two-stroke Evinrude Defender outboard engine and the capacity to carry

a four-person crew. Because data on airborne noise generated from marine vessels was not available, a qualitative assessment was made when analyzing above-water noise.

Underwater Noise. Vessel noises, caused by the turning of the screws, engine operations, and onboard machinery, generally fall in a range of 5 to 2,000 Hz, with highest intensities below 100 Hz. Larger USCG cutters may generate source pressures of 160 to 170 dB-referenced 1 μ Pa at one meter. A low frequency sound attenuates with distance to about 155 dB referenced 1 μ Pa at about 100 yards from the source and to about 120 dB referenced 1 μ Pa at about two miles from the source and also depends on the physical oceanic environment (e.g., temperature and salinity). Table 3-6 lists sound pressure source levels for various vessels (Richardson, et al. 1995; USCG undated).

Table 3-6. Underwater Sound Pressure Levels for Various Vessels

Vessel (length) and Description	Frequency	Source Level (dB referenced 1 μ Pa-meter)
Outboard drive – 23 feet (2 engines, 80 horsepower each)	630, 1/3 octave	156
Twin Diesel – 112 feet	630, 1/3 octave	159
Small Supply Ships – 180 to 279 feet	1000, 1/3 octave	125-135 (at 50 meters)
Freighter – 443 feet	41, 1/3 octave	172

Source: Richardson, et al 1995

Note: USCG cutters range from 110 to 387 feet. These underwater sound pressure levels cannot be directly compared to airborne decibel levels.

Noise levels associated with supertankers and container ships are 180 to 190 dB-referenced as 1 μ Pa. The USCG vessels are considerably smaller with much smaller engines; therefore, they will not significantly contribute to this type of noise (USCG 2002a).

3.4.2 Affected Environment

Currently, the USCG is located adjacent to compatible areas, zoned mostly industrial and commercial. The base is equipped with a variety of piers that meet the needs of roll-on/roll-off, break bulk cargo, and other large vessels. The Gulf of Mexico, which is connected to the Atlantic Ocean by the Straits of Florida, is an important transportation route, serving ports such as Veracruz, Mexico; New Orleans, Louisiana; Pensacola, Florida and Tampa, Florida.

While home ported or in transit to off-shore areas, noise produced by water vessels and supporting facilities can combine with other noise sources to affect nearby communities and natural resources. Industrial and commercial areas border the USCG Group Galveston facilities as shown in Figure 3-1. The USCG has established guidelines and developed cooperative agreements to mitigate impacts on

neighboring communities. Federal and state laws and local ordinances establish standards and limitations for noise output from ports, airfields, heliports, helipads, power generating plants, and motor vehicles.

Current Operations

The USCG's activities in the Southeast Texas/Western Louisiana operating area focus on four principal missions: maritime safety, maritime law enforcement, environmental protection, and national security. The units are established and managed based on their functions according to the mission. Since all units are multi-mission, there is some overlap in the responsibilities of each mission, and therefore, no one type of watercraft is limited to a mission (USCG 2000).

As previously discussed, Coastal Control Boats have a crew capacity of four and a two-stroke Evinrude Defender outboard engine. A two-stroke engine is commonly found in lower-power equipment such as chain saws and other lawn/garden equipment, jet skis and outboard engines. Two-stroke engines do not have valves, which simplify their construction and make them less expensive to produce. This design also causes them to fire once every revolution, instead of once every other revolution as in a four-stroke engine, giving it a significant power boost. However, because the engine is fired more frequently, two-stroke engines produce more noise than with a four-stroke engine (Brain 2002). Another type of watercraft engine is a direct fuel injected two-stroke carburetor engine that sounds similar to a four-stroke engine at full throttle, but is louder than a four-stroke engine at idle (Evinrude 2002).

3.5 Public Safety

3.5.1 Definition of the Resource

A safe environment is one in which there is no, or an optimally reduced, potential for property damage, serious bodily injury or illness, or death. Safety and accident hazards can often be identified and reduced or eliminated. Necessary elements for an accident-prone situation or environment include the presence of the hazard itself together with the exposed (and possibly susceptible) population. The degree of exposure depends primarily on the proximity of the hazard to the population. Activities that can be hazardous include transportation, maintenance and repair activities, and the creation of highly noisy environs. The proper operation, maintenance, and repair of vehicles and equipment carry important safety implications. Any facility or human-use area with potential explosive or other rapid oxidation process creates unsafe environments for nearby populations. Extremely noisy environments can also mask verbal or mechanical warning signals such as sirens, bells, or horns.

3.5.2 Affected Environment

Public safety is one of the USCG's primary missions, as the USCG is the prominent overseer of maritime safety in all U.S. waters, including the high seas. The U.S. maritime transportation system is diverse. Geography, environmental conditions, and the amount and types of vessel traffic are all aspects of the U.S. maritime system.

U.S. ports must provide safe and efficient rapid turnaround capabilities to accommodate expanding trade and the increasing size and speed of oceangoing ships, many of which are foreign. U.S. ports also handle a large volume of coastal and inland traffic. Major members of the U.S. maritime transportation system include federal agencies, commercial groups, state and local groups, and public and community groups (USCG 2002a). Since the events of September 11, 2001, the safety of the country's ports and its maritime system has received increased scrutiny and concern. It is due to these concerns that the Proposed Action is being considered.

One potential problem at the MSST station site on Harborside Drive location is the location of the driveway in relation to Harborside Drive. This road is a major thoroughfare for semi-vans and other large trucks between the mainland and the City of Galveston. The driveway is situated on a sharp curve and a large building at the apex of the curve hinders the line of sight for drivers. In addition, there does not appear to be a posted speed limit, and traffic is both heavy and fast.

4. Environmental Consequences

4.1 Introduction

This chapter presents the potential environmental impacts of the Proposed Action and the No Action Alternatives. U.S. Coast Guard (USCG) personnel and cutters currently perform security duties in and around the Galveston Bay, Port of Galveston, Galveston Channel, and the Intracoastal Waterway from Port Arthur to Texas City. The Proposed Action and No Action Alternative are briefly described below (see Sections 2.1 and 2.2 for full descriptions). For the purposes of this chapter, these two alternatives will only be concisely discussed as they relate to each resource. This abbreviated discussion will avoid needless repetition throughout this chapter. Based on professional judgment, potential impacts are identified as minor, moderate, or high, and beneficial and adverse, whenever possible.

Proposed Action

The Proposed Action is the stand-up and operations of a Maritime Safety and Security Team (MSST) at Base Galveston, Texas. This is a direct response to the events of September 11, 2001. The MSSTs are urgently needed to improve existing domestic port capabilities. While MSSTs will be used similarly to the Port Security Units (PSU) to augment existing USCG forces in the United States (U.S.), MSSTs will not duplicate existing protective measures. The Galveston MSST will consist of six Response Boats-Small (RBS) and approximately 71 active duty personnel and 33 reservists. The Region of Influence (ROI) includes the Port of Galveston, Galveston Bay, and the Galveston Channel and the Intracoastal Waterway from Port Arthur to Texas City.

No Action Alternative

The No Action Alternative is the continuation of existing conditions without implementation of the Proposed Action or alternatives. The No Action Alternative, as used in this Environmental Assessment (EA), will not fulfill the USCG's purpose and need to provide additional security to the nation's ports, including the Port of Galveston. If a No Action Alternative were acceptable, several consequences may occur. Currently, vessels and manpower are being diverted from other missions in order to provide the additional security for the nation's ports, including the Port of Galveston. Under the No Action Alternative, disruption to other missions would continue resulting in further strain on manpower and current assets. This scenario of vessels and manpower being stretched to their limit could make it easier for an attack to occur. The result might be a potential for significant adverse environmental impacts. Terrorists could strike at military or commercial facilities in these ports creating health and safety hazards for the surrounding populace, impacting appropriate emergency responses, employment and trade, and marine life. The impacts could be immediate (i.e., loss of life) or long lasting (i.e., loss of fishing habitats

that could impact the economy on a long-term basis). Recovery time would be dependent on the severity to the resource, the extent of the loss, and the resource's ability to recover.

Potential impacts are addressed in the context of the scope of the Proposed Action as described in Section 2.0 and in consideration of the potentially affected environment as characterized in Section 3.0.

4.2 Biological Resources

4.2.1 Significance Criteria

This section evaluates the potential impacts to the biological resources under the Proposed Action and the No Action Alternative. The significance of impact to biological resources is based on: 1) the importance (i.e., legal, commercial, recreational, ecological, or scientific) of the resource; 2) the proportion of the resource that would be affected relative to its occurrence in the region; 3) the sensitivity of the resource to proposed activities; and 4) the duration of ecological ramifications. The impacts to biological resources are significant if species or habitats of high concern are adversely affected over relatively large areas. Impacts are also considered significant if disturbances cause reductions in population size or distribution of a species of high concern. Threatened or endangered species, if present, will be discussed under each biological resource area.

Protected and Sensitive Habitats

Although a number of wildlife refuges and parks exist in the region, there are no protected areas within the ROI. Laws relating to protected and sensitive habitats include the Marine Protection, Research, and Sanctuaries Act, the Magnuson-Stevens Conservation and Management Act, the Oil Pollution Act, and the Endangered Species Act (ESA). Under either alternative, the USCG would continue to enforce these living marine resource protection laws.

Impacts to protected and sensitive habitats would be significant if MSST activities resulted in any of the following outcomes:

- Temporary or permanent loss of any sensitive, protected, or reporting area habitat
- Direct loss or damage of any sensitive resource within a protected or sensitive habitat
- Excessive noise or presence from normal USCG activities that lessens the habitat value

Marine Mammals

Impacts to marine mammals would be significant if MSST activities resulted in any of the following outcomes:

- Temporary or permanent loss of any habitat
- Direct loss (take) of a substantial number of a specific species that would affect the species' ability to survive
- Harassment, either Level A, defined as pursuit, torment, or annoyance that has the potential to injure, or Level B, defined as causing disruption of behavioral patterns
- Permanent loss of breeding areas and habitat
- Substantial interference with movement of any resident species

Fish

Fisheries may be impacted by a number of factors. The most important factors within the ROI are disturbance from direct contact between USCG vessels, enforcement of applicable fishing laws, and impacts to fish habitat. Additional impacts may result from accidental pollution emissions. The USCG enforces a number of fishing and fisheries laws. In addition, USCG has developed its own initiatives to protect fisheries and their habitat.

Impacts to fisheries would be significant if MSST activities resulted in any of the following outcomes:

- Overfishing impacting the species' ability to survive
- Permanent loss of breeding areas and habitat
- Substantial interference with movement of any resident species

Coastal and Other Birds

Impacts to coastal and other birds would be significant if MSST activities resulted in any of the following outcomes:

- Harassment of nesting and foraging areas impacting the species' ability to survive
- Permanent loss of breeding areas and habitat
- Substantial interference with migration

Wetlands and Floodplains

The significance of impacts on wetland resources is proportional to the functions and values of the wetland complex. Wetlands function as habitat for plant and wildlife populations, including threatened and endangered species that depend on wetlands for their survival. Wetlands are valuable to the public for flood mitigation, stormwater runoff abatement, aquifer recharge, water quality improvement, and aesthetics. Quantification of wetlands functions and values, therefore, is based on the ecological quality of the site as compared with similar sites, and the comparison of the economic value of the habitat with the economic value of the proposed activity that would modify it. A significant adverse impact on

wetlands would occur should either the major function or value of the wetland be significantly altered. Significance criteria for impacts to floodplains are based on the existence of floodplains and associated regulations. The impact of flood hazards on a proposed action is significant if such an action is proposed in an area with a high probability of flooding.

4.2.2 Potential Impacts

Protected and Sensitive Habitats

Proposed Action. Although a number of wildlife refuges and parks are in the general area, no protected or sensitive habitats are within the ROI. Based on the purpose of and projected operations of the MSST, they would not normally patrol in or near these areas. An exception to these normal operations would be in the case of an unusual occurrence (i.e., pursuit). Under a normal operational scenario, there would be no loss of sensitive habitats. Therefore, there are no anticipated adverse impacts on sensitive habitats or protected areas because of the Proposed Action.

No Action Alternative. Under the No Action Alternative, existing conditions would remain as is, the MSST would not be stood up, and the potential scenarios identified in Section 4.1 could result. Impacts of selecting this alternative could result in the potential for significant adverse impacts to protected and sensitive habitats.

Marine Mammals

Proposed Action. The USCG's current Commandant Instructions (COMDTINSTs), regulations, and procedures to avoid collisions with marine mammals would continue under the Proposed Action. While the purpose of the MSST is not to provide marine resource protection and law enforcement, the MSST would continue to comply with these regulations. Although several species of marine mammals are known to occasionally utilize Galveston Bay, the increase in the number of total USCG operations is not expected to result in more than minor adverse impacts. An exception to these normal operations would be in the case of an unusual occurrence (i.e., pursuit).

Federally endangered marine mammals, including the sperm whale, fin whale, and west indian manatee, are known to occur in the Gulf of Mexico. The addition of the MSST to the Port of Galveston is not likely to result in adverse effects to these protected marine species. The MSST vessels will represent only a small increase when compared to the existing traffic already using the port. These boats are designed to be highly maneuverable, which will assist them in avoiding collisions with protected species. To guard against any adverse impacts of the MSST vessel operations on protected species, the USCG would continue to adhere to the protective measures in place. Moreover, the USCG would continue to adhere

to the policies and goals stated in the Ocean Steward program (Appendix G). Because of the Ocean Steward program and other protective measures, the small number and size of vessels, the boats' high level of maneuverability, and their low level of speed during normal operations, the addition of the MSST boats and their operations will not likely result in adverse effects to protected marine species.

No Action Alternative. Under the No Action Alternative, existing conditions would remain as is, the MSST would not be stood up, and the potential scenarios identified in Section 4.1 could result. Impacts of selecting this alternative could be considered significantly adverse due to the potential of a terrorist attack and the potential for adverse impacts to marine mammals such an attack may cause. Recovery would depend on the extent of loss.

Fish

Proposed Action. As part of the Proposed Action, the stationing and operations conducted by the MSST would result in minor adverse impacts on fisheries or essential fish habitats (EFHs). Minor adverse impacts have been designated for the potential taking of individuals or causing minor disruptions in feeding or reproduction. There is no indication in published literature that collisions with vessels are a significant source of injury or mortality for invertebrates and fish (USCG 1996). No federally threatened or endangered fish are known to inhabit the ROI.

No Action Alternative. Under the No Action Alternative, existing conditions would remain as is, the MSST would not be stood up, and the potential scenarios identified in Section 4.1 could result. Impacts of selecting this alternative could be considered significantly adverse due to the potential of a terrorist attack that might result in a loss or degradation of fishing areas. The potential for loss of EFHs and fish species could also impact the nation's economy.

Coastal and Other Birds

Proposed Action. While several species of federally endangered or threatened birds (i.e., eastern brown pelican, whooping crane, bald eagle, northern aplomado falcon, Mexican spotted owl, piping plover, Eskimo curlew, and interior least tern) are known to breed in the Galveston Bay region, neither the stationing site nor the launch sites provide suitable habitat for threatened and endangered species or migratory birds. The MSST normal operations will not be within or adjacent to nesting and foraging habitat for threatened and endangered species, or migratory birds. It is anticipated that only minor adverse impacts, if any, might occur.

No Action Alternative. Under the No Action Alternative, existing conditions would remain as is, the MSST would not be stood up, and the potential scenarios identified in Section 4.1 could result. Impacts

of selecting this alternative could be considered significantly adverse due to the potential of a terrorist attack, with the potential for adverse impacts to coastal and migratory birds. Recovery would depend on the extent of loss.

Wetlands and Floodplains

Proposed Action. The stationing site and launch sites are located within 100-year floodplains, however, there are no modifications to the floodplain area. The Seabrook Wetlands is within the ROI, however, the comparatively small number of MSST operations weighed against the large number of ships in the same area should not result in more than minor impacts. Seagrass beds and associated estuarine wetlands will not be utilized during MSST operations. Due to the shallow water depth in these areas, MSST boats will not be able to operate in the area. Operations in proximity to estuarine wetland areas will have to be conducted at low speeds due to the shallow nature of the water and the high likelihood of submerged obstacles. Therefore, there may be minor impacts from the Proposed Action.

No Action Alternative. Under the No Action Alternative, existing conditions would remain as is, the MSST would not be stood up, and the potential scenarios identified in Section 4.1 could result. Impacts of selecting this alternative could be considered significantly adverse due to the potential of a terrorist attack, with the potential for loss of wetlands and their unique ecosystems.

4.3 Air Quality and Climate

4.3.1 Significance Criteria

The potential impacts to local and regional air quality conditions near a proposed federal action are determined based upon the increases in regulated pollutant emissions relative to existing conditions and ambient air quality. Impacts to air quality in National Ambient Air Quality Standards (NAAQS) “attainment” areas are considered significant if the net changes project-related emissions result in one of the following situations:

- Violation of any national or state ambient air quality standard
- Exposure of sensitive receptors to substantially increased pollutant concentrations
- An increase of 10 percent or more in an affected Air Quality Control Region (AQCR) emissions inventory

Impacts to air quality in NAAQS “non-attainment” areas are considered significant if the net changes in project-related emissions result in one of the following situations:

- Violating any national or state ambient air quality standards

- Increasing the frequency or severity of a violation of any ambient air quality standard
- Exceeding any significance criteria established in a State Implementation Plan (SIP)
- Delaying the attainment of any standard or other milestone contained in the SIP

With respect to the General Conformity Rule, impacts to air quality would be considered significant if the Proposed Action would result in an increase of a non-attainment or maintenance area's emission inventory by 10 percent or more for one or more non-attainment pollutants; or if such emissions exceed *de minimis* threshold levels established in 40 Code of Federal Regulations (CFR) 93.153(b) for individual non-attainment pollutants or for pollutants for which the area has been designated as a non-attainment or maintenance area. The Proposed Action would occur in a severe ozone non-attainment area, therefore the General Conformity Rule does apply.

Federal Prevention of Significant Deterioration (PSD) regulations also define air pollutant emissions to be "significant" if: 1) a proposed project is within 10 kilometers of any Class I area; and 2) regulated pollutant emissions would cause an increase in the 24-hour average concentration of 1 $\mu\text{g}/\text{m}^3$ or more of any regulated pollutant in the Class I area (40 CFR 52.21(b)(23)(iii)). PSD regulations also define ambient air increments—limiting the allowable increases to any area's baseline air contaminant concentrations, based on the area's designation as Class I, II, or III (40 CFR 52.21(c)).

Local and regional pollutant impacts of direct and indirect emissions from stationary emission sources from the Proposed Action are addressed through federal and state permitting program requirements under the New Source Review and PSD regulations (40 Code of Federal Regulations [CFR] Parts 51 and 52).

4.3.2 Potential Impacts

Proposed Action. The potential sources of increased criteria pollutant emissions under the Proposed Action would be from 1) watercraft operations; 2) fuel storage and handling emissions; 3) maintenance and support activities; and 4) personnel travel. The Houston-Galveston-Brazoria area (which includes the ROI) is classified as non-attainment (severe) for ozone pollution. As an international port and business center, Houston is the source of 51 percent of the area's nitrogen oxide (NO_x) emissions and 23 percent of VOC emissions. Forty-nine percent of NO_x emissions and 14 percent of volatile organic compound (VOC) emissions stem from on- and off-road mobile sources (TLC 2002). Appendix E presents the General Conformity Analysis, which includes a description of the affected environment and potential impacts from the Proposed Action.

An Air Conformity Analysis was conducted for the Proposed Action. The purpose of the analysis is to determine whether the Proposed Action would conform to the applicable SIP, based on upon the criteria

established in the General Conformity Rule and promulgated in 40 CFR 93.158. Based upon the conformity analyses, the Proposed Action meets the conformity criterion for not exceeding *de minimis* thresholds in the affected area. Based upon the emission analyses, the reasonably foreseeable project emissions of NO_x and VOCs would not exceed *de minimis* thresholds at MSST Galveston. For the complete Air Conformity Analysis, including a description of the affected environment and potential impacts from the Proposed Action, please refer to Appendix E. Based on the results of the Air Conformity Analysis, no adverse impacts to air quality are expected.

No Action Alternative. Under the No Action Alternative, existing conditions would remain as is and the MSST would not be fully implemented. The USCG could maintain the current level of protection, which has been determined to be insufficient. Impacts of selecting this alternative could be considered significantly adverse due to the potential of terrorist attacks on U.S. ports, with the potential for loss of life and impacts to the environment.

4.4 Noise

4.4.1 Significance Criteria

Noise produced by water vessels and supporting facilities while home ported or in transit can combine with other noise sources to affect nearby communities and natural resources. This section addresses the noise impacts from the Proposed Action and the No Action Alternative. Examples of noise impacts from MSST operations include noise from the Response Boats-Small (RBS), construction equipment (temporary), and traffic. Noise impacts were only considered within the ROI. This section also discusses general noise impacts to marine mammals. The USCG has established guidelines and develops cooperative agreements to mitigate impacts on neighboring communities. Federal and state laws and local ordinances establish standards and limitations for noise output from ports, airfields, heliports, helipads, power generating plants, and motor vehicles.

Noise impact criteria normally are based partly on land use compatibility guidelines and partly on factors related to duration and magnitude of the noise level, including the time of day and the conduct of operations. It is known that the interim watercraft is a Coastal Control Boat but it is unknown what type of RBS will be purchased in support of the MSST in the Proposed Action. In addition, specific engines have not been identified. It is only known that the two-stroke engines will be replaced with four-stroke engines. In making the qualitative statements, engines commonly used by the USCG were chosen. Four-stroke engines have four cycles: intake stroke, compression stroke, combustion stroke, and exhaust stroke. The first three cycles generate the majority of engine noise, with interaction of the piston and crankshaft. Unlike a two-stroke engine, oil is separated and there are moving valves (Brain 2002).

4.4.2 Potential Impacts

Proposed Action. As previously discussed, the type of vessel engine for the MSST has not been identified, and therefore sound exposure levels could not be calculated for noise sensitive areas in proximity to the Port of Galveston, Galveston Bay, and the Intracoastal Waterway. Research was done on two-stroke and four-stroke engines commonly used by the USCG, however, data on airborne noise generation by marine vessels generally is not available. Manufacturer literature stated that new four-stroke engines were quieter than two-stroke engines, which is likely because of the incorporation of muffling devices into design and the reduced number of combustion firings (Evinrude 2002). According to the Society of Automobile Engineers, motorboat noise dissipates up to 9.9 A-weighted decibels (dBA) when a boat travels from 50 to 100 feet away (4.8 dBA reduction from 50 to 100 feet, with an additional 5.1 dBA reduction from 100 to 200 feet away). A boat with a new engine meeting the Society of Engineers standards, traveling a normal operating speed, a minimum of 50 feet away from noise sensitive receptors would meet USCG, Environmental Protection Agency (EPA), and state and local noise ordinances (PWIA 2002).

This area is a large geographic area and it would not be practical to provide specific noise level value estimates that would be representative of MSST boat noise impacts. Low speeds in port areas would continue except during an unusual event (i.e., pursuit). Based on the limited data available for analysis, it is anticipated that above-water noise impacts would be similar to moderately to minor adverse within the ROI.

In regard to noise impacts by vessels to marine mammals, there is no scientific consensus regarding absolute thresholds for significance. However, this section applies current scientific knowledge to the assessment of impacts from ocean-going vessels on marine mammals. As previously discussed in section 3.9, underwater decibel (dB) measurements are not equivalent to dB measurements of airborne sounds. The reference pressure used for underwater noise measurement, one microPascal ($1\mu\text{Pa}$), is much lower than the reference pressure used for airborne sound measurements ($20\mu\text{Pa}$).

The impact that a human-made sound can have on sea life depends on its loudness, the specific acoustic frequency pattern at the location where the marine organisms detect the sound, and the distance from the noise source. High frequency components of the noise decrease more rapidly with distance than do low frequency components.

Although the Proposed Action would produce an increase in the overall level of boat operations, the size of the vessels proposed are smaller than existing vessels operating in the vicinity of the Port of Galveston, Galveston Bay, and the Intracoastal Waterway. RBS noises are most likely well below sound intensities

associated with severe disturbance or injury to marine mammals at normal operating procedures. In addition, the number of marine mammals that frequent the ROI is low. Since there is no scientific information concluding that the noise levels emitted by existing larger USCG vessels have direct significant adverse impacts on marine mammals, it is anticipated that the noise generated by the RBS will create only minor adverse impacts.

No Action Alternative. Under the No Action Alternative, existing conditions would remain as is, the MSST would not be fully implemented, and the potential scenarios identified in Section 4.1 could result. However, the impacts of selecting this alternative could result in less noise being added to the marine environment. However, the level of protection for the port and the ROI would remain as current.

4.5 Public Safety

4.5.1 Significance Criteria

If implementation of the Proposed Action were to substantially increase risks associated with the safety of MSST personnel, contractors, or the local community, or substantially hinder the ability to respond to an emergency, it would represent a significant impact. Furthermore, if implementation of the Proposed Action would result in incompatible land use with regard to safety criteria, impacts to safety would be significant. Public safety is one of the USCG's primary missions, as the USCG is the prominent overseer of maritime safety in all U.S. waters, including the high seas. The U.S. maritime transportation system is diverse. Geography, environmental conditions, and the amount and types of vessel traffic are all aspects of the U.S. maritime system. Since the events of September 11, 2001, the safety of the nation's ports and its maritime system has received increased scrutiny and concern. It is extremely difficult to determine the level of significance and degree of impact in losing one (or more ships) and associated loss of life; therefore, no attempt to do so is made in this section.

4.5.2 Potential Impacts

Proposed Action. The Proposed Action will increase the USCG's ability to protect critical domestic ports and the U.S. Maritime Transportation System from warfare and terrorist attacks. MSST operations will closely parallel USCG traditional port security operations, but will provide complementary, non-redundant capabilities that will close significant readiness gaps in our nation's strategic ports. The MSST will escort a variety of vessels and maintain specific security zones in each port. It is capable of operating seven days a week, 24 hours a day, in all weather conditions. It will operate with, and be supported by, both military and civilian government organizations, commercial, and non-government entities. Beneficial impacts may be reasonably expected from the Proposed Action.

There is, however, a potential safety problem with vehicles, especially those towing RBS, attempting to leave the Harborside Drive location. As noted previously, there is a very poor line of sight for on-coming traffic. Traffic on Harborside Drive consists of mainly large trucks and semi-trailers that travel at fast speeds. It is suggested that a warning light and sign be placed an adequate distance before the curve to warn travelers that slow-moving traffic may be entering the road.

No Action Alternative. Under the No Action Alternative, the USCG will continue to provide port security at the current level. Under the No Action Alternative, existing conditions would remain as is, the MSST would not be stood up, and the potential scenarios identified in Section 4.1 could result. Impacts of selecting this alternative could be considered significantly adverse due to the potential of terrorist attacks on U.S. ports, with the increased potential for loss of life.

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5. Cumulative Impacts

5.1 Cumulative Impacts Methods

Cumulative impacts are defined as “the impacts that result from the incremental impact of the action, when added to other past, present, and foreseeable future action” (40 Code of Federal Regulations [CFR] 1508.7). Cumulative impacts can result from individually minor but collective impacts occurring over a period of time (see Table 5-1).

This cumulative impact analysis considers reasonably foreseeable programs, projects, or policies that may impact operations to, and add to Maritime Safety and Security Team (MSST) operations, and or create a significant impact in Galveston and the surrounding areas. For the purposes of this Environmental Assessment (EA), only those resources identified in Chapter 3 that may be impacted by the Proposed Action will be carried over into the Cumulative Impacts discussions.

Table 5-1. On-Going and Future Projects

Proposed (or Existing) Action	Potential Cumulative Impacts
Off-shore Service Center (Pelican Island)	Short-term impacts to air, water quality and essential fish habitats (EFHs) during construction. Long-term impacts may be expected from high-frequency operations.
Coastal Erosion Planning and Response Act (CEPRA); various projects	Short-term impacts to air, water quality and EFHs during replenishment activities.
City of Texas City Terminal Railway Dredging Plan	Short-term impacts to air, water quality and EFHs during dredging and construction. Potential long-term impacts to air, water quality and EFHs from high-frequency operations.
City of Texas City’s Proposed Shoal Point Container Terminal	Short-term impacts to air, water quality, noise and EFHs during dredging and construction. Potential long-term impacts to air, water quality, noise and EFHs from frequency of operations.
Port of Houston Authority’s Proposed Container/Cruise Terminal	Short-term impacts to air, water quality and EFHs during dredging and construction. Potential long-term impacts to air, water quality and EFHs from high-frequency operations
Deepwater Program	Galveston may receive new and/or additional cutters as a result of this Program. The number, types, and time frame are unknown at this time. Additional NEPA documentation may be required.

Information about on-going and future projects and programs has been identified from web searches, other National Environmental Policy Act (NEPA) documents, local newspaper articles, and discussions with knowledgeable U.S. Coast Guard (USCG) personnel. Based on professional judgment, potential impacts are identified as minor, moderate, or high and beneficial and adverse whenever possible.

All projects are identified and briefly discussed below. Projects that are currently in the planning stages, or have been delayed until further studies have been completed and have no target dates, have been dismissed from further consideration. For the purposes of this EA, all identified projects have been deleted from further consideration. These projects, if completed, will be concluded at some future unknown date, long after the MSST has become operational.

Offshore Service Center (Pelican Island): This project includes the construction of a new terminal at Pelican Island, which is just offshore of northeast Galveston Island. This center will offer goods, services and products required in offshore deepwater drilling operations. Approximately 100 acres will be utilized. The project has three distinct phases: 1) engineering, marketing, and promotion; 2) construction; and 3) operations. No environmental data has been developed for this project. No permit from the U.S. Army Corps of Engineers (USACE) has been published for public comment. As the earliest date for operations is 2010, this project has been deleted from further consideration.

Coastal Erosion Planning and Response Act (CEPRA) various projects: CEPRA is administered by the Texas General Land Office. Potential projects include West Galveston Island and other small projects around the ROI. Although 15 million dollars for projects and related studies has been approved, neither specific projects nor a timetable has been published (GLO 2002).

City of Texas City Terminal Railway Dredging Plan: The City of Texas approved a plan in which the City would serve as a conduit for money from the port to the USACE to pay for dredging. Under the plan, USACE will do hydrographic surveys of the port, including ships' berths, when it does the survey for the ship channel. USACE will give the port an estimate of the cost of dredging. No target date has been established for the survey (GCDN 2002).

Deepwater Program: The award for this program was made in July 2002. It is not known at this time, if additional and/or new assets will be added to the Galveston area. It is anticipated that additional NEPA documentation will be required.

City of Texas City's Proposed Shoal Point Container Terminal: An Environmental Impact Statement (EIS) is being prepared by the Corps of Engineers, Galveston District for the City of Texas City's Proposed Shoal Point Container Terminal. The Proposed Action is to deepen the Texas City Channel in Galveston Bay to 45 feet mean level tide, dredge a turning basin and develop a six-berth, 400-acre

container terminal on Shoal Point, an active dredge material placement area. Wetland impacts would be approximately 14 acres. Approximately 11 million cubic yards of dredged material would be generated by the project. Key issues identified at the scoping meeting included concerns on air quality issues, traffic, channel navigation, and dredged material management. Comments from the public review of the Draft EIS included air quality concerns and general environmental concerns regarding possible impacts to Galveston Bay and the local area. The Final EIS is expected to be published in mid-October, 2002 with the Record of Decision in mid-December, 2002. The project is not expected to be completed until 2016 (USACE 2002a).

Draft Environmental Impact Statement for the Port of Houston Authority's Proposed Container/Cruise Terminal: The Proposed Action is to develop a major marine terminal complex on approximately 1,043 acres approximately 30 miles southeast of downtown Houston. This development would include facilities for docking, loading and unloading container and cruise ships, container storage areas, an intermodal yard, warehousing facilities, and properties available for light-industrial development. Access to the site would be improved for vehicles, trains, and ships. There are 18.3 acres of jurisdictional wetlands on the site. The Draft EIS was published on November 12, 2001. Numerous concerns were raised regarding the proximity of the proposed project to several residential communities. The major issues seem to be air quality, traffic, noise, aesthetics, dredging, and safety. The Final EIS is expected to be published in early January 2003. If approved, the project is not scheduled for completion until 2023 (USACE 2002b).

Pertinent Projects

As of this time, no current projects nor projects that would be simultaneous with the stand-up of the MSST were identified. The Proposed Action will not be adding to the severity of any existing projects or projects that will commence during the stand-up of the MSST. While the possibility of standing up six boats may appear to be a large increase, when compared to the number and size of vessels that visit Galveston Bay, Port of Galveston, and the Intracoastal Waterway everyday, this is actually a small number. Furthermore, all six boats are unlikely to be in use at any one time. It is unlikely that the addition of the MSST in Galveston would result in any significant impacts. Supporting documentation for the above projects should include MSST operations.

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APPENDIX A

INTERESTED PARTY LETTER



16475

JUN 6 2002

Dear Interested Party:

The United States Coast Guard is announcing its intent to prepare an Environmental Assessment (EA) for the establishment of Maritime Safety and Security Teams (one each) in Seattle, WA; Chesapeake, VA; Galveston, TX; and San Pedro, CA. Preparation of the EAs is being conducted in accordance with the National Environmental Policy Act (NEPA) of 1969 (Section 102[2][c]) and its implementing regulations at 40 Code of Federal Regulations, Part 1500. These first four Maritime Safety and Security Teams (MSSTs) are being established to increase the Coast Guard's ability to protect critical domestic ports and the U.S. Maritime Transportation System from warfare and terrorist attacks. The MSSTs' operations will closely parallel Coast Guard traditional port security operations, but will provide complementary, non-redundant capabilities that will be able to close significant readiness gaps in our nation's strategic ports. In addition to the four MSSTs mentioned above, the Coast Guard is planning to stand up MSSTs in other critical ports around the country. Additional NEPA analysis will be prepared for any future ports as necessary.

The EAs will address the overall environmental impacts of establishing and operating each of the first four MSSTs including the implementation of minor shore side infrastructure to accommodate 106 MSST personnel, equipment and the operation of 6 new 25' response boats in each of the above-mentioned ports. The urgency of the MSST security mission has resulted in an implementation schedule that directs the Seattle, WA MSST to be operational by July 1, 2002; Chesapeake, VA MSST to be operational by August 1, 2002; Galveston, TX MSST to be operational by September 1, 2002; and San Pedro, CA to be operational by September 1, 2002. Public input is important in the preparation of these EAs. Your concerns and comments regarding the implementation of these MSSTs and their possible environmental impacts are important to the Coast Guard. You are invited to submit comments by July 5, 2002 using only one of the following means:

(1) By mail to:

Headquarters, U.S. Coast Guard
Captain Wayne Buchanan
Chief, Office of Defense Operations (G-OPD)
Room 3121
2100 Second Street, SW
Washington, DC 20593

- (2) Or, by fax to LCDR Kirk Schilling at (202) 267-4278.
(3) Or by E-mail to KSchilling@comdt.uscg.mil.

In choosing among the above means for submitting your comments, please give due regard to the recent difficulties and delays associated with delivery of mail through the U.S. Postal Service to Federal facilities in the Washington area.

Written comments should include your name, address, and the specific location to which the comment relates. The Coast Guard will consider all comments received by July 5, 2002 in the development and completion of each EA.

Sincerely,

A handwritten signature in black ink, appearing to read "W. Buchanan", written in a cursive style.

W. BUCHANAN
Captain, U. S. Coast Guard
Chief, Office of Defense Operations

Encl: (1) MSST Overview

Maritime Safety and Security Team (MSST) Overview

Background:

In October 1995, the Secretaries of Transportation and the Department of Defense, the Chief of Naval Operations and the Commandant of the Coast Guard (CG) signed a Memorandum of Agreement that identified the unique national defense capabilities of the CG. Domestic port security and protection has long been a core CG mission. However, in the wake of September 11th, emerging threats to the U. S. homeland has prompted an increased CG focus on protecting domestic ports and the U.S. Maritime Transportation System from warfare and terrorist threats.

Maritime Safety and Security Teams:

The CG's answer is Maritime Safety and Security Teams (MSSTs). While other solutions are underway or being considered, the stand-up (establishment and operations) of the MSSTs at Seattle, WA; Chesapeake, VA; San Pedro, CA and Galveston, TX are the actions that will be considered in these Environmental Assessments.

Each MSST will consist of 73 active duty personnel and 33 reserve personnel (these will consist of mostly reassigned personnel although there may be some newly recruited personnel as well), support buildings for personnel, and six response boats for each MSST. All six boats can, but will not necessarily, be operating at once. The response boats will have outboard motors, will be no larger than 25 feet, will be highly maneuverable, will be capable of quickly reaching and sustaining high speeds (40 knots), and will carry between three and six crewmembers. Other requirements will include, but not be limited to, communication equipment, protection for the crew, and appropriate weaponry. When not in use, the response boats are capable of being placed on boat trailers.

Maritime Safety and Security Teams will normally conduct operations in protected waters such as a harbor or port. MSSTs are primarily intended for domestic operations, in support of the Coast Guard Group commanders or Captains of the Port (COTP). Operations will closely parallel existing CG traditional port security operations, but will provide complementary, non-redundant capabilities that will be able to close significant readiness gaps in our nation's strategic ports. The MSSTs will escort a variety of vessels and maintain specific security zones in each port. They are capable of operating 7 days a week, 24 hours a day, in weather conditions from tropical climates to near arctic conditions. They will operate with, and be supported by, both military and civilian government organizations, commercial and non-government entities. MSSTs will be transportable via land transportation, Coast Guard cutter, and Coast Guard or other military aircraft worldwide. MSST personnel will be employed for operations consistent with training and readiness. In summary, the MSST will:

- Augment a Coast Guard Group or COTP to enhance port safety and security, and law enforcement capabilities at economic or military significant ports.
- Deploy for specific episodic events that require an increased security posture for a limited duration.

- Transport all equipment and material via aircraft or ground or cutter transportation. Exercise security contingency plans in major ports.
- Detachments may also augment COTPs as Sea Marshals and deploy for port familiarization and training.

Locations:

Each MSST will be located at or near an existing Coast Guard command in the vicinity of a regionally significant economic or military port. The criteria used to select these ports and the priority in which the MSSTs are stood up is based on a number of factors, including, but not limited to, the level of current port protection available, the amount and type of cargo transiting the port facilities, and the concentration of critical Department of Defense facilities. Additional ports are currently being evaluated.

Co-locating MSSTs with or near existing Coast Guard commands, will maximize the use of existing infrastructure (i.e.: electric, water and communications) and already assigned personnel, although in some cases, additional personnel may be necessary. We anticipate maximizing the use of existing facilities for MSST personnel during working hours (e.g., leasing existing facilities, renovating existing buildings, etc.); however, in San Pedro, CA, there is the possibility that we will stand up some temporary trailers on already developed property. We do not anticipate any new construction. We anticipate MSST personnel will reside in the local area.

APPENDIX B

INTERESTED PARTY MAILING LIST

***Establishment of the Marine Safety and Security Team at Galveston, TX
Environmental Assessment
Interested Party Mailing List***

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APPENDIX C

NEWSPAPER ANNOUNCEMENT

PUBLIC NOTICE

Environmental Assessments for Maritime Safety Security Teams (MSSTs) US Coast Guard

The United States Coast Guard is announcing its intent to prepare an Environmental Assessment (EA) for the establishment of Maritime Safety and Security Teams (one each) in Seattle, WA; Chesapeake, VA; Galveston, TX; and San Pedro, CA. Preparation of the EAs is being conducted in accordance with the National Environmental Policy Act (NEPA) of 1969 (Section 102[2][c]) and its implementing regulations at 40 Code of Federal Regulations, Part 1500. These first four Maritime Safety and Security Teams (MSSTs) are being established to increase the Coast Guard's ability to protect critical domestic ports and the U.S. Maritime Transportation System from warfare and terrorist attacks. The MSSTs' operations will closely parallel Coast Guard traditional port security operations, but will provide complementary, non-redundant capabilities that will be able to close significant readiness gaps in our nation's strategic ports. In addition to the four MSSTs mentioned above, the Coast Guard is planning to stand up MSSTs in other critical ports around the country. Additional NEPA analysis will be prepared for future ports as necessary.

The EAs will address the overall environmental impacts of establishing and operating each of the first four MSSTs including the implementation of minor shore side infrastructure support to accommodate MSST personnel and equipment and the operation of approximately 6 new Response Boats-Small (RB-S) in each of the above-mentioned ports. The urgency of the MSST national security mission has resulted in an implementation schedule that directs the Seattle, WA MSST to be operational by July 1, 2002; Chesapeake, VA MSST to be operational by August 1, 2002; Galveston, TX MSST to be operational by September 1, 2002; and San Pedro, CA to be operational by September 1, 2002. Public input is important in the preparation of these EAs. Your concerns and comments regarding the implementation of these MSSTs and their possible environmental impacts are important to the Coast Guard. You are invited to submit comments by May 31, 2002 using only one of the following means:

(1) By mail to: Headquarters, U.S. Coast Guard
Captain Wayne Buchanan
Chief, Office of Defense Operations (G-OPD)
Room 3121
2100 Second Street, SW
Washington, DC

(2) Or, by fax to LCDR Kirk Schilling at (202) 267-4278.

(3) Or by E-mail to KSchilling@comdt.uscg.mil.

In choosing among the above means for submitting your comments, please give due regard to the recent difficulties and delays associated with delivery of mail through the U.S. Postal Service to Federal facilities.

Written comments should include your name, address, and the specific port(s) to which the comment relates. The Coast Guard will consider all comments received by May 31, 2002 in the development and completion of each EA.

* An Affidavit of Publication verifies that the above Public Notice was posted in The Daily News on May 13, 2002.

APPENDIX D

RESPONSES TO INTERESTED PARTY LETTER

APPENDIX E

CLEAN AIR ACT

GENERAL CONFORMITY ANALYSIS

EXECUTIVE SUMMARY

- Agency:** United States Coast Guard (USCG)
- Action:** The USCG proposes to stand-up and operate four Maritime Safety and Security Teams (MSSTs) nationwide, one of which will be located in the Port of Galveston. The term “stand-up” is defined as establishing a new activity. The MSST will improve the existing security capabilities of Port of Galveston and the Intracoastal Waterway, including Texas City and Port Arthur, on an on-going basis. This analysis evaluates whether the Proposed Action is compliant with the Federal and state General Conformity Rules.
- Contact:** LCDR Kirk Schilling [email: KSchilling@comdt.uscg.mil]
- Designation:** Clean Air Act General Conformity Analysis

Project

Abstract: The Galveston MSST will be located at 7707 Harborside Drive, Galveston. This is a light industrial area between the Causeway and the City of Galveston. The building is primarily modular with a brick face. There is a detached shed and parking area behind the main building where the boat engines will receive light maintenance. A large boat shelter (i.e., canopy) will be placed in front of the existing shed. This canopy will provide shade for a boat and the crew while performing minor maintenance activities.

The USGC’s Proposed Action would introduce six 25-foot Boston Whaler watercraft powered by twin outboard motors for use by the new Galveston MSST. These small patrol boats are categorized by the USCG as Response Boats – Small (RBS).

The RBS will be launched from three locations: the Galveston Yacht Club, a public ramp at the southern end of Galveston Island, and a shared ramp with the U.S. Marine Corps, located adjacent to USCG Base Galveston.

The stand-up of the MSST in Galveston would necessitate the addition of new personnel, including 71 active duty personnel and 33 reservists.

Conformity Analysis:

After careful and thorough examination of the facts contained herein, and following consideration of the views of those agencies having jurisdiction by law or special expertise with respect to air quality impacts and the Texas State Implementation Plan (SIP), the project proponent finds that the Proposed Action is consistent with the objectives as set forth in Section 176(c) of the Clean Air Act, as amended, and its implementing regulation, 40 CFR Part 93, Subpart B, *Determining Conformity of General Federal Actions to State and Local Implementation Plans*, and said action conforms to the applicable SIP in accordance with the law. Specifically, the emissions analyses concluded that total net emissions increases in NO_x and VOC emissions associated with the Proposed Action would be below the applicable *de minimis* thresholds.

This Conformity Analysis demonstrates that the Proposed Action would not cause or contribute to any new violations or increase the frequency or severity of existing violations of the National Ambient Air Quality Standards (NAAQS), nor delay the

timely attainment of the Federal ozone standards in the region. This Conformity Analysis also determined that the Proposed Action would be consistent with the applicable SIP measures through compliance with the State of Texas Air Quality rules and permitting requirements.

This Conformity Analysis is based upon the total direct and indirect emissions associated with the stand-up of the MSST in Galveston. Future personnel levels and watercraft activity levels associated with the MSST in Galveston may differ from those analyzed in this Conformity Analysis. Therefore, this analysis applies as long as total emissions remain at or below *de minimis* thresholds. If the Proposed Action is changed so that there would be an increase in the total direct and indirect emissions reported in this analysis, a new conformity analysis will be performed.

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1. Introduction

The Clean Air Act Amendments (CAAA) of 1990 require Federal agencies to ensure that their actions conform to the applicable State Implementation Plan (SIP). The SIP is a U.S. Environmental Protection Agency (EPA)-approved plan that provides for implementation, maintenance, and enforcement of the National Ambient Air Quality Standards (NAAQS). The SIP includes emission limitations, rules, schedules, and specific control measures to attain and maintain the NAAQS. Conformity to a SIP, as defined in the CAAA, means conforming to the SIP's purpose of reducing the severity and number of violations of the NAAQS to achieve attainment of such standards.

As a Federal agency and proponent of a "Federal action," the U.S. Coast Guard (USCG) must complete a conformity analysis to determine whether the Proposed Action (stand-up, operations, and associated regulated pollutant emissions with the introduction of six 25-foot Boston Whaler watercraft in Galveston) will conform to the State of Texas SIP. Other elements of the Proposed Action include the introduction of 71 active-duty staff and 33 reservists and increased vehicle emissions due to the additional commuting by new personnel. All elements of the Proposed Action could impact areas within the Houston-Galveston-Brazoria Ozone Non-attainment Area. Therefore, a conformity analysis is required.

1.1 Background

The Clean Air Act (CAA) and its amendments were passed by Congress and corresponding rules were promulgated by the EPA because it has been determined that certain pollutants have the potential to cause an adverse affect on public health and the environment when certain concentrations are exceeded in ambient air. In order to control and regulate these "criteria pollutants" and better maintain healthful air, NAAQS were established for six criteria pollutants. These pollutants include: carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), particulate matter less than 10 microns in diameter (PM₁₀), sulfur dioxide (SO₂), and lead (Pb). Ozone is not typically emitted directly from emission sources, but rather is formed in the atmosphere by photochemical reactions involving sunlight and other emitted pollutants or "ozone precursors." These ozone precursors consist primarily of nitrogen dioxide (NO₂) and volatile organic compounds (VOCs), which are emitted directly from a wide range of stationary and mobile sources. Therefore, ozone concentrations in the atmosphere are controlled through limiting the emissions of VOCs (also identified as hydrocarbons or HCs) and NO₂.

Air quality conformity provisions first appeared in the CAA of 1977. These provisions stated that no Federal agency could engage in, support in any way, provide financial assistance for, license, permit, or approve any activity that did not conform to a SIP after approval and promulgation. Section 176 (42 United States Code [U.S.C.] 7506c) of the CAA, as amended in 1990, further explained conformity to an implementation plan as meaning conformity to the plan's purpose of eliminating or reducing the severity

and of violations of the NAAQS, and achieving timely attainment of these standards. In November 1993, the EPA promulgated regulations and requirements that clarify the applicability, procedures, and analyses necessary to ensure that Federal facilities comply with the CAA.

In establishing the Final General Conformity Rule, 40 Code of Federal Regulations (CFR) 93 Subpart B, U.S. EPA requires Federal agencies to evaluate a proposed Federal action and ensure that it does not result in one of the following situations:

1. Cause a new violation of a NAAQS
2. Contribute to an increase in the frequency or severity of violations of NAAQS
3. Delay the timely attainment of any NAAQS, interim progress milestones, or other milestones toward achieving compliance with the NAAQS

The General Conformity Rule requires that Federal agencies consider total direct and indirect emissions of criteria pollutants. Conformity must be shown for those pollutants (or precursors) emitted in areas designated as non-attainment for those pollutants, as well as, pollutants for which an area has been redesignated from non-attainment to attainment (i.e., a maintenance area).

The General Conformity Rule requires that Federal agencies do a conformity applicability analysis to determine whether a formal conformity determination is required. Where the direct and indirect emissions associated with a proposed action do not exceed *de minimis* threshold levels promulgated in 40 CFR 93.153(b), the proposed action is deemed to be in conformity and no further action is required. Table E-1 presents the applicable *de minimis* thresholds under the General Conformity Rule.

If net changes in non-attainment pollutants do not exceed these *de minimis* threshold levels, the General Conformity Rule also requires an analysis of “regional significance.” This includes a comparison of the net emissions changes to the total emissions inventory of non-attainment pollutants for an affected non-attainment area. If the net emissions change associated with the Proposed Action are below *de minimis* thresholds and will not increase regional emissions by 10 percent, the action is not considered regionally significant and is exempt from further General Conformity Rule requirements.

1.2 Purpose

The purpose of this general conformity analysis is to document compliance with CAA requirements in accordance with 40 CFR 93, Subpart B. This Conformity Analysis will analyze the air quality impact of emissions of non-attainment pollutants (i.e., ozone precursors - NO_x and VOC) resulting from the proposed Federal actions. Further, this evaluation will determine whether the Proposed Action in Galveston and the areas affected by watercraft patrols will conform to the Texas SIP. This analysis of conformity for the Proposed Action is done in coordination with the Commandant of the USCG, Texas Commission on Environmental Quality (TCEQ), and the MSST operation in Galveston.

Table E-1. General Conformity Rule *de minimis* Emission Thresholds

Criteria Pollutant	Status	Degree or Classification	<i>de minimis</i> Limit Threshold (tpy)
Ozone (NO _x or VOCs)	Non-attainment	Extreme	10
		Severe	25
		Serious	50
		Moderate/marginal (inside ozone transport region)	50 (VOCs)/100 (NO _x)
		All others	100
	Maintenance	Inside ozone transport region	50 (VOCs)/100 (NO _x)
		Outside ozone transport region	100
Carbon Monoxide (CO)	Non-attainment/ maintenance	All	100
Particulate Matter (PM ₁₀)	Non-attainment/ Maintenance	Serious	70
		Moderate	100
		N/A	100
Sulfur Dioxide (SO ₂)	Non-attainment/ maintenance	All	100
Nitrogen Dioxide (NO _x)	Non-attainment/ maintenance	All	100

Note: tpy = tons per year
Source: 40 CFR 93.153 (b)(2)

1.3 Document Organization

The remainder of Section 1 presents the purpose and background for the document, describes the proposed project at the MSST operation in Galveston, and summarizes the existing air quality conditions in the region. Section 2.0 of this document outlines the regulatory requirements of the General Conformity Rule and their relationships to this Conformity Analysis.

Section 3.0 details the applicability of the General Conformity Rule to the proposed stand-up and operations of the Boston Whaler vessels included as part of the MSST operation in Galveston. Section 4.0 provides the conformity analysis results for the Proposed Action and an assessment of the project's consistency with the applicable SIP requirements. Finally, Attachment 1 details the emissions calculation methodologies and results used for this Conformity Analysis.

1.4 Existing Air Quality

1.4.1 Affected Area

Nearly all of the motor vehicle commutes and boat patrol activities associated with the MSST operation in Galveston will occur within the Houston-Galveston-Brazoria area. Based on historical ambient air quality monitoring records, the Houston-Galveston-Brazoria Area has been designated by the EPA as a “severe” non-attainment area for ozone. The Houston-Galveston-Brazoria Area is in attainment for all other criteria pollutants, which include CO, SO_x, PM₁₀, NO₂, and Pb.

The reservists will contribute a small fraction of the commute emissions from outside the Houston-Galveston-Brazoria Non-attainment Area. Boat patrols will occasionally be required in the Port Arthur area, which is in the Beaumont-Port Arthur Ozone Non-attainment Area. However, because the Proposed Action-related emissions are lower and the *de minimis* thresholds higher for these remote emissions, it is necessary only to evaluate conformity for the Houston-Galveston-Brazoria Non-attainment Area.

Figure E-1 shows the southeast Texas coastline area where the proposed MSST will operate. Figure E-1 shows the locations of the Houston-Galveston-Brazoria Non-attainment Area and the Beaumont-Port Arthur Non-attainment Area.

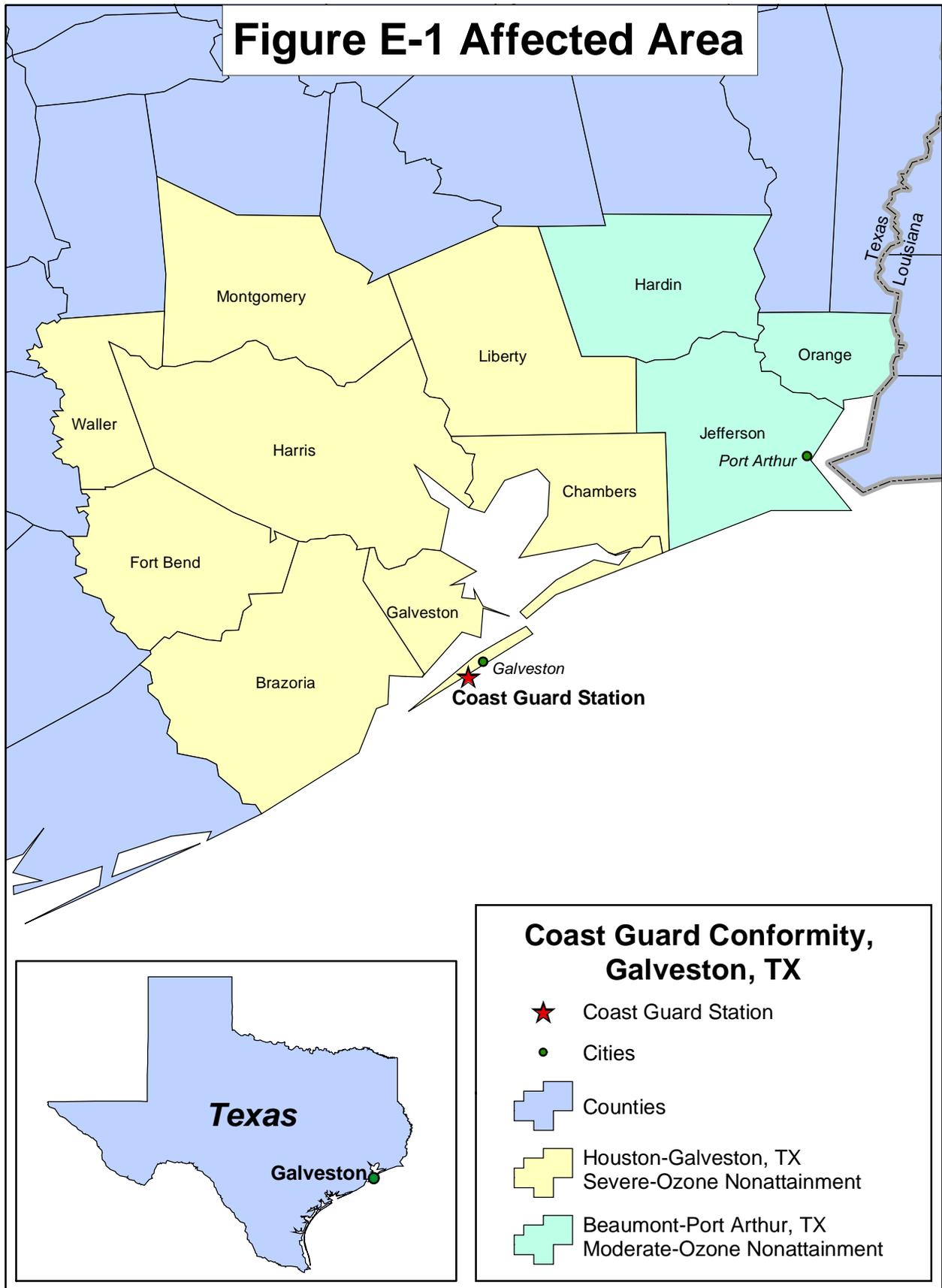
1.4.2 Non-attainment Pollutants

Ozone is a secondary pollutant formed in the atmosphere by photochemical reactions of previously emitted pollutants (mainly VOCs and NO_x) and sunlight. A brown odorless gas, O₃ can cause irritation of the respiratory tract in humans and animals, and can damage vegetation. The maximum effect of the precursor emissions on ozone formation may be many miles from the source because ozone is a byproduct of a photochemical reaction.

1.4.3 State of Texas General Conformity Rule

The State of Texas Conformity Rule was approved by the EPA and made effective in May of 1998. Title 30 of the Texas Administrative Code, Chapter 101 (30 TAC 101), Section 101.3(c)(2) states that “a conformity determination is required for each pollutant where the total of direct and indirect emissions in a non-attainment or maintenance area caused by a federal action would equal or exceed any of the rates in subparagraphs (A) or (B) of this paragraph.” The rate for the O₃ precursors for the Houston-Galveston-Brazoria Ozone Non-attainment Area, as shown in Table E-1 is 25 tons/year.

Figure E-1 Affected Area



2. General Conformity Determination Requirements

2.1 Regulatory Background

The EPA has promulgated rules that establish the conformity determination criteria and procedures for Federal actions, pursuant to Section 176(c) of the CAA. The General Conformity Rule (40 CFR 93, Subpart B) defines the conformity criteria and procedures for Federal agencies that propose non-transportation projects.

The General Conformity Rule applies to Federal actions in areas that are failing to meet one or more of the Federal air quality standards (designated as non-attainment areas), and/or areas that are subject to attainment maintenance plans (designated as maintenance areas). As noted in Section 1, the proposed project will occur in the Houston-Galveston-Brazoria Area, which is designated by the EPA as a severe non-attainment area for ozone. Therefore, a conformity applicability analysis, and determination, if warranted, will evaluate the conformity of the Proposed Action for each non-attainment pollutant based upon future VOC and NO_x emissions.

The following subsections describe the General Conformity Rule procedures and criteria, and how they specifically pertain to this conformity analysis.

2.2 Exemptions and Applicability

2.2.1 Source Exemptions

The General Conformity Rule provisions identify specific Federal actions or portions of actions that are exempt from the conformity procedural requirement, because the EPA has already determined that these actions already conform. These actions include those that must undergo thorough air quality analysis to comply with other statutory requirements; actions that would result in no emission increase, or an increase in emissions that are clearly *de minimis*; or actions presumed to conform by the agency through separate rule-making actions. These exemptions include the transfer of ownership of real property under 40 CFR 93.153(c)(2)(xiv and xx), as well as leasing agreements pending environmental restoration under 40 CFR 93.153(c)(2)(xix).

2.2.2 *de minimis* and Regional Significance Thresholds

In addition to the specific source exemptions identified in the General Conformity Rule, Federal actions may be exempt from the conformity demonstration requirement if the action meets the applicability criteria for *de minimis* emission levels and regional significance thresholds. The applicability determination procedures define the applicable emission sources for the Federal action, quantify the total direct and indirect emissions of non-attainment pollutants from these sources, and then compare these emission

rates against the appropriate *de minimis* emission levels or regionally significant thresholds. If the total direct and indirect emissions reach or exceed these applicability threshold values, a conformity determination must be prepared by the Federal agency before undertaking the action.

The General Conformity Rule defines direct and indirect emissions based upon the timing and location of the emissions. Direct emissions are those that are caused or initiated by the Federal actions, and occur at the same time and place as the action. Indirect emissions are those that occur in the future or at a distance from the Federal action. In addition, the General Conformity Rule limits the scope of indirect emissions to those that can be quantified and are reasonably foreseeable by the agency at the time of analysis, and those emissions that the Federal agency can practicably control and maintain control of through its continuing program responsibility.

The definitions of direct and indirect emissions do not distinguish among specific source categories; point, area, and mobile sources are given equal consideration in the conformity requirements. All substantive procedural requirements of the General Conformity Rule apply to the total of the net increases and decreases in direct and indirect emissions resulting from the action.

If the total of direct and indirect emissions from the action meet or exceed the *de minimis* or regional significant thresholds, the agency must perform a conformity determination to demonstrate the positive conformity of the Federal action. The *de minimis* emission levels vary by the criteria pollutant and the severity of the region's non-attainment conditions. Regionally significant thresholds represent 10 percent of the applicable SIP emissions inventory for non-attainment pollutants.

Section 3.0 presents the specific emission thresholds and the applicability analysis results for the USCG's proposed MSST operation in Galveston.

2.3 CAA Conformity Criteria

If the Proposed Action is not exempt from the conformity demonstration requirements, the General Conformity Rule defines conformity and provides five basic criteria to determine whether a Federal action conforms to an applicable SIP. These criteria assess conformity based upon emission analyses and/or dispersion modeling for the pollutants in non-attainment. If the Federal action meets the conformity criteria and requirements, the action is demonstrated to conform to the applicable SIP. If the action cannot meet the criteria and requirements, the regulatory agency (i.e., TCEQ for the Proposed Action) must develop an enforceable implementation plan to effectively mitigate (e.g., completely offset) the Proposed Action to meet the conformity requirements. The Federal action cannot proceed unless positive conformity can be demonstrated.

The General Conformity Rule provides the option to select any one of several criteria to analyze the conformity of the Proposed Action. Presented in 40 CFR 93.158, the criteria are primarily based upon the type of pollutant and the status of the applicable SIP. If the applicability analysis concludes that further conformity analyses are required to demonstrate positive conformity (i.e., *de minimis* or regional significance thresholds are exceeded) the following conformity criteria (paraphrased below) can be used to demonstrate conformity for a proposed action in a non-attainment area:

1. The total direct and indirect emissions for the Proposed Action are specifically identified and accounted for in the applicable SIP's attainment or maintenance demonstration [40 CFR 93.158(a)(1)].
2. The total direct and indirect emissions of ozone precursors are fully offset within the same non-attainment or maintenance area through a revision to the applicable SIP or a similarly enforceable measure so that there is a no net increase in emissions [40 CFR 93.158(a)(2)].
3. The State has made a revision to the area's attainment or maintenance demonstration after 1990 and the State **either**:
 - a. Determines and documents that the action, together with all other emissions in the non-attainment (or maintenance) area would not exceed the emissions budget specified in the applicable SIP; **or**
 - b. Determines that the action, together with all other emissions in the non-attainment (or maintenance) area would exceed the emissions budget specified in the applicable SIP but the State's Governor or designee for SIP actions makes a written commitment to the EPA to demonstrate CAA conformity through specific measures and scheduled actions [40 CFR 93.158(a)(5)(i)(A & B)].
4. The Federal action fully offsets its entire emissions within the same non-attainment area through a revision to the SIP or a similar measure so that there is no net increase in non-attainment pollutant emissions [40 CFR 93.158(a)(5)(iii)].
5. The State has not made a revision to the approved SIP since 1990, and the total emissions from the action do not increase emissions above the baseline emissions which are either:
 - a. CY1990 emissions or another calendar year that was the basis for the non-attainment area designation) [40 CFR 93.158(a)(5)(iv)(A)] or
 - b. Historic activity levels and emissions calculated for future years using appropriate emission factors and methods for future years.
6. Dispersion modeling analysis demonstrates that direct and indirect emissions from the Federal action will not cause or contribute to violations of Federal ambient air quality standards.

2.4 Other State Implementation Plan Consistency Requirements

The conformity analysis must also demonstrate that total direct and indirect emissions from the Federal action are consistent with the applicable SIP requirements and milestones:

- Reasonable further progress schedules
- Assumptions specified in the attainment or maintenance demonstration
- SIP prohibitions, numerical emission limits, and work practice requirements

3. Applicability Analysis

This section of the conformity determination describes the applicability analysis for MSST operations in Galveston to the General Conformity Rule requirements.

3.1 Sources Included in the Conformity Analysis

In accordance with the General Conformity Rule, total direct and indirect emissions resulting from proposed Federal action include numerous types of stationary and mobile sources. These emissions would occur during various phases of the Proposed Action. As defined by the General Conformity Rule and applied to the proposed MSST operations in Galveston, indirect emissions would include increases in privately-owned vehicle commute emissions resulting from increased personnel at the USCG Station in Galveston.

3.2 Total Emission Calculations

The estimates of the net changes in non-attainment pollutant emissions that would result from implementation of the proposed MSST operations in Galveston and the affected patrol area are presented in Attachment E-1 of this Conformity Analysis. These calculations are based on the proposed future operations and support of the MSST watercraft in Galveston. The analyses results indicate that potential non-stationary pollutant impacts could result from construction activities, motor vehicle commutes, and boat patrols. The net changes in direct and indirect VOC and NO_x emissions associated with the Proposed Action are presented below.

3.2.1 Construction Activities.

There is one construction project proposed with the Proposed Action. The project includes the addition of a canopy to the existing modular building. Emissions associated with the delivery and installation of this canopy will be minimal and temporary and have been omitted from this analysis.

3.2.2 Commuting Activities

The MSST operation in Galveston will result in a staffing increase of 71 active duty personnel and 33 reservists. The active duty personnel are full time staff working five days a week. The reservists assigned to this unit originate from locations throughout the state of Texas and drive to the USCG Station monthly for weekend drills. Emissions were calculated based on information provided by MSST

personnel, indicating an average commute of 20 miles one-way for active duty staff, working 240 days per year. The non-attainment area commute for reservists was defined as 100 miles each way (from Galveston to the northern edge of the non-attainment area), twelve times per year. The estimated emissions associated with these additional staff commutes are presented in Table E-2.

Table E-2. Estimated Emissions from Commuters

NO_x tpy	VOC tpy	CO tpy	PM₁₀ tpy	SO₂ tpy
1.02	1.20	14.48	0.82	0.07

tpy – tons per year

3.2.3 Operational Activities

The MSST will operate two teams in Galveston. Each team will use three watercraft, two for general use and one as a backup. Normally, only one team will be out on patrol at any given time, and total patrol time will be approximately 12 hours per day.

Regulated pollutant emissions from proposed operations were calculated for the patrol area and the operation of two watercraft running 12 hours a day seven days a week. These emissions estimates are presented in Table E-3 and the calculations are presented in Attachment 1 to this conformity analysis.

Table E-3. Estimated Emissions from Watercraft

NO_x tpy	VOC tpy	CO tpy	PM₁₀ tpy	SO₂ tpy
6.03	13.79	60.33	0.58	0.54

tpy – tons per year

The overall net emissions changes in the Houston-Galveston-Brazoria Area associated with the Proposed Action include emissions changes from watercraft operations, and travel by personnel in privately-owned vehicles. As Tables E-2 and E-3 show, the Proposed Action will result in a small increase of emissions in the Houston-Galveston-Brazoria Area.

3.3 Applicability Analysis Results

The results of the applicability analysis indicate that the emissions for MSST operations in Galveston (within the Houston-Galveston-Brazoria Area) will not exceed the *de minimis* threshold level of 25 tons per year for NO_x emissions. Therefore, a Conformity Determination is not required for the Proposed Action in order to show positive conformity within the Houston-Galveston-Brazoria Area (See Table E-4).

Table E-4. Comparison of Estimated Emissions from Proposed Action to *de minimis* Thresholds

Emission Source	NO_x tpy	VOC tpy	CO tpy	PM₁₀ tpy	SO₂ tpy
Watercraft	6.03	13.79	60.33	0.58	0.54
Commute	1.02	1.20	14.48	0.82	0.07
Total	7.05	14.99	74.81	1.4	0.61
<i>de minimis</i> Thresholds	25	25	----	----	----

tpy – tons per year

3.4 Regional Significance

In addition to *de minimis* thresholds, Federal actions must also be compared to regional significance thresholds, where regional significance is defined as 10 percent of the emissions inventory for the affected area.

Regional significance should be evaluated for all future target planning years identified in the SIP. As a practical matter, however, it is often very difficult to locate and compile the SIP target year inventories for point, area, road, and nonroad sources within a specific non-attainment area. Although these numbers have been developed by the states and submitted to EPA for review, they may not have been published in the Federal Register notices or in other readily available documents. Where regional target-year inventories are not readily available, a comparison of the Proposed Action emissions to the current regional inventory may demonstrate that the Proposed Action emissions are several orders of magnitude below regional emission levels. Because future target year inventories will be only a few percent lower than the current regional inventory, a Proposed Action that is several orders of magnitude below the current regional inventory will therefore be several orders of magnitude below any future target year inventory. Table E-5 compares the Proposed Action emissions to the current air emission inventory for the Houston-Galveston-Brazoria Non-attainment Area.

4. Conformity Analysis and Results

This section presents the comprehensive results of this Conformity Analysis for the Proposed Action. The purpose of this analysis is to determine whether the Proposed Action would conform to the applicable SIP, based upon the criteria established in the General Conformity Rule and promulgated in 40 CFR 93.158.

Table E-5. Comparison of Estimated Emissions from Proposed Action to Regional Significance

Emission Source	NO_x tpy	VOC tpy	CO tpy	PM₁₀ tpy	SO_x tpy
Watercraft	6.03	13.79	60.33	0.58	0.54
Commute	1.02	1.20	14.48	0.82	0.07
Total Proposed Action	7.05	14.99	74.81	1.4	0.61
Regional Inventory ^a	563,505	269,851	----	----	----
Proposed Action Percent of Regional Inventory^b	0.001%	0.006%	----	----	----

Note: tpy – tons per year

^a Source for CY1999 regional inventory data: EPA - AirData NET Tier Report, <http://oaspub.epa.gov/airdata/adnet.tier>

^b Regional Significance is defined as 10% of regional emissions for any target year. Because proposed action emissions are three orders of magnitude below CY99 emissions, they will obviously be orders of magnitude below any target year inventory for this region.

The regulatory basis and specific criteria for this analysis was presented in Section 2.0. This section presents the methods and results of the conformity analysis for the following criteria: demonstration that direct and indirect emissions associates with the proposed federal action will not exceed the conformity de-minimis thresholds in any affected non-attainment or maintenance area.

This criterion is satisfied by the information presented in Tables E-2, E-3, E-4 and E-5.

4.1 Conformity Analysis Conclusions

Based upon the conformity analyses results summarized in the previous sections, the proposed MSST in Galveston meets the conformity criterion for not exceeding *de minimis* thresholds in the affected area.

Based upon the emission analyses, the reasonably foreseeable project emissions of NO_x and VOCs would not exceed *de minimis* thresholds at MSST Galveston.

This Conformity Analysis is based upon the total emissions and indirect emissions associated with the proposed project at MSST Galveston. The supporting calculations are detailed and provided in Attachment E-1 to this Conformity Analysis. Future activity levels and operations associated with the MSST Galveston may differ from those analyzed in this Conformity Analysis. However, this conclusion applies as long as total emissions and net emissions changes remain below *de minimis* emission levels as analyzed herein. If the Proposed Action is changed so that there is an increase in the total direct and

indirect emissions over the *de minimis* levels for ozone precursors, a new conformity analysis will be performed.

Compliance with the requirements of the General Conformity Rule has been demonstrated based upon the promulgated air conformity regulations and SIP provisions in effect at the time of this Conformity Analysis.

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ATTACHMENT E-1

PROPOSED ACTION EMISSIONS

Notes

LCDR Kirk Schilling on 5 November stated:

two boats, 12 hr/day each, 7 days a week
two or three boats, 24 hr/day for two days during Military Load Outs (about twice a month)
patrol at 7-8 knots, accelerate to above planing speed occasionally to relocate.

Assumed worst-case 104 new staff commuting 20 miles each way

Contacted each of the two conformity locations to confirm assumptions.

Galveston

Joan Lang met with Lt Rob Smith (409) 740-3807 in mid-July 2002
Contacted Lt Smith on 11/26/02 and received the following information:

Staff: This is a new unit (trained since June 2002, active as of October) so all staff are MSST-related.
They have 75 active-duty staff working 5 days per week
There are 21 (will be up to 33) reservists who come in one weekend per month to drill.

Commute: About 30-40% of the active duty staff live right there on the island and commute only 2-3 miles to work. The others live on the mainland and commute 20-30 miles to work. The average commute is likely about 15 miles each way.
The reservists who come in one weekend a month come from all over the state. While some live on the island, others come clear from Dallas.

Boat Duty Lt Smith concurred with LCDR Shilling's description of typical duty.

Second POC: Chief Petty Officer Mark Wilkins (boat specifics)

The new boats have arrived, they are 25-foot Boston Whaler TPSBs
The motors are Evenrude HT 175 FICHT motors

The boats normally idle along at 6-8 knots with both engines running.
Periodically, they accelerate to up to 50 knots for 1-2 minutes to intercept another watercraft.

Fuel use is approximately 45 gallons for a 12-hour shift.

LCDR Kirk Schilling on 5 November stated:

two boats, 12 hr/day each, 7 days a week
two or three boats, 24 hr/day for two days during Military Load Outs (about twice a month)
patrol at 7-8 knots, accelerate to above planing speed occasionally to relocate.

Assumed worst-case 104 new staff commuting 20 miles each way

Contacted each of the two conformity locations to confirm my assumptions.



25-foot Boston Whaler with twin 175HP outboards
http://www.defenselink.mil/news/Jun2002/n06262002_200206261.html



25-foot Boston Whaler with twin 175HP outboards
http://www.defenselink.mil/news/Jun2002/n06262002_200206261.html

Galveston Texas MSST

Scenario

2 boats total in the water at one time, 12 hrs/day 7 days/wk
will patrol the harbor and up the intercoastal waterway to Port Arthur

During military load-outs, the Harbor boats will patrol 24 hr/day for 2-3 days.
The frequency of such events is dependent on world events, but is expected to be
1-2 per month for the near future.

The 12 knot speed presented in the DOPAA is an average
speed rather than an actual speed. The boats would rarely actually travel at 10-12 knots
because that is a transition speed between displacement and planing for a boat of this size.
As a result, that speed generates a significant wake, and results in unnecessary fuel
consumption and emissions.

According to Chief Petty Officer Mark Wilkins (telecon 11/26/02) the MSST boats normally idle
at 6-8 knots in the harbor, with occasional bursts of up to 50 knots for 1-2 minutes when they need
to intercept another watercraft.

The MSST boats are 25-foot Boston Whaler Transportable Port Security Boats (TPSBs).
Each boat is equipped with two Evenrude HT 175hp FICHT motors.

There will be a total of 71 active duty and 33 reservists associated with the Proposed Action.
These are all new staff as this is a new unit in Galveston. The active duty are 5-day-per-week
staff. The reservists come to the facility one weekend per month. According to Lt. Rob Smith
(telecon 11/26/02), about 30-40% of the active duty staff live on the island and commute only
about 2-3 miles to work. The rest of the staff live on the mainland and commute 20-30 miles
each way. Reservists may come from anywhere in the state for their weekend drill.

Assumptions:

Assume that the boats will be in the Houston-Galveston-Brazoria severe nonattainment area
100% of the time. (worst-case)
Neglect the time that they may spend on the Beaumont-Port Arthur moderate nonattainment area.
Those emissions will be well below de minimus for a moderate nonattainment area, and no
on-road commute emissions are predicted for that region.

Chief Petty Officer Mark Wilkins stated on 11/26/02 that the engines use about 45 gallons of
gasoline in a 12-hour day. Based on mileage data from comparable engines, see
"Power Requirements" worksheet, these outboard motors have a thermal efficiency
of approximately 22.6%.

$$\frac{(3.75 \text{ gal/hr}) (130,000 \text{ Btu/gal}) (22.6\% \text{ thermal efficiency})}{3413 \text{ Btu/kW-hr}} = 32.28 \text{ kW}$$

For the purposes of these calculations, the assumed average engine load will be:
50 HP engine load to patrol: 37 kW

For commute emissions, this analysis will assume 75 active-duty staff each work 240 days
per year, and commute an average of 40 miles per day (20 miles each way) at one rider
per car. The 33 reservists will be assumed to traverse the entire nonattainment area each
weekend that they come down to drill, approximately 100 miles each way, at one rider per car.

$$[(75 \text{ cars}) (40 \text{ mi/day}) (240 \text{ day/yr})] + [(33 \text{ cars}) (200 \text{ mi/weekend}) (12 \text{ weekends/yr})] = 800,000 \text{ mi/yr}$$

Emission Factors Used for MSST Outboard Motors

NOx g/kW-hr	VOC g/kW-hr	CO g/kW-hr	PM10 g/kW-hr	SOx g/kW-hr
14	32	140	1.3	1.2

g/kW-hr = gallons per kilowatt hour

A comparison of these default 'compliant' emission factors to the actual certification data for the engines selected for these boats indicates that this estimate will conservatively over-estimate NOx, VOC and CO for these new engines, and should be conservatively high for any future engines that may replace these engines during the life of the Proposed Action.

Available references documenting emission factors for outboard motors generally provide data for NOx, HC, and CO only. For this analysis, PM10 and SOx factors for gasoline engines were taken from U.S. EPA AP-42 Table 3.3-1 dated 10/96.

Estimated Emissions From Watercraft

	NOx tpy	VOC tpy	CO tpy	PM10 tpy	SOx tpy
Annual Emissions	6.03	13.79	60.33	0.58	0.54

tpy = tons per year

Two harbor patrol boats, 12 hrs/day, 293 days/yr; and 24 hr/day 72 days/yr
Diurnal and refueling emissions for these watercraft are estimated to be only 15 lbs per year.

Emissions From Commuter Vehicles

Emission Factors Used for the Commuter Fleet

NOx g/mi	VOC g/mi	CO g/mi	PM10 g/mi	SOx g/mi
1.2	1.4	16.4	0.93	0.1

g/mi = gallons per mile

These are national average emission factors using a fleet mix that is typical of commuter traffic. These factors have not been refined to reflect local smog check programs, etc. The fleet mix and emission factor calculation is done on the "Commute" sheet in this workbook. Combining these emission factors and the estimate of 800,000 miles per year that was described in the Assumptions discussion above, generates the following estimates:

Estimated Emissions From Commuters

	NOx tpy	HC tpy	CO tpy	PM10 tpy	SOx tpy
Annual Emissions	1.02	1.20	14.48	0.82	0.07

tpy = tons per year

Total Proposed Action Estimated Annual Emissions - Watercraft and Commuter Emissions Combined

	NOx tpy	HC tpy	CO tpy	PM10 tpy	SOx tpy
Annual Emissions	7.05	14.99	74.81	1.40	0.61

tpy = tons per year

All emissions are presumed to occur in the Houston-Galveston-Brazoria severe nonattainment area.

General Conformity De Minimis Thresholds

NOx tpy	HC tpy	CO tpy	PM10 tpy	SOx tpy
25.00	25.00	--	--	--

tpy = tons per year

Severe O₃ Nonattainment

APPENDIX F

NOISE TERMINOLOGY AND ANALYSIS METHODOLOGY

APPENDIX F

This Appendix presents a detailed discussion of noise and its effects on people and the environment. An assessment of noise requires a general understanding of how sound is measured and how it affects people in the natural environment. The purpose of this appendix is to address public concerns regarding noise impacts.

Section F.1 is a general discussion on the properties of noise. Section F.2 summarizes the noise metrics discussed throughout this Environmental Assessment (EA). Section F.3 summarizes Land-Use Compatibility.

F.1 General

Noise, often defined as unwanted sound, is one of the most common environmental issues associated with aircraft operations. Of course, aircraft are not the only source of noise in an urban or suburban surrounding, where interstate and local roadway traffic, rail, industrial, and neighborhood sources also intrude on the everyday quality of life. Nevertheless, aircraft are readily identifiable to those affected by their noise, and typically are singled out for special attention and criticism. Consequently, aircraft noise problems often dominate analyses of environmental impacts.

Sound is a physical phenomenon, and consists of minute vibrations that travel through a medium, such as air, and are sensed by the human ear. Whether that sound is interpreted as pleasant or unpleasant depends largely on the listener's current activity, past experience, and attitude toward the source of that sound. It is often true that one person's music is another person's noise.

The measurement and human perception of sound involves two basic physical characteristics, intensity and frequency. The intensity is a measure of the strength or amplitude of the sound vibrations and is expressed in terms of sound pressure. The higher the sound pressure, the more energy carried by the sound and the louder is the perception of that sound. The second important physical characteristic is sound frequency that is the number of times per second the air vibrates or oscillates. Low-frequency sounds are characterized as rumbles or roars, while sirens or screeches typify high-frequency sounds

The loudest sounds that can be detected comfortably by the human ear have intensities that are 1,000,000,000,000 times larger than those of sounds that can just be detected. Because of this vast range, any attempt to represent the intensity of sound using a linear scale becomes very unwieldy. As a result, a

logarithmic unit known as the decibel (dB) is used to represent the intensity of a sound. Such a representation is called a sound level.

Because of the logarithmic nature of the decibel unit, sound levels cannot be added or subtracted directly and are somewhat cumbersome to handle mathematically. However, some simple rules of thumb are useful in dealing with sound levels. First, if a sound's intensity is doubled, the sound level increases by 3 dB, regardless of the initial sound level. For example:

$$60 \text{ dB} + 60 \text{ dB} = 63 \text{ dB, and}$$

$$80 \text{ dB} + 80 \text{ dB} = 83 \text{ dB}$$

The total sound level produced by two sounds of different levels is usually only slightly more than the higher of the two. For example:

$$60.0 \text{ dB} + 70.0 \text{ dB} = 70.4 \text{ dB}$$

Because the addition of sound levels behaves differently than that of ordinary numbers, such addition is often referred to as “decibel addition” or “energy addition.” The latter term arises from the fact that what we are really doing when we add decibel values is first converting each decibel value to its corresponding acoustic energy, then adding the energies using the normal rules of addition, and finally converting the total energy back to its decibel equivalent.

An important facet of decibel addition arises later when the concept of time-average sound levels is introduced to explain Day-Night Average Sound Level (DNL). Because of the logarithmic units, the louder levels that occur during the averaging period dominate the time-average sound level. As a simple example, consider a sound level which is 100 dB and lasts for 30 seconds, followed by a sound level of 50 dB which also lasts for 30 seconds. The time-average sound level over the total 60-second period is 97 dB, not 75 dB.

A sound level of 0 dB is approximately the threshold of human hearing and is barely audible under extremely quiet listening conditions. Normal speech has a sound level of approximately 60 dB. Sound levels above about 120 dB begin to be felt inside the human ear as discomfort and eventually pain at still higher levels.

The minimum change in the time-average sound level of individual events that an average human ear can detect is about 3 dB. A change in sound level of about 10 dB is usually perceived by the average person as a doubling (or halving) of the sound's loudness, and this relation holds true for loud sounds and for quieter sounds.

Sound frequency is pitch measured in terms of hertz (Hz). The normal human ear can detect sounds that range in frequency from about 20 Hz to about 15,000 Hz. All sounds in this wide range of frequencies, however, are not heard equally well by the human ear, which is most sensitive to frequencies in the 1,000 to 4,000 Hz range. To account for the varied frequency sensitivity of people, we use the A-weighted scale that approximates the average, healthy human ear. The A-weighting de-emphasizes the low and high frequency portion of the noise signal and emphasizes the mid-frequency portion. Sound levels measured using A-weighting are most properly called A-weighted sound levels while sound levels measured without any frequency weighting are most properly called sound levels. However, since most environmental impact analysis documents deal only with A-weighted sound levels, the adjective “A-weighted” is often omitted, and A-weighted sound levels are referred to simply as sound levels. In some instances, the author will indicate that the levels have been A-weighted by using the abbreviation dBA or dB(A), rather than the abbreviation dB, for decibel. As long as the use of A-weighting is understood to be used, there is no difference implied by the terms “sound level” and “A-weighted sound level” or by the units dB, dBA, and dB(A). The A-weighting function de-emphasizes higher and especially lower frequencies to which humans are less sensitive. Because the A-weighting is closely related to human hearing characteristics, it is appropriate to use A-weighted sound levels when assessing potential noise effects on humans and many terrestrial wildlife species. In this document, all sound levels are A-weighted and are reported in dB.

Sound levels do not represent instantaneous measurements but rather averages over short periods of time. Two-measurement time periods are most common – 1 second and 1/8 of a second. A measured sound level averaged over 1 second is called a slow response sound level; one averaged over 1/8 of a second is called a fast response sound level. Most environmental noise studies use slow response measurements, and the adjective “slow response” is usually omitted. It is easy to understand why the proper descriptor “slow response A-weighted sound level” is usually shortened to “sound level” in environmental impact analysis documents.

F.2 Noise Metrics

A “metric” is defined as something “of, involving, or used in measurement.” As used in environmental noise analyses, a metric refers to the unit or quantity that measures or represents the effect of noise on people. Noise measurements typically have involved a confusing proliferation of noise metrics as individual researchers have attempted to understand and represent the effects of noise. As a result, past literature describing environmental noise or environmental noise abatement has included many different metrics. Recently, however, various Federal agencies involved in environmental noise mitigation have agreed on common metrics for environmental impact analyses documents, and both the Department of

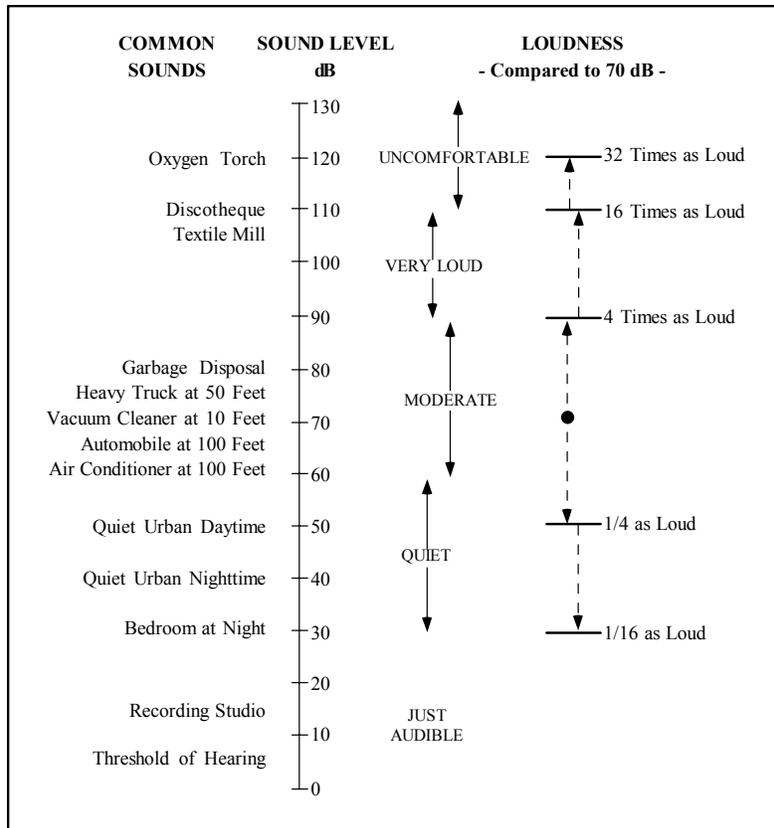
Defense (DoD) and the Federal Aviation Administration (FAA) have specified those which should be used for Federal aviation noise assessments. These metrics are as follows.

F.2.1 Maximum Sound Level

The highest A-weighted sound level measured during a single event in which the sound level changes value as time goes on (e.g., an aircraft overflight) is called the maximum A-weighted sound level or maximum sound level, for short. It is usually abbreviated by ALM, L_{max} , or LA_{max} . The typical A-weighted levels of common sounds are shown in Figure F-1. The maximum sound level is important in judging the interference caused by a noise event with conversation, TV or radio listening, sleep, or other common activities.

F.2.2 Sound Exposure Level

Individual time-varying noise events have two main characteristics: 1) a sound level which changes throughout the event, and 2) a period of time during which the event is heard. Although the maximum sound level, described above, provides some measure of the intrusiveness of the event, it alone does not completely describe the total event. The period of time during which the sound is heard is also significant. The sound exposure level (abbreviated SEL or LAE) combines both of these characteristics into a single metric.



Source: Harris 1979

Figure F-1. Typical A-Weighted Sound Levels of Common Sounds

Sound exposure level is a logarithmic measure of the total acoustic energy transmitted to the listener during the event. Mathematically, it represents the sound level of the constant sound that would, in one second, generate the same acoustic energy, as did the actual time-varying noise event. For example, since aircraft overflights usually last longer than one second, the SEL of an overflight is usually greater than the maximum sound level of the overflight.

Sound exposure level is a composite metric that represents both the intensity of a sound and its duration. It does not directly represent the sound level heard at any given time, but rather provides a measure of the net impact of the entire acoustic event. It has been well established in the scientific community that SEL measures this impact much more reliably than just the maximum sound level. Because the SEL and the maximum sound level are both A-weighted sound levels expressed in dBs, there is sometimes confusion between the two, so the specific metric used should be clearly stated.

F.2.3 Day-Night Average Sound Level

Time-average sound levels are the measurements of sound levels that are averaged over a specified length of time. These levels provide a measure of the average sound energy during the measurement period.

For the evaluation of community noise effects, and particularly aircraft noise effects, the day-night average sound level (abbreviated DNL or L_{dn}) is used. Day-night average sound level averages aircraft sound levels at a location over a complete 24-hour period, with a 10-dB adjustment added to those noise events that take place between 10:00 p.m. and 7:00 a.m. (local time) the following morning. This 10-dB “penalty” represents the added intrusiveness of sounds that occur during normal sleeping hours, both because of the increased sensitivity to noise during those hours and because ambient sound levels during nighttime are typically about 10 dB lower than during daytime hours.

Ignoring the 10-dB nighttime adjustment for the moment, DNL may be thought of as the continuous A-weighted sound level that would be present if all of the variations in sound level that occur over a 24-hour period were smoothed out so as to contain the same total sound energy.

Day-night average sound level provides a single measure of overall noise impact, but does not provide specific information on the number of noise events or the individual sound levels that occur during the day. For example, a DNL of 65 dB could result from a very few noisy events, or a large number of quieter events.

As noted earlier for SEL, DNL does not represent the sound level heard at any particular time, but rather represents the total sound exposure. Scientific studies and social surveys that have been conducted to appraise community annoyance to all types of environmental noise have found the DNL to be the best measure of that annoyance. Its use is endorsed by the scientific community (American National Standards Institute [ANSI] 1980, 1988; U.S. Environmental Protection Agency [EPA] 1974; Federal Interagency Committee on Urban Noise [FICUN] 1980; Federal Interagency Committee on Noise [FICON] 1992).

There is, in fact, a remarkable consistency in the results of attitudinal surveys about aircraft noise conducted in different countries to find the percentages of groups of people who express various degrees of annoyance when exposed to different levels of DNL. This is illustrated in Figure F-2, which summarizes the results of a large number of social surveys relating community responses to various types of noises, measured in DNL.

Figure F-2 is taken from Schultz (1978) and shows the original curve fit. A more recent study has reaffirmed this relationship (Fidell et al. 1991). Figure F-3 shows an updated form of the curve fit (Finegold et al. 1992) in comparison with the original. The updated fit, which does not differ substantially from the original, is the current preferred form. In general, correlation coefficients of 0.85 to 0.95 are found between the percentages of groups of people highly annoyed and the level of average noise exposure. The correlation coefficients for the annoyance of individuals are relatively low, however, on the order of 0.5 or less. This is not surprising, considering the varying personal factors that influence the manner in which individuals react to noise. Nevertheless, findings substantiate that community annoyance to aircraft noise is represented quite reliably using DNL.

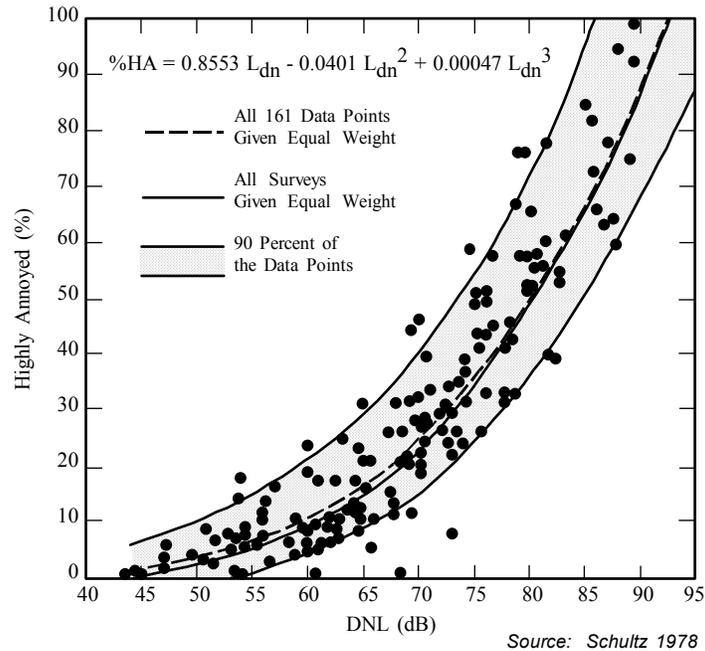


Figure F-2. Community Surveys of Noise Annoyance

F.3 Land-Use Compatibility

As noted above, the inherent variability between individuals makes it impossible to predict accurately how any individual will react to a given noise event. Nevertheless, when a community is considered as a whole, its overall reaction to noise can be represented with a high degree of confidence. As described above, the best noise exposure metric for this correlation is the DNL. In June 1980, an ad hoc Federal Interagency Committee on Urban Noise (FICUN) published guidelines for considering noise in land use planning (FICUN 1980). These guidelines related DNL to compatible land uses in urban areas. The committee was composed of representatives from the DoD, Department of Transportation, Department of Housing and Urban Development; the EPA; and the Veterans Administration. Since the issuance of these guidelines, Federal agencies have generally adopted these guidelines to make recommendations to the local communities on land use compatibilities.

The FAA included the committee's guidelines in the Federal Aviation Regulations (Harris 1984). These guidelines are reprinted in Table F-1, along with the explanatory notes included in the regulation. Although these guidelines are not mandatory (see Notes in Table F-1), they provide the best means for evaluating noise impact in airport communities. In general, residential land uses normally are not compatible with outdoor DNL (Ldn values) above 65 dB, and the extent of land areas and populations exposed to DNL of 65 dB and higher provides the best means for assessing the noise impacts of alternative aircraft actions.

In 1990, the FICON was formed to review the manner in which aviation noise effects are assessed and presented. This group released its report in 1992 and reaffirmed the use of DNL as the best metric for this purpose (FICON 1992).

Table F-1. Land Use Compatibility Guidelines with Yearly Day-Night Average Sound Levels

LAND USE	YEARLY DAY-NIGHT AVERAGE SOUND LEVELS IN DECIBELS					
	BELOW 65	65-70	70-75	75-80	80-85	OVER 85
Residential						
<i>Residential, other than mobile homes and transient lodgings</i>	Y	N(1)	N(1)	N	N	N
<i>Mobile home parks</i>	Y	N	N	N	N	N
<i>Transient lodgings</i>	Y	N(1)	N(1)	N(1)	N	N
Public Use						
<i>Schools</i>	Y	N(1)	N(1)	N	N	N
<i>Hospitals & nursing homes</i>	Y	25	30	N	N	N
<i>Churches, auditoria, & concert halls</i>	Y	25	30	N	N	N
<i>Government services</i>	Y	Y	25	30	N	N
<i>Transportation</i>	Y	Y	Y(2)	Y(3)	Y(4)	Y(4)
<i>Parking</i>	Y	Y	Y(2)	Y(3)	Y(4)	N
Commercial Use						
<i>Offices, business, & professional</i>	Y	Y	25	30	N	N
<i>Wholesale & retail-building materials, hardware, and farm equipment</i>	Y	Y	Y(2)	Y(3)	Y(4)	N
<i>Retail trade-general</i>	Y	Y	25	30	N	N
<i>Utilities</i>	Y	Y	Y(2)	Y(3)	Y(4)	N
<i>Communication</i>	Y	Y	25	30	N	N
Manufacturing and Production						
<i>Manufacturing, general</i>	Y	Y	Y(2)	Y(3)	Y(4)	N
<i>Photographic & optical</i>	Y	Y	25	30	N	N
<i>Agriculture (except livestock) & forestry</i>	Y	Y(6)	Y(7)	Y(8)	Y(8)	Y(8)
<i>Livestock farming & breeding</i>	Y	Y(6)	Y(7)	N	N	N
<i>Mining & fishing, resource production & extraction</i>	Y	Y	Y	Y	Y	Y
Recreational						
<i>Outdoor sports arenas & spectator sports</i>	Y	Y(5)	Y(5)	N	N	N
<i>Outdoor music shells, amphitheaters</i>	Y	N	N	N	N	N
<i>Nature exhibits & zoos</i>	Y	Y	N	N	N	N
<i>Amusements, parks, resorts, & camps</i>	Y	Y	Y	N	N	N
<i>Golf courses, riding stables, & water recreation</i>	Y	Y	25	30	N	N
<p>Key: Y (Yes) = Land use and related structures compatible without restrictions. N (No) = Land use and related structures are not compatible and should be prohibited. NLR = Noise Level Reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation into the design and construction of the structure. 25 or 30 = Land use and related structures generally compatible; measures to achieve NLR of 25, 30, or 35 dB must be incorporated into design and construction of structures. Notes: (1) Where the community determines that residential or school uses must be allowed, measures to achieve outdoor-to-indoor NLR of at least 25 and 30 dB should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide an NLR of 20 dB; thus, the reduction requirements often are stated as 5, 10, or 15 dB over standard construction and normally assume mechanical ventilation and closed windows year-round. However, the use of NLR criteria will not eliminate outdoor noise problems. (2) Measures to achieve NLR of 25 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise-sensitive areas, or where the normal noise level is low. (3) Measures to achieve NLR of 30 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise-sensitive areas, or where the normal noise level is low. (4) Measures to achieve NLR of 35 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise-sensitive areas, or where the normal level is low. (5) Land-use compatible, provided special sound reinforcement systems are installed. (6) Residential buildings require an NLR of 25 dB. (7) Residential buildings require an NLR of 30 dB. (8) Residential buildings not permitted.</p>						

Source: USDOT 1984 and FAA 1985

APPENDIX G

OCEAN STEWARD

U.S. Department
of Transportation

United States
Coast Guard



Commandant
United States Coast Guard

2100 Second Street, S.W.
Washington, DC 20593-0001
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16214

SEP 28 2000

LETTER OF PROMULGATION

From: Commandant
To: Distribution

1. Protecting our nation's natural resources is one of the Coast Guard's five strategic goals. Along with Maritime Safety, Maritime Security, Maritime Mobility, and National Defense, Protection of Natural Resources is one of the basic reasons the taxpayers fund the Coast Guard each year. Hence, it is one of the outcomes to which our entire organizational effort – programs, policies, and assets – should be dedicated. In our Strategic Plan 1999, I defined the Protection of Natural Resources Strategic Goals as "the elimination of environmental damage and natural resource degradation associated with all maritime activities." A vital aspect of achieving this goal is helping the nation recover and maintain healthy populations of marine protected species. OCEAN STEWARD is our strategic plan for making that happen.

2. OCEAN STEWARD provides the emphasis operational commanders, training commands, and administrative staffs need to prioritize and execute this increasingly important mission. The core idea behind OCEAN STEWARD is the premise that all of us, as members of the Coast Guard, have a responsibility to be good stewards of the ocean. If we adhere to this premise as individuals, then the Coast Guard, as an organization, will make great progress toward achieving OCEAN STEWARD's objectives.

3. As we enter the 21st century, our nation is becoming increasingly concerned about the ocean and the state of its living marine resources. Coast Guard leadership in protecting marine species, however, is nothing new; it dates back as far as the Fur Seal Act of 1897. The Coast Guard remains committed to continuing that tradition of leadership, and OCEAN STEWARD is your guide in this important endeavor.

A handwritten signature in black ink, appearing to read "James H. Loy".

JAMES H. LOY

Encl: (1) OCEAN STEWARD, Protected Living Marine Resources Strategic Plan

Dist: CG LANTAREA (A, Am, Ao), CG PACAREA (P, Pm, Po), CG DISTRICTS (d, m, o), CG ACADEMY, CG INSTITUTE, CG TRACEN Yorktown, CG TRACEN Cape May, CG TRACEN Petaluma, CG PACAREA TRATEAM, CG RFTC Cape Cod MA, CG RFTC Charleston SC, CG RFTC New Orleans LA, CG RFTC Kodiak AK, CG R&DC

COMMANDANT'S PREAMBLE

The Coast Guard's Strategic Plan 1999 states the nation's waterways and their ecosystems are vital to our economy and health. This is why we made the protection of natural resources, specifically the elimination of environmental damage and natural resource degradation associated with maritime activities, one of our five strategic goals, and made enforcing the federal regulations that result in all living marine resources achieving healthy, sustainable populations one of our performance goals. We already have formal plans in place to help us achieve some of these goals, particularly in the areas of pollution response and fisheries law enforcement. However, if we are to fully achieve our protection of natural resources strategic goal, we must become more involved in the efforts to recover and maintain our nation's marine protected species and the habitats on which they depend.

In recent years, there has been a dramatic increase in public and governmental concern about the state of our oceans and their living resources. Evidence of this includes:

- Increasing fishery management measures designed to reduce bycatch of non-targeted species, such as turtle excluder devices (TEDs), fixed-net pingers, and bycatch reduction devices (BRDs).
- Rising conflicts between advocates for species protection and resource users, such as those existing between Steller sea lion protection advocates and Bering Sea/Gulf of Alaska pollock fishers, and between northern right whale protection advocates and New England fixed gear fishers.
- The recent formation of federal and state government task forces to protect coral reefs, northern right whales, Pacific salmon, and other endangered species.
- National Marine Fisheries Service Report to Congress (1999) concluding, of the 230 stocks for which the status can be determined, 98 are overfished and five are approaching overfished - an increase from 86 overfished stocks in 1997 and 90 in 1998.
- Fisheries closures and restrictions in the Gulf of Maine and the West Coast that have had a devastating economic impact on groundfish fleets.
- Increasing litigation against government agencies (including the Coast Guard) by organizations trying to influence marine resource management policy.
- Funding for the Lands Legacy Initiative, which included \$27 million to protect ocean and coastal resources in FY 2000 and a request for \$266 million for FY 2001.
- The recent signing, by President Clinton, of Executive Order 13158, strengthening and expanding the nation's system of marine protected areas (MPAs).

The Coast Guard already has effective, coordinated strategies for enforcing our nation's fisheries management regulations, protecting the marine environment from oil pollution, and responding to maritime disasters. However, our approach to marine protected species (MPS), specifically those species and geographic areas that are protected under the Endangered Species Act, the Marine Mammal Protection Act, the National Marine Sanctuaries Act, or similar regulations or executive orders, is less clearly defined. Problems resulting from this include:

- Initial delay in establishing a coordinated plan for accomplishing assigned Atlantic Protected Living Marine Resources Initiative (APLMRI) tasks.

- Difficulty in addressing potential conflicts between high-speed craft and marine protected species in New England.
- Low funding priority for funding assessments to address the impact Coast Guard operations have on marine protected species throughout the Pacific Area.
- Inconsistency in handling cross-directorate MPS issues such as working with the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) on marine mammal protection initiatives and responding to the Coral Reef Initiative (Executive Order 13089).
- Working level frustration with lack of guidance for dealing with endangered species lawsuits, creation of Memorandums of Understanding (MOU) with NMFS, potential regulation of high-speed craft and whale watch industry vessels, and other MPS issues.

A robust ocean environment is essential to our nation's prosperity, and healthy populations of marine protected species are essential to maintaining a robust ocean environment. Just as protecting our water and air became top national priorities during the last decades of the 20th century, protecting our oceans is becoming a top priority of the 21st century. In the coming years, the nation will look for leaders to exercise responsible stewardship of our ocean resources. The Coast Guard is stepping forward and embracing this role, it is one of the most important roles we will ever undertake.

OCEAN STEWARD PURPOSE

The purpose of Ocean Steward is to help the Coast Guard achieve its strategic goal Protection of Natural Resources and its performance goal of enforcing federal regulations that result in all living marine resources achieving healthy, sustainable populations. Ocean Steward provides a clearly defined strategy for our role in helping the nation recover and maintain healthy populations of marine protected species; it captures the things we are already doing and provides a comprehensive list of objectives we can achieve if we are provided the necessary resources. Ocean Steward complements our fisheries enforcement strategic plan, Ocean Guardian. Together, Ocean Steward and Ocean Guardian provide a roadmap for the Coast Guard's efforts in ensuring our nation's waterways and their ecosystems remain productive by protecting all our nation's living marine resources from degradation.

COAST GUARD STRATEGIC GOAL: PROTECTION OF NATURAL RESOURCES

Eliminate environmental damage and natural resource degradation associated with all maritime activities

The nation's waterways and their ecosystems are vital to our economy and health. If the United States is to enjoy a rich, diverse and sustainable ocean environment, then we must halt the degradation of our ocean's natural resources associated with maritime activities. This includes ensuring our country's marine protected species are provided the protection necessary to help their populations recover to healthy, sustainable levels. Providing adequate protection will require the United States to enact and enforce a wide range of regulations to govern marine resource management and use. Ocean Steward will enable the Coast Guard, as the nation's primary at sea law enforcement agency, to develop and enforce those regulations necessary to help recover and maintain our country's marine protected species. Moreover, Ocean Steward will ensure the Coast Guard is viewed as a leader in regional, national and international efforts to protect the nation's marine ecosystems.

OCEAN STEWARD VISION STATEMENT

The Coast Guard will be a leader in the effort to recover and maintain our nation's marine protected species

OCEAN STEWARD MISSION STATEMENT

We will enforce and comply with marine protected species regulations, work with other agencies and organizations to develop appropriate regulations for marine protected species recovery, and publicize our efforts to gain the support and resources necessary to fully implement Ocean Steward

The Coast Guard will implement a formal MPS strategy, Ocean Steward, with a clear, focused vision. We will educate and train our members to make certain every individual understands that stewardship of the ocean environment is a fundamental part of their duty. We will use existing enforcement authorities, and seek new authorities as necessary, to help reduce the risks of extinction and recover marine protected species populations. We will conduct our own operations so as to minimize our impact on marine protected species. We will assess the impact on marine protected species when developing both internal and external regulations and policies. We will work closely with other federal, state and local governments, as well as environmental and research organizations, to carry out the nation's MPS policies. We will inform the public of both the importance of the mission and the ways in which they can help lessen the impact of human activities on marine protected species. We will widely publicize our strategy and results to inform policymakers and the public of the value of our MPS efforts.

GUIDING PRINCIPLE

We are Stewards of the Ocean

The guiding principle behind Ocean Steward is instilling in every member of the Coast Guard the belief that each individual is a steward of the ocean. This concept must be promoted throughout the entire organization. Our training commands – Training Center Cape May, the Coast Guard Academy, Training Center Yorktown, Training Center Petaluma, and the Regional Fisheries Training Centers – should produce graduates who understand and believe preservation of marine protected species is a fundamental Coast Guard responsibility. Our boarding officers and marine inspectors should know, and want to know, what marine protected species exist in their AORs, the regulations that exist to protect them, and how his or her actions can promote species recovery. Our operations and marine safety units should know, and want to know, the concerns of federal, state and local officials, and should work cooperatively with them. Our stations, cutters and marine safety offices should distribute appropriate educational literature. At every opportunity Coast Guard personnel should let the public know we are on watch protecting their oceans and waterways, and inform them of what they can do to help eliminate the degradation of natural resources associated with maritime activities. Our deck watch officers, aircrews and coxswains should be able to recognize the marine protected species they are likely to

encounter and report sightings to interested organizations. Our staff officers and port operations personnel should ensure, and want to ensure, recovery of marine protected species is taken into account when making policy decisions, and they should prioritize the workloads of their personnel to reflect this emphasis. In short, every member of the Coast Guard must think of himself or herself as a steward of the ocean. Committing to that, both organizationally and individually, we will enable us to reach our overarching Protection of Natural Resources strategic goal.

OCEAN STEWARD STRATEGIES

Raise the Profile of the MPS Mission: We will raise the profile of the MPS mission to the status of missions such as maritime drug interdiction, marine pollution prevention and fisheries enforcement.

Obtain Necessary Resources and Authorities: We will prioritize existing resources, use existing authorities, and seek additional resources and authorities as necessary to implement Ocean Steward.

Partner with Other Agencies: We will work closely with other agencies and organizations involved in the preservation and recovery of marine protected species to eliminate redundancy, and provide a clear link between enforcement and management.

Publicize Our Efforts: We will stress the importance of the Coast Guard's role as part of a comprehensive management scheme and highlight our successful efforts to the public.

Each of these strategies contains sets of near, mid, and long-term objectives. Near-term objectives are those that can be achieved without a major reallocation of resources. Mid-term objectives require addition resources or a significant reallocation of resources. Long-term objectives are those objectives that will require institutional changes such as seeking additional authorities or creation of program offices.

STRATEGY: RAISE THE PROFILE OF THE MPS MISSION

1. DISCUSSION

If the Coast Guard is to be truly committed to protecting the ocean and its resources, then, in the eyes of our own people, recovery of marine protected species must be just as important as traditional missions such as maritime drug interdiction, marine pollution prevention, and fisheries enforcement. We must go beyond development of single initiatives in response to pressure or crisis. We should approach MPS issues with the same proactive, integrated, long-term strategy we use for addressing counterdrug operations, fisheries law enforcement, and commercial vessel safety. Every member of the Coast Guard must know it is part of our job to help recover and maintain our marine

protected species, just as they know it is our job to rescue those in distress. If we understand this concept individually, we will certainly convey that image organizationally.

2. KEY OBJECTIVES

a. Near Term

1) Incorporate MPS issues into CG performance planning.	G-CCS
2) Develop Area and District MPS operating and enforcement guidance.	G-O/Areas/ Districts
3) Emphasize area specific MPS issues in the curriculum of all 5 Regional Fisheries Training Centers (RFTC).	G-O/G-W/ Areas/RFTCs
4) Identify ways to increase CG Auxiliary participation in MPS mission.	G-O
5) Identify ways to increase focus on MPS issues in Sea Partners program.	G-M
6) Measure the effectiveness of current MPS initiatives such as compliance with the Mandatory Ship Reporting System (MSR) and manatee speed zone regulations.	G-O
7) Designate MPS points of contact (POC) at HQ/Areas/Districts, and create a CG network for information flow on MPS issues.	G-O/Areas/ Districts

b. Mid Term

1) Increase Endangered Species Act/Marine Mammal Protection Act enforcement pulse ops during critical seasons.	G-O/Areas/ Districts
2) Ensure current and potential MPS missions (patrol of remote coral reefs, removal of derelict fishing gear, assisting in disentanglement of whales, etc.) are included in Deepwater decision making process.	G-O
3) Increase CG participation in environmental cleanup events such as the Center for Marine Conservation's annual International Coastal Clean Up.	G-M/G-O
4) Incorporate MPS mission into curriculum of all entry-level and accession training programs (e.g., Officer Candidate School, the Academy, Cape May, and Civilian Indoctrination).	G-W
5) Incorporate MPS issues into International Maritime Officers Course and Mobile Training Teams.	G-CI
6) Designate MPS POC at appropriate CG units.	Districts
7) Include MPS guidance in Maritime Law Enforcement Manual updates.	G-O
8) Include MPS guidance in Marine Safety Manual updates.	G-M

c. Long Term

1) Create HQ cross-directorate MPS office.	G-M/G-O
2) Incorporate MPS questions into Servicewide Examinations.	G-W
3) Add MPS material to appropriate A School curricula (e.g., BM, QM, and MST).	G-W
4) Add MPS material to appropriate C School curricula (e.g., Boarding Officer Course, Boarding Team Member Course, and Marine Safety Petty Officer Course).	G-W

STRATEGY: OBTAIN NECESSARY RESOURCES AND AUTHORITIES

1. DISCUSSION

As national sentiment builds for increasing the protection of our oceans, the Coast Guard should be at the top of the list of agencies that the public demands to be adequately funded. We should reinforce this by documenting our need for, and requesting, the additional resources required to meet the increasing enforcement and regulatory demands in the oceans environment. The public must view the Coast Guard as a leader in preserving our oceans and their protected species. When it is the right thing to do, we should seek to expand our enforcement and regulatory roles, and not shy away for fear of acquiring additional mandates or becoming the target of legal action. If we can be leaders in maritime search and rescue, drug interdiction and pollution prevention, then we can also become leaders in the recovery of marine protected species.

2. KEY OBJECTIVES

a. Near Term

1) Request funding for implementation of Ocean Steward through annual budgeting and resource allocation processes.	G-I/G-M/ G-O/G-
2) Include resource hour requests for implementation of Ocean Steward in input to the annual Operational Guidance letter.	G-O/Areas
3) Assess the need for more enforcement authority to protect resources of various marine protected areas and sanctuaries.	G-I/G-M/ G-O
4) Monitor and evaluate effectiveness of the Mandatory Ship Reporting System (MSR).	G-M/G-O
5) Monitor R&D efforts to develop new technologies for marine mammal detection and avoidance in order to plan for possible acquisition of feasible technologies.	G-O/G-S

b. Mid Term

1) Develop better measures of effectiveness for MPS enforcement efforts.	G-O
2) Support Resource Proposals that address requirements for MPS activities.	G-CCS
3) Allocate resources required to implement Ocean Steward in the annual Operational Guidance letter.	G-O
4) Propose statutory changes and new regulations to improve CG ability to support the nation's MPS objectives.	G-L/G-M/ G-O

c. Long term

1) Consider seeking expanded authority for regulation of vessels in order to protect marine protected species.	G-L/G-M/ G-O
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STRATEGY: PARTNER WITH OTHER AGENCIES AND ORGANIZATIONS

1. DISCUSSION

Our leadership should seek opportunities to help recover and maintain the nation's marine protected species (MPS) by working more closely with the National Oceanic and Atmospheric Administration (NOAA), the National Marine Fisheries Service, the National Marine Sanctuaries (NMS), the U.S. Fish and Wildlife Service, the Department of State, the Department of Defense, state and local governments, non-governmental organizations, industry, research institutions, and international organizations. We should partner with concerned agencies and organizations to ensure MPS issues are considered whenever agencies propose new regulations. We should work closely with NOAA, NMFS, the NMS, state and local governments, and international organizations to ensure we are doing all we can to provide enforcement for various marine protected areas, and to assist them with their education and outreach initiatives. We should reach out to other management agencies and research institutions to assist in providing the data needed to answer important questions about marine protected species.

2. KEY OBJECTIVES

a. Near Term

1) Maximize assistance to NMFS in investigation and prosecution of protected MPS incidents.	G-O
2) Work closely with NMFS on MPS issues such as fishing gear conflicts, vessel traffic management, and bycatch reduction.	G-M/G-O
3) Work closely with the Navy to monitor research and development efforts to use acoustics for tracking and avoiding endangered whales.	G-O/G-C
4) Use MOUs, as appropriate, to define relations with the National Marine Sanctuaries and other marine protected areas.	G-L/G-M/ G-O
5) Engage other agencies in a discussion of remote marine protected areas.	G-M/G-O
6) Increase our role in federal and international recovery teams and task forces (e.g., the Coral Reef Task Force, the Manatee Recovery Team, and Right Whale Recovery Plan Implementation Teams).	G-M/G-O
7) Emphasize ship-riding opportunities for NMFS and NMS personnel on CG fisheries/MPS patrols.	G-O

b. Mid Term

1) Establish a senior officer liaison billet to NOAA to increase CG input and interaction in developing MPS issues and regulations.	G-M/G-O
2) Establish a senior officer liaison billet to Council on Environmental Quality (CEQ).	G-M/G-O
3) Create opportunities for undergraduate/graduate level marine affairs students to experience CG fisheries and MPS operations.	G-O

c. Long term

1) Consider engaging other agencies in joint rulemaking for MPS regulations.	G-L/G-M
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STRATEGY: PUBLICIZE OUR EFFORTS

1. DISCUSSION

The Coast Guard already has many marine protected species success stories to tell. We are partnering with the USFWS to educate the boating public and reduce manatee deaths by enforcing speed zone regulations in Florida. We are working closely with NMFS and environmental agencies to help protect the highly endangered northern right whale. In Hawaii, we remove tons of derelict fishing nets from coral reefs that are critical habitat of the endangered Hawaiian monk seal. Conducting this work, however, is only half of the job.

If the public is to perceive us as stewards of the ocean, then we must highlight our efforts and successes to the press and the public at every opportunity. Local units need to let communities know what we are doing to protect their waters. Districts should emphasize the importance of our MPS mission in maintaining healthy, sustainable ecosystems. Area and Headquarters staffs must cultivate relationships with the press, civic leaders, stakeholders and legislators to ensure they are aware of the valuable work the Coast Guard is doing. The public must recognize we are the nation's most valuable maritime asset in the effort to protect and sustain our oceans and their resources. The more we are seen taking positive, decisive action and producing good results, the more the public will demand we be properly resourced to perform this vital mission.

2. KEY OBJECTIVES

a. Near Term

1) Maximize publicity of cooperative MPS efforts with federal and state agencies and non-governmental organizations.	G-I/G-L/ G-M/G-O
2) Maximize publicity of Sea Partners MPS initiatives.	G-I/G-M
3) Use inspections and examinations as opportunities to provide MPS information packages to vessels.	G-M/G-O

b. Mid Term

1) Use publicity to generate interest in, and develop ideas for, future marine environment cleanups and other initiatives.	G-I
2) Optimize publicity of CG role in MPS task forces.	G-I
3) Maximize publicity of CG Auxiliary public education efforts in MPS identification, sensitivity, and avoidance measures.	G-I/G-O

c. Long term

1) Develop an interactive forum for public comment and ideas regarding MPS protection.	G-I
2) Raise the profile of the MPS mission to attract recruits with interest in environmental issues.	G-W