



September 17, 2004

Sandra Queen
Commandant (G-ACS-2) USCG HQ
2100 Second Street S.W.
Washington, D.C. 20593-0001

REFERENCE: **Contract No.:** DTCG23-02-D-EXB001
 USCG Order No.: DTCG23-03-F-DDX118
 e²M Project No.: 3055-004

SUBJECT: Transmittal of the Final Environmental Assessment for the
 Stand-Up and Operation of the Maritime Safety and Security Team (MSST)
 in Boston, Massachusetts

Dear Ms Queen:

This letter is to inform you of the delivery of the Final Environmental Assessment (EA) for the Stand-Up and Operation of the Maritime Safety and Security Team (MSST) in Boston, Massachusetts. Under separate cover, engineering-environmental Management, Inc. (e²M) provided 8 copies of the Final EA to LT Ty Nagie (G-OT) for internal distribution. These are administrative record copies of the Final EA and no comments are required.

The Final EA includes a copy of USCG's formal response to comments on the Draft EA from Chris Boelke of the National Oceanographic and Atmospheric Administration's (NOAA), National Marine Fisheries Service. The letter clarifies the location of the boathouse identified in NOAA's comments.

We appreciate this opportunity to provide our continued support to the USCG. Should you have any questions concerning this deliverable, please contact me at (610) 949-9699.

Sincerely,
engineering-environmental Management, Inc.

Alan J. Finio
Project Manager

cc: LT Ty Nagie (G-OT)
 Kelley, Kebby (G-SEC-3)
 Mark Zill (G-SEC-3)
 Russell Goff (e²M)
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 e2M Project File, 3055-004

ENVIRONMENTAL ASSESSMENT
STAND-UP AND OPERATIONS OF THE
MARITIME SAFETY AND SECURITY TEAM
BOSTON, MASSACHUSETTS



COMMANDANT
UNITED STATES COAST GUARD (G-OPD)



APRIL 2004

Abbreviations and Acronyms

°F	degrees Fahrenheit	MSA	Magnuson-Stevens Fisheries Conservation and Management Act
ALCOASTS	All coasts – message sent to all USCG installations and vessels	MSRS	Mandatory Ship Reporting System
APE	Area of Protected Effect	MSST	Marine Safety and Security Team
APLMRI	Atlantic Protected Living Marine Resources Initiative	MTSA	Maritime Transportation Security Act
AQCR	Air Quality Control Region	NAAQS	National Ambient Air Quality Standards
CAA	Clean Air Act	NEFMC	New England Fishery Management Council
CEQ	Council on Environmental Quality	NEPA	National Environmental Policy Act
CFR	Code of Federal Regulations	NESU	Naval Engineering Support Unit
CMR	Coastal Management Regulations	NHPA	National Historic Preservation Act
CO	carbon monoxide	NMSA	National Marine Sanctuaries Act
COMDTINST	Coast Guard Commandant Instruction	NO ₂	nitrogen dioxide
CWA	Clean Water Act	NOAA	National Oceanic and Atmospheric Administration
CZMA	Coastal Zone Management Act	NOAA Fisheries	National Oceanic Atmospheric Administration’s National Marine Fisheries Service
dB	decibel	NOAA Fisheries HMS	National Oceanic and Atmospheric Administration Fisheries Highly Migratory Species Division
dBA	A-weighted decibel	NO _x	nitrogen oxide(s)
dBC	C-weighted decibel	NRHP	National Register of Historic Places
DGPS	Differential Global Positioning System	NSR	New Source Review
DHS	Department of Homeland Security	O ₃	ozone
DNL	Day-Night Average Sound Level	P.L.	Public Law
DOD	U.S. Department of Defense	Pb	lead
DOT	Department of Transportation	PM ₁₀	Particulate Matter ≤ 10 microns in diameter
EA	Environmental Assessment	ppm	parts per million
EEZ	Exclusive Economic Zone	PSD	Prevention of Significant Deterioration
EFH	Essential Fish Habitat	RB-HS	Response Boats-Homeland Security
EIS	Environmental Impact Statement	ROI	Region of Influence
EO	Executive Order	SAE	Society of Automotive Engineers
EPA	U.S. Environmental Protection Agency	SAFMC	South Atlantic Fishery Management Council
ESA	Endangered Species Act	SAV	Submerged Aquatic Vegetation
ESU	Electronics System Support Unit	SIP	State Implementation Plan
FBI	Federal Bureau of Investigation	SO ₂	sulfur dioxide
FEMA	Federal Emergency Management Agency	tpy	tons per year
FONSI	Finding of No Significant Impact	U.S.C.	United States Code
FSO	Fleet Support Office	U.S.S.	United States Ship
ft ²	square feet	USACE	U.S. Army Corps of Engineers
FY	Fiscal Year	USCG	United States Coast Guard
hp	horsepower	USFWS	U.S. Fish and Wildlife Service
Hz	Hertz	VOC	Volatile Organic Compounds
ISC	Integrated Support Command	µg/m ³	micrograms per cubic meter
Leq(24)	24-hour Equivalent Sound Level	µPa	microPascal
LNG	Liquefied Natural Gas	µPa-m	microPascal – meters
m/s	meters per second		
MADEP	Massachusetts Department of Environmental Protection		
MAMFC	Mid-Atlantic Fishery Management Council		
MMPA	Marine Mammals Protection Act		

USCG

FINDING OF NO SIGNIFICANT IMPACT

FOR

U.S. COAST GUARD STAND-UP AND OPERATIONS OF THE MARITIME SAFETY AND SECURITY TEAM IN BOSTON, MA

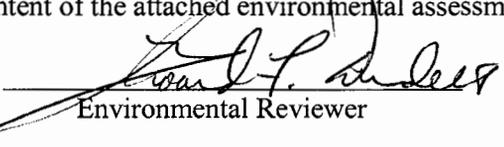
The Proposed Action includes the stand up and operations of one Maritime Safety and Security Team (MSST) located at USCG Integrated Support Command (ISC) Boston. The MSST will consist of 75 active duty personnel and 33 reserve personnel, and six Response Boats-Homeland Security (RB-HS). All six RB-HS can, but will not necessarily, be operating at once. The RB-HS will have two 225 horsepower outboard motors, will be 25 feet in length, will be highly maneuverable, will be capable of quickly reaching and sustaining high speeds (in excess of 40 knots), and will carry three crewmembers, plus a maximum of seven passengers. Other requirements will include, but not be limited to, communication equipment, protection for the crew, and defensive weaponry. When not in use, RB-HS may be placed on trailers.

The MSST will normally conduct operations in Boston Harbor and Cape Cod Bay. The Region of Influence (ROI) includes the Massachusetts counties of Barnstable, Essex, Middlesex, Norfolk, Plymouth, and Suffolk. 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 Boston Harbor. It will be capable of operating seven days a week, 24 hours a day, in all weather conditions. It will also operate with, and be supported by, both military and civilian government organizations and commercial and non-governmental 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 (EA) 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.

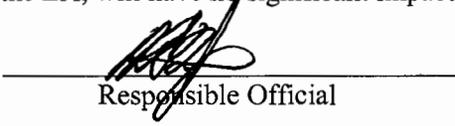
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Date


Environmental Reviewer

CHIEF - G-SEC-3
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.

1/30/04
Date


Responsible Official

CPT/G-SEC
Title/Position

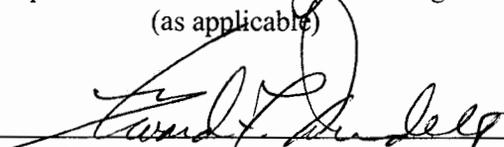
USCG
ENVIRONMENTAL ASSESSMENT

FOR
COAST GUARD STAND-UP AND OPERATION OF MARITIME SAFETY AND
SECURITY TEAM IN BOSTON, MA

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.

<u>1/29/04</u> Date	<u></u> Preparer/Environmental Project Manager (as applicable)	<u>LCDR /G-020</u> Title/Position
<u>2-4-04</u> Date	<u></u> **Environmental Reviewer	<u>CHIEF, G-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.

<u>1/30/04</u> Date	<u></u> Responsible Official	<u>LCDR /G-020</u> Title/Position
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**ENVIRONMENTAL ASSESSMENT OF THE
STAND-UP AND OPERATIONS
OF THE
MARITIME SAFETY AND SECURITY TEAM
BOSTON, MA**

Contract No.: DTCG23-02-D-EXB001

Prepared for:

**Commandant
United States Coast Guard (G-OPD)
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Prepared by:



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April 2004

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1. Purpose of and Need for the Action

1.1 Introduction

The United States Coast Guard (USCG), one of the country's five armed services, is this nation's oldest maritime agency, and is one of the most unique agencies of the Federal government. The USCG began on August 4, 1790, when the first Congress authorized the construction of ten vessels to enforce tariff and trade laws, prevent smuggling, and protect the collection of the Federal revenue. Known variously as the Revenue Marine and the Revenue Cutter Service, the USCG expanded in size and responsibilities as the nation grew. These added responsibilities included humanitarian duties such as aiding mariners in distress, enforcing laws against slavery and piracy, protecting the marine environment, exploring and policing Alaska, and charting the growing nation's coastlines, all well before the turn of the 20th century.

The USCG received its present name in 1915 when the Revenue Cutter Service merged with the Life-Saving Service. The nation now had a single maritime service dedicated to saving life at sea and enforcing the nation's maritime laws. The USCG has continued to protect the nation throughout its long history and has served proudly in every one of the nation's conflicts. National defense responsibilities remain one of the USCG's most important functions.

Today, the USCG operates in all maritime regions for missions such as search and rescue, law enforcement, alien migrant interdiction, and national defense. These include:

- 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.

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. Since the events of September 11, 2001, the USCG has dramatically shifted its mission activity to reflect its role as a leader in Maritime Homeland Security. On March 1, 2003, in response to growing national security demands, the newly formed Department of Homeland Security (DHS) assumed control of the USCG from the Department of Transportation (DOT) in the largest reorganization of the Federal government since the 1940s (Public Law [P.L.] 107-296). The USCG is the lead Federal agency for 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. USCG activities in 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 skills most needed in support of the nation's military and naval strategies for the 21st century. The USCG's missions include maritime law enforcement, maritime safety, national defense, and marine environmental protection.

Under the newly formed DHS, one of the USCG's primary missions is to protect the U.S. Maritime Domain and the U.S. Marine Transportation System and deny their use and exploitation by terrorists as a means for attacks on U.S. territory, population, and critical infrastructure. The Maritime Transportation Security Act (MTSA) of 2002 contains several provisions relating to the USCG's role in maritime homeland security. It creates a U.S. maritime security system and requires Federal agencies, ports, and vessel owners to take numerous steps to upgrade security. The MTSA required the USCG to develop national and regional area maritime transportation security plans and required ports, waterfront terminals, and certain types of vessels to submit security and incident response plans to the USCG for approval.

The USCG has several additional 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 resupplied, both by keeping USCG units at a high state of readiness, and by keeping marine transportation open for the transit of assets and personnel from other branches of the armed forces.
- Protect against illegal fishing and indiscriminate destruction of living marine resources.
- Prevent and respond to oil and hazardous material spills—both accidental and intentional.
- Coordinate efforts and intelligence with Federal, state, and local agencies.

In response to the increased homeland security threat level, the USCG is engaged in Operation Liberty Shield. Operation Liberty Shield is a multi-department, multi-agency, national team effort to protect America's citizens and infrastructure while minimizing disruption to our economy and way of life. The USCG is integrating its efforts within DHS and closely coordinating its efforts with those of the Department of Defense (DOD); DOT; the Federal Bureau of Investigation (FBI); and other

Federal, state, and local security and law enforcement agencies to ensure the security of our nation's ports, waterways, and facilities. Hundreds of USCG cutters, aircraft, and small boats manned by thousands of USCG active duty and reserve members are guarding our coasts, ports, and waterways around the clock during this heightened state of alert.

In addition, 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. 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. The increased USCG maritime security presence prevents and deters those who would cause harm to innocent Americans.

1.3 Purpose and Need for the Action

1.3.1 Purpose of the Action

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).

The establishment of additional Maritime Safety and Security Teams (MSSTs) would better allow the USCG to perform all of its missions, especially the newly acquired homeland security missions. The MSSTs are needed to improve existing domestic port security capabilities. While the MSSTs would augment existing USCG forces in the U.S., they would not duplicate existing protective measures. They would provide complimentary, non-redundant capabilities that would be able to close significant readiness gaps in our nation's strategic ports (USCG 2002b, c).

In order to determine which ports required additional protection, the USCG and other agencies developed a matrix to assess and "grade" each U.S. port to aid in the selection of the most critical ports to stand up. Elements that were assessed included but are not limited to (USCG 2002b):

- Cargo Value
- Cargo Volume
- Domestic Cargo

- Hazardous Cargo
- Military Presence
- Population

The first four MSSTs are located in Seattle, Washington; Chesapeake, Virginia; San Pedro, California; and Galveston, Texas. The second round of ports to be assigned MSSTs are Staten Island, New York; Boston, Massachusetts; St. Mary's, Georgia; and San Francisco, California. In addition to these eight ports, the USCG is planning to stand up MSSTs in other critical ports around the country. If additional MSSTs are established around the country, additional National Environmental Policy Act (NEPA) analysis will be prepared for future stand-ups, as necessary.

1.3.2 Need for the Action

The USCG has a broad range of environmental and geographic responsibilities throughout the EEZ. In the wake of the events of September 11, 2001, the USCG assumed homeland security duties in addition to their current missions. Unfortunately, manpower and vessels to perform all missions, including these additional operations, also remained the same. Currently, USCG resources are at maximum capacity and all missions (*e.g.*, maritime border security, fisheries enforcement, and living marine resources protection) suffer from the USCG's attempt to maintain the previous level of effectiveness and efficiency. In some cases, current detachments of MSSTs have been temporarily assigned to other ports, leaving a detachment at the homeport to perform 'double duty'. When the away detachment returns, neither detachment has had the ability to rotate through a rest period, resulting in an increased demand on manpower sources. If implemented, the Proposed Action would increase security and allow other USCG assets to focus on their intended missions more effectively and efficiently, since the MSST's primary responsibility would be dedicated to security. The Proposed Action would also allow more MSSTs to remain in their homeports and maintain a regular work/rest cycle.

In 2002, under P.L. 107-87, an emergency response supplemental enacted by Congress, funds were appropriated to support USCG anti-terrorist activities, including the mandated establishment and operation of four MSSTs to be completed in Fiscal Year (FY) 2002. The establishment of MSSTs in Seattle, Washington; San Pedro, California; Galveston, Texas; and Chesapeake, Virginia helped relieve some of the demand on USCG units. However, a number of ports require further protection. Therefore, Congress appropriated additional funds and manpower positions in the FY 2004 budget for the establishment of additional MSSTs.

In the *Programmatic Environmental Assessment for the U.S. Coast Guard Acquisitions* (USCG 2003a), the USCG assessed the need to acquire standard small and medium response boats to add to or replace the aging and increasingly inefficient assets with standard, more reliable, and more environmentally sound assets. The response boat acquisition, intended to take place over the next several years, will also help alleviate homeland security needs in the long term.

The establishment of MSSTs in this second series of ports (Staten Island, New York; St. Mary's, Georgia; Boston, Massachusetts; and San Francisco, California) would further alleviate the demand on the existing units to perform all required missions equitably and provide additional protection for these ports. Additionally, RB-HSs are boats that can be acquired and modified in the very short term, thus responding to current security concerns.

1.4 Project Scope and Area

This Environmental Assessment (EA) addresses the MSST to be located in Boston, Massachusetts (see Figure 1-1). The MSST would normally conduct the majority of its operations in Boston Harbor and Cape Cod Bay. The Boston MSST would be composed of two detachments: one at Integrated Support Command (ISC) Boston and the second at USCG Station Cape Cod Canal (referred to as the Station). Three boats would be stationed at ISC Boston and three at the Station. The boats and their crew complements would be rotated on an as-needed basis. The RB-HSs would be dropped in the water at ISC Boston, a public boat ramp located in Boston Harbor, or in Cape Cod Bay. The Region of Influence (ROI) for the Boston MSST would include Boston Harbor and Cape Cod Bay (see Figure 1-2). The MSST would normally conduct operations in the harbor or port to which it is assigned. However, the MSST would also be transportable via land transportation, USCG cutter, and USCG or other military aircraft. In an emergency or under specific threat, the MSST could be relocated to another port. The location and duration of this relocation is impossible to predict and would depend on a number of unknown circumstances. Therefore, potential impacts from these types of operations would 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 at ISC Boston, Boston Harbor, and Cape Cod Bay.

1.5 Public Involvement Process

An advertisement published in the *Dorchester Reporter* on November 26, 2003, announced the USCG's intent to prepare an EA and gave information on the proposal and seeking comments.

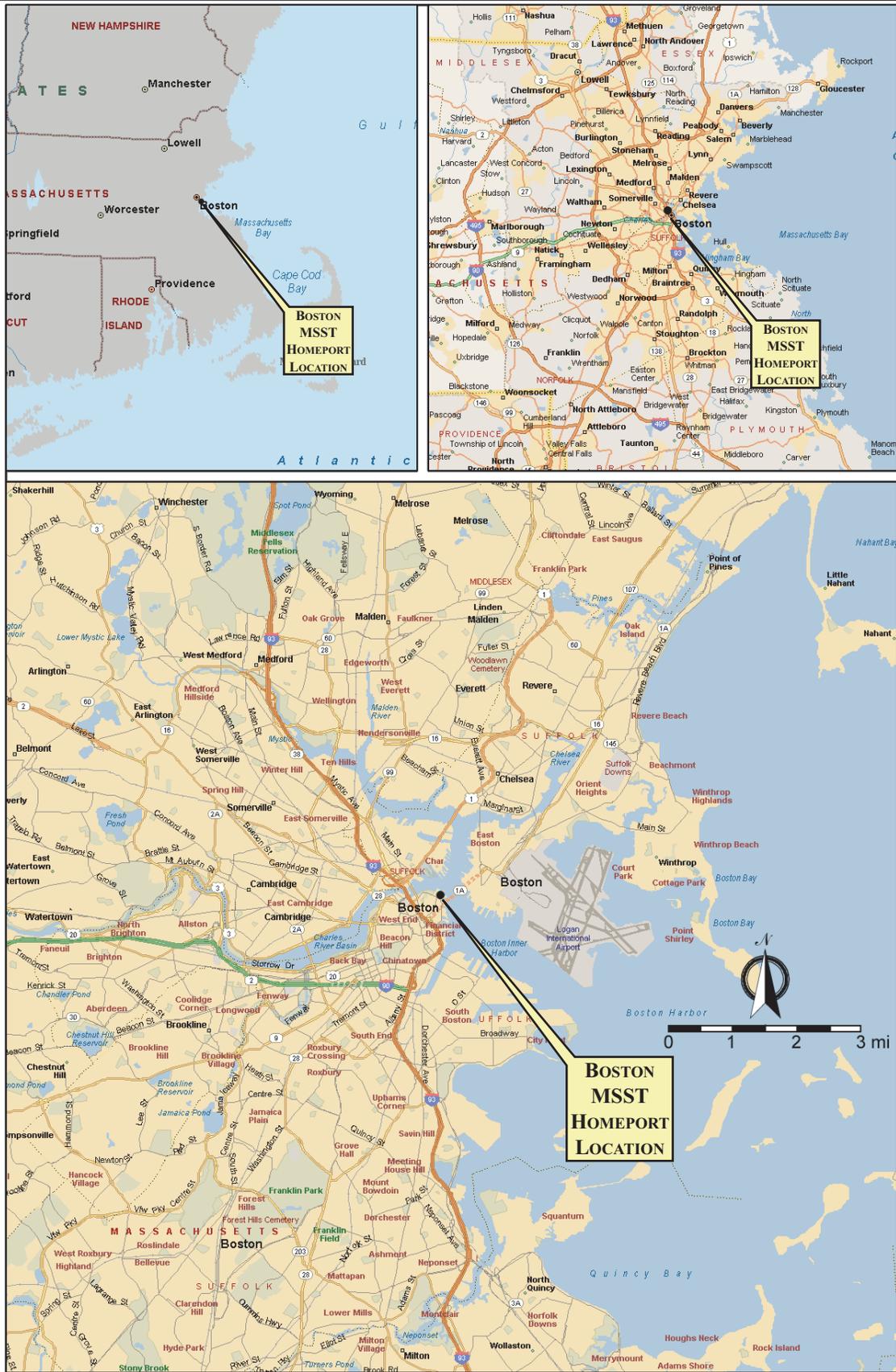


Figure 1-1. Location Map of Boston MSST Homeport



Figure 1-2. Location Map of Boston MSST Region of Influence

Letters to interested parties were also mailed to appropriate Federal, state, and local agencies (See Appendix A [Interested Party Mailing List and Letter]; Appendix B; [Responses to the Interested Party Letter]; Appendix C [Newspaper Announcement]; and Appendix D [Agency Correspondence and Coordination]). The USCG will accept comments on this EA throughout the environmental process. An announcement on the availability of the EA and draft Finding of No Significant Impact (FONSI) was placed in the *Dorchester Reporter* on March 4, 2003.

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, the purpose and need of the action, and 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 direct and indirect environmental impacts on each resource area under both the Proposed Action and No Action Alternative.

Chapter 5: Cumulative Impacts. This chapter discusses the potential cumulative impacts that might 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 nine appendices that provide additional information. Appendix A includes a copy of the Interested Party Mailing List, the Interested Party Letter and its attachment. Appendix B has the written responses to the Interested Party Letter. Appendix C includes a copy of the language used in the newspaper announcement. Appendix D includes correspondence with regulatory agencies regarding the Proposed Action. Appendix E includes a summary of the Atlantic

Protected Living Marine Resources Initiative (APLMRI). Appendix F includes a copy of the USCG's Ocean Steward Program. Appendix G includes a list of those regulations, laws, and executive orders that may reasonably be expected to apply to the Proposed Action. Appendix H includes further explanation of the terminology and methodology used in the noise resource section. Finally, Appendix I includes the calculations used for the air quality analysis.

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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 additional Maritime Safety and Security Teams (MSSTs), one of which would be located at USCG Integrated Support Command (ISC) Boston. The term 'stand-up' is defined as establishing a new activity. The MSST would improve existing ISC Boston and Boston Harbor security capabilities on an ongoing basis. The MSST would not duplicate existing protective measures, but would provide complimentary capabilities that would be able to close significant readiness gaps in our nation's strategic ports.

The MSST would include 75 active duty personnel augmented by 33 reservists, support buildings for personnel, six Response Boat-Homeland Security (RB-HS), and four Ford F-350 pickup trucks for tow vehicles. Personnel would consist of mostly reassigned personnel, although there may be some newly recruited personnel. It is anticipated that they would reside in Norfolk, Plymouth, Barnstable, Suffolk, Essex, or Middlesex Counties. MSST personnel would possess the specialized skills, capabilities, and expertise to perform a broad range of port security and harbor defense missions that may be required. The MSST administrative support offices would be located at already existing facility at ISC Boston, 427 Commercial Street, Boston, MA.

Each RB-HS would be 25 feet long with an eight-foot beam and a four-foot navigational draft, would be equipped with two 225 horsepower (hp) Honda outboard motors, radar, depth sounder, differential global positioning system (DGPS), and defense weaponry. The RB-HSs would be capable of reaching speeds of 40 knots in a short period. Three RB-HSs would be stored in a boathouse that consists of a Butler Building (*i.e.*, a modular building) that would be installed between Piers 2 and 3 at ISC Boston. The proposed installation site would be on heavily disturbed land (*i.e.*, an already existing concrete pad). The RB-HSs would be launched from either ISC Boston using a portable boatlift on an existing pier or from a public boat ramp in Boston Harbor. The other three RB-HSs would be stored in a locked and fenced area on USCG Station Cape Cod Canal.

Depending on operational requirements, there may be between two to six boats operating at any one time. The MSST would be capable of operating 24 hours per day, seven days per week. However, it is anticipated that the RB-HSs would operate 12 hours a day, 7 days per week and that there would be two to three boats operating at any given period.

The MSST would spend most of its operating time in Boston Harbor and Cape Cod Bay, including the Massachusetts counties of Barnstable, Essex, Middlesex, Norfolk, Plymouth, and Suffolk. The MSST can be moved by aircraft or other means in order to respond to events in locations other than Boston Harbor and Cape Cod Bay, should an increased presence be required at another port. The MSST would be interoperable with, and supported by, military and civilian government organizations, and commercial and non-government entities.

The MSST would primarily be responsible for patrolling the established ship channels, including a liquefied natural gas (LNG) facility in Boston Bay. The MSST would establish a moving security zone around specific vessels, including LNG tankers. Other specific escorting duties would include escorting the United States Ship (U.S.S.) Constitution, tall ships, and specific large regattas. The MSST would coordinate with the Boston Harbor Police on escort and other security duties.

USCG personnel would follow procedures already familiar to them including 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 would 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 Boston MSST would perform a wide range of activities including escorting and maintaining a floating security zone around LNG tankers and the U.S. Constitution. The Boston MSST would also coordinate with the Boston Harbor Police in security duties. Furthermore, the MSST would be prepared to conduct operations through all maritime security levels, and would be capable of operating under the threat of chemical, biological, or radiological attack. The MSST would have limited ability to detect chemical, biological, or radiological attack, and must be able to evacuate a contaminated environment. They would 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 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 action alternatives. The No Action Alternative identifies and describes the potential environmental impacts if the proponent agency does not take the Proposed Action or one of the other action alternatives, if applicable.

The continuation of the existing conditions without implementation of the Proposed Action is referred to as the No Action Alternative. For the purposes of this project, the No Action Alternative is defined as not establishing an MSST in Boston. The No Action Alternative serves as the benchmark against which Federal actions can be evaluated. Inclusion of the No Action Alternative is prescribed by Council on Environmental Quality (CEQ) regulations and, therefore, will be carried forward for further analysis in this Environmental Assessment (EA).

Congress and the Executive Branch must respond to the critical demand for homeland defense. Port security measures, such as MSSTs, must be created immediately. In the case of the establishment 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 before Fiscal Year (FY) 2003, which have been established. The Senate Appropriations Committee recently approved a \$76 million budget for the next seven MSSTs in FY 2004 (Senate Report 108-086).

If the No Action Alternative was selected, as described in this EA, it would not fulfill the USCG's purpose and need to provide additional port security. 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 a further strain on manpower and current assets. This scenario of vessels and manpower at maximum capacity would facilitate an attack at 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 and impacting appropriate emergency responses, employment and trade, and marine life. The impacts could be immediate (loss of life) or long-lasting (disruption of commerce activities) that could affect the long-term economy. Recovery time would be dependent on the severity and extent of the loss.

Other consequences would flow from the USCG's inability 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 would 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, such as commercial fishing, may also suffer from the USCG's diminished ability to protect those areas from illegal catches, as discussed in Ocean Steward (see Appendix F). In addition, adverse impacts on threatened and endangered species could occur if the USCG is unable to maintain its current level of effectiveness in enforcing the Endangered Species Act (ESA) and associated regulation in U.S. waters.

2.3 Comparison of Alternatives

The Proposed Action to stand-up and operate an MSST in Boston, Massachusetts, has the potential for positive impacts from both a security and safety viewpoint, as well as easing environmental concerns. First, the additional response boats would provide added security from terrorist attack for the safety of ships entering or leaving Boston Harbor. Second, the Proposed Action would add additional protection from potentially significant environmental damage. While the possibility of standing up six boats may appear to be a large increase, this is actually a small number when compared to the number and size of vessels that visit Boston Harbor. It is unlikely that all six boats would be in use at any one time. The boats would usually cruise at 10 to 12 knots, resulting in a small wake that should not negatively impact the surrounding shores. Furthermore, the USCG has existing mitigation in place on the East Coast to guard against adverse vessel impacts on protected species. The USCG currently operates under the Atlantic Protected Living Marine Resources Initiative (APLMRI) (a summary of the APLMRI can be found in Appendix E), Ocean Steward (Appendix F), and other long-standing initiatives and programs related to living marine resource protection. In 1996, the USCG published the APLMRI Environmental Impact Statement Record of Decision in the Federal Register. The APLMRI provides guidance for actions during USCG operations to support the recovery of protected living marine resources. It consists of two components: an internal program focusing on the USCG enforcement of the ESA and the Marine Mammal Protection Act (MMPA), and a conservation program focusing on other USCG activities, including interactions between USCG personnel and the public. The purpose of Ocean Steward is the USCG's national strategic goal to help the recovery and maintenance of marine protected species to achieve healthy, sustainable populations. Therefore, no additional mitigation activities should be necessary for the stand-up and operation of the MSST at ISC Boston.

Under the No Action Alternative, the added safety and security provided by the MSST would not be available. While the USCG would continue with its current level of protection, this level has already been determined to be less than is required for Boston Harbor and Cape Cod Bay. The potential environmental damage from a terrorist attack could be significantly adverse.

2.4 Alternatives Considered but Eliminated

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, 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 as the MSSTs would be using in Boston Harbor, 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. Therefore, this EA will assess the potential impacts of the USCG establishing and operating an MSST at ISC Boston and USCG Station Cape Cod Canal.

2.5 Comparison of Environmental Effects of All Alternatives

Table 2-1 summarizes the impacts of the Proposed Action and No Action Alternative.

Table 2-1. Impact Summary Matrix

Resource Area	Proposed Action	No Action Alternative
Biological Resources	<p>Implementation of the Proposed Action would have minor adverse impacts on biological resources in Boston Harbor and Cape Cod Bay. Current USCG environmental policies, regulations, and programs designed to protect living marine species (<i>e.g.</i>, the APLMRI – Appendix E, Ocean Steward – Appendix F, and speed guidance designed to avoid collisions with marine mammals) would continue to be followed. These programs would be particularly important in Cape Cod Bay. Additionally, RB-HS boats are designed to be highly maneuverable. Therefore, the addition of six RB-HSs would not have major adverse impacts on biological protected marine resources or habitats.</p>	<p>Under this scenario, it would be easier for a terrorist attack to occur or an attack that could spread to areas frequented by marine mammals. Significant adverse impacts would be expected should this alternative be selected due to the increased risk of a terrorist attack and the potential for significant adverse effects on marine mammals. Recovery time would depend on the extent of loss.</p>
Air Quality	<p>Under the Proposed Action, minor adverse impacts on air quality would occur. Calculations of air pollutant emissions from the proposed MSST operations were performed based on two boats operating 24 hours a day, 365 days a year. The number of additional personnel is comparatively small (75 active duty and 33 reservists) and would result in minor adverse impacts on air quality. The net change in nitrogen oxide (NO_x), and volatile organic compounds (VOC), emissions would be well below the <i>de minimis</i> threshold requirements and the regional significance requirements of the General Conformity Rule.</p>	<p>Under the No Action Alternative, existing conditions would remain as is and the MSST would not be stood up. Significant adverse impacts would be expected should this alternative be selected due to the increased risk of a terrorist attack and the potential for significant adverse effects on air quality. Recovery time would depend on the severity and extent of the impact.</p>

Table 2-1. Impact Summary Matrix (cont.)

Resource Area	Proposed Action	No Action Alternative
Noise	<p>Implementation of the Proposed Action would result in minor adverse impacts. However, due to low speed approach, docking at USCG facilities, and the fact that most operations would be conducted at 10 to 12 knots, the potential noise from the addition of six RB-HSs would have minor adverse impacts on humans or marine wildlife. Because sound levels created by the RB-HSs would be well below sound intensities associated with severe disturbance to whales or other marine mammals, and noise disturbance to sea turtles in the water would be temporary in nature, impacts on marine wildlife would be negligible minor adverse.</p>	<p>Under the No Action Alternative, existing conditions would remain as is and the MSST would not be stood up. Significant adverse impacts would be expected should this alternative be selected due to the increased risk of a terrorist attack and the potential for significant adverse effects on the noise environment. Recovery time would depend on the severity and extent of the impact.</p>
Public Safety	<p>Beneficial impacts may be reasonably expected from the Proposed Action. The Proposed Action would increase the USCG's ability to protect critical domestic ports and the U.S. Maritime Transportation System from warfare and terrorist attacks. While the MSST's operations would closely parallel USCG traditional port security operations, they would also provide complementary, non-redundant capabilities that would be able to close significant readiness gaps in our nation's strategic ports. The MSST would escort a variety of vessels, including LNG tankers and the U.S.S. Constitution, and maintain specific security zones around these vessels and other activities.</p>	<p>Under the No Action Alternative, existing conditions would remain as is, and the MSST would not be stood up. The USCG would maintain the current level of protection, which has been determined to be insufficient. Increased demand on vessels and manpower and disruption to other missions would continue. Significant adverse impacts would be expected should this alternative be selected due to the increased risk of a terrorist attack and the potential for significant adverse effects on public safety. Terrorists could strike at military or commercial facilities in the Region of Influence (ROI) creating health and safety hazards for the surrounding populace. The impacts could be immediate or long lasting. Recovery time would depend on the severity and extent of the impact.</p>

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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) guidelines, the description of the affected environment focuses on those conditions and resource areas potentially affected by the Proposed Action. These resources include water resources, soils and land use, socioeconomics, environmental justice, cultural resources, hazardous materials and waste management, biological resources, air quality and climate, noise, and public safety. Some environmental resources and conditions that are not present in the area or would not be affected by the Proposed Action have been omitted from this analysis. The following paragraphs identify the omitted resource areas and the basis for such exclusions:

- *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 flow, quantity, or quality. The Proposed Action could impact water quality in the Region of Influence (ROI) as a result of the emissions of outboard engines. However, Boston Harbor is highly traveled. In addition, 50 percent of the total sediment samples available from the harbor area show concentration levels that exceed screening-level, bulk-sediment toxicity criteria for zinc, copper, lead, and mercury (USGS 1999). The addition of six Response Boat-Homeland Security (RB-HS) would not adversely affect the water quality of Boston Harbor. Accordingly, the U.S. Coast Guard (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.
- *Soils and Land Use.* The Proposed Action would not involve any physical disturbances or earth-moving construction activities. Installation of a Butler Building (i.e., a modular building), serving as the boathouse would occur at Integrated Support Command (ISC) Boston between Piers 2 and 3. The proposed installation site would be on heavily disturbed (i.e., an existing concrete pad) land. Implementation of the Proposed Action would not alter the existing land use at these locations. Accordingly, the USCG has omitted detailed examination of soils and land use.
- *Socioeconomics.* The Proposed Action does not involve any activities that would contribute to significant changes in socioeconomic resources. The 33 reservists are currently in the Boston area. The majority of the 75 active duty personnel would be reassigned personnel and, therefore, already in the Boston area. Any additional personnel would be in Middlesex or Suffolk Counties surrounding the ISC Boston. Middlesex and Suffolk Counties have a total of more than two million people (Census Bureau 2003). It is unlikely that the addition of 75 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, in turn, be expected to affect disproportionately 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 would occur within areas that have high historical and cultural values. Part of the ROI (including Boston Inner Harbor, the Charles River, and the Charles River Basin) contains numerous cultural and/or historic properties. There are a number of Federal historic districts adjacent to or visible from the water including Back Bay Historic District, Boston Harbor Historic District, Boston National Historical Park, Boston (Charleston) Navy Yard, and the Charles River Basin Historical District (NRHP 2003a). The state has also identified a large number of historic and cultural landmarks in the same areas including Boston Light, Bulfinch Triangle Historic District, and Fort Warren (NRHP 2003b). The installation of the boathouse would occur at the existing USCG ISC at the confluence of the Charles River and Boston Inner Harbor. The National Historic Preservation Act (NHPA) defines the Area of Potential Effects (APE) as the geographic area within which an undertaking may cause changes in the character or use of historic properties. For the purpose of this EA, the APE for the Proposed Action is defined by the construction limits of the proposed boathouse. The boathouse APE would not affect the “line-of-sight” of historical or cultural buildings or the historic areas. There would be no direct or indirect impact to potentially significant resources from the Proposed Action. The RB-HSs would be operating in highly trafficked areas, which include a high number of container ships, cruise ships, gas tankers, ferryboats, and fishing ships. The other portion of the ROI, Cape Cod Bay, is also heavily identified with this country’s historic and cultural past. Some of the Federal and state designations are the Cotuit Historical District, Craigville Historical District, the Kennedy Compound, and the Provincetown Historical District (NRHP 2003c). The Cape Cod National Seashore is also an important area with numerous historic buildings including lighthouses and a life-saving station (NPS 2003). The RB-HSs would be operating in an area that experiences a high number of pleasure boats and several ferries during the summer season and a lesser number of boats and fewer ferries during the winter months (Mass VINS 2003). The introduction of six RB-HSs over such a wide geographic and highly trafficked area would not significantly affect the setting or qualities of integrity, or jeopardize a property’s eligibility on the National Register of Historic Places (NHRP). Accordingly, USCG has omitted detailed examination of cultural resources.
- *Hazardous Materials and Hazardous Wastes.* The Proposed Action would occur at ISC Boston. This facility has existing hazardous materials and hazardous waste management programs. Minor maintenance and repair work would be performed by MSST personnel. The engines are under a three-year maintenance agreement, therefore, all major maintenance will be done at a Honda authorized facility. The Proposed Action would not require or add a significant amount of hazardous materials or wastes to those already generated by this facility. MSST personnel would follow the USCG’s procedures as described in the Hazardous Waste Management Manual (Commandant Instructions [COMDTINST] M 16478.1B), known internally as the “Red Book.” This manual is a compilation of standard operating procedures for employees handling hazardous materials and waste, asbestos, polychlorinated biphenyls, fuel tanks, lead, and biohazardous waste (USCG 1992). Boston ISC also has a number of waste management practices including the recycling of used oils for heating. The MSST would also comply with these practices. Accordingly, the USCG has omitted detailed examination of hazardous materials and hazardous wastes.

- *Coastal Zone Management Act (CZMA)*. Under the National Oceanic and Atmospheric Administration (NOAA) Federal Consistency provisions (15 Code of Federal Regulations [CFR] 930), Federal agencies must determine if their proposed project directly affects Massachusetts' coastal zone. Cumulative and secondary effects must be included. Under Massachusetts' CZMA law (301 Coastal Management Regulations [CMR] 2100), Section 21.06, the installation of the Butler Building (i.e., a modular building) falls under an "Activity subject to Federal Consistency Review." However, the purpose and need of the Proposed Action (including the new boathouse) is consistent with the nine management principles set forth in Section 21.98: protection of water quality, habitat, protected areas, coastal hazards, port and harbor infrastructure, public access, energy, ocean resources, and growth management (CZMR 1999). It is not anticipated that the Boston MSST should present any foreseeable effects in any of these areas. However, a copy of this EA, describing both the stand-up and operations of the MSST was sent to the Coastal Zone Management Office for concurrence. Agency correspondence is included in Appendix D. Communication with the MA Office of Coastal Zone Management indicated that they were in receipt of all materials required to complete their review (Kelly 2004).

3.1.2 Region of Influence

The MSST would be homeported at ISC Boston (see Figure 1-1). The RB-HSs would be launched from either ISC Boston or a public ramp in Boston Harbor. The ROI for the Proposed Action and the No Action Alternative is geographically defined as Boston Harbor and Cape Cod Bay. The ROI includes the Massachusetts counties of Barnstable, Essex, Middlesex, Norfolk, Plymouth, and Suffolk. This region encompasses the area where the MSST is expected to spend the majority of its operating time. The MSST can be deployed temporarily in emergencies or potential threat conditions to other ports as needed.

Boston is the oldest continually active major port in the Western Hemisphere. The Port of Boston is alive and thriving. Since 1980, container traffic has tripled and Boston has become one of the most modern and efficient container ports in the U.S. General cargo tonnage has grown on an average of 3.6 percent each year. Conley Terminal and Moran Terminal handle more than 1.3 million tons of general cargo, 1.5 million tons of non-fuels bulk cargo, and 12.8 million tons of bulk fuel cargos each year (Massport 2003a).

In addition, the passenger ship industry is expanding in the Port of Boston. Numerous four- and five-star cruise lines, such as Cunard, Norwegian Majesty, Hapag-Lloyd, and Silversea, regularly make port-calls. With 95 passenger ships scheduled to call in the 2003 season, Cruiseport Boston is now considered one of the fastest growing high-end cruise markets in the country. The Black Falcon Cruise Terminal in Boston Marine Industrial Park will serve over 210,000 cruise passengers this year. Another full cruise season is planned for 2004 (Massport 2003b).

Boston also hosts an enormous complex of privately owned petroleum and liquefied natural gas (LNG) terminals, which supply more than 90 percent of Massachusetts' petroleum consumption needs. The port is also home to two shipyards, numerous public and private ferry operations, world-renowned marine research institutions, marinas, USCG First District Headquarters, Electronics System Support Unit (ESU) Boston, and the Naval Engineering Support Unit (NESU) Boston, and is one of America's highest-value fishing ports (Massport 2003b).

ISC Boston, on Boston's historic waterfront, is home to three 270-foot medium endurance cutters, an Aids to Navigation Team, Station Boston, and Group Boston. The USCG Support Center is in Boston proper about a mile above the Commonwealth pier on the west bank of the inner harbor. There are five steelpiled, concrete-decked piers suitable for small to medium ships. Fleet Support Office (FSO) Boston represents Navy Region Northeast in the Boston area. FSO Boston provides port services support to all visiting Naval warships in the Port of Boston, as well as all ports in Massachusetts.

3.1.3 Environmental Regulations, Laws, and Executive Orders

A table containing a listing of regulations, laws, and executive orders that might reasonably be expected to apply to the Proposed Action is included in Appendix G. It is not intended to be a complete description of the entire legal framework under which the USCG conducts its missions.

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 protected and sensitive habitats; and plant and animal species listed as threatened or endangered by the U.S. Fish and Wildlife Service (USFWS), National Oceanic Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries), or state regulatory agency, or protected under other Federal or state laws. Determining which species or habitats occur in an area affected by a proposed action can be accomplished through literature reviews and coordination with appropriate Federal and state regulatory agency representatives, resource managers, and other knowledgeable experts.

The USCG has a number of long-standing initiatives and programs relating to Living Marine Resource Protection, a primary mission of the USCG:

- *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 recovery and maintenance of healthy populations of marine protected species.
- *Sea Partners:* 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 2002d).
- *Commandant Instructions (COMDTINSTs) and ALCOASTS:* Implementation and guidance for policy and procedures focused on living marine resource protection, including enhanced enforcement of the Endangered Species Act (ESA) and Marine Mammals Protection Act (MMPA).
- *Conservation Program:* Promotes USCG involvement with outside Federal and state agencies, and public and non-government organizations to conserve and protect living marine resources (USCG 1996).
- *Atlantic Protected Living Marine Resources Initiative (APLMRI):* Provides guidance for actions during Coast Guard operations to support the recovery of protected living marine resources through internal compliance with and enforcement of Federal, state, and international laws designed to preserve marine protected species.

Protected and Sensitive Habitats

Protected and sensitive habitats are usually defined as those regions that are 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, or local jurisdictions.

Wetlands, Floodplains, and Barrier Islands

Biological resources also include wetlands. Wetlands are an important natural system and habitat because of the diverse biologic and hydrologic functions they perform. These include water quality improvement, groundwater recharge and discharge, pollution mitigation, nutrient cycling, wildlife habitat provision, unique flora and fauna niche provision, stormwater attenuation and storage, sediment detention, and erosion protection. Wetlands are protected as a subset of the "waters of the U.S." under 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 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. Section 401 of the CWA authorizes states to use their water quality standards to protect wetlands. The permit provided by the state under Section 401 is generally referred to as a 401 Water Quality Certification.

Wetlands in Massachusetts are regulated under the Wetlands Protection Act (Massachusetts General Law Chapter 131, Section 40). The local community conservation commission and Boston Conservation Commission administer the Wetlands Protection Act, and the Massachusetts Department of Environmental Protection (MADEP) oversees administration. Section 401 Water Quality Certification is coordinated with the Wetlands Protection Act. Therefore, most projects coordinated at the local level do not need further state review for compliance with wetlands and water quality standards (EPA 2001).

Floodplains are areas of low-level ground along a river or stream channel. These lands can 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 to reduce the risks to human health and safety and minimize cost to replace or repair repetitively damaged infrastructure.

Marine Mammals and Sea Turtles

Protection of marine protected species, such as mammals, sea turtles, or other threatened or endangered marine species, is an important USCG mission. A number of factors might impact the distribution of marine mammals and sea turtles, including environmental, biotic, and impacts generated by humans. Environmental factors might 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 and sea turtles.

The USCG has a long-standing role in protecting marine mammals and sea turtles. It enforces all U.S. laws in the Exclusive Economic Zone (EEZ), including laws protecting marine protected species. The USCG enforces the ESA, the MMPA, the National Marine Sanctuaries Act (NMSA), and a number of maritime executive orders (EOs) and Federal and international laws, as applicable. COMDTINSTs include a number of USCG policies, directions, and procedures that include specific rules to ensure avoidance with marine mammals and sea turtles and avoid impacts whenever possible. The USCG's Ocean Steward and Ocean Guardian initiatives, the APLMRI, and speed guidance also support these goals (USCG 2002b). Additionally, the Ocean Steward initiative protects marine mammals by regulating incidental and intentional 'takes' (harassment of marine mammals from close or repeated approach by vessels).

The ESA of 1973 (16 United States Code [U.S.C.] 1531-1534) establishes protection and conservation of threatened and endangered species and the ecosystems upon which they depend. The ESA is administered by USFWS and NOAA Fisheries. 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. Section 7 of the ESA requires that all Federal agencies consult with USFWS or NOAA Fisheries, as applicable, before initiating any action that could affect a listed species. Section 7 of the ESA also states that any project authorized, funded, or conducted by any Federal agency should not "... jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined to be critical."

Under the MMPA of 1972 (16 U.S.C. 1361 *et seq.*), the Secretary of Commerce is responsible for the protection of all cetaceans (whales, porpoises, and dolphins) and pinnipeds (seals and sea lions) except walruses, and has delegated authority for implementing the MMPA to NOAA Fisheries. The Secretary of the Interior is responsible for walruses, polar bears, sea otters, manatees, and dugongs and delegated the responsibility of conservation and protection of these marine mammals to USFWS. These responsibilities include providing overview and advice to regulatory agencies on all Federal actions that may affect these species.

The MMPA (administered by the Department of Commerce) prohibits the “take” of marine mammals, with certain exceptions, in waters under U.S. jurisdiction and by U.S. citizens on the high seas. Under Section 3 of the MMPA, “take” of marine mammals is defined as “harass, hunt, capture, or kill or attempt to harass, hunt, capture, or kill any marine mammal” and “harassment” is defined as any act of pursuit, torment, or annoyance that has the potential to injure marine mammal stock in the wild; or has the potential to disturb a marine mammal or marine mammal stock in the wild by disrupting behavioral patterns, including migration, breathing, nursing, breeding, feeding, or sheltering. In cases where U.S. citizens are engaged in activities, other than fishing, that result in “unavoidable,” incidental take of marine mammals, the Secretary of Commerce can issue a “small take authorization.” The authorization can be issued after notice and opportunity for public comment if the Secretary of commerce finds negligible impacts.

The Commonwealth of Massachusetts also has an endangered species act (Massachusetts General Law, Chapter 131A, Sections 1-6). The state endangered species law mandates that projects avoid or minimize damage to state-listed species.

Fish

Under their Living Marine Resource Protection mission, the USCG undertakes activities such as enforcing domestic fisheries laws and ensuring the development of practical enforcement plans to protect, conserve, and manage these resources. Examples of laws that the USCG enforces pertaining to fish and fisheries management include

- Atlantic Coastal Fisheries Cooperative Management Act (16 U.S.C. 2431 *et seq.*)
- Atlantic Salmon Convention Act (16 U.S.C. 971 *et seq.*)
- Lacey Act Amendments of 1981 (16 U.S.C. 1531 *et seq.*)
- Magnuson-Stevens Fisheries Conservation and Management Act (MSA) (16 U.S.C. 1801, *et seq.*)
- Northwest Atlantic Fisheries Compliance Act of 1995 (16 U.S.C. 5001 *et seq.*)
- Tuna Conventions Act (16 U.S.C. 973 *et seq.*)

Additionally, the Ocean Guardian initiative includes the Fisheries Enforcement Strategic Plan to support national goals for fisheries resource management and conservation.

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*.

3.2.2 Affected Environment

Protected and Sensitive Habitats

Boston's Inner Harbor is a highly developed area. MSST operations would be expected throughout much of Massachusetts Bay. Several marine managed areas are located in the ROI. These include the Boston Harbor Islands, Gerry E. Studds-Stellwagen Bank National Marine Sanctuary (more commonly called the Stellwagen Bank National Sanctuary), Cape Cod National Seashore, and Cape Cod Bay Northern Right Whale Critical Habitat.

Boston Harbor Islands are a 34-island network in the Greater Boston area managed by various groups, including National Park Service. The Massachusetts Natural Heritage Program lists six rare species of plants and birds known to exist within the park, including two species listed as threatened and four of special concern. The USFWS reports several federally listed endangered and threatened species of fish, turtles, birds, and mammals near or in coastal waters of Massachusetts, but not known to be found among the Boston Harbor Islands. There are no island species on the Federal list.

Stellwagen Bank National Marine Sanctuary is located at the mouth of Massachusetts Bay. High levels of nutrients flowing out of the bay make it a productive area (MPA undated). Endangered whales, sea turtles, and birds are all supported by this sanctuary (EPA 2001).

The area of ocean south-southeast of the Stellwagen Bank National Marine Sanctuary is designated as northern right whale critical habitat (MPA undated). This area is almost due east of South Boston and extends into Cape Cod Bay.

Cape Cod National Seashore comprises 44,600 acres of marine, estuarine, fresh water, and terrestrial ecosystems. Marine and estuarine systems include beaches, sand spits, tidal flats, salt marshes, and soft-bottom benthos. Freshwater ecosystems include kettle ponds, vernal pools, sphagnum bogs, and swamps. Terrestrial systems include pitch pine and scrub oak forests, heathlands, dunes, and sandplain grasslands. Many of these habitats are globally uncommon, and the species that occupy them are also rare. Over 450 species of amphibians, reptiles, fish, birds, and mammals, and a myriad of invertebrate animals depend on the diversity of habitats found at Cape Cod National Seashore. Twenty-five of these species are federally protected. Approximately five percent of the entire Atlantic coast piping plover population (federally threatened) nests at the Cape Cod National Seashore. The Seashore also supports 32 species that are considered rare or endangered in the Commonwealth of Massachusetts. Some of these, such as the common tern, are conspicuous; far less noticeable is the elusive spadefoot toad, which spends most its life buried in the sand, emerging only on warm nights

with torrential rainfall. In addition, Cape Cod National Seashore harbors a diverse array of more than 800 species of terrestrial, wetland, aquatic, and marine plants uniquely adapted to life in the coastal environment. In addition, a variety of historic structures are within the boundary of the Seashore, including lighthouses, a lifesaving station, and numerous Cape Cod style houses. The Seashore offers six swimming beaches, eleven self-guiding nature trails, and a variety of picnic areas and scenic overlooks (NPS 2003).

Two other waterfront state parks are in the Greater Boston area, Lynn Heritage and Webb Memorial State Parks. However, these parks are primarily historic or scenic in nature, and therefore do not represent sensitive habitats.

Wetlands and Seagrasses

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.

Over the last 200 years, the Commonwealth of Massachusetts has lost approximately 28 percent of its total wetland acreage (EPA 2001). Boston Bay, in Massachusetts Bay, is estimated to have approximately 44,200 acres (69 square miles) of wetlands (NOAA 1990). Cape Cod is estimated to have approximately 46,080 acres (72 square miles) (NOAA 1990). Small areas of seagrasses are present in Hingham Bay, near Boston Harbor Islands State Park, and in North Harbor near Logan Airport (MWRA 2002). However, seagrass meadows (also considered submerged aquatic vegetation [SAV]) once covered hundreds of acres in Boston Harbor's subtidal flats. SAV loss is largely attributed to water quality degradation (specifically water clarity). Although sediment loads into Boston Harbor are decreasing and thus water clarity is improving, conditions have not improved enough to support SAV. Eelgrass (*Zostera marina*) is the most common seagrass, but other seagrasses that can be found in brackish or saltwater environments include widgeon grass (*Ruppia maritima*), wild celery (*Vallisneria americana*), redhead grass (*Potamogeton perfoliatus*), sago pondweed (*Potamogeton pectinatus*), waterweed (*Elodea canadensis*), and horned pondweed (*Zannichellia palustris*) (ASMFC 2000).

Floodplains

According to FEMA's Multi-hazard Mapping Initiative, most of Boston and all of Cape Cod are within the special flood hazards area (MMI 2003). Special flood hazard areas are located in the 100- or 500-year floodplain.

Marine Mammals

Marine mammals spotted in the Boston Harbor and Cape Cod Bay include the harbor porpoise (*Phocoena phocoena*), Atlantic white-sided dolphin (*Lagenorhynchus acutus*), harbor seal (*Phoca vitulina*), grey seal (*Halichoerus grypus*), Minke whale (*Balaenoptera acutorostrata*), North Atlantic right whale (*Eubalaena glacialis*), humpback whale (*Megaptera novaeangliae*), and fin whale (*Balaenoptera physalus*). Species of endangered marine mammals that have the potential to occur in the ROI are the North Atlantic right, humpback, and fin whales. Sei whales (*Balaenoptera borealis*) and blue whales (*Balaenoptera musculus*) are rarely sighted in Cape Cod Bay and therefore, not expected in the ROI (Koyama 2003; McLeod 2002).

The western North Atlantic right whale population ranges from wintering and calving grounds in coastal waters of the southeastern U.S. to summer feeding and nursery grounds in New England waters and northward to the Bay of Fundy and the Scotian Shelf (Waring et al. 2003). New England waters are a primary feeding habitat for the right whale, but also serve as a mating and nursery ground for calves. Right whales are found in mid-Atlantic waters as a migratory population. North Atlantic right whales have been documented in the nearshore waters of Massachusetts from January through September (Koyama 2003). The North Atlantic population has declined since the 1980s. Northern right whales are now the rarest of all the great whales. Most recent estimates indicate that the North Atlantic population of right whales is approximately 291 individuals (Waring et al. 2003). In the ROI, right whales are primarily sighted along Stellwagen Bank, Race Point, Provincetown, and central Cape Cod Bay. However, one right whale was sighted near the mouth of Boston Harbor in 1996 (McLeod 2002).

Western North Atlantic populations of humpback whales feed during the spring, summer, and fall over a range that encompasses the eastern coast of the United States (Waring et al. 2003; Koyama 2003). As such, humpback whales have the potential to occur in the ROI. In the fall, humpback whales migrate southwards to breeding grounds. New evidence indicates that mid-Atlantic and southeastern waters may be supplemental feeding grounds and/or habitat for juveniles. Population estimates of humpback whales in the North Atlantic range from 10,400 to 11,570 individuals (Waring et al. 2003).

Finback whales usually occur in deeper offshore waters from Cape Hatteras northward (Waring et al. 2003). New England waters represent a major feeding ground for fin whales. Finback whales are the most frequently sighted whales in Massachusetts and Cape Cod Bays (McLeod 2002). New England waters represent a major feeding ground for fin whales. Stranding data indicate that calving takes place during approximately four months from October to January in the U.S. mid-Atlantic region. It is unknown where calving, mating, and wintering for most of the population occurs (Waring et al. 2003). While these whale species are not considered residents of Boston Harbor, it is possible that transients might enter the area during seasonal migrations (Koyama 2003). Population estimates of fin whales in the North Atlantic range from 2,200 to 2,814 individuals (Waring et al. 2003).

Both sei and blue whales are rarely sighted in Massachusetts and Cape Cod Bays (McLeod 2002). These whales typically occur in water 100 meters or deeper; distribution may be related to prey (McLeod 2002).

The USCG is also likely to encounter various non-threatened and non-endangered marine mammal species in Boston Harbor and Cape Cod Bay that are protected under the MMPA, including: (Koyama 2003; McLeod 2002)

- Minke whales (*Balaenoptera acutorostrata*)
- Harbor porpoises (*Phocoena phocoena*)
- White-sided dolphins (*Lagenorhynchus acutus*)
- Long-finned pilot whale (*Globicephala malaena*)
- Gray seals (*Halichoerus grypus*)
- Harbor seals (*Phoca vitulina*)
- North Atlantic right whale (*Eubalaena glacialis*)

Sea Turtles

Four species of federally threatened and endangered sea turtles are found seasonally in nearshore Massachusetts waters and have the potential to occur in the ROI (Wellfleet Bay Wildlife Sanctuary 2003). However, there is limited evidence of turtle presence in Boston Harbor (Koyama 2003). Species of sea turtles that may occur in the ROI include the loggerhead sea turtle (*Caretta caretta*) (threatened), Kemp's ridley sea turtle (*Lepidochelys kempii*) (endangered), leatherback sea turtle (*Dermochelys coriacea*) (endangered), and the green sea turtle (*Chelonia mydas*) (endangered). While there are historical records of the hawksbill turtle (*Eretmochelys imbricata*) (endangered) in Cape Cod Bay, it prefers the open ocean and is not expected in the ROI. Typically, sea turtles arrive in nearshore Massachusetts waters in early summer and return south when the water temperature decreases in October or November (Koyama 2003).

Loggerhead and Kemp's ridley sea turtles are the sea turtles most commonly found in Massachusetts waters and occur there during the summer months (Koyama 2003). Leatherback sea turtles, the largest marine turtle, are found from Nova Scotia to southeast U.S. waters. Leatherback sea turtles occur in Cape Cod Bay on their southward migration in August and September (Wellfleet Bay Wildlife Sanctuary 2002).

Green sea turtles and hawksbill turtles are rare in the ROI. Green sea turtles are occasionally sighted in Massachusetts but are most common in southeast waters (Koyama 2003). Hawksbill sea turtles are federally listed as endangered throughout their range. Approximately one green sea turtle stranding per year is recorded in Massachusetts (Wellfleet Bay Wildlife Sanctuary 2002). Hawksbill turtles are more common in tropical and subtropical waters, but they have been spotted along the eastern seaboard as far north as Massachusetts (USCG 2003a; Wellfleet Bay Wildlife Sanctuary 2003).

In November, when Cape Cod Bay water temperatures drop below 50 degrees Fahrenheit (°F) sea turtles become "cold stunned." Efforts are being made to recover and rehabilitate live sea turtles and use data from the sea turtle strandings to learn more about the behavior and ecology of sea turtles (Wellfleet Bay Wildlife Sanctuary 2003).

Sea turtle nesting does not occur within the ROI. All the federally listed sea turtle species are reported to nest on beaches in the southeastern U.S. Human disturbance is the primary cause of sea turtle declines.

Fish

The shortnose sturgeon (*Acipenser brevirostrum*) is the only federally endangered fish species that might occur in the ROI. This species is a large bony fish that typically lives in fresh tidal water and saline estuaries. It migrates upstream in coastal rivers to spawn. The shortnose sturgeon spends a greater portion of its life in slow-moving, brackish, or fresh water than other sturgeon species. Measuring up to four feet in length, it is the smallest of the three sturgeon species that inhabit eastern North American rivers from Florida to New Brunswick, Canada. The shortnose sturgeon was historically found in Boston Harbor, but it is not likely to be encountered in the ROI (NatureServe 2003).

The New England Fishery Management Council (NEFMC), Mid-Atlantic Fishery Management Council (MAFMC), South Atlantic Fishery Management Council (SAFMC), and NOAA Fisheries Highly Migratory Species Division (NOAA Fisheries HMS) are responsible for the management of 38 species in the U.S. waters of the Atlantic Ocean. Fourteen of these species have Essential Fish

Habitat (EFH) designated within the ROI. Table 3-1 lists the species and life stages that have EFH designated in the ROI. EFH types that might occur in Boston Harbor and Cape Cod Bay include the water surface, water column, bottom sediments, bottom shell fragments, and aquatic vegetation (NOAA undated).

Table 3-1. Summary of Essential Fish Habitat Designations for Boston Harbor and Cape Cod Bay

Species	Eggs	Larvae	Juveniles	Adults	Spawning Adults
American plaice, <i>Hippoglossoides platessoides</i>	X	X	X	X	X
Atlantic butterflyfish, <i>Peprilus triacanthus</i>	X	X	X	X	
Atlantic cod, <i>Gadus morhua</i>	X	X	X	X	X
Atlantic halibut, <i>Hippoglossus hippoglossus</i>	X	X	X	X	X
Atlantic mackerel, <i>Scomber scombrus</i>	X	X	X	X	
Atlantic sea herring, <i>Clupea harengus</i>	X	X	X	X	
Atlantic sea scallop, <i>Placopecten magellanicus</i>	X	X	X	X	X
Bluefish, <i>Pomatomus saltatrix</i>			X	X	
Haddock, <i>Melanogrammus aeglefinus</i>	X	X			
Ocean pout, <i>Macrozoarces americanus</i>	X	X	X	X	X
Pollock, <i>Pollachius virens</i>	X	X	X	X	
Red hake, <i>Urophycis chuss</i>		X	X	X	X
Scup, <i>Stenotomus chrysops</i>			X	X	
White hake, <i>Urophycis tenuis</i>	X	X	X	X	
Windowpane flounder, <i>Scopthalmus aquosus</i>	X	X	X	X	X
Winter flounder, <i>Pleuronectes americanus</i>	X	X	X	X	X
Yellowtail flounder, <i>Pleuronectes ferruginea</i>	X	X	X	X	X

Source: NOAA undated

Coastal and Other Birds

Three threatened and endangered birds occur in Massachusetts and might occur in the ROI: the piping plover (*Charadrius melodus*) (threatened), roseate tern (*Sterna dougallii*) (endangered), and bald eagle (*Haliaeetus leucocephalus*) (threatened). Table 3-2 provides a list of both Federal- and state-listed bird species that might occur in the ROI.

Table 3-2. List of Federal- or State-Listed Bird Species

Species	State Status	Federal Status
Waterbirds		
Common loon, <i>Gavia immer</i>	SC	
Leach's storm-petrel, <i>Oceanodroma leucorhoa</i>	E	
Pied-billed grebe, <i>Podilymbus podiceps</i>	E	
Wading and Shore Birds		
American bittern, <i>Botaurus lentiginosus</i>	E	
Arctic tern, <i>Sterna paradisaea</i>	SC	
Common moorhen, <i>Gallinula chloropus</i>	SC	
Common tern, <i>Sterna hirundo</i>	SC	
King rail, <i>Rallus elegans</i>	T	
Least bittern, <i>Ixobrychus exilis</i>	E	
Least tern, <i>Sterna antillarum</i>	SC	
Piping plover, <i>Charadrius melodus</i>	T	T
Roseate tern, <i>Sterna dougallii</i>	E	E
Upland sandpiper, <i>Bartramia longicauda</i>	E	
Birds of Prey		
Bald eagle, <i>Haliaeetus leucocephalus</i>	E	T
Barn owl, <i>Tyto alba</i>	SC	
Long-eared owl, <i>Asio otus</i>	SC	
Northern harrier, <i>Circus cyaneus</i>	T	
Peregrine falcon, <i>Falco peregrinus</i>	E	
Sharp-shinned hawk, <i>Accipiter striatus</i>	SC	
Short-eared owl, <i>Asio flammeus</i>	E	

Source: MDFW 2003

Notes: SC – Species of special concern

E – Endangered

T – Threatened

The piping plover breeds on sandy beaches in isolated colonies on the northeast coast and Great Lakes region from March to September, where they summer. The Cape Cod National Seashore is a significant site for this species with roughly five percent of the entire Atlantic coast population nesting here. They winter along the southeastern coast of the U.S. The roseate tern breeds on islands and protected sand spits. Cape Cod supports the largest premigratory concentrations of roseate terns in North America (CCS 2003). Colonies in North America range from Long Island to southeast Canada with the two largest sites on Great Gull Island, NY and Bird Island, Buzzards Bay, MA. After nesting, adults and juveniles move to staging and roosting areas in preparation for migratory

flights south (CCS 2003). The bald eagle occurs year-round in many coastal areas, breeding in spring. Some individuals migrate south during the winter (USCG 2003a).

3.3 Air Quality and Climate

3.3.1 Definition of the Resource

The air quality in a given region is measured by the concentration of various pollutants in the atmosphere. The Clean Air Act (CAA) National Ambient Air Quality Standards (NAAQS) have been established by the U.S. Environmental Protection Agency (EPA) for six criteria pollutants: ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter less than ten microns (PM₁₀), and lead (Pb). The measurements of these “criteria pollutants” are expressed in units of parts per million (ppm) or in units of micrograms per cubic meter (µg/m³). The CAA directed EPA to develop, implement, and enforce strong environmental regulations that would ensure cleaner and healthier ambient air quality. In order to protect public health and welfare, EPA developed numerical concentration-based primary and secondary standards for these criteria pollutants. NAAQS represent maximum levels of background pollution that are considered safe, with an adequate margin of safety to protect public health and welfare. O₃ is not emitted directly from stationary, mobile, or area pollution sources. Rather, it is a product of photochemically reactive compounds such as nitrogen oxides (NO_x) and volatile organic compounds (VOC). These compounds are inventoried and quantified as precursors of O₃. Air quality in a region is a result of not only the types and quantities of atmospheric pollutants and pollutants sources in an area, but also surface topography, the size of the air basin, and the prevailing meteorological conditions.

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.

The CAA Section 176 I (1) prohibits Federal agencies from undertaking projects that do not conform to an EPA-approved State Implementation Plan (SIP) in non-attainment areas. 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 and maintenance areas. A maintenance area is one that has met Federal air quality standards, thus removing it from non-attainment status. This rule and all subsequent amendments can be found in 40 CFR 51 Subpart W and 40 CFR 93 Subpart B. Through the Conformity Determination process specified in the final

rule, any Federal agency must analyze increases in pollutant emissions directly or indirectly attributable to the Proposed Action. In addition, they might need to complete a formal evaluation that may include modeling for NAAQS impacts, obtaining a commitment from the state regulatory agency to modify the SIP to account for emissions from the Proposed Action, and/or providing for mitigation for any significant increases in non-attainment pollutants. SIPs are the regulations and other materials for meeting clean air standards and associated CAA requirements. Since the Proposed Action in Boston Harbor and Cape Cod Bay occurs in a maintenance area, the General Conformity Rule does apply. A conformity analysis is required.

3.3.2 Affected Environment

MADEP has primary jurisdiction over air quality in the Commonwealth of Massachusetts. The Proposed Action is located in the Metropolitan Boston AQCR, which includes the City of Boston and Cape Cod. The air quality in this region is designated as a *serious* non-attainment area for O₃ and is in attainment for all other criteria pollutants. Table 3-3 presents the primary and secondary NAAQS.

Climate

The Metropolitan Boston AQCR area is in a humid climate and experiences moderately warm summers and long cold winters. Precipitation remains moderate and fairly evenly divided throughout the year, with the exception of the winter when there is less precipitation. The average yearly high temperature is 48.4 and the average low is 47.1 °F. Annual precipitation for Massachusetts is approximately 42.8 inches with precipitation occurring evenly throughout the year. Table 3-5 presents the monthly temperature and precipitation data for the Commonwealth of Massachusetts.

Table 3-3. 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	0.12 ppm	(235 µg/m ³) ^e	Primary & Secondary
8-hour Average	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	(1,300 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 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 2000, the ozone 1-hour standard was reinstated as a result of the Federal lawsuits that were preventing the implementation of the new 8-hour ozone standard. As of December 2001, the EPA estimated that the revised 8-hour ozone standard rules would be promulgated in 2003–2004. In the interim, no areas can be deemed to be definitively non-attainment with the new 8-hour standard.

Table 3-4 presents the current air emissions inventory data for Metropolitan Boston AQCR.

Table 3-4. Current AQCR Annual Emissions Inventory Data for Metropolitan Boston AQCR

	NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM ₁₀ (tpy)
Area Sources	595,173	728,390	4,658,928	133,386	258,318
Point Sources	122,705	81,426	43,207	173,843	27,744
Total Emissions Inventory	717,878	809,816	4,702,135	307,229	286,062

Source: EPA 1999
 Note: tpy – tons per year

Table 3-5. Local Climate Summary for Commonwealth of Massachusetts

Month	Mean Temperature (°F)	Median Precipitation (Inches)
January	25.22	3.44
February	26.01	3.15
March	34.82	3.71
April	45.11	3.68
May	55.98	3.44
June	64.88	3.48
July	70.30	3.55
August	68.34	3.57
September	61.13	3.63
October	50.76	3.63
November	40.39	3.89
December	29.27	3.68

Source: NOAA 2003

Notes: Mean temperature and precipitation data obtained from average of 1895 to 2002.

°F – degrees Fahrenheit

3.4 Noise

3.4.1 Definition of the Resource

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” on marine mammals, depending on the type of noise and duration. Noise can result in stressful situations that disrupt sleep, reproduction, feeding habits, and communication in marine mammals.

This section defines noise standards and methodology; discusses the impacts of noise on humans, marine mammals, and sea turtles; and describes the existing ambient sound level in the ROI (Boston Harbor and Cape Cod Bay). In order to understand the impact of noise on humans, marine mammals, and sea turtles it is necessary to understand the properties of noise in air and water and the existing ambient noise levels in the ROI.

Noise is customarily measured in decibels (dB) (the ratio between a measured pressure and a reference pressure); it is a logarithmic unit that accounts for large variations in amplitude and is the accepted standard unit measurement of sound. The ambient sound level of a region is defined by the total noise generated, including sounds from both natural and artificial sources. The magnitude and frequency of environmental noise may vary considerably over the course of the day and throughout the week, due in part to changing weather conditions.

Above-water Noise

In order to evaluate the total community noise environment (above-water noise), two measurements are used by some Federal agencies to relate the time-varying quality of environmental noise to its known effect on people, the 24-hour equivalent sound level (Leq(24)) and the day-night sound level (DNL). The Leq(24) is the level of steady sound with the same total (equivalent) energy as the time-varying sound of interest, averaged over a 24-hour period. DNL is the average acoustical energy during a 24-hour period with a 10 dB penalty added to nighttime levels (*i.e.*, hours between 10 p.m. and 7 a.m.) to account for people's greater sensitivity to sound during nighttime hours. When measuring sound to determine its effects on the human population, A-weighted sound levels (dBA) are typically used to account for the response of the human ear and represent adjusted sound levels. The adjustments are made according to the frequency content of the sound. Another sound scale is the C-weighted decibel scale (dBC). In contrast to dBA, dBC provides no adjustment to the noise signal over most of the audible frequency range. The dBC scale is generally used to measure impulsive noise such as airblasts from explosions, sonic booms, and gunfire.

Underwater Noise

Underwater sound measurements are different from above-water sounds. Because of these differences in reference standards, noise levels cited in air do not equal underwater levels. The reference pressure used for underwater noise measurements is 1 micro-Pascal (μPA) at 1 meter (re $1\mu\text{PA-m}$), which is lower than that used for airborne sound measurements. In addition, underwater noise measurements typically do not have any frequency weighting applied (*i.e.*, dBA or dBC), while airborne noise is often measured using one of several frequency weighting scales. In many cases, underwater noise levels are reported only for limited frequency bands, while airborne noise is usually reported as an integrated value over a very wide range of frequencies. To compare noise levels in water to noise levels in air, one must subtract 61 dB from the noise level referenced in water in order to account for the difference in reference pressure (USN undated). For example, a supertanker that

emits 164 dB in air (20 re 1 μ PA-m) would sound more like 225 dB in water (1 re 1 μ PA-m) (USCG 2003b).

Furthermore, because the mechanical properties of water differ from those of air, sound moves at a faster speed in water (1,500 meters per second [m/s]) than in air (about 340 m/s) (USCG 2003b). Temperature also affects the speed of sound, traveling faster in warm water than in cold water, which is very significant in some parts of the ocean. A lower frequency sound has a longer wavelength, and the wavelength of a sound equals the speed of sound in either air or water divided by the frequency of the wave. Therefore, a 20-Hertz (Hz) sound wave is 75 meters long in the water, whereas a 20 Hz sound wave in air is only 17 meters long (USCG 2003b).

Regulatory Framework for Noise and Standard Operating Procedures

USCG NEPA Implementing Procedures (COMDTINST M16475.1-D) require a discussion of the existing conditions in the surrounding communities, including noise regulations. EPA, the Department of Defense (DOD), and other Federal agencies having non-occupational noise regulations use the DNL as their principal noise descriptor for community assessments (Cowan 1994).

The USCG Safety and Environmental Health Manual (COMDTINST M5100.47) establishes requirements for noise, which include compliance with local noise ordinances and the identification and assessment of hazardous noise sources. USCG defines a hazardous noise as continuous sound levels exceeding 84 dBA or impact noises exceeding 140 dBA. Noise produced by USCG watercraft or by other USCG facility activities should comply with USCG, state, and local noise guidelines. Using Society of Automotive Engineers (SAE) J34 method, USCG recommends 86 dBA as the maximum noise-level that watercraft may generate at 50 feet at full speed (PWIA 2002).

EPA has determined 75 dBA at 50 feet as an acceptable noise level to protect public health and welfare (PWIA 2002). For analysis purposes of this EA, EPA standard will be used.

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). The MADEP's noise regulation (310 CMR 7.10) states that a noise is in violation if the source "increases the broadband sound level by more than 10 dBA above ambient or produces a 'pure tone' condition" (MADEP undated). The regulation defines a pure tone condition as "when any octave band center frequency sound pressure level exceeds the two adjacent center frequency sound pressure levels by 3 decibels or more" (MADEP undated). Under the General Laws of Massachusetts, chapter 90B:6, "the exhaust of every internal combustion engine on any motorboat shall be effectively

muffled by a muffler or underwater exhaust...” Similarly, the Motorboat Laws of the Commonwealth of Massachusetts (323 CMR 2.06(2)) writes, “a dry exhaust shall be effectively muffled by a muffler of the automotive type or equal. Where a sufficient amount of cooling water is discharged overboard through the exhaust pipe to effectively muffle the engine exhaust noise, it will be considered as adequate.”

The USCG’s *Reference Guide to State Boating Laws, 6th edition, 2000*, states that the Commonwealth of Massachusetts follows Federal standards for maximum operational noise level for watercraft. Although the Commonwealth of Massachusetts did not institute a maximum noise level, most states have established a maximum noise level operating range of 75 dBA to 90 dBA at 50 feet, which incorporates the SAE J-2005 (stationary test) and SAE J-1970 (shoreline test).

The USCG also cooperates with local governments or host agencies to ensure that the facilities comply with local noise standards and land use regulations. The City of Boston has a general noise ordinance that prohibits “any unreasonable or excessive noise in the city.” This includes “noise measured in excess of 50 dBA between the hours of 11:00 p.m. and 7:00 a.m., or in excess of 70 dBA at all other hours; or in the absence of an applicable noise level standard or regulation of the Air Pollution control commission, any noise plainly audible at a distance of 300 feet or, in the case of loud amplification devices of similar equipment, noise plainly audible at a distance of 100 feet from its source by a person of normal hearing.” In addition, communities surrounding Cape Cod Bay have noise regulations against disturbance of the peace during evening and nighttime hours. The Barnstable and Sandwich communities have general noise ordinances banning noise (such as from watercraft) that can be heard 150 feet away from the source (Article XXI, Section 1; Chapter 8, Section 3.55, respectively). Speeds in excess of six miles per hour, wash generation, and varying degrees of horsepower are also prohibited in some ponds.

Human Response to Noise

Human response to noise varies according to the type and characteristics of the noise source, distance between source and receptor, receptor sensitivity, and time of day. Human hearing varies in sensitivity for different sound frequencies. The ear is most sensitive to sound frequencies between 800 and 8,000 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, as described above.

Most people are exposed to sound levels of DNL 50 to 55 dB 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 DNL 65 dB (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. The methodology employing DNL and the percent highly annoyed has been successfully used throughout the U.S. in a variety of settings, ranging from urban to rural (see Appendix H for further explanation on noise metrics).

Marine Organism Response to Noise

Increasing attention is being paid to the impacts of anthropogenic (human-generated) noise sources on marine mammals and sea turtles, especially those associated with the military because these sources tend to be much louder and can be widespread (ONR 2000, Richardson et al. 1995). Both above-water (*e.g.*, helicopters) and underwater (*e.g.*, vessels) noise is recognized as a disturbance to marine mammals and sea turtles. Underwater hearing of marine animals varies between species over a broad range of frequencies from about 10 Hz to more than 10,000 Hz. Peak acoustic sensitivity of most invertebrates, fish, sea turtles, and baleen whales is below about 1,000 Hz. However, little is known about sea turtle hearing ability. For most toothed whales, pinnipeds, manatees, and sea birds, hearing is best at frequencies greater than 1,000 Hz (USCG 1996).

3.4.2 Affected Environment

Above-water Noise

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 RB-HS is expected to operate in the waters defined as the Boston Harbor and Cape Cod Bay. The ROI for the noise environment is the ISC Boston, Boston Harbor, and Cape Cod Bay.

While homeported or in transit to offshore areas, noise produced by water vessels and supporting facilities can combine with other noise sources to affect nearby communities and natural resources. As shown in Figure 1-1, industrial and commercial areas border the ISC Boston facilities. 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.

Underwater Noise

Underwater ambient sound levels are not available for the ROI. However, the Port of Boston Harbor is a highly trafficked port. Overall, the port handles more than 1.3 million tons of general cargo, 1.5 million tons of non-fuels bulk cargo, and 12.8 million tons of bulk fuel cargos yearly. Additionally, the passenger ship industry is expanding in the Port of Boston.

Underwater noise in the ocean is a result of natural and human-generated sound sources. Natural sound sources include earthquakes, lightening strikes, sea ice activity, precipitation, and waves. 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 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 oceans at frequencies below 500 Hz have increased over the last three decades (Richardson et al. 1995).

Vessel size, hull construction, speed, maintenance, and other factors all affect the noise a vessel produces underwater. Vessel noises, caused by the turning of the screws, engine noise and noises of operating machinery on board generally fall within the range of 5 to 2,000 Hz (USCG 1996). Sound intensity, particularly at higher frequencies, tends to increase with the size of the vessel. Supertankers and large container ships may have a maximum broadband sound source level of 190 to 200 dB-referenced 1 μPa at 1 meter. Small outboard motor vessels produce broadband sounds of 150 dB-referenced 1 μPa at 1 meter; these sounds are attenuated to the range of 85 to 140 dB-referenced 1 μPa at a distance of 50 meters from the source (USCG 1996). Most USCG vessels are generally less than 100 feet in length and, therefore, generate sound pressure source levels of 160 dB-referenced 1 μPa at 1 meter or less (USCG 1996). Table 3-6 lists sound pressure source levels for various vessels (Richardson et al. 1995; USCG 1996).

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

Vessel (length) and Description	Frequency	Source Level (dB referenced 1μPa-meter)
Outboard drive – 23 feet (2 engines, 80 hp each)	630, 1/3 octave	156
Twin Diesel – 112 feet	630, 1/3 octave	159
Small Supply Ships – 180 to 279 feet	1,000, 1/3 octave	125–135 (at 50 meters)
Freighter – 443 feet	41, 1/3 octave	172

Source: Richardson et al. 1995

Notes: These underwater sound pressure levels cannot be directly compared to airborne decibel levels.

hp – horsepower

dB – decibel

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 death, serious bodily injury or illness, or property damage. 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.

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-flagged. U.S. ports also handle a large volume of coastal and inland traffic.

3.5.2 Affected Environment

Boston is the oldest continually active major port in the Western Hemisphere. Though it did not become an international cargo port until 1630, for at least 4,000 years previously, it had served as a settlement and trading area for Native American tribes. After the Massachusetts Bay Colony was formed, the port became a very busy place. For most of the century, Boston was America's largest and busiest port, serving the rapidly expanding colonies with imports of English finished goods in exchange for exports of lumber, fully constructed vessels, rum, and salted fish. The port continued to grow in size and importance throughout the centuries until after World War II. A major reorganization in 1956 and the expansion to the use of shipping containers in 1966–1971 brought renewed attention to the port. Since 1980, container traffic has tripled and Boston has become one of the most modern and efficient container ports in the U.S. (Massport 2003b).

General cargo tonnage growth has averaged 3.6 percent growth each year. Overall, the port handles more than 1.3 million tons of general cargo, 1.5 million tons of non-fuels bulk cargo, and 12.8 million tons of bulk fuel cargos yearly. The passenger ship industry is also expanding in the Port of Boston. Numerous four- and five-star cruise lines regularly call at the port. With more than 62 ship calls last year alone, the port is now considered one of the fastest-growing, high-end markets in the country.

Boston also hosts an enormous complex of privately owned petroleum and liquefied natural gas terminals, which supply more than 90 percent of Massachusetts' petroleum consumption needs. The port is home to two shipyards, numerous public and private ferry operations, world-renowned marine research institutions, marinas, and a major USCG facility and is one of America's highest-value fish ports (Massport 2003b).

4. Environmental Consequences

4.1 Introduction

This chapter will present 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 Integrated Support Command (ISC), Boston Harbor, and Cape Cod Bay.

The Proposed Action is the stand-up and operation of a Maritime Safety and Security Team (MSST) at the ISC Boston. The MSST would consist of six Response Boat-Homeland Security (RB-HS) and approximately 75 active duty personnel and 33 reservists. The Region of Influence (ROI) is geographically defined as Boston Harbor and Cape Cod Bay. This region encompasses the area where the MSST is expected to spend the majority of its operating time.

Effects can be direct, indirect, or cumulative. Direct effects are caused by the action and occur at the same time and place. Indirect effects are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Cumulative effects are impacts that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time (40 Code of Federal Regulations [CFR] 1508.7), and are analyzed in Section 5.

Currently, vessels and manpower are being diverted from other missions in order to provide the additional security for the nation's ports, including the Boston Harbor and Cape Cod Bay. The No Action Alternative fails to meet the Purpose and Need of the USCG mission. Under the No Action Alternative, disruption to other missions would continue to result in increased demand on manpower and current assets. This scenario would possibly 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 (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.

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 on biological resources under the Proposed Action and the No Action Alternative. The significance of impact on 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 on 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.

Protected and Sensitive Habitats

Impacts on 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

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 altered significantly.

Significance criteria for impacts on 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.

Marine Mammals and Sea Turtles

Impacts on marine mammals and sea turtles 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 Marine Mammal Protection Act (MMPA), 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 might be impacted by a number of factors. The most important factors within the ROI are impacts on fish habitat, disturbance from USCG vessels, and enforcement of applicable fishing laws. Additional impacts might result from accidental pollution emissions.

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

- Overfishing resulting in 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 on coastal and other birds would be significant if MSST activities resulted in any of the following outcomes:

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

4.2.2 Potential Impacts

Protected and Sensitive Habitats

Proposed Action. Although there are protected habitats (*i.e.*, Boston Harbor Islands, Gerry E. Stellwagen Bank National Sanctuary, Cape Cod National Seashore, and Cape Cod Bay Northern Right Whale Critical Habitat) in the ROI, the stationing of and operations conducted by the MSST would not result in adverse effects on protected and sensitive habitats. The Proposed Action involves installation of a Butler Building (*i.e.*, a modular building), to serve as the boathouse, between Piers 2 and 3 at ISC Boston and operations in Boston Harbor and Cape Cod Bay. The Butler Building would be installed in a previously disturbed area (*i.e.*, an existing concrete pad). Additionally, the boats would be launched from an existing boat ramp in Boston Harbor, dropped in the water at ISC Boston using a portable boatlift at an existing pier, or launched at USCG Station Cape Cod Canal and thus would not impact sensitive and protected habitats within the ROI. MSST personnel are aware of environmentally sensitive areas within the ROI, particularly the Cape Cod National Seashore. The MSST would not patrol in these areas on a regular basis. However, during a pursuit or other potential problem, they would enter these areas. Therefore, the MSST would not impact sensitive and protected habitats.

While the purpose of the MSST would not be to protect these habitats, the USCG would continue to enforce laws that relate to habitat protection. These laws 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).

Additionally, based on the purpose and projected operations of the MSST, normal patrol operations would not disturb these areas. An exception to 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, no adverse impacts on sensitive or protected habitats would occur as a result of the Proposed Action.

No Action Alternative. Under the No Action Alternative, existing conditions would remain as is, and the MSST would not be stood up. The USCG would maintain the current level of protection, which has been determined to be insufficient. Increased demand on vessels and manpower and disruption to other missions would continue. Under this scenario, it would possibly be easier for a terrorist attack on military and commercial assets to occur. Significant adverse impacts would be expected should this alternative be selected due to the increased risk of a terrorist attack and the potential for

significant adverse effects on protected and sensitive habitats. Recovery would depend on the extent and type of damage.

Wetlands and Floodplains

Proposed Action. The stationing of the MSST would not result in significant adverse effects on wetlands and floodplains. The Proposed Action involves installation of a boathouse between Piers 2 and 3 at ISC Boston. The boathouse would be built in a previously disturbed area (*i.e.*, an existing concrete pad). Boats would be launched from an existing boat ramp in Boston Harbor, dropped in the water at ISC Boston using a portable boatlift at an existing pier, or launched at USCG Station Cape Cod Canal, and, thus, would not impact wetlands.

Estuarine wetlands would not be used during MSST operations. Due to the shallow water depth, MSST boats would not be able to operate in the area. Any operations in proximity to estuarine wetland areas would be conducted at low speeds due to the shallow nature of the water and the high likelihood of submerged obstacles.

The ISC Boston is located within a 100-year floodplain. However, modifications to the floodplain area are not proposed. There would be no modification to Coast Guard Station Cape Cod Canal as a result of the Proposed Action. Therefore, there would be no effects on wetlands or floodplains as a result of the Proposed Action.

No Action Alternative. Under the No Action Alternative, existing conditions would remain as is, and the MSST would not be stood up. The USCG would maintain the current level of protection, which has been determined to be insufficient. Increased demand on vessels and manpower and disruption to other missions would continue. Under this scenario, it would potentially make a terrorist attack more likely to occur on the port or in Cape Cod Bay that might impact wetlands and floodplains. Significant adverse impacts would be expected should this alternative be selected due to the increased risk of a terrorist attack and the potential for significant adverse effects due to the potential for loss of wetlands and floodplains and their unique ecosystems. Recovery would depend on the extent and type of damage.

Marine Mammals

Proposed Action. Although several species of marine mammals are known to use Boston Harbor and Cape Cod Bay, the stationing and operations conducted by the MSST would not result in more than minor adverse impacts on these species. An exception to normal operations would be in the case of an unusual occurrence (*i.e.*, pursuit).

The USCG has protocols in place for protecting the right whale and other marine mammals and sea turtles. Strategies the USCG uses to reduce right whale ship strikes are discussed in the Atlantic Protected Living Marine Resources Initiative (APLMRI). These strategies allow for right whale monitoring as well as for generally protecting and conserving marine animals and their habitats. APLMRI includes protocols and collaborations with various Federal and state agencies to implement major actions, including the Federal Right Whale Recovery Plan (USCG 2003a). One major action undertaken by NOAA Fisheries and USCG is the Mandatory Ship Reporting System (MSRS) of 300 gross tons and greater. Commercial vessels are required to report to the USCG when they are transiting right whale critical habitat. Federal vessels are exempt from the MSRS; however, the USCG voluntarily participates with cutters that are 300 gross tons and over. Since the implementation of the MSRS, ships strikes of large whales have not been reported in right critical habitat, although they have been reported in other areas on the U.S. Atlantic coast (Silber 2004). The USCG's current procedures to avoid marine mammals would continue under the Proposed Action. While the purpose of the MSST would not be to provide marine resource protection and law enforcement, the MSST would continue to comply with USCG living marine resources protection programs, initiatives, and guidance.

Although standing up the MSSTs would add six new boats that are capable of 40 knots to Boston Harbor and Cape Cod Bay, the MSST vessels are only a small percentage of a much larger number of commercial and recreational vessels that enter this port on a daily basis. It is likely that only two to four RB-HS would be utilized under normal operations. Even though the RB-HSs are capable of 40 knots, this speed would not be used on a continuous basis and would usually be reserved for emergency security operations which necessitate high speed. Normal transit speeds would be in the range of 10-15 knots. Because these boats are designed to be highly maneuverable, it is easier for them to avoid collisions with marine mammals. To guard against any adverse impacts of the MSST vessel operation on marine mammals, the USCG would continue to adhere to the protective measures in place in the APLMRI. Moreover, the USCG would continue to adhere to the policies and goals stated in the Ocean Steward (Appendix F). Because of the APLMRI and Ocean Steward, the small number and size of RB-HSs, high level of maneuverability of the RB-HSs, and their low level of speed during normal operations, the addition of the MSST boats and their operations would not likely result in adverse effects on marine mammals.

Agency correspondence regarding threatened and endangered species, ESA Section 7(a)(2) consultation, and other sensitive species protected under the MMPA is provided in Appendix D.

No Action Alternative. Under the No Action Alternative, existing conditions would remain as is, and the MSST would not be stood up. The USCG would maintain the current level of protection, which has been determined to be insufficient. Increased demand on vessels and manpower and disruption to other missions would continue. Under this scenario, it would potentially make a terrorist attack more likely to occur on the port or in Cape Cod Bay that might spread into areas frequented by marine mammals. Significant adverse impacts would be expected should this alternative be selected due to the increased risk of a terrorist attack and the potential for significant adverse effects on marine mammals. Recovery would depend on the extent of loss.

Sea Turtles

Proposed Action. Although four species of sea turtles are known to use Boston Harbor and Cape Cod Bay occasionally, the stationing and operations conducted by the MSST would not result in more than minor adverse impacts on these species. An exception to these normal operations would be in the case of an unusual occurrence (*i.e.*, pursuit). The USCG's current initiatives, programs, and procedures to avoid protected species 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.

The addition of the USCG MSST vessels to Boston Harbor and Cape Cod Bay would represent only a small increase when compared to the existing traffic already using the port. Because these boats are designed to be highly maneuverable, it is easier for them to avoid collisions with protected sea turtles. To guard against any adverse impacts of the MSST vessel operation on protected species, the USCG would continue to adhere to the protective measures in place in the APLMRI. Moreover, the USCG would continue to adhere to the policies and goals stated in the Ocean Steward (Appendix F). Because of the APLMRI and Ocean Steward, 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 would not likely result in adverse effects on sea turtles.

Agency correspondence regarding threatened and endangered species and ESA Section 7(a)(2) consultation is provided in Appendix D.

No Action Alternative. Under the No Action Alternative, existing conditions would remain as is, and the MSST would not be stood up. The USCG would maintain the current level of protection, which has been determined to be insufficient. Increased demand on vessels and manpower and disruption to other missions would continue. Under this scenario, it would potentially make a terrorist attack more

likely to occur on the port or in Cape Cod Bay that might spread into areas frequented by sea turtles. Significant adverse impacts would be expected should this alternative be selected due to the increased risk of a terrorist attack and the potential for significant adverse effects on sea turtles. 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 not result in adverse impacts on fisheries or essential fish habitat (EFH). The addition of the USCG MSST vessels to Boston Harbor would represent only a small increase when compared to the existing traffic already using the port.

The USCG enforces a number of fishing and fisheries laws. In addition, USCG has developed its own initiatives to protect fisheries and their habitat. While the purpose of the MSST is not to provide marine resource protection and law enforcement, the MSST would continue to comply with USCG living marine resources protection programs, initiatives, and guidance.

The Proposed Action involves installation of a Butler Building, serving as the boathouse, between Piers 2 and 3 at ISC Boston. The boathouse would be built in a previously disturbed area (*i.e.*, an existing concrete pad). Boats would be launched from an existing boat ramp in Boston Harbor, dropped in the water at ISC Boston using a portable boatlift at an existing pier, or launched at Coast Guard Station Cape Cod Bay Canal and thus would not result in significant adverse impacts. As such, no permanent alteration of EFH is expected as a result of the Proposed Action.

Agency correspondence regarding EFH consultation is provided in Appendix D.

No Action Alternative. Under the No Action Alternative, existing conditions would remain as is, and the MSST would not be stood up. The USCG would maintain the current level of protection, which has been determined to be insufficient. Increased demand on vessels and manpower and disruption to other missions would continue. Under this scenario, it would potentially make a terrorist attack more likely to occur on the port or in Cape Cod Bay. Significant adverse impacts would be expected should this alternative be selected due to the increased risk of a terrorist attack or an attack that might result in a loss or degradation of fishing areas. The potential for loss of EFH and fish species would also indirectly affect the nation's economy by impacting commercial fisheries. Recovery would depend on the amount and extent of loss.

Coastal and Other Birds

Proposed Action. While several species of threatened, endangered, coastal, and migratory birds are known to occur within the ROI, the stationing and operations conducted by the MSST would not result in more than minor adverse impacts on these species. Neither the stationing site nor the launch sites provide suitable habitat for these bird species. The MSST normal operations would not be within or adjacent to nesting and foraging habitat for threatened, endangered, coastal, or migratory birds. It is anticipated that only temporary, minor adverse impacts, if any, might occur.

Agency correspondence regarding endangered or threatened species and Section 7(a)(2) ESA consultation is provided in Appendix D.

No Action Alternative. Under the No Action Alternative, existing conditions would remain as is, and the MSST would not be stood up. The USCG would maintain the current level of protection, which has been determined to be insufficient. Increased demand on vessels and manpower and disruption to other missions would continue. Under this scenario, it would potentially make a terrorist attack more likely to occur on the port or in Cape Cod Bay that might impact birds' habitats. Significant adverse impacts would be expected should this alternative be selected due to the increased risk of a terrorist attack, with the potential for significant adverse impacts on threatened, endangered, coastal, and migratory birds. Recovery would depend on the amount and extent of loss.

4.3 Air Quality and Climate

4.3.1 Significance Criteria

The potential impacts on 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 on air quality in National Ambient Air Quality Standards (NAAQS) "attainment" areas are considered significant if the net changes in project-related emissions result in one of the following situations:

- Violation of any national or state ambient air quality standards
- 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 on 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 on air quality would be considered significant if the Proposed Action results 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 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 an attainment area, therefore the General Conformity Rule does not apply.

Federal Prevention of Significant Deterioration (PSD) regulations also define air pollutant emissions to be "significant" if a proposed project is within 10 kilometers of any Class I area, and regulated pollutant emissions would cause an increase in the 24-hour average concentration of 1 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) 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 (NSR) and PSD regulations (40 CFR 51 and 52).

4.3.2 Potential Impacts

The potential sources of increased criteria pollutant emissions under the Proposed Action would be from (1) watercraft operations, (2) personnel commuter travel and the addition of three tow vehicles, (3) maintenance and support activities, and (4) fuel storage and handling emissions.

Watercraft Operations

Proposed Action. The vessels and engines to be used for the RB-HS must meet specific requirements of the MSST, including the capability of sustaining speeds of 40 or more knots in calm seas. The proposed engines would be Honda 225 horsepower (hp) engines. These four-stroke engines would meet the speed requirements of the USCG and would fulfill Federal U.S. Environmental Protection

Agency (EPA) 2006 emission requirements. The Proposed Action will be assessed based on impacts on the AQCR current emissions inventory.

Under the Proposed Action, a minor impact on air quality would be realized. Calculations of air pollutant emissions from the proposed MSST operations were performed based on two boats operating 24 hours a day, 365 days a year, at approximately 20 hp (see Appendix I).

No Action Alternative. Under the No Action Alternative, existing conditions would remain as is, and the MSST would not be stood up. The USCG would maintain the current level of protection, which has been determined to be insufficient. Under this alternative, disruption to other missions would continue. This scenario of vessels and manpower at maximum capacity would possibly be easier for a terrorist attack to occur. Significant adverse impacts would be expected should this alternative be selected due to the increased risk of a terrorist attack. Terrorists could strike at military or commercial facilities creating the potential for impacts on the environment. The impacts could be immediate or long lasting. Recovery time would depend on the severity and extent of the impact.

Personnel Commuter Travel

Proposed Action. The number of additional personnel (71 active duty and 33 reservists) and three tow vehicles would result in minor adverse impacts on air quality. Calculations of air pollutant emissions from the proposed personnel commuter travel operations and tow vehicles were performed based on an average fleet model from 1995, commuting an average of 20 miles each way to ISC Boston 365 days a year (see Appendix I).

No Action Alternative. Under the No Action Alternative, existing conditions would remain as is, and the MSST would not be stood up. The USCG would maintain the current level of protection, which has been determined to be insufficient. Under this alternative, disruption to other missions would continue. This scenario of vessels and manpower at maximum capacity would potentially make a terrorist attack more likely to occur. Significant adverse impacts would be expected should this alternative be selected due to the increased risk of a terrorist attack. Terrorists could strike at military or commercial facilities creating the potential for impacts on the environment. The impacts could be immediate or long lasting. Recovery time would depend on the severity and extent of the impact.

Maintenance and Support Activities

Proposed Action. Under the Proposed Action, minor maintenance would be performed at ISC Boston. Since the maintenance schedule is not known, it is anticipated that there would be minor

adverse impacts on air quality in the region. No additional support facilities (beyond the addition of a Butler Building) would be required to support the MSST.

No Action Alternative. Under the No Action Alternative, existing conditions would remain as is, and the MSST would not be stood up. The USCG would maintain the current level of protection, which has been determined to be insufficient. Under this alternative, disruption to other missions would continue. This scenario of vessels and manpower at maximum capacity would potentially make a terrorist attack more likely to occur. Significant adverse impacts would be expected should this alternative be selected due to the increased risk of a terrorist attack. Terrorists could strike at military or commercial facilities creating the potential for impacts on the environment. The impacts could be immediate or long lasting. Recovery time would depend on the severity and extent of the impact.

Fuel Storage and Handling Emissions

Proposed Action. No new fuel storage or dispensing facilities would be required under the Proposed Action. RB-HSs would be refueled at existing marina facilities or gas stations. All dispensing facilities would have regulated vapor controls to reduce evaporative emissions. It is anticipated that there would be minor adverse impacts on air quality in the region.

No Action Alternative. Under the No Action Alternative, existing conditions would remain as is, and the MSST would not be stood up. The USCG would maintain the current level of protection, which has been determined to be insufficient. Under this alternative, disruption to other missions would continue. This scenario of vessels and manpower at maximum capacity would potentially make a terrorist attack more likely to occur. Significant adverse impacts would be expected should this alternative be selected due to the increased risk of a terrorist attack. Terrorists could strike at military or commercial facilities creating the potential for impacts on the environment, as well as loss of petroleum storage tanks and delivery systems, thus affecting the economy. The impacts could be immediate or long lasting. Recovery time would depend on the severity and extent of the impact.

Conformity

Proposed Action. Since an EPA-designated non-attainment area is affected by this Proposed Action, the USCG must comply with the Federal General Conformity Rule (40 CFR 93). To do so, an analysis has been completed to ensure that, given the changes in direct and indirect emissions of the ozone (O₃) precursors (nitrous oxides [NO_x] and volatile organic compounds [VOCs]), particulate matter less than or equal to 10 microns (PM₁₀), and carbon monoxide (CO), the Proposed Action would be in conformity with applicable Clean Air Act (CAA) requirements. The Conformity

Determination requirements specified in this rule can be avoided if the project-related, non-attainment pollutant emission rate increases are below *de minimis* thresholds levels for each pollutant and are not considered regionally significant. For purposes of determining conformity in this non-attainment area, projected regulated pollutant emissions associated with the Proposed Action were estimated using available construction emissions and other non-permitted emission source information. The emission calculations and *de minimis* threshold comparisons are collectively presented in Appendix I.

With respect to the General Conformity Rule, impacts on air quality would be considered significant if the proposed Federal 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 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 *de minimis* threshold emission rates were established by EPA in the General Conformity Rule in order to focus analysis requirements on Federal actions with the potential to have "significant" air quality impacts. Table 4-1 presents these thresholds, by regulated pollutant. These *de minimis* thresholds are similar, in most cases, to the definitions for major stationary sources of criteria and precursors to criteria pollutants under the CAA's NSR Program (CAA Title I). As shown in Table 4-1, *de minimis* thresholds vary depending upon the severity of the non-attainment area designation by EPA.

Based on the emission calculations and analyses completed for the Proposed Action, it is clear that the net change in NO_x and VOC emissions would be well below the *de minimis* threshold requirements and the regional significance requirements of the General Conformity Rule. As such, this Federal action is exempt from a Conformity Determination and all other requirements that are specified under the General Conformity Rule and applicable regulations (40 CFR 93). Table 4-2 presents total air quality emissions from the Proposed Action.

No Action Alternative. Under the No Action Alternative, existing conditions would remain as is, and the MSST would not be stood up. The USCG would maintain the current level of protection, which has been determined not to be sufficient. Under this alternative, disruption to other missions would continue. The result would be further strain on manpower and current assets. This scenario of vessels and manpower at maximum capacity would potentially make a terrorist attack more likely to occur. Significant adverse impacts would be expected should this alternative be selected due to the

increased risk of a terrorist attack. Terrorists could strike at military or commercial facilities creating the potential for impacts on the environment. The impacts could be immediate or long lasting. Recovery time would be dependent on the severity and extent of the impact.

Table 4-1. General Conformity Rule *de minimis* Emission Thresholds

Pollutant	Status	Non-Attainment Classification	<i>de minimis</i> Threshold (tons/yr)
Ozone (measured as – “precursors”: Nitrogen Oxides (NO _x) or Volatile Organic Compounds (VOCs))	Non-attainment	Extreme	10
		Severe	25
	Maintenance	Serious	50
		Moderate/marginal (inside ozone transport region)	50 (VOCs)/100 (NO _x)
Maintenance	All others	100	
	Inside ozone transport region	50 (VOCs)/100 (NO _x)	
		Outside ozone transport region	100
Carbon Monoxide (CO)	Non-attainment/ Maintenance	All	100
Particulate Matter ≤ 10 microns (PM ₁₀)	Non-attainment Maintenance	Serious	70
		Moderate	100
		Not Applicable	100
Sulfur Dioxide (SO ₂)	Non-attainment/ maintenance	Not Applicable	100
Nitrogen Dioxide (NO ₂)	Non-attainment/ maintenance	Not Applicable	100

Source: 40 CFR 93.153(b)

Table 4-2. USCG MSST—Boston MSST Emissions from Proposed Action

Vehicle Category	VOC Emissions (tpy)	NO_x Emissions (tpy)	CO Emissions (tpy)	SO₂ Emissions (tpy)	PM₁₀ Emissions (tpy)
Watercraft Operations	6.33	2.77	27.68	0.25	0.26
Commuter and Tow Vehicles	1.30	1.13	15.84	0.08	1.09
Total Emissions:	7.63	3.90	43.52	0.33	1.35

Note: tpy – tons per year

Table 4-3 compares the Proposed Action emissions to the total Metropolitan Boston AQCR emissions inventory.

Table 4-3. Net Emission Changes in Criteria Pollutants for Metropolitan Boston AQCR Under the Proposed Action

	VOC	NO _x	CO	SO ₂	PM ₁₀
Metropolitan Boston AQCR Inventory (tpy):	221,094	206,560	1,403,495	126,229	159,381
Proposed Action Net Change (tpy):	7.63	3.90	43.52	0.33	1.35
Percent (%) of Metropolitan Boston AQCR Inventory:	0.0034%	0.0019%	0.0031%	0.0003%	0.0008%

Source: EPA 1999

Note: tpy – tons per year

4.4 Noise

4.4.1 Significance Criteria

Noise produced by water vessels and supporting facilities while homeported 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 vessels, construction equipment (temporary), and traffic. Noise impacts were only considered within the ROI. This section also discusses general noise impacts on marine mammals.

The USCG establishes 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. USCG activities are operated in accordance with all Federal and state laws and local ordinances.

Noise impact criteria normally are based on a combination of land use compatibility guidelines and factors related to duration and magnitude of the noise level, including the time of day and the conduct of operations.

Above-water Noise

The significance of above-water noise impact criteria is normally based on a combination of land use compatibility guidelines and factors related to duration and magnitude of the noise level, including the time of day and the conduct of operations. EPA has determined a day-night average sound level

(DNL) 75 decibels (dB) at 50 feet as an acceptable noise level to protect public health and welfare (PWIA 2002).

Underwater Noise

Impacts on marine mammals and sea turtles would be significant if MSST activities resulted in any of the following outcomes:

- Harassment, either Level A (MMPA), defined as pursuit, torment, or annoyance that has the potential to injure; or Level B, defined as causing disruption of behavioral patterns
- Substantial interference with movement of any resident species

4.4.2 Potential Impacts

The Proposed Action would result in minor adverse noise impacts to human health and welfare under normal operating conditions. A detailed description of the analysis is presented below.

Above-water Noise

Proposed Action. The Proposed Action would result in minor adverse noise impacts on human health and welfare under normal operating conditions. It is anticipated that the MSST would operate 12 hours a day, 7 days per week and that there would be two to three boats operating at any given period. All operations of the MSST would be in accordance with all Federal and state laws and local noise ordinances.

Although the USCG has a variety of vessel types in use in Boston Harbor and Cape Cod Bay, the type of watercraft being evaluated for noise in this Environmental Assessment (EA) is a RB-HS. Since data on airborne noise generation by marine vessels generally is not available, qualitative statements will be made in the vessel generated underwater noise section.

The 25-foot RB-HS would contain a crew of three people with twin 225 hp Honda outboard engines, capable of speeds exceeding 40 knots. The outboard engines on the RB-HS are four-stroke engines. 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. The four-stroke engine is quieter than a two-stroke engine. This is likely because of the incorporation of muffling devices into design and the reduced number of combustion cycles (Evinrude 2002).

There are no identified noise sensitive areas in the ROI, therefore sound exposure levels were not calculated. The ROI is a large geographic area including Boston Harbor and Cape Cod Bay.

Airborne noise impacts from marine vessel operations is rarely an issue of concern because the majority of the population lives near waterways and has become familiar with the sound of passing boats and ships. Speeds in the waterways would be expected to continue to be generally low (10 to 12 knots) except during an unusual event (*i.e.*, pursuit). It is anticipated that the proposed USCG operation within the ROI would be indistinguishable from existing vessel activity and the ambient noise environment. Noise impacts during unusual events would be minor adverse within the port dependent upon the specific location of the unusual event to a sensitive noise receptor.

Minor noise impacts could result from the installation of the Butler Building at ISC Boston. These impacts would only persist during installation of the Butler Building and thus would be short-term in nature.

No Action Alternative. Under the No Action Alternative, existing conditions would remain as is and the MSST would not be stood up. The USCG would maintain the current level of protection, which has been determined to be insufficient. Under this alternative, disruption to other missions would continue. This scenario of vessels and manpower at maximum capacity would potentially make a terrorist attack more likely to occur. Significant adverse impacts would be expected should this alternative be selected due to the increased risk of a terrorist attack. Terrorists could strike at military or commercial facilities in these ports creating the potential for impacts on the environment. The impacts could be immediate or long lasting. Recovery time would be dependent on the severity and extent of the impact.

Underwater Noise

Proposed Action. Cetacean (whale) reaction to boat traffic varies by species and within species, according to their current behavior patterns and previous experience. Toothed whales and dolphins show tolerance of vessel traffic. Many dolphin species are attracted to vessels, and spend periods of time following them or swimming within these vessels' bow pressure waves, apparently to reduce energetic costs of swimming (USCG 2003c). Resting dolphins tend to avoid boats, foraging dolphins ignore boats, and socializing dolphins may approach the vessels (Richardson et al. 1995). It is known that bottlenose dolphins inhabit channels in many areas that are used by vessels including large tankers as well as small pleasure craft (USCG 2003c).

The most likely effects of noise on sea turtles would be short-term behavioral changes such as diving and evasive swimming, disruption of activities, or departure from the area of disturbance. Areas with

heavy vessel traffic may be avoided by sea turtles, although generally most species appear to exhibit tolerance to noise.

Although the Proposed Action would produce an increase in the overall level of boat operations, the size of the vessels proposed are smaller than the existing commercial vessels operating in Boston Harbor and Cape Cod Bay and the RB-HS would be equipped with the quieter four-stroke engine (compared to the two-stroke engine). It is anticipated that the proposed USCG operation within the ROI would be indistinguishable from existing vessel activity and the ambient noise environment.

The USCG has protocols in place for protecting the right whale and other marine mammals and sea turtles. While the purpose of the MSST is not to provide marine resource protection and law enforcement, the MSST would continue to comply with USCG living marine resources protection programs, initiatives, and guidance.

Noise-related disturbance from USCG vessels would be transient and, should not significantly affect marine mammals and sea turtles (USCG 1996). The Proposed Action is not expected to result in more than minor adverse noise impacts on marine mammals and sea turtles that might occur in the ROI.

No Action Alternative. Under the No Action Alternative, existing conditions would remain as is and the MSST would not be stood up. The USCG would maintain the current level of protection, which has been determined to be insufficient. Under this alternative, disruption to other missions would continue. This scenario of vessels and manpower at maximum capacity would potentially make a terrorist attack more likely to occur. Significant adverse impacts would be expected should this alternative be selected due to the increased risk of a terrorist attack. Terrorists could strike at military facilities in the ROI creating the potential for impacts on the environment. The impacts could be immediate or long lasting. Recovery time would be dependent on the severity and extent of the impact.

4.5 Public Safety

4.5.1 Significance Criteria

If implementation of the Proposed Action were to increase substantially risks associated with the safety of Naval or Coast Guard personnel (including MSST personnel), port workers and visitors, 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 on 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.

It is extremely difficult to determine the level of significance and degree of impact in losing one (or more ships) and loss of life; therefore, no attempt to do so is made in this section.

4.5.2 Potential Impacts

Based on the analysis completed for this EA, beneficial impacts on public safety would be expected. The establishment of the MSST would provide additional security to the military and commercial assets in the ROI. A detailed explanation of the analysis is below.

Proposed Action. The Proposed Action would increase the USCG's ability to protect the critical domestic port of Boston, Massachusetts and the U.S. Maritime Transportation System from warfare and terrorist attacks. 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 is diverse. Geography, environmental conditions, and the amount and types of vessels are all aspects of the U.S. maritime system. 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.

The MSST's operations will closely parallel 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 strategy ports. The MSST will escort a variety of vessels and maintain specific security zones in each port. It is capable of operating 7 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, and commercial and nongovernmental entities. Significant beneficial impacts might be reasonably expected from the Proposed Action.

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 and the MSST would not be stood up. The USCG would maintain the current level of protection, which has been determined to be insufficient. Additional boats and personnel would only be assigned to Boston Harbor and Cape Cod Bay under unusual circumstances. Under this alternative, disruption

to other missions would continue. This scenario of vessels and manpower at maximum capacity would potentially make a terrorist attack more likely to occur. Significant adverse impacts would be expected should this alternative be selected due to the increased risk of a terrorist attack. Terrorists could strike at military or commercial facilities in Boston Harbor, Cape Cod Bay, and the surrounding areas. Such attacks would create health and safety hazards for the surrounding populace, impacting appropriate emergency responses, and the potential for impacts on the environment. The impacts could be immediate or long lasting. Recovery time would be dependent on the severity and extent of the impact.

5. Cumulative Impacts

5.1 Cumulative Impacts Methods

Cumulative impacts are defined as those that result from the incremental impact of the action, when added to other past, present, and foreseeable future actions (40 Code of Federal Regulations [CFR] 1508.7). Cumulative impacts can result from individually minor but collectively significant impacts occurring over time.

This cumulative impact analysis considers reasonably foreseeable programs, projects, or policies that might impact Maritime Safety and Security Team (MSST) stand-up and operations, add to the MSST operations, or create a significant impact in the Region of Influence (ROI). For the purposes of this Environmental Assessment (EA), only those projects identified in Section 3 that may be impacted by the Proposed Action will be carried over into the Cumulative Impacts discussion. Information about ongoing and future projects and programs has been identified from Web searches, other National Environmental Policy Act (NEPA) documents, and local newspaper articles.

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. These projects, if completed, will be concluded at some future unknown date, long after the MSST has become operational. Based on professional judgment, potential impacts are identified as minor, moderate, or high and beneficial or adverse, whenever possible. Table 5-1 lists the programs and projects evaluated for potential cumulative impacts.

Table 5-1. Programs and Projects Evaluated for Potential Cumulative Impacts

Proposed (or Existing) Action	Potential Cumulative Impacts
Feasibility Study and Supplemental Environmental Impact Statement (EIS) for Additional Dredging Main Ship Channel	Study and EIS not expected until 2006. Unknown impacts at this time.
Muddy River Flood Control Plan, Environmental Dredging in Boston and Brookline	Construction target date unknown. However, restricted vessel traffic in nearshore areas, and short-term adverse impacts on air, water quality, and noise may reasonably be expected during construction. Long-term beneficial impacts may include increased flood control, increased aquatic habitat, eradication of invasive plant species, and restoration of historic shoreline.
Maintenance Dredging Main Ship Channel	Scheduled fall 2003. Short-term adverse impacts on air, water quality, and noise may be reasonably expected during dredging operations. Long-term beneficial impacts are economic, as larger ships will be able to access the port. Long-term adverse impacts might include increased vessel traffic, noise, and air quality.
Central Artery/Tunnel Project completion of Seaport Access	Estimated completion 2004. Short-term adverse impacts on air quality and noise during construction. Long-term adverse air quality and noise impacts might occur as a result of increase usage of port.
Waterfront Planning & Development – South Boston Strategic Plan	Ongoing with multiple projects; completion dates unknown. However, when completed, approximately 225 acres of Massport’s 285 acres in South Boston will be dedicated to maritime and industrial use. Short-term adverse impacts on air quality and noise during construction. Long-term adverse air quality and noise impacts might occur as a result of increase usage of port.
Waterfront Planning & Development – East Boston Strategic Plan	Multiple projects. Completion date unknown.

5.2 Cumulative Impacts Analysis

5.2.1 Projects Deleted from Further Consideration

- Waterfront Planning and Development – South Boston.* Massport’s property in South Boston is uniquely located, adjacent to downtown Boston and with direct access to Logan International Airport. The completion of a major infrastructure project in the area in the near future will further improve direct access that will benefit both maritime/industrial and commercial uses. These projects include extending several major thoroughfares, improving access to terminals, extending municipal transit ways, and expanding passenger water transportation service. Overall, the development program at full build-out would result in an estimated total of between 7.1 and 8.4 million square feet (ft²) of new and renovated building area; approximately 2.5 million ft² of this build-out exists today. Target dates for these

- programs vary and are dependent upon availability of Federal/state/local funds (Massport 2003c).
- *Waterfront Planning and Development – East Boston.* Massport has undertaken the development of a Strategic Plan for its waterfront properties in the Jeffries Port section of East Boston. The proposed project area included the Massport Shipyard and East Boston Piers 1 to 5. No further information is available at this time (Massport 2003d).
 - *Muddy River Flood Control Plan, Environmental Dredging in Boston and Brookline.* The U.S. Army Corps of Engineers (USACE) is currently preparing a Final EA and Finding of No Significant Impact for this project. The recommended plan consists of a combination of 20-year flood control plan and extensive environmental dredging. The major features of the plan include protecting against a flood with a return frequency of 20 years by making channel improvements, removing underside culverts, installing two new culverts, and daylighting approximately 700 feet of the Muddy River; dredging approximately 200,000 cubic yards of sediment; eradicating invasive species from wetland and riparian areas by dredging and cutting/herbicide treatment; and preserving and restoring the historic park shoreline and vegetation in construction areas. According to the Draft EA, no impacts on federally threatened or endangered species are expected. The recommended plan would improve habitat for a state-listed threatened fish, the three-spine stickleback. Adverse impacts on the area are expected to be temporary. Construction will interfere with recreational use and increase local traffic congestion. Some additional odors may occur during dredging and dewatering of dredged material. Turbidity levels will increase in surface waters during dredging. Measures to minimize adverse effects will include implementation of a traffic control plan, odor control measures, and use of silt curtains to reduce dredging impacts on water quality (USACE 2003a).
 - *Feasibility Study and Supplemental Environmental Impact Statement for Additional Dredging Main Ship Channel.* USACE and Massport have begun examining a proposal by Massport to deepen the major entrance channel and main ship channel through the harbor up to South Boston to 45 feet. An expedited reconnaissance report was completed in July 2000 and approved in August 2000. In June 2002, the USACE and Massport executed a feasibility cost-sharing agreement for the next phase of the study. The Feasibility Study, including preparation of a Supplemental EIS began in June 2002, and will be completed in 2006 (USACE 2003b).
 - *Maintenance Dredging of Main Ship Channel.* USACE is proceeding on plans for maintenance dredging of the 35- and 40-foot sections of the Main Ship Channel outside of the areas recently deepened. These areas were not included in the project that was recently completed. The work was expected to begin this fall, contingent on sufficient funding (USACE 2003b).

5.2.2 Pertinent Projects

It should be noted that several channels were used to attempt to obtain environmental analyses for the pertinent projects; however, as of the date of publication of this EA, no objective data were obtained. As noted in Table 5-1, a number of programs are in various stages of execution. However, while a specific project has been identified, there have been no target completion dates, since all the projects will depend on various sources of funding. In addition, in many cases the environmental data have yet to be produced or finalized. Therefore, based on previous experience with these types of projects, reasonable potential impacts have been identified, and when possible, identified as minor, moderate,

or adverse. In all cases, and in comparison to these large projects, the potential impacts from the stand-up and operations of the MSST must be considered minor.

- *Central Artery/Tunnel Project completion of Seaport Access.* This project is currently under construction. When completed (estimated in 2004), the Seaport Access will connect the Massachusetts Turnpike and the Ted Williams Tunnel and create an interchange on Massport property. The South Piers Transitway will introduce public transit service to the South Boston waterfront and provide connections to South Station and Logan Airport. In addition, the planned Boston Exhibition and Convention Center on land immediately south will add a significant tourism/visitor attraction in the area (Massport 2003c). During construction, short-term adverse impacts may reasonably expect to include degradation of air quality, and increased noise and traffic. Long-term beneficial impacts may include reduction of air emissions and decreased traffic as a result of the public transitway.

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