

**ENVIRONMENTAL ASSESSMENT**  
**FOR THE DECOMMISSIONING AND EXCESSING OF THE**  
**U.S. COAST GUARD CUTTER**  
**MACKINAW (WAGB-83)**



**UNITED STATES COAST GUARD**



**DECEMBER 2005**

## Acronyms and Abbreviations

AtoN	Aids to Navigation
ABS	American Bureau of Shipping
ACHP	Advisory Council on Historic Preservation
AOC	Area of Concern
AOR	Area of Operation
BMP	Best Management Practice
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CSO	Combined Sewer Overflow
dB	Decibels
dBA	A-Weighted Sound Level
DHS	Department of Homeland Security
DoD	Department of Defense
DOS	Department of State
DOT	Department of Transportation
EA	Environmental Assessment
EEZ	Exclusive Economic Zone
EIS	Environmental Impact Statement
EO	Executive Order
FAA	Foreign Assistance Act
FMAP	Foreign Military Assistance Program
FONSI	Finding of No Significant Impact
FPASA	Federal Property and Administrative Services Act
FPMR	Federal Property Management Regulations
GLIB	Great Lakes Icebreaking
GSA	General Services Administration
HAER	Historic American Engineering Record
MARPOL	International Convention for Prevention of Marine Pollution from Ships

MOA	Memorandum of Agreement
MTS	U.S. Marine Transportation System
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
OFCO	Operating Facility Change Order
OSHA	Occupational Safety & Health Administration
PAH	Polycyclic Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyls
P.L.	Public Law
ROI	Region of Influence
SAR	Search and Rescue
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SSO	Sanitary Sewer Overflow
USACE	U.S. Army Corps of Engineers
USC	United States Code
USCG	United States Coast Guard
USCGC	U.S. Coast Guard Cutter
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
WAGB	Icebreaker
WAGB-83	Hull Number for the existing USCGC MACKINAW to be decommissioned
WLB	Seagoing buoy tender
WLBB-30	Hull Number for the new Great Lakes Ice Breaker (GLIB) to replace WAGB-83
μPA	micro Pascal
VOSS	Vessel of Opportunity Skimming System

**U.S. COAST GUARD**  
**FINDING OF NO SIGNIFICANT IMPACT**  
**FOR THE**  
**DECOMMISSIONING AND EXCESSING OF THE**  
**U.S. COAST GUARD CUTTER MACKINAW (WAGB-83)**

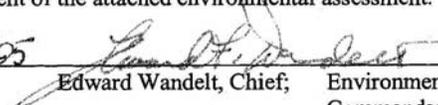
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The Proposed Action includes the decommissioning and excessing of the USCGC MACKINAW (WAGB-83). The vessel was constructed in 1944 and was the world's largest and most powerful icebreaker at that time. USCGC MACKINAW (WAGB-83) represented the state of the art in icebreaking technology. After over 60 years of continuous service, USCGC MACKINAW (WAGB-83) is at the end of its service life. The USCG is required to identify and declare excess property to the General Services Administration. The USCG will decommission and declare excess USCGC MACKINAW (WAGB-83) in 2006 through the Federal Real Property Service Act and Federal Real Property Management Regulations, unless a Congressional mandate to transfer ownership of the vessel to another entity is issued.

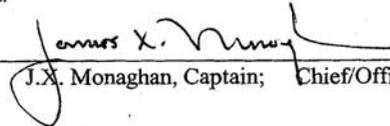
The Environmental Assessment (EA) for the decommissioning and excessing of USCGC MACKINAW (WAGB-83) was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 (Section 102[2][c]) and its implementing regulations at Title 40 Code of Federal Regulations, Part 1500.

This project was thoroughly reviewed by the USCG and by the undersigned, and determined that this project will have no significant effect on the human environment.

This finding of no significant impact is based on the attached environmental assessment which has been independently evaluated by the USCG and determined to adequately and accurately discuss the environmental issues and impacts of the proposed project and provides sufficient evidence and analysis for determining that an environment impact statement is not required. The USCG takes full responsibility for the accuracy, scope, and content of the attached environmental assessment.

15 Dec 05  0.00000  
Date Edward Wandelt, Chief; Environmental Management/Assistant  
Commandant for Engineering and Logistics

I have considered the information contained in the EA, which is the basis for the 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.

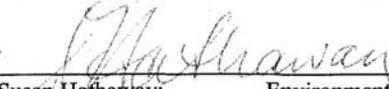
12/15/05   
Date J.X. Monaghan, Captain; Chief/Office of Cutter Forces

**U.S. COAST GUARD**  
**ENVIRONMENTAL ASSESSMENT**  
**FOR THE**  
**DECOMMISSIONING AND EXCESSING OF THE**  
**U.S. COAST GUARD CUTTER MACKINAW (WAGB-83)**

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).

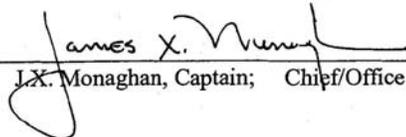
This environmental assessment serves as a concise public document to briefly provide sufficient evidence and analysis for determining the need to prepare an environmental impact statement or a finding of no significant impact.

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 EA preparation.

12/15/2005  Env. Protect Spec.  
Date Susan Hathaway; Environmental Protection Specialist/Assistant  
Commandant for Engineering and Logistics

15 Dec. 05  Chief  
Date Edward Wandelt, Chief; Environmental Management/Assistant  
Commandant for Engineering and Logistics

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

12/15/05   
Date J.X. Monaghan, Captain; Chief/Office of Cutter Forces

**ENVIRONMENTAL ASSESSMENT**  
**FOR THE DECOMMISSIONING AND EXCESSING**  
**OF THE**  
**U.S. COAST GUARD CUTTER**  
**MACKINAW (WAGB-83)**

Prepared for  
**Commandant**  
**Office of Engineering and Logistics**  
**Environmental Management (CG-443)**  
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**DECEMBER 2005**



**DRAFT ENVIRONMENTAL ASSESSMENT FOR THE  
DECOMMISSIONING AND EXCESSING OF THE USCGC MACKINAW (WAGB-83)**

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# 1. Introduction

The United States Coast Guard (USCG) is proposing to decommission and excess the U.S. Coast Guard Cutter (USCGC) MACKINAW (WAGB-83). Responsibility for icebreaking in the Great Lakes would be assumed by a new Great Lakes Icebreaking (GLIB) USCGC, WLBB-30 that would also be named MACKINAW (USCGC MACKINAW (WLBB-30)).

## 1.1 Coast Guard Background and Mission

The USCG, one of the country's five armed services, is this nation's first and oldest maritime agency, and is a unique agency of the federal government. The Revenue Marine (also known as Revenue Service, and changed to Revenue Cutter Service in 1863) was formed on 4 August 1790. The USCG received its present name in 1915 when the Revenue Cutter Service merged with the Life-Saving Service. Today, the USCG operates in all maritime regions:

- Approximately 95,000 miles of U.S. coastline, 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 United States.

On 1 March 2003, in response to growing national security demands, the newly formed U.S. Department of Homeland Security (DHS) assumed control of the USCG from the U.S. Department of Transportation (DOT) (Public Law [P.L.] 107-296). The USCG is the lead federal agency for Maritime Homeland Security and has dramatically shifted its mission activity to reflect this role.

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 (MTS) and deny their use and exploitation by terrorists as a means for attacks on U.S. territory, population, and critical infrastructure. The U.S. Maritime Domain includes all U.S. ports, inland waterways, harbors, navigable waters, the Great Lakes, territorial seas, contiguous waters, custom waters, coastal seas, littoral areas, the U.S. EEZ, and oceanic regions of the U.S. national interest, as well as the sealanes to the United States, and U.S. maritime approaches, and high seas (surrounding the nation). The U.S. MTS consists of waterways, ports, and their intermodal connections, vessels, vehicles and system users as well as all federal maritime navigation systems.

The USCG has several additional roles:

- Maintain maritime border security against illegal drugs, illegal aliens, firearms, and weapons of mass destruction.
- Ensure that U.S. military assets can be rapidly supplied and deployed 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.

## 1.2 U.S. Coast Guard Great Lakes Icebreaking Background

The USCG's icebreaking mission is based on the statutory authorities of 14 *United States Code* (USC) 2, 14 USC 88, and 14 USC 141. Executive Order (EO) 7521, dated 21 December 1936, states "The Coast Guard... is hereby directed to assist in keeping open the navigation by means of icebreaking operations... channels and harbors in accordance with the reasonable demands of commerce."

The USCG has been directed to assist in keeping open to navigation, in so far as practicable, channels and harbors for the reasonable demands of commerce. Icebreaking is conducted primarily to ensure a regular navigation season on the Great Lakes and the northeastern U.S. coast, to ensure commercial fishing fleets can conduct business, and keep ice-prone transportation systems open for strategic material movement. The icebreaking capabilities of USCGC MACKINAW (WLBB-30) are not expected to extend east of the Welland Canal. The Welland Canal is located in the Niagara region of Ontario, Canada between the Great Lakes, Lake Ontario, and Lake Erie. The areas east of the Welland Canal are not in the Area of Operation (AOR) for the new USCGC MACKINAW (WLBB-30). Domestic icebreaking is also conducted for search and rescue (SAR) and other emergency situations, to prevent flooding caused by ice, and to facilitate navigation.

The USCG employs nine vessels for its icebreaking operations in the Great Lakes system, which includes the lakes and their connecting rivers as well as harbors and river mouths (USCG 2000). USCGC MACKINAW (WAGB-83) is the only U.S. heavy icebreaking resource assigned to the Great Lakes (figure 1-1). A mission analysis report defining the Great Lakes icebreaking requirements was approved on 5 June 1997. The deputy secretary of the DOT subsequently approved the mission need statement in November 1997. A GLIB Fleet Mix Analysis was conducted in the late 1990s. The analysis evaluated four fleet mix options (combination of vessels to best meet the icebreaking requirements). The analysis concluded that the best choice was one multipurpose icebreaker (GLIB) and two seagoing buoy tenders (WLB). The GLIB Capability Replacement Project is a major acquisition program chartered to maintain heavy icebreaking capability on the Great Lakes. On 26 August 1999, the DOT formally endorsed the USCG's recommended preferred alternative to build a multipurpose icebreaker.



FIGURE 1-1. MACKINAW (WAGB-83) CA. 19XX

On 15 October 2001, the USCG awarded a contract to Marinette Marine Corporation for the construction of a new multipurpose GLIB vessel (figure 1-2). The vessel was launched on 2 April 2005, and delivery is anticipated in October 2005. The vessel is capable of multiple missions including maritime homeland security, icebreaking, aids to navigation (AtoN), law enforcement, pollution control, and SAR (USCG 2005). The icebreaking season maintained by MACKINAW WAGB-83 would be assumed by the MACKINAW (WLBB-30). The regular icebreaking season would not be deviated. The MACKINAW (WLBB-30) would be in operation during non-ice season performing the other missions mentioned throughout its AOR.

### 1.3 Purpose and Need for Action

USCGC MACKINAW (WAGB-83), constructed in 1944 by the Toledo Shipbuilding Company, was the world's largest and most powerful icebreaker at the time and represented the state of the art in icebreaking technology. But after 61 years of continuous service, MACKINAW has become increasingly costly to support. Excessive maintenance problems stem from the age of the vessel and result in reduced reliability and increased operating costs. The crew space of the USCGC MACKINAW (WAGB-83) is outdated and, therefore, the habitability is below USCG standards.

In order for the USCG to effectively continue its icebreaking mission as set forth in 14 USC 2, 14 USC 88, 14 USC 141, and EO 7521, the USCG constructed a new multipurpose GLIB vessel using state-of-the-art technology to replace the USCGC MACKINAW (WAGB-83). The USCGC MACKINAW (WAGB-83) has reached the end of its service life and would no longer be needed upon delivery of the new GLIB. The USCGC MACKINAW (WAGB-83) would be

transported to Curtis Bay, Maryland, for storage, unless disposition of the ship is arranged in a manner that would preclude the need for storage at Curtis Bay.



**FIGURE 1-2. GLIB - USCGC MACKINAW (WLB-30) CA. 2005**

The Federal Property and Administrative Services Act (FPASA) of 1949 requires excess property be identified by the USCG and declared as such. Therefore, the purpose of the proposed action is to declare the USCGC MACKINAW (WAGB-83) excess to the needs of the USCG.

The USCG has a limited budget for carrying out its missions. Maintaining a vessel that can no longer carry out the USCG mission diverts funds and personnel from mission-essential programs. The purpose of the proposed action is for the USCG to decommission and dispose of the USCGC MACKINAW (WAGB-83).

The proposed action is needed to meet the legal requirements to excess obsolete property, and to reduce the cost of operation and improve the efficiency of USCG operations.

## **1.4 Project Scope and Region of Influence**

The area of operation for the USCGC MACKINAW (WAGB-83) is the Great Lakes system, including the lakes and their connecting rivers. This vessel is currently homeported in Cheboygan, Michigan. The region of influence (ROI) analyzed in this environmental assessment (EA) is the Great Lakes system, including the lakes and their connecting rivers. Under the proposed action, the USCGC MACKINAW (WAGB-83) may be temporarily stored at the USCG boat yard in Curtis Bay, Maryland, possibly requiring transit through the St.

Lawrence River and down the northeast coastal shipping lanes to Chesapeake Bay (which contains Curtis Bay) (figure 1-3).



**FIGURE 1-3. USCG MACKINAW (WAGB-83) ROUTE TO CURTIS BAY**

This single passage of a non-cargo-bearing vessel through commercial shipping lanes is not anticipated to have any measurable impacts on the resources analyzed in this EA. Therefore, the St. Lawrence River, the northeast coastal shipping lanes, and Chesapeake Bay are not included in the ROI for this assessment.

## 1.5 Agency and Public Involvement

A public notice plan was developed and implemented for the National Environmental Policy Act (NEPA) and the National Historic Preservation Act (NHPA). The plan is published on the U.S. Coast Guard Web site (<http://www.uscg.mil/systems/gse/gsec-3H.htm>). Letters were also mailed to appropriate federal, state, and local agencies (appendix B), and other individuals and entities that have expressed interest in the disposition of the USCGC MACKINAW (WAGB-83) (appendix A). Letters received from agencies are included in appendix B, as well as responses to these comments. Most agencies that did respond did not express concern for the proposed action. One agency, the Michigan Department of Natural Resources, expressed concern that use as an underwater museum allows for littering of bottomlands. The New York State Department of Environmental Conservation Region 9 expressed concern for long ice

breaking operating season, and impacts associated with ice breaking activities by private entities. The USCGC MACKINAW (WLBB-30) is designed to be a multi-purpose vessel and would be employed where ice breaking would not be part of its off- season job routine. During the period of 1 April to 15 January, the ship would be used for other operations such as SAR and not ice breaking.

A notice of availability for the final EA and draft Finding of No Significant Impact (FONSI) was published in the *Federal Register* on 26 October, 2005. The final EA and draft FONSI were made available to the public for comment from 26 October to 26 November 2005. During the public comment period, four responses were received. The Indiana Department of Natural Resources sent an email concurring with the FONSI (appendix B). Two letters (appendix A) were received expressing interest in acquiring the USCGC MACKINAW. These letters do not pertain to the impacts analysis, so no changes were made to the EA. These letters were forwarded to the USCG Office of Internal Controls and Asset management to be submitted to GSA for consideration during the decommissioning process.

## **1.6 Summary of Key Environmental Requirements**

A table containing examples of regulations, laws, and EOs that might reasonably be expected to apply to the proposed action is included in appendix C. It is not intended to be a complete description of the entire legal framework under which the USCG conducts its missions.

### **1.6.1 National Environmental Policy Act of 1969**

The National Environmental Policy Act of 1969, commonly known as NEPA, is a federal statute requiring the identification and analysis of potential environmental impacts of proposed federal actions before those actions are taken. NEPA also established the Council on Environmental Quality (CEQ) that is charged with the development of implementing regulations and ensuring agency compliance with NEPA. CEQ regulations mandate that all federal agencies use a systematic interdisciplinary approach to environmental planning and the evaluation of actions that might affect the environment. This process evaluates potential environmental consequences associated with a proposed action and considers alternative courses of action. The intent of NEPA is to protect, restore, or enhance the environment through well-informed federal decisions.

The process for implementing NEPA is codified in Title 40 of the *Code of Federal Regulations* (CFR) Parts 1500–1508, *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act*. The CEQ was established under NEPA to implement and oversee federal policy in this process. CEQ regulations specify that the following must be accomplished when preparing an EA:

- Briefly provide evidence and analysis for determining whether to prepare an environmental impact statement (EIS) or a FONSI.

- Aid in an agency's compliance with NEPA when an EIS is unnecessary.
- Facilitate preparation of an EIS when one is necessary.

This document has been prepared to comply with NEPA requirements, the CEQ regulations for implementing NEPA, and USCG policy (Commandant's Instruction M16475.1D).

## 1.6.2 Integration of Other Environmental Statutes and Regulations

To comply with NEPA, the planning and decision making process for actions proposed by federal agencies involves a study of other relevant environmental statutes and regulations. The NEPA process, however, does not replace procedural or substantive requirements of other environmental statutes and regulations. It addresses them collectively in the form of an EA or EIS, which enables the decision maker to have a comprehensive view of major environmental issues and requirements associated with the proposed action. According to CEQ regulations, the requirements of NEPA must be integrated "with other planning and environmental review procedures required by law or by agency so that all such procedures run concurrently rather than consecutively." Resources analyzed in the EA are those identified as being potentially affected by the proposed action, and include applicable critical elements of the human environment whose review is mandated by EO, regulation, or policy (appendix C). The undertakings described in this document are subject to Section 106 of the National Historic Preservation Act (NHPA), as amended in 1992 (16 USC 460 *et seq.*). The USCG has initiated consultation with the Michigan State Historic Preservation Office (SHPO) under Section 106 of the NHPA, and this consultation is ongoing through the environmental review process.

## 1.7 Organization of the EA

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

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

**Chapter 2.** Proposed Action and Alternatives. This chapter describes the proposed action, alternatives considered, and the no action alternative.

**Chapter 3.** Affected Environment. This chapter describes the existing environmental conditions in the area in which the proposed action would occur (i.e., the ROI).

**Chapter 4.** Environmental Consequences. Using the information in Chapter 3, this chapter identifies potential direct and indirect environmental impacts on each resource area under the proposed action and the no action alternative. Direct and cumulative impacts that could result from the proposed action are identified on a broad scale as appropriate in an EA.

**Chapters 5 and 6.** These chapters provide references and a list of this document's preparers.

**Appendices.** This EA includes seven appendices that provide additional information. Appendix A is a copy of the Public Notice Plan and other public involvement materials, including the Dear Interested Party mailing list. Appendix B includes all agency consultation, including consultation letters sent to natural resources agencies, a memorandum of agreement (MOA) with the Michigan SHPO, and all comments received from agencies regarding the proposed action. Appendix C is a list of those regulations, laws, and EOs that might reasonably be expected to apply to the proposed action. Appendix D is the Historic Context Study for the excessing and decommissioning of the USCGC MACKINAW (WAGB-83). Appendix E is the hazardous materials and hazardous waste survey of the vessel. Appendix F is the MOA between the USCG and the Michigan SHPO. Appendix G provides an impact summary matrix of the anticipated environmental consequences for each of the alternatives.

## **2. Alternatives, Including the Proposed Action**

Alternatives were developed based on the purpose and need for the USCG to cost-effectively rid itself of obsolete and inefficient vessels that can no longer carry out the USCG missions for which they were designed, and to reduce the cost of operation and improve the efficiency of USCG operations. The alternatives were also shaped, in part, by applicable General Services Administration (GSA) personal property disposal regulations enacted pursuant to the FPASA of 1949, and the no action alternative required by NEPA.

### **2.1 Alternative 1: No Action**

The USCG is analyzing the no action alternative in this EA to provide a benchmark for decision makers and the public to compare the magnitude of environmental effects of the no action alternative with the action alternatives. The no action alternative is required by NEPA.

Under the no action alternative, the USCGC MACKINAW (WAGB-83) would not be decommissioned. The new GLIB vessel (WLBB-30) would be commissioned and delivered to assume icebreaking duties in the Great Lakes. Upon commissioning of the new GLIB vessel (WLBB-30), if the disposition of the USCGC MACKINAW (WAGB-83) has not been determined, it would be relocated to a storage facility at Curtis Bay, Maryland, where the vessel would become inactive and maintained at a level based on available funding.

The no action alternative would not satisfy the need of the USCG to rid itself of obsolete and inefficient vessels and declare such obsolete vessels as excess to the USCG.

### **2.2 Alternative 2: Proposed Action**

As with the no action alternative, the new GLIB vessel (WLBB-30) would assume icebreaking duties in the Great Lakes. Under this alternative, the USCGC MACKINAW (WAGB-83) would be declared excess to USCG needs and then decommissioned. MACKINAW (WAGB-83) could be stored temporarily at the USCG yard in Curtis Bay, Maryland, if the disposition of the ship has not been determined at that time. Storage of a vessel at the USCG yard involves measures to minimize deterioration, including the issuance of the appropriate operating facility change order (OFCO). Within OFCO, certain physical changes to the vessel can be prohibited so that the material and design integrity of the vessel is maintained under Criteria A and C of the National Register of Historic Places (NRHP) criteria. Actions implemented for a decommissioned and stored vessel vary based on the projected end use of that vessel and the location where that vessel would be stored, but could include removal of computer equipment, electronic equipment, medical stores and equipment, repair equipment and spare parts, communication equipment, testing equipment, publications, dining facility inventories, small arms and ammunition, and identification markings.

There are several steps associated with Alternative 2, the proposed action. A description of the steps follows.

## **2.2.1 Disposal Under Established Procedures**

Carrying out this portion of the proposed action may result in temporary storage of the decommissioned vessel at the USCG yard in Curtis Bay, Maryland, if the disposition of the ship has not been determined at the time the ship is declared excess. The MACKINAW would be stored until the vessel is transferred to another DHS entity or other federal agency or declared surplus to the needs of the government by GSA and conveyed to a non-federal entity or private individual.

The disposal process would run as follows:

1. As required by FPASA and Federal Property Management Regulations (FPMR) (41 CFR Part 102), an inquiry would be made within the DHS to ensure that the vessel is not needed elsewhere in DHS. If required by another DHS entity, the vessel would be reassigned to that DHS entity. Under this scenario, the DHS entity would most likely use the former USCGC MACKINAW as a vessel to conduct missions for that entity.
2. If the vessel is not needed anywhere within the USCG or the DHS, the USCG reports the vessel to the GSA as excess (41 CFR 102-36.35(a)). GSA then offers the vessel to other federal agencies utilizing the mandated GSA process (41 CFR 102-36.35(a)). Under this scenario, the other federal agency would most likely use the former USCGC MACKINAW as a vessel to conduct missions for that agency.
3. If GSA determines that there are no federal requirements for the USCGC MACKINAW, then the vessel becomes surplus property and is available for donation to state and local public agencies and other eligible non-federal activities (41 CFR 102-36.35(b)). Under this scenario, the donee state or local government or nonprofit organization would most likely use the USCGC MACKINAW (WAGB-83) as vessel, as a museum (including an underwater museum), or as part of an artificial reefing program.
  - a. Nearly all of the Atlantic and Gulf states have active artificial reef programs based on guidance contained in the National Artificial Reef Plan developed by the Department of Commerce, National Oceanic and Atmospheric Administration, and according to the requirements of the National Fishing Enhancement Act of 1984. The RAND Report on Disposal Options for Ships, 2001, documents that the Atlantic and Gulf Coast state reef authorities reported that more than 846 vessels have been used for reefs during the past 25 years and that there is near-term demand for hundreds more. States with active reef building programs include Massachusetts, New York, New Jersey, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, and

Texas. Artificial reef building materials include steel-hulled vessels, as well as other materials of opportunity.

- b. Another possibility is for the MACKINAW to become an underwater museum, providing opportunities for recreational diving. From an environmental analysis standpoint, this possibility is included under the artificial reefing headings in Chapter 4 because the impacts on the MACKINAW would be the same as if the ship were artificially reefed.
4. Surplus property not selected for donation is offered, by the GSA, for sale to the public by competitive offerings (41 CFR 102-36.35(c)). Under this scenario, the former USCGC MACKINAW could be used as a vessel for private purposes or scrapped.
5. In addition, the vessel could be declared surplus by GSA and offered to the Department of State (DOS) / Department of Defense (DoD) for possible use under the Foreign Military Assistance Program (FMAP), pursuant to the Foreign Assistance Act (FAA) (22 USC 2321j). Under the FAA, the USCG, in conjunction with the DoD and DOS, handles vessel transfers to friendly foreign governments. However, the ultimate authority for approval of transfers lies with the DOS. Vessels transferred under FMAP are not required to be free of hazardous substances; however, MACKINAW was cleaned of polychlorinated biphenyls (PCBs) and is expected to go through the GSA process first. Under this scenario, the former USCGC MACKINAW would leave the jurisdiction of the United States and in all probability, be operated as a foreign flag vessel in the navy or coast guard of another nation.
6. Finally, the USCG has authority to convey the vessel to the Coast Guard Auxiliary, the sea-scout service of the Boy Scouts of America, and to other similar organizations under the authority of 14 USC 641. Such disposals are subject to the applicable GSA regulations promulgated pursuant to FPASA. Under this scenario, such organizations would most likely use the former USCGC MACKINAW as a vessel.

### **2.3 Alternative 3: Congressional Mandate to Transfer Ownership of the MACKINAW**

Under this alternative, Congress could direct through legislation that the vessel be transferred directly from the USCG to another federal agency, a state or local government entity, a private entity or group, or a nonprofit organization. This alternative is analyzed because it is reasonably foreseeable that public interest in the vessel could drive Congress to legislatively direct the transfer of USCGC MACKINAW (WAGB-83) by specifying the grantee. As a federal agency, the USCG does not control this legislative process and as such, the USCG cannot determine the details, timing, or the outcome of such legislation.

A congressional mandate legislating transfer of the vessel could include specific environmental or historic preservation protections for the vessel that are in addition to those protections

already required under existing environmental laws. Examples could include legislation designed to protect the historic characteristics of the vessel by placing specific restrictions on a new owner that must be followed in the use, maintenance, or future sale of the vessel. These restrictions could be designed to protect the historic integrity of a vessel, or they could be additional restrictions placed on the transfer of a vessel with certain types of hazardous materials on board.

## **2.4 Alternatives Eliminated from Detailed Analysis**

Under the GSA disposal process, if the USCGC MACKINAW (WAGB-83) is not needed anywhere within the USCG or the DHS, it could be offered to other federal agencies. A possible use of the vessel by other federal agencies is use for parts. Use for parts was dismissed as an alternative because the vessel is a one-of-a-kind vessel and the parts are generally outdated and would not be useful for other vessels.

## **2.5 Impact Summary Matrix**

Appendix G provides an impact summary matrix of the anticipated environmental consequences for each of the alternatives.

## **2.6 Mitigation**

### **2.6.1 Mitigation for Historic and Cultural Resource Impacts**

In accordance with the requirements of the NHPA, the USCG must evaluate whether actions it proposes could affect properties eligible for listing on the NRHP. If USCG properties eligible for listing on the NRHP could be impacted adversely by a proposed USCG action, then the USCG must consult with the appropriate SHPO regarding adverse impacts on historic properties and the means to mitigate those impacts. The Advisory Council on Historic Preservation (ACHP) must be notified of an adverse effect finding (and invited to consult if an MOA is negotiated). The ACHP must then advise the federal agency as to its participation in the process.

### **USCGC MACKINAW (WAGB-83) Eligibility and Documentation**

The USCG determined that USCGC MACKINAW (WAGB-83) is eligible for listing on the NRHP. The excessing, decommissioning, and disposal processes could affect the historic value and integrity of the vessel by terminating the historic use of the vessel or by resulting in its destruction or transfer out of federal ownership. Thus, the USCG concluded that Section 106

consultation for the decommissioning of the USCGC MACKINAW (WAGB-83) was appropriate.

An MOA is currently being negotiated between the USCG and the Michigan SHPO, the draft of which is included as appendix B of this EA. This MOA addresses mitigation of possible adverse effects on the MACKINAW from the excessing, decommissioning, and disposal processes.

The MOA was prepared pursuant to the requirements of the NHPA and the regulations implementing NHPA (36 CFR Part 800, *Protection of Historic Properties*). The MOA specifies Historic American Engineering Record (HAER) documentation as the means to mitigate adverse effects on the historic vessel. The MOA commits the USCG to the preparation of a historic narrative on the USCGC MACKINAW (WAGB-83), photographic documentation of the vessel, and drawings for incorporation into the HAER archives at the Library of Congress (appendix D). The legislative authority for HAER is the 1935 Historic Sites Act (P.L. 74-292) and the 1966 National Historic Preservation Act (P.L. 89-665), as amended in 1980 (P.L. 96-515).

The NHPA Section 106 process commits the USCG to involve the public. To date, the USCG provided mailings to potentially interested parties notifying them of the proposed undertaking and directing them to the Internet, mail, and e-mail for information on the proposed undertaking and the MACKINAW (WAGB-83). The measures specified in the MOA would mitigate the adverse effects of declaring excess, decommissioning, and disposing of the MACKINAW.

#### **Mitigation in the Form of an MOA with Protective Covenants Between SHPOs and the Proposed New Owner(s) of the Vessel**

The USCG examined mitigating the effects of vessel decommissioning and excessing by requiring that the potential new owner sign an MOA with the appropriate SHPO before transfer of the vessel. Such an MOA would require the new owner to protect the historic value of the vessel in perpetuity by stipulating to specific protective measures that would be overseen by the SHPO. Additionally, the MOA would require the current owner of the vessel to enter into a subsequent MOA with the same protections (for signature by the current owner, the appropriate SHPO, and any potential new owner) if, in the future, the current owner wanted to relinquish ownership of the vessel to another party.

In order for such an MOA to be effective, the appropriate SHPO must act as the enforcer of the protective provisions in the MOA and the potential new owner must agree to the protective provisions. The cooperation of these other parties is necessary and the USCG cannot guarantee such cooperation. For this reason, mitigation in the form of requiring the grantee to enter into an MOA in the future is of limited effectiveness.

## **2.6.2 Mitigation of Hazardous Materials**

The USCG must comply with relevant laws and regulations that are designed to manage hazardous materials. In accordance with the Toxic Substances Control Act, the USCG is precluded from the “distribution in commerce” of PCBs or items containing PCBs in concentrations above specified levels. Under the FPMR, GSA regulates the transfer of excess personal property through the utilization and disposal cycle defined in 41 CFR Part 102-36. The transfer of any property that is contaminated with hazardous materials such as PCBs, asbestos, or lead-based paint shall be in accordance with the guidelines established in 41 CFR Part 101-42.

To ensure compliance with the above requirements, the USCG performed a contamination survey of the MACKINAW prior to its decommissioning. The survey provides relevant information about the amount of contamination present on the vessel, and is included as appendix E of this EA. The MACKINAW (WAGB-83) was subsequently cleaned of all PCBs (USCG 2004a).

## **3. Affected Environment**

### **3.1 Introduction**

This chapter describes the cultural, socioeconomic, and environmental 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.

#### **3.1.1 Resources for Analysis**

In compliance with NEPA, CEQ, and USCG regulations and guidelines, the description of the affected environment focuses on those conditions and resource areas that are potentially subject to impacts. These resources include cultural resources, socioeconomic, water resources and water quality, hazardous materials, air quality, noise, fisheries, threatened and endangered species, and public safety.

#### **3.1.2 Resources Dismissed from Detailed Analysis**

Some environmental resources and conditions that are often analyzed in an EA have been omitted from this analysis. Because the USCGC MACKINAW (WAGB-83) is a water-based resource, land-based resources including soils, land use, vegetation, geologic features, wetlands, floodplains, and prime and unique farmlands have been dismissed from detailed analysis in this EA.

The Federal Coastal Zone Management Act of 1972 requires federal agency activities to be consistent with the state's federally approved Coastal Management Program. As assessed in this EA, no significant impacts on coastal resources in the Great Lakes system are anticipated as a result of the proposed action. The purpose of the project is for the USCG to decommission and dispose of the USCGC MACKINAW (WAGB-83). Based on the preceding information, data, and analysis, the USCG finds that the decommissioning and disposal of the USCGC MACKINAW (WAGB-83) is consistent to the maximum extent practicable with the enforceable policies of the potentially affected states' Coastal Management Programs; therefore, the USCG has omitted further detailed examination.

### **3.2 Cultural Resources**

In addition to the analysis under NEPA, consideration of impacts on cultural resources is mandated under Sections 106 and 110 of the NHPA and under 36 CFR Part 800, *Protection of Historic Properties* (Section 106 implementing regulations). All properties that are either listed

or eligible for listing on the NRHP must possess integrity, have significance, and meet certain criteria. Consideration is given to all qualifying characteristics of a historic property, including those that might have been identified subsequent to the original evaluation of the property's eligibility for the NRHP.

There are five historic types of vessels that might be eligible for listing on the NRHP. They are floating historic vessels that are generally greater than 40 feet in length and greater than 20 tons in weight, dry-berthed historic vessels, small crafts less than 40 feet in length, hulks—substantially intact abandoned vessels not afloat, and shipwrecks (USCG 2004b).

Based on the current research and including age, vessel type, significance, and integrity, the USCG finds there is sufficient potential to address NRHP criteria for potential listing of the USCGC MACKINAW (WAGB-83) on the NRHP. The USCGC MACKINAW (WAGB-83) was involved with important maritime heritage, commercial activity, and government activities. The USCGC MACKINAW (WAGB-83) is the sole vessel in the *MACKINAW* Class.

The USCGC MACKINAW (WAGB-83) represents significant, extensive, and enduring maritime heritage for the United States and particularly for the Great Lakes region. During World War II, demands on the iron ore, limestone, coal, and other raw material industries increased remarkably. The flow of these products from the Great Lakes region and the extension of the shipping season through the winter were imperative to the war effort. Meanwhile, federal vessels from around the United States were transferred to the North Atlantic to support the war. As a result, the Great Lakes region was absent of the icebreakers that enabled freighters and other craft to travel the needed shipping lanes during the ice season (USCG 2004b).

In 1943, Congressman Bradley (MI) proposed that an icebreaker be commissioned for use only within the Great Lakes. Plans for the nation's largest and strongest icebreaker, USCGC MACKINAW, commenced. The vessel's primary initial mission would be icebreaking in order to keep shipping lanes passable and maintained through and only within the Great Lakes (USCG 2004b). The implementation of the USCGC MACKINAW (WAGB-83) would continue domestic coal supplies moving westward and iron ore and grain flowing eastward to support the war.

The USCGC MACKINAW (WAGB-83) was designed by Gibbs and Cox, Naval Architects. Per the original 1940s proposal by Congressman Bradley (MI), the vessel plans were expressly designed for icebreaking missions only within the Great Lakes. The USCGC MACKINAW (WAGB-83) is the only icebreaking cutter in the *MACKINAW* Class of vessels. The USCGC MACKINAW (WAGB-83) represents the distinctive and successful type of period-specific vessel design and construction. Innovative, unique, and distinctive features of the USCGC MACKINAW (WAGB-83) include the front propeller, the ship's displacement, heeling system, fantail design, and wood decks (USCG 2004b).

The USCGC MACKINAW (WAGB-83) is the oldest working icebreaker in the Great Lakes. The keel of the USCGC MACKINAW (WAGB-83) was laid 2 March 1943, by Toledo Shipbuilding Company, Toledo, Ohio. American Shipbuilding and Drydock Company,

Cleveland, Ohio, subsequently assumed the construction of the USCGC MACKINAW (WAGB-83) when the Toledo Shipbuilding Company declared bankruptcy. The vessel cost \$10 million to build (USCG 2004b). USCGC MACKINAW (WAGB-83) was commissioned in late 1944 (Canney 2000), and arrived at her home port of Cheboygan, Michigan, on 30 December 1944 (Hebert 1998). One of the ship's first duties was to escort a trio of newly constructed 4,000-ton freighters through heavy ice out of the lakes via Chicago and the Mississippi River. It was reported the freighters were constructed for approximately \$2 million each (Walsh 1994).

The USCGC MACKINAW (WAGB-83) has been known and respected as the most reliable vessel faring the Great Lakes. Countless freighters and other craft that became ice-locked have been rescued by the USCGC MACKINAW (WAGB-83). Of particular note for the USCGC MACKINAW (WAGB-83) is the 1948 ice season when, in the lower lakes region near Buffalo, New York, 12 vessels became ice-locked. The USCGC MACKINAW (WAGB-83) freed each of the vessels (USCG 2004b).

### **3.3 Socioeconomics**

#### **3.3.1 Great Lakes**

The Great Lakes is a group of five large freshwater lakes in central North America, interconnected by natural and artificial channels. From west to east, they are Lake Superior, Lake Michigan, Lake Huron, Lake Erie, and Lake Ontario. Lake Michigan lies entirely within the United States; the others form part of the border between the United States and Canada. The combined surface area of the lakes is slightly more than 94,000 square miles. Together, the lakes drain a total of about 290,000 square miles in Canada and the United States. The primary outlet of the system is the St. Lawrence River. The lakes are bordered by the Canadian province of Ontario and by eight U.S. states: New York, Pennsylvania, Ohio, Indiana, Michigan, Illinois, Minnesota, and Wisconsin (USCG 2001).

The Great Lakes serve as the focus of the industrial heartland of North America. Four of the 20 largest cities in North America (Chicago, Detroit, Toronto, and Cleveland) lie on the shores of the Great Lakes system and owe much of their wealth to commerce attracted to the lakes. The lakes also form an important recreational resource with about 10,900 miles of shoreline, rich sport fisheries, and numerous beaches and marinas (USCG 2001).

The Great Lakes form one of the world's busiest shipping arteries. Since the completion in 1959 of the St. Lawrence Seaway (a system of dredged channels, canals, and locks) the lakes have been open to medium-sized oceangoing vessels. Canals and waterways also connect the lakes to the Gulf of Mexico via the Mississippi River, and to the Atlantic Ocean via the Hudson River and Erie barge canal. The lakes and channels are closed to shipping between December and April, when ice impedes passage. Historically, the Great Lakes have been a major route for iron ore shipments from the north to steel-producing plants in the lower lakes region. Grain grown in the Great Plains is another important cargo (USCG 2001).

### 3.3.2 Economic Environment

**Great Lakes Region.** An average of 200 million tons of cargo passes through the Great Lakes each year. Major commodities shipped on the Great Lakes each season include 72.3 million tons of iron ore and 41 million tons of coal. Dry-bulk shipping generally begins in early March and extends until the end of January. One 65,000-ton cargo of iron ore keeps a major steel mill in operation for more than 4 days. One 65,000-ton coal cargo produces enough electricity to power the greater Detroit area for 1 day (USCG 2004c). “Even though shipping out of Lake Superior is halted for two months each winter, Great Lakes freighters move up to 20 million tons of iron ore, grain, coal, cement, stone and other cargo during a typical ice season” stated Glenn Nekvasil, spokesman for the Lake Carriers Association, which represents the owners of U.S.-registered freighters (Kalamazoo Gazette 2001).

Steel mills in the Great Lakes basin account for more than 125,000 jobs. The iron ore mines of Minnesota and Michigan employ 8,600 men and women. These industries rely on the efficiency of Great Lakes shipping to deliver their raw materials (Carr 1994).

Commander Joe McGuiness, 9th District Aids to Navigation Assistant Branch Chief stated, “Icebreaking on the Great Lakes is a key to the region’s economy. We help our industries maintain global competitiveness. We keep the shipping lanes open a month longer in winter and open them up earlier in the spring. These longer shipping seasons mean the factories do not have to stockpile so much raw materials. That reduces inventory costs, so the cost of manufacturing is lower. We clear the ways so ships carrying coal can reach power plants resulting in lower cost, yet reliable electricity for everyone. Barges keep gasoline and home heating oil flowing north. For the average citizen this means lower cost for heating oil and gasoline. The region needs shipping, and shipping needs USCG icebreaking (USCG 2004d).”

The USCGC MACKINAW (WAGB-83) has been described as “...an essential link in the nation’s chain of commerce.” It opens shipping lanes and provides direct assistance to ships that carry millions of tons of cargo to the nation’s steel mills, electric utilities, and other major employers (Kalamazoo Gazette 2001).

**Cheboygan, Michigan.** Cheboygan, Michigan, is the home port for the USCGC MACKINAW (WAGB-83). Cheboygan’s main industries are tourism, farming, commercial fishing, wood and metal fabrication, limestone, and paper production (Cheboygan 2004a). The population of Cheboygan in 2000 was 5,295. The median household income was \$25,033, and the median house value was \$68,800 (Cheboygan 2004b). In Cheboygan County in the year 2000, the population was 26,448 and there were 10,835 households (Census Bureau 2000).

**Duluth Floating Maritime Museum.** Bob Hom, Director of Operations for the Duluth Floating Maritime Museum, provided the following information on museum operations that can be used to estimate economic impact of use of the USCGC MACKINAW (WAGB-83) in a museum setting (Hom 2004).

The Duluth Floating Maritime Museum contains the ships USCGC SUNDEW and SS WILLIAM A. IRVIN, and the tug LAKE SUPERIOR. Ships maintained as a floating museum

either need to be dry docked and all areas in the hulls designed for water intake welded shut, or a bubbler system needs to be installed to keep water from freezing in the hull of the ship during cold weather. Welding of hull openings in a dry-dock situation is estimated to cost \$40,000 to \$50,000. If a bubbler system is used to prevent freezing, the ships need to be monitored on a daily basis, and continuous electrical service provided to ensure the system does not fail. Serious damage to ships can occur in a short period of time if water freezes in the hull. The main cyclic maintenance requirement is painting of the hull every 6 to 7 years. Contracts for painting hulls range from \$130,000 to \$160,000.

Ships at the Duluth Floating Maritime Museum are not heated during the winter because they require approximately 75 gallons of diesel fuel per day to heat. For this reason, the ships require annual winterization in addition to the bubbler systems. Routine maintenance of the ships at the Duluth Floating Maritime Museum is accomplished with part-time maintenance people during warm weather months. Annual maintenance requirements for the IRVIN cost approximately \$20,000 per year (this figure is for direct costs only and does not include overhead costs). Annual maintenance costs for the USCGC MACKINAW (WAGB-83) would be greater than they are for the IRVIN. Mr. Hom estimated they could be as much as double those of the IRVIN.

The Duluth Floating Maritime Museum is part of the Duluth convention center complex. This complex provides for all overhead costs not included in the above figures. In addition, there is no cost to the organization for dockage, as they own the docks where the ships are housed.

The IRVIN at the Duluth Floating Maritime Museum receives approximately 75,000 visitors per year. However, the SUNDEW receives only approximately 9,000 visitors per year because it is a smaller ship. The fact that the museum is collocated with the convention center, and is visibly located near where the St. Lawrence Seaway enters into the port, contributes to the level of visitation the museum receives.

***MACKINAW (WAGB-83) Economic Efficiency.*** USCGC MACKINAW (WAGB-83), constructed in 1944, is a one-of-a-kind ship; it is the only 290-foot WAGB in service (Midwest Connection 2003). In terms of routine operations, the USCGC MACKINAW (WAGB-83) has the following capabilities:

- 36-inch level icebreaking capability ahead (none astern), and refrozen brash icebreaking capability greater than 60 inches
- the capability to circumnavigate a beset 1,000-foot vessel in heavy ice (32 inches solid level) in 30 minutes
- a fresh water carrying capacity of 22,000 gallons; enough for a crew of 75 for 7 days
- the capacity to retain 4 days of black and grey water for a crew of 75
- the capacity to retain 7 days of trash for a crew of 75
- a fuel oil capacity of 276,000 gallons, giving the ship a range of 41,000 nautical miles at 11 knots
- no AtoN capabilities (USCG 2005)

There have been no major upgrades to engineering systems, so maintenance and training requirements are higher than on modern ships. The crew has been reduced to a minimum level to provide needed maintenance, and to operate safely in an extremely demanding environment (USCG 1994a). Since the ship is more than 60 years old, necessary repairs are increasing in frequency. Parts for the USCGC MACKINAW (WAGB-83) must be custom-manufactured, dramatically increasing the cost of repairs. For example, in 1994 the USCGC MACKINAW (WAGB-83) broke its Number Three main diesel engine lower crankshaft in five places. The broken crankshaft was estimated at \$100,000 to repair, but collateral damage was estimated at up to \$1 million (USCG 1994b). The USCGC MACKINAW (WAGB-83) can generate 10,000 horsepower when the ship is fully functional. In the 18 months preceding December 2004, the USCGC MACKINAW (WAGB-83) was fully functional for only 3 days (Kalamazoo Gazette 2001).

**GLIB (WLBB-30) Economic Efficiency.** The new GLIB vessel (WLBB-30) is constructed with state-of-the-art technology and comes into service in October 2005. The GLIB vessel is expected to be very reliable with few, if any, mechanical breakdowns with routine maintenance.

In terms of routine operations, the GLIB vessel has:

- a 32-inch level icebreaking capability, both ahead and astern, and 10-foot refrozen brash icebreaking capability
- the capability to circumnavigate a beset 1,000-foot vessel in heavy ice (32 inches solid level) in 12 minutes
- a fresh water carrying capacity of 27,500 gallons; enough for a crew of 50 for 10 days
- the capacity to retain 10 days of black and grey water for a crew of 50
- the capacity to retain 10 days of trash for a crew of 50, as well as separate plastics, glass, and paper
- a fuel oil capacity of 130,896 gallons, giving the ship a predicted range of 4,000 nautical miles at 12 knots, or 9,000 nautical miles at 9 knots
- an AtoN capability equivalent to that installed on the 225-foot Historic Tender Class Buoy Tenders (USCG 2005)

### 3.3.3 Social Environment

The USCGC MACKINAW (WAGB-83) is distinctive and recognizable. The USCGC MACKINAW (WAGB-83) is a fixture in the lives of the people of the region, having operated in the Great Lakes and homeported in Cheboygan, Michigan, for more than 60 years. The 42-week Great Lakes shipping season runs from 1 April to 15 January, approximately 12 weeks of which require icebreaking (no icebreaking takes place between 15 January and 30 March) (USCG 1994b, 2005). Since the USCGC MACKINAW (WAGB-83)'s primary function is icebreaking, there are periods of time when the ship is available to participate in community activities. The USCGC MACKINAW (WAGB-83) has participated in events throughout the Great Lakes region, on all lakes except Lake Ontario. The USCGC MACKINAW (WAGB-83)

participates in one or two maritime events each year, usually the Grand Haven Coast Guard Festival and one regatta escort, providing a public face for the USCG at events. The two major regattas on the Great Lakes are the Chicago to Mackinac race and the Port Huron to Mackinac race (USCG 2004e). The USCGC MACKINAW (WAGB-83) is also available for tours and educational events during the off season. “Anywhere we go on the Great Lakes, people know who we are” stated commander Jonathon Nickerson (Kalamazoo Gazette 2001).

***The Christmas Ship.*** The USCGC MACKINAW (WAGB-83) has functioned as “Chicago’s Christmas Ship.” In 2004, the USCGC MACKINAW (WAGB-83) delivered more than 1,000 Christmas trees to be distributed to Chicago’s less-fortunate families with children. The USCGC MACKINAW (WAGB-83) delivered an additional 150 trees to its home port of Cheboygan, Michigan, for less-fortunate families (CCS 2004). In 2004, the crew of the USCGC MACKINAW (WAGB-83) cut the trees themselves to reduce the cost of the operation (TWC 2004).

The Christmas Tree Ship began as a business venture in the late 1800s, by August and Herman Schuenemann who started delivering Christmas trees from Michigan’s Upper Peninsula to Chicago, selling them from the ship. August Schuenemann, known as “Christmas Tree Schuenemann,” died in 1893 when his schooner, the *S. Thal*, sank with all hands. Herman continued the business and died when the *Rouse Simmons*, overloaded with Christmas trees, sank in bad weather in 1912 (Beaver Beacon 2003).

### **3.4 Water Resources and Water Quality**

The USCGC MACKINAW (WAGB-83) has served primarily as a single-mission (icebreaking) vessel in the Great Lakes system. U.S. Army Corps of Engineers (USACE) documents, based on previous studies, indicate that environmental impacts from winter navigation through ice would be most severe in restricted areas such as the rivers connecting the lakes, rather than open water where the shipping channels are far from shore (USCG 2000). While the USCG agrees with this assessment, the fact that the replacement GLIB vessel (WLBB-30) would serve multiple missions, including icebreaking, buoy tending, SAR, marine environmental response, and maritime law enforcement, necessitates consideration of the entirety of the Great Lakes system. Therefore, water resources and water quality are described for the lakes and their connecting rivers because these resources are inextricably connected.

#### **3.4.1 The Lakes**

The USCGC MACKINAW (WAGB-83) has spent its entire history, from conception to impending decommissioning, in a single system of water—the Great Lakes of North America. The Great Lakes, an interconnected system comprised of Lakes Erie, Huron, Michigan, Ontario, and Superior, lie along the northeastern border of the United States and the southeastern border of Canada. Fed into by a watershed that covers approximately 295,000 square miles, the Great Lakes’ 94,000 square miles of water surface covers approximately 6

quadrillion gallons (5,500 cubic miles) of fresh water, representing roughly 18% of the world's fresh surface water, and 95% of the fresh surface water supply of the United States (USEPA 2003a; GLIN 2004). This system is surrounded by approximately 10,900 miles of coastline (GLIN 2004).

While the immense area covered by the Great Lakes ecosystem provides physical variation among the lakes, their interconnectivity, proximity to intense industrialization and agriculture, and rates of outflow that are minimal relative to their combined volume, unite them in their sensitivity to the effects of a wide range of pollutants and impacts.

The northern region of the Great Lakes watershed is typical of the Canadian Shield with a relatively cold climate, and granitic bedrock covered by a thin layer of acidic soils supporting coniferous forests. The southern reaches are warmer, presenting deeper and varied soils that historically supported rich deciduous forests. These forests were replaced by agriculture that is, in turn, being replaced by spreading urban development.

These climatic and physical differences are reflected in differences among the five lakes (table 3-1). Lake Superior, the northernmost in the system, is the largest in volume with a capacity that could contain all of the other Great Lakes as well as three more Lake Eries (USEPA 2003a). This tremendous volume results in a retention time (a measure of how long substances stay in the lake that is based on the mean rate of outflow relative to water volume) of 191 years (USEPA 2003a). Lake Superior is also the deepest and coldest of the Great Lakes. Because of its northernmost position, it is surrounded by coniferous forest with little agricultural development and relatively sparse human population. As a result, the major avenue for entry of pollutants into Lake Superior is airborne transport (USEPA 2003a).

**TABLE 3-1. PHYSICAL CHARACTERISTICS AND HUMAN POPULATION DATA FOR EACH OF THE GREAT LAKES AND THE GREAT LAKES SYSTEM**

		Superior	Michigan	Huron	Erie	Ontario	Totals
Elevation <sup>a</sup>	feet**	600	577	577	569	243	
	meters	183	176	176	173	74	
Length	miles*	350	307	206	241	193	
	kilometers	563	494	332	388	311	
Breadth	miles*	160	118	183	57	53	
	kilometers	257	190	245	92	85	
Average Depth <sup>a</sup>	feet**	483	279	195	62	283	
	meters	147	85	59	19	86	
Maximum Depth <sup>a</sup>	feet*	1,332	925	750	210	802	
	meters	406	282	229	64	244	
Volume <sup>a</sup>	mi <sup>3*</sup>	2,900	1,180	850	116	393	5,439
	km <sup>3</sup>	12,100	4,920	3,540	484	1,640	22,684

**TABLE 3-1. PHYSICAL CHARACTERISTICS AND HUMAN POPULATION DATA FOR EACH OF THE GREAT LAKES AND THE GREAT LAKES SYSTEM**

		Superior	Michigan	Huron	Erie	Ontario	Totals
Water Area	mi <sup>2</sup> *	31,700	22,300	23,000	9,910	7,340	94,250
	km <sup>2</sup>	82,100	57,800	59,600	25,700	18,960	244,160
Land Drainage Area <sup>b</sup>	mi <sup>2</sup> *	49,300	45,600	51,700	30,140	24,720	201,460
	km <sup>2</sup>	127,700	118,000	134,100	78,000	64,030	521,830
Total Area	mi <sup>2</sup> *	81,000	67,900	74,700	40,050	32,060	295,710
	km <sup>2</sup>	209,800	175,800	193,700	103,700	82,990	765,990
Shoreline Length <sup>c</sup>	miles*	2,726	1,638	3,827	871	712	10,210d
	kilometers	4,385	2,633	6,157	1,402	1,146	17,017d
Retention Time	years**	191	99	22	2.6	6	
Population:	U.S. 1990†	425,548	10,057,026	1,502,687	10,017,530	2,704,284	24,707,075
	Canada 1991	181,573		1,191,467	1,664,639	5,446,611	8,484,290
	<b>Totals</b>	<b>607,121</b>	<b>10,057,026</b>	<b>2,694,154</b>	<b>11,682,169</b>	<b>8,150,895</b>	<b>33,191,365</b>
Outlet		St. Mary's River	Straits of Mackinac	St. Clair River	Niagara River/Welland Canal	St. Lawrence River	

Sources: USEPA 2003a

\* Coordinating Committee on Great Lakes Basic Hydraulic and Hydrologic Data, *Coordinated Great Lakes Physical Data*. May 1992.

\*\* *Extension Bulletins E-1866-70*, Michigan Sea Grant College Program, Cooperative Extension Service, Michigan State University, East Lansing, Michigan, 1985.

† 1990–1991 population census data were collected on different watershed boundaries and are not directly comparable to previous years.

Notes:

<sup>a</sup> Measured at Low Water Datum.

<sup>b</sup> Land Drainage Area for Lake Huron includes St. Mary's River.  
 Lake Erie includes the St. Clair-Detroit system.  
 Lake Ontario includes the Niagara River.

<sup>c</sup> Including islands.

<sup>d</sup> These totals are greater than the sum of the shoreline length for the lakes because they include the connecting channels (excluding the St. Lawrence River).

Lake Michigan, the second largest, is the only Great Lake entirely within the United States. The northern part is in the colder, less developed upper Great Lakes region, and includes the home port of the USCGC MACKINAW (WAGB-83) at Cheboygan, Michigan. The northern portion of the lake is sparsely populated, except for the Fox River Valley, which drains into Green Bay. This bay has one of the most productive Great Lakes fisheries, but also receives the wastes from the world's largest concentration of pulp and paper mills. The more temperate southern basin of Lake Michigan is among the most urbanized areas in the Great Lakes system, containing both the Milwaukee and Chicago metropolitan areas. This region is home to

approximately 8 million people; about one-fifth of the total population of the Great Lakes basin (USEPA 2003a).

Lake Huron, which includes Georgian Bay, is the third largest of the lakes by volume. Many Canadians and Americans own cottages on the shallow, sandy beaches of Lake Huron and along the rocky shores of Georgian Bay. The Saginaw River basin is intensively farmed and contains the Flint and Saginaw Bay City metropolitan areas. Saginaw Bay, like Green Bay, contains a very productive fishery (USEPA 2003a).

Lake Erie, although covering 10,000 square miles, has an average depth of only about 62 feet, making it the smallest of the lakes in volume. This small volume, combined with Lake Erie's southernmost position, results in the lake having the greatest exposure to effects from urbanization and agriculture. Because of the fertile soils surrounding the lake, the area is intensively farmed. The lake receives runoff from the agricultural area of southwestern Ontario and parts of Ohio, Indiana, and Michigan. Seventeen metropolitan areas with populations of more than 50,000 are within the Lake Erie basin. Due to its relatively shallow profile, the lake warms rapidly in the spring and summer, and frequently freezes over in winter. Lake Erie also has the shortest retention time at 2.6 years (USEPA 2003a).

Lake Ontario, although slightly smaller in area, is much deeper than its upstream neighbor, Lake Erie, with an average depth of 283 feet. Major urban industrial centers such as Hamilton and Toronto are located on its shore. The U.S. shore is less urbanized and is not intensively farmed, except for a narrow band along the lake. The retention time of Lake Ontario is about 6 years (USEPA 2003a).

### **3.4.2 The Rivers**

The St. Mary's River flows from Whitefish Bay on Lake Superior to Lake Huron. The river is 65 to 75 miles long (depending on the route followed), varies in width from several hundred feet to several miles, and ranges in natural depth from 20 feet to 100 feet. The average discharge of 75,000 cubic feet per second is controlled by regulatory facilities and locks with an average fall of 20 feet. The USACE maintains a minimal navigation width of 1,200 feet upstream of the locks, and 300 feet for one-way traffic and 600 feet for two-way traffic downstream of the locks. The minimum channel depth is 27 feet (USCG 2000).

While water quality in Lake Superior and St. Mary's River upstream of Sault Ste. Marie is reportedly good compared to that downstream (USCG 2000), the entire reach of St. Mary's River, from its headwaters at Whitefish Bay (Point Iroquois and Gros Cap), downstream through the St. Joseph Channel to Humburg Point on the Ontario side, and to the straits of Detour on the Michigan side, is designated an area of concern (AOC) in Annex 2 of the Great Lakes Water Quality Agreement between the United States and Canada (USEPA 2003b). Severe impairment of water quality, sediment (contaminated with arsenic, cadmium, chromium, copper, cyanide, and lead), and biota remain on the Ontario shoreline due to major point source discharges (USEPA 2003b). Contaminants of concern include oils and greases, suspended solids, metals, phenols, ammonia, bacteria, and polycyclic aromatic hydrocarbons

(PAHs) (e.g., petroleum coke) (USEPA 2003b). Turbidity in the St. Mary's River is generally low, except for areas around tributaries that drain watersheds with highly erodible soils (USCG 2000). Turbidity generally decreases from the shore to the channel during open water season, and overall during the winter when the river is ice-covered (USCG 2000).

Drainage water from Lakes Superior, Michigan, and Huron flows through the St. Clair River (39 miles), Lake St. Clair (20 miles), and the Detroit River (32 miles) before flowing into Lake Erie. Channel depths are maintained for navigation (USCG 2000).

The St. Clair River branches into several channels near its mouth at Lake St. Clair, creating a broad delta region. The St. Clair River AOC includes these wetlands from St. Johns Marsh on the west (near Anchor Bay) to the north shore of Mitchell's Bay in Ontario. Agriculture is the predominant land use within the river's watershed; however, intensive development has occurred in and near the cities of Port Huron and Sarnia. The heaviest concentration of industry (including a large petrochemical complex) lies along the Ontario shore near Sarnia. Several communities along the St. Clair River rely on it as their primary source of drinking water. Industries, including petroleum refineries, chemical manufacturers, paper mills, salt producers, and electric power plants, need high-quality water for their operations as well. Ships carrying cargo between the upper and lower Great Lakes use the St. Clair River.

The St. Clair River Remedial Action Plan priorities include contaminated sediment remediation on the Canadian side of the river, elimination of combined sewer overflows (CSOs) and sanitary sewer overflows (SSOs) on both sides of the river, elimination of spills to the river from "chemical valley" downstream of Sarnia, Ontario, and ensuring proper notification when spills do occur (USEPA 2003c).

The Detroit River AOC includes the areas that drain directly to the river and the drainage area of its tributaries in Michigan and Ontario (700 square miles), as well as the city of Detroit "sewershed" (107 square miles). Known causes of concern include urban and industrial development in the watershed, bacteria, PCBs, PAHs, metals, and oils and greases. CSOs and municipal and industrial discharges are major sources of contaminants within the AOC. Stormwater runoff and tributaries in Michigan are also major sources of contaminants. Additional environmental concerns include exotic species, changes in the fish community structure, and reductions in wildlife populations.

Detroit River priorities include control of CSOs and SSOs, point and nonpoint source pollution controls, remediation of contaminated sediments, habitat restoration, and pollution prevention.

### **3.5 Hazardous Materials**

Hazardous materials are identified and regulated under the Comprehensive Environmental Responsibility, Compensation, and Liability Act (42 USC 103), the Occupational Safety and Health Act (OSHA) (29 USC 15), and the Emergency Planning and Community Right-To-Know Act (42 USC 116). Hazardous materials can be defined as any substance or material that is harmful to human health or the environment and is regulated by federal, state, or local law.

### **3.5.1 The Great Lakes**

While a wide variety of cargo is transported on the Great Lakes, including petroleum products and other potentially hazardous substances, a comprehensive listing is unavailable. Winter oil spills have been a consistent environmental concern with winter navigation because of the widespread effects that could occur and the potential difficulties associated with remediating such spills during the winter. A study of oil spills on the St. Mary's River indicated that no oil spills occurred as a result of a vessel accident such as grounding or collision; instead, all spills occurred during operational activities such as refueling (USCG 2000).

### **3.5.2 USCGC MACKINAW (WAGB-83)**

The MACKINAW (WAGB-83) was surveyed for hazardous materials (i.e., asbestos, lead-based paint, and PCBs) in 2001. The survey revealed that the vessel did contain PCBs at regulated levels, as well as asbestos-containing materials and lead-based paints (appendix E). In preparation for potential decommissioning, the vessel has since been cleaned of PCBs (USCG 2004a).

In terms of routine operations, the MACKINAW has the capacity to hold waste oil after separation from water.

### **3.5.3 GLIB (WLBB-30)**

The new GLIB vessel is constructed using state-of-the-art technology, incorporating minimal potentially hazardous materials in her construction. In terms of routine operations, the GLIB vessel's environmentally friendly systems include:

- Double-bottom hull to move fuel tanks away from hull bottom.
- Box-type coolers are used for machinery cooling water. All cooling water stays internal to the ship, preventing any potential leakage from being improperly discharged (similar to nuclear plant designs).
- Zero discharge of gray water and all trash is retained aboard.
- Diesel engines that meet the latest International Convention for Prevention of Marine Pollution from Ships (MARPOL) regulations for engine emissions.
- Propulsion pods that incorporate multiple seals between the lubricated parts and the pod exteriors, including a void space to detect water ingress or oil egress.
- The capability of providing maritime environmental response through the deployment of a Vessel of Opportunity Skimming System (VOSS). The VOSS skims oil from the surface of the water to inflatable oil barges. The cutter has the capability to handle two inflatable barges with capacity of 28,000 gallons each (USCG 2005).

### **3.6 Air Quality**

The U.S. Environmental Protection Agency (USEPA) classifies air quality based on standards, called National Ambient Air Quality Standards (NAAQS), described in the Clean Air Act for specific pollutants such as carbon monoxide, suspended particulates, ozone (O<sub>3</sub>), sulfur dioxide, and nitrous oxides. In general, the areas around the Great Lakes that do not support intense industrialization, such as the northern portions of the region near the St. Mary's River, are in attainment of air quality standards. Relatively southern and industrialized reaches of the Great Lakes system, such as the areas around the St. Clair and Detroit River system, usually do not meet air quality goals. Counties in this region are usually designated as nonattainment areas for various pollutants (USCG 2000). While states that have nonattainment areas generally have state implementation plans (SIPs) for improving air quality and moving toward attainment status, these SIPs do not regulate emissions of maritime vessels.

### **3.7 Noise**

Noise, generally defined as undesirable sound, can have impacts on both the human environment and biota in the aquatic environment. Factors that make noise undesirable in the human environment are that it could interfere with communication, result in damage to hearing, and cause physiological changes leading to fatigue and behavioral reactions. In the aquatic environment, noise can interfere with natural behaviors of aquatic organisms. In either environment, the type and characteristics of the noise, the distance between the noise source and receptor, receptor sensitivity, and time of day are important considerations when estimating the impacts of a noise source. The primary concerns regarding noise and potential environmental effects for this EA relate to the human environment, both onboard and in proximity to the USCGCs MACKINAW (WAGB-83) and GLIB vessel (WLBB-30), and to biological resources behaviors.

Sound is measured with instruments that record instantaneous sound levels in decibels (dB). "A-weighted" decibel (dBA) measurements are used to characterize sound levels that can be sensed by the human ear. "A-weighted" denotes the adjustment of the frequency content of a noise event to represent the way in which the average human ear responds to the noise events.

The Noise Control Act of 1972 directs federal agencies to comply with applicable noise control regulations. In 1974, USEPA provided information on negative effects of noise such as hearing damage, sleep disturbance, and communication disruption, and identified indoor and outdoor noise limits that protect public health and welfare. OSHA and a number of human factor design guidelines, including those published by the American Bureau of Shipping (ABS) have prescribed values for intensities and exposure duration at which individuals can safely be subjected to noise. The purpose of these guidelines is to protect the individual from permanent and short-term hearing damage.

Sound quality criteria promulgated by the USEPA, the U.S. Department of Housing and Urban Development, and DoD have identified noise levels to protect public health and welfare with an

adequate margin of safety. These levels are considered acceptable guidelines for assessing noise conditions in an environmental setting. Noise levels below 65 dB are generally considered to be normally acceptable in suitable living environments.

Noise is present in most compartments of a ship and is difficult to avoid. Noise comes from numerous sources including engines, generators, pumps, and air conditioners. While there are many human physiological and physical impacts of noise in the workplace that cause fatigue and negatively impair human performance, guidelines used to prescribe acceptable noise levels onboard ships are established and used solely to prevent long-term hearing loss (Calhoun 1998).

Long-term exposure to excessive noise can result in permanent hearing loss. The extent of the hearing damage is dependent on noise intensity and frequency. Temporary loss of hearing is the result of short-term exposure to noise and can lead to permanent hearing loss (Calhoun 1998).

The sound levels and permissible duration of exposure time per day given by OSHA are provided in table 3-2 and are a good generalization of standards used by the military (Calhoun 1998).

**TABLE 3-2. GUIDELINES FOR SOUND LEVELS AND PERMISSIBLE DURATION OF EXPOSURE PER DAY**

Decibels (dBA)	Hours
90	8.0
92	6.0
95	4.0
97	3.0
100	2.0
105	1.0
110	0.5
115	0.25

Source: Calhoun 1998

The ABS has also established guidelines for acceptable and preferred levels of noise (table 3-3) that are adapted from the International Maritime Organization Assembly Resolution A.486, (XII), *Code on Noise Levels Onboard Ships*.

**TABLE 3-3. ABS-RECOMMENDED SOUND LEVELS**

Space	Maximum dBA	Preferred dBA
<b>Work Spaces</b>		
Machinery space (continuously manned)	90	85

TABLE 3-3. ABS-RECOMMENDED SOUND LEVELS

Space	Maximum dBA	Preferred dBA
Machinery space (not continuously manned)	110	95
Machinery control rooms	75	55
Workshops	85	70
Nonspecified spaces	90	85
<b>Navigation Spaces</b>		
Navigation Bridge and chartroom	65	55
Listening post, including bridge wings and windows	70	60
Radio rooms	60	45
Radar rooms	65	55
<b>Accommodation Spaces</b>		
Cabins and hospitals	60	45
Mess rooms	65	55
Recreation rooms	65	50
Open recreation areas	75	65
Offices	65	55
<b>Service Areas</b>		
Galleys	75	65
Serveries and pantries	75	65
<b>Normally Unoccupied Spaces</b>		
Spaces not specified	90	85

Source: ABS 2003, Calhoun 1998

Vessel noise produced also affects people and other organisms outside the ship. The intensity and impact of the noise depends on the frequency composition of the sound, the distance from the source to the receptor, the medium through which the sound travels, and the sensitivity of the receptor.

Although most research on the impacts of noise on aquatic organisms has focused on marine fish and cetaceans, it is reasonable to extend the generalities of those results to freshwater systems with the understanding that sound travels differently in the two media. Substantial research does indicate that fish and cetaceans exhibit avoidance behavior in response to engine noise (Acoustic Ecology 2001). Environmental and physiological factors play a part in determining the noise levels that would trigger an avoidance reaction in fish. Fish avoidance-reaction distances are 100 to 200 meters for some vessels, but might be 400 meters for noisier vessels (ICES 1995). At the same time, research conclusions tend to suggest that since the

effects are “transient” (i.e., once the ship passes, behavior returns to normal), then the long-term effects on populations are negligible (Acoustic Ecology 2001).

While specific noise data for USCGC MACKINAW (WAGB-83) are not available, icebreakers in general are reported to produce sound intensities of close to 200 dB (table 3-4). The GLIB vessel (WLBB-30), equipped with an azipod integrated propulsion plant and fixed-pitch screws, would produce less noise than the previous vessel.

### 3.8 Fisheries

Human activities have led to the decline and sometimes extinction of several species native to the Great Lakes. Species that were extirpated in some or all of the Great Lakes include Atlantic salmon, blue pike, and several species of ciscoes. Species whose populations have dramatically declined include American eel, lake sturgeon, lake trout, lake whitefish, lake herring, coaster brook trout, deepwater sculpin, and several species of native unionid clams. Several of these species were used by American Indian tribes for subsistence and ceremonial purposes (GLSC 2004a).

**TABLE 3-4. COMPARABLE AIRBORNE AND UNDERWATER NOISE SOURCES A**

Air Source or Environment	Air Sound Level and Intensity re: 20 µPa <sup>b, c</sup>	Underwater Source or Environment	Ocean Sound Level and Intensity re: 1 µPa <sup>c, d</sup>
Humans can hear their own heartbeat under water		Ambient level in a calm sea	46
Soundproof vault / threshold of human audibility	10	Coastal bay with snapping shrimp ambient noise	71
Whisper or rustle of leaves / motion picture sound stage	20	Shipping channel ambient level, “normal” shipping density	81
Country residence / empty concert hall / speaking range	30	Shipping channel ambient level, “heavy” shipping density	91
Classroom / auditorium / conference room	45		106
Typical office / hotel lobby / bank	50		111
Department store / laboratory	55	Avoidance behavior noticed in Bowhead whales	116
Busy dining room / very noisy office / telephone use difficult	60	Avoidance behavior noticed in various whales and dolphins	121
Busy machine shop / raised voice range 2 feet	75	Avoidance behavior in 80% of migrating gray whales	136
Vehicular tunnel / voice communication impractical	85	Maximum allowable exposure to U.S. Navy divers	146
Superhighway / New York subway	90		151

TABLE 3-4. COMPARABLE AIRBORNE AND UNDERWATER NOISE SOURCES A

Air Source or Environment	Air Sound Level and Intensity re: 20 $\mu$ Pa <sup>b, c</sup>	Underwater Source or Environment	Ocean Sound Level and Intensity re: 1 $\mu$ Pa <sup>c, d</sup>
Riveting shop or forge	110	Tug and barge underway, 18 km/hr	171
Propeller plane takeoff at 100 feet (30 meters)	120	Loudest sounds produced by blue whales	180 <sup>5</sup>
Threshold of pain in human hearing	125	Large tanker underway	186
	135	Icebreaker, ATOC (another Navy noise source)	196
	154	Individual LFA Sonar speaker effective source level (one of 18)	215
Ram jet at 1 meter (F-16 with after-burners at 1 meter)	160		221
Saturn Rocket at 20 feet / 5 lbs of TNT at 20 feet	180	SURTASS/LFA system effective source level	241

Source: EII 2003

Notes:

$\mu$ Pa micro Pascal

<sup>a</sup> This chart is only for a sense of approximate comparisons. As humans and airborne sounds are poorly adapted to the undersea environment, and sea creatures and underwater noise sources are poorly adapted to terrestrial sound perception and generation, comparisons on this chart are speculative with respect to impact.

<sup>b</sup> 0dB re: 20  $\mu$ PA refers to the convention of measuring human perceived sounds relative to the threshold of human audibility.

<sup>c</sup> "Sound intensity" expresses a physical property of sound transmission relative to the density of the transmission medium.

<sup>d</sup> 0dB re: 1  $\mu$ PA refers to the convention of measuring underwater sound relative to a known convenient reference point.

No single factor led to the decline of native fish species in the Great Lakes. For migratory species such as Atlantic salmon and American eel, dams are thought to have severed historic migration routes. For other species such as lake trout and blue pike, factors including over-harvest and predation by sea lamprey are considered the major causes of their declines. Alewife, an invasive marine species that is now a major prey species in several Great Lakes, is thought to have led to the decline of ciscoes and perhaps deepwater sculpin in some of the Great Lakes by a combination of predation and competition (GLSC 2004a).

The U.S. Geological Survey's Great Lakes Science Center has conducted lake-wide surveys of the fish communities since 1978 in Lake Superior, and since 1973 in Lake Michigan and Lake Huron. These systematic surveys are performed during specific seasons for each lake, and use standardized methodologies and sampling transects to allow comparison across sampling periods.

Lake Superior supports a variety of commercially, recreationally, or ecologically significant self-sustaining fish species. It is the only Great Lake that has maintained a majority of its native species, and during the past 20 years has undergone progress toward restoration of lake trout, lake whitefish, and lake herring (GLSC 2004b). Predominant prey fish found in a 2003 survey of Lake Superior included (in order of dominance by biomass) lake whitefish, lake herring,

bloater, and rainbow smelt. These four species declined in biomass compared to the 2002 survey. Prey fish biomass has continued to decline since the 1990 peak and is now near the low levels observed from 1978 to 1979 (Gorman et al. 2004).

The surveys of Lake Michigan fish stocks are performed every fall. Alewife was the most abundant prey fish in Lake Michigan in 2003. Whereas, bloater biomass continued its decline in 2003, alewife biomass trended neither upward nor downward between the early 1980s and 2003. The decline in bloater biomass began in 1990 (Madenjian et al. 2004).

The annual trawl surveys of the fish community in Lake Huron have been conducted since 1973. The fish community during 2003 was very different from recent years. Adult alewife abundance during 2003 was extremely low; however, age-0 alewives were more abundant than at any time since 1992. Adult bloater abundance increased slightly, but age-0 bloaters were ubiquitous. Abundances for most other prey species were stable, but round gobies continued to increase at southern ports. Predators in Lake Huron face potential prey shortages. Although overall prey density was high, there were few adult alewives or rainbow smelt available (Schaeffer et al. 2004).

Lake Erie fish stocks are multimillion dollar resources that are vitally important to the commercial and sport fishing industries of four states (Michigan, Ohio, Pennsylvania, and New York) and the Province of Ontario. The abundance and availability of these stocks for harvest have been altered by over fishing, habitat alteration, environmental degradation, and the influx of nonendemic species during the past century (GLSC 2004c).

Maintaining well-balanced fish populations that produce harvestable surpluses for sport and commercial fisheries and restoring a self-sustaining lake trout population in Lake Ontario remains a high priority of the U.S. Fish and Wildlife Service (USFWS), the New York Department of Environmental Conservation, and the Ontario Ministry of Natural Resources. Ongoing research is being conducted to track annual changes in prey fish abundance, determine individual growth rates and define stock-recruit relations, investigate the effect of changes in prey fish populations on food habits and growth of piscivores, determine the diet of prey fishes, and investigate the effect of alewife planktivory on the zooplankton community (GLSC 2004d).

The USACE identified 66 cold- and warm-water species of fish in the St. Mary's River. The Michigan Department of Natural Resources collaborated with the USFWS, the Bay Mills Indian Community, Ontario Ministry of Natural Resources, and the Chippewa / Ottawa Resource Authority to conduct a survey on the abundance, growth, mortality, and size structure of important fish populations of the St. Mary's River in 2002. This survey was a continuation of a series of investigations using similar methodologies since 1975. The report focused on the status of five resident species of particular interest to anglers. Abundance was stable across the survey series for most species. Two important species, northern pike and lake herring, exhibited declines in 2002. It was not fully clear what accounted for lake herring decline as their mortality rate was low (Fielder et al. 2004).

Lake herring move into or out of the St. Mary's River to spawn or to thermoregulate. The U.S. Geological Survey USFWS, National Biological Service—Ann Arbor Michigan Laboratory studied the effects of vessel traffic on lake herring production and larval survival during ice-

cover in the St. Mary's River during the winters of 1994 to 1996. No significant adverse effects of winter navigation on fish populations in the St. Mary's River were identified by this research effort (NBS 1996).

The Michigan Department of Natural Resources Alpena Great Lakes Fishery Station, in cooperation with the Ontario Ministry of Natural Resources and Bay Mills Reservation, conducted research on the potential effects of winter navigation on fish populations in the St. Mary's River, Michigan, from 1993 through 1996. Lake herring spawning areas were identified in areas possessing similar rocky bottoms away from the fast currents in the channel. The results of this research effort suggest that there is a healthy, viable population of lake herring in the St. Mary's River, although it might be reduced in number from historical levels. This study did not identify any significant effects of winter navigation activities on fish populations of the St. Mary's River (MDNR 1997a, b).

### 3.9 Threatened and Endangered Species

Table 3-5 lists the federally endangered and threatened species that occur in the Great Lakes region and the habitat requirements for each species. Isle Royal, Michigan, and the north shore of Lake Superior, near Taconite Harbor, Minnesota, are considered critical habitat for the gray wolf. Table 3-6 lists Michigan's state-listed endangered and threatened fish that have been found in recent surveys of the St. Clair and Detroit River systems. Table 3-7 lists Michigan's endangered or threatened mussels that have been found in the St. Clair and Detroit River systems.

**TABLE 3-5. GREAT LAKES FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES**

Common Name	Scientific Name	Habitat	Classification
Gray wolf	<i>Canis lupus</i>	Northern forests	Threatened / Endangered
Piping plover	<i>Charadrius melodus</i>	Sandy beaches; bare alluvial and dredge spoil piles – breeding	Endangered
Pitcher's thistle	<i>Cirsium pitcheri</i>	Stabilized dunes and blowout areas	Threatened
Kirtland's warbler	<i>Dendroica kirtlandii</i>	Jack pine – breeding	Endangered
Northern riffle shell	<i>Epioblasma torulosa rangiana</i>	Detroit River	Endangered
Peregrine falcon	<i>Falco peregrinus</i>	Potential breeding and release sites	Endangered
Bald eagle	<i>Haliaeetus leucocephalus</i>	Breeding, wintering	Threatened / Endangered
Dwarf Lake Iris	<i>Iris lacustris</i>	Partially shaded sandy-gravelly soils on lakeshores	Threatened

**TABLE 3-5. GREAT LAKES FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES**

Common Name	Scientific Name	Habitat	Classification
Michigan monkeyflower	<i>Mimulus glabratus</i> var. <i>michiganensis</i>	Saturated soils	Endangered
Eastern prairie fringed orchid	<i>Platanthera leucophaea</i>	Wet grassland	Threatened
Houghton's goldenrod	<i>Solidago houghtonii</i>	Moist sand beach flats and between dune ridges	Threatened

Source: USACE 1994

**TABLE 3-6. ST. CLAIR AND DETROIT RIVER SYSTEMS MICHIGAN-LISTED ENDANGERED AND THREATENED FISH**

Common Name	Scientific Name	Life Stage	Classification
Lake sturgeon	<i>Acipenser fulvescens</i>	Adult	Threatened
Lake herring	<i>Coregonus artedii</i>	Larva	Threatened
Mooneye	<i>Hiodon tergisus</i>	Adult	Peripheral
Silver chub	<i>Hybopsis storeriana</i>	Adult	Special Concern
Black redbhorse	<i>Moxostoma duquesnei</i>	Adult	Rare
River redbhorse	<i>M. carinatum</i>	Adult	Rare

Source: USACE 1994

**TABLE 3-7. ST. CLAIR AND DETROIT RIVER SYSTEM MICHIGAN-LISTED ENDANGERED AND THREATENED MUSSELS**

Common Name	Scientific Name	Location	Classification
Purple wartyback	<i>Cyclonaias tuberculata</i>	Upper Detroit River	Rare
Snuffbox	<i>Dysnomia triquetra</i>	Upper Detroit River	Threatened
Northern riffle shell	<i>D. torulosa rangiana</i>	Detroit River	Endangered
Hickory nut	<i>Obovaria olivaria</i>	Upper Detroit River and Lake St. Clair	Special Status
Round hickory nut	<i>O. subrotunda</i>	Upper Detroit River	Threatened
Salamander mussel	<i>Simpsoniconcha ambigua</i>	Upper Detroit River	Endangered
Bean mussel	<i>Villosa fabalis</i>	Upper Detroit River	Endangered

Source: USACE 1994

### **3.10 Public Safety**

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. Public safety is one of the USCG's primary missions, as the USCG is the prominent overseer of the safety of the Great Lakes shipping industry and private boaters. Major members of the U.S. MTS include federal agencies, commercial groups, state and local groups, and public and community groups (USCG 2002a).

#### **3.10.1 MACKINAW (WAGB-83)**

The MACKINAW (WAGB-83) breaks ice and extends the shipping season in the Great Lakes shipping lanes through approximately 15 January and resumes icebreaking in April. No icebreaking is typically done during the period of time between 15 January and 1 April (USCG 1994a). The longer shipping season allows the shipping industry more time to complete their job in a safer, less time-constrained manner. Breaking ice, and thus extending the shipping season, contributes to the safety of the public involved in the Great Lakes shipping industry. The MACKINAW (WAGB-83) also performs SAR functions, which contribute to the safety of the public involved in the shipping industry, as well as private boaters.

The MACKINAW (WAGB-83) is equipped with small arms in support of law enforcement functions (USCG 2005). The MACKINAW (WAGB-83) has a stopping distance of 1,000 feet.

#### **3.10.2 GLIB (WLBB-30)**

In support of public safety, the new GLIB vessel (WLBB-30) would:

- provide the same level of icebreaking service as the MACKINAW (WAGB-83)
- be equipped with six 50-caliber machine guns in addition to small arms in support of law enforcement functions (USCG 2005)
- have an anticipated stopping distance of less than 1,000 feet
- be equipped to handle SAR operations and environmental cleanup

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## 4. Environmental Consequences

### 4.1 Introduction

This chapter presents the potential environmental impacts of the no action and proposed action alternatives analyzed in this EA. Potential direct, indirect, and cumulative impacts are addressed in the context of the scope of the proposed action as described in Section 2.2, and in consideration of the potentially affected environment as characterized in Section 3.0.

Cumulative impacts on environmental resources result from incremental effects of proposed actions, when combined with other past, present, and reasonably foreseeable future projects in the area. Cumulative impacts can result from individually minor, but collectively substantial, actions undertaken over a period of time by various agencies (federal, state, and local) or individuals. Informed decision making is served by consideration of cumulative impacts resulting from projects that are proposed, in progress, recently completed, or anticipated to be implemented in the reasonably foreseeable future.

Other projects evaluated in this section include planned or reasonably foreseeable projects by the USCG, other agencies, and businesses. Planned or reasonably foreseeable projects were identified through a review of public documents, Internet searches, other NEPA documents, and local newspaper articles.

The primary project evaluated for cumulative effects is the excessing or decommissioning of the remaining USCG cutters in the 180-foot WLB class. As of 1 January 2001, the USCG had 15 WLBs in its fleet and was actively operating 12. Of the 12 active ships, three operated and were homeported in the Great Lakes: BRAMBLE, ACACIA, and SUNDEW. Table 4-1 indicates the location of these vessels.

**TABLE 4-1. LOCATIONS OF THREE WLB GREAT LAKES VESSELS**

<b>Vessel</b>	<b>Location</b>
BRAMBLE	Pt. Huron, Michigan
ACACIA	Charlevoix, Michigan
SUNDEW	Duluth, Michigan

Modifications of the pier at Cheboygan, Michigan, were made at the home port in Cheboygan. No environmental impacts are expected from the pier modifications or in combination with the proposed action; therefore, the pier modifications would not contribute to cumulative impacts and are not evaluated in detail in this EA.

Cumulative impacts are analyzed and addressed by alternative under each resource below.

## 4.2 Cultural Resources

The USCG determined that the USCGC MACKINAW (WAGB-83) is potentially eligible for listing on the NRHP. The MACKINAW (WAGB-83) achieved national significance through its operation as the only heavy icebreaker on the Great Lakes for more than 60 years, and its resulting contribution to the World War II effort and its contributions to industry in the Great Lakes region. The MACKINAW (WAGB-83) also represents distinctive characteristics of a type, period, and method of construction, and although it has undergone minor renovation over the years, it still retains the integrity of design and engineering function associated with its historic period of significance.

If implementation of an action were to result in an adverse effect on the MACKINAW (WAGB-83) as a cultural resource, or render it no longer eligible for listing on the NRHP, and if the impacts could not be mitigated, the action would represent a significant impact. An adverse effect is found when an undertaking might alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion on the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association.

### 4.2.1 Alternative 1: No Action

Under the no action alternative, the USCGC MACKINAW (WAGB-83), which is eligible for listing on the NRHP, would continue to be under federal ownership; however, if the disposition of the ship has not been determined at the time it is declared excess, it would be relocated to Curtis Bay, Maryland, classified as inactive, and maintained at a level based on available funding. This would result in:

- removal of the property from its historic location
- change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance

This would result in adverse impacts on its historic value since the vessel would not continue to carry out the mission that made it eligible for listing on the NRHP. Mitigation measures discussed in Section 2.7.1.1 of this document would provide for the entire vessel being documented, including the interior and exterior, so that information is not lost and adverse effects on the vessel are mitigated to a level of insignificance. Therefore, with mitigation, this alternative would have no significant impact on cultural resources.

The no action alternative of removing the 1940s-era MACKINAW (WAGB-83) from service would contribute to adverse cumulative impacts on cultural resources resulting from elimination of three, 1940s-era, 180-foot class buoy tenders from the region; however, those impacts would not be significant.

## 4.2.2 Alternative 2: Proposed Action

The USCG determined that the decommissioning and excessing of the MACKINAW (WAGB-83) would result in an adverse effect on the vessel, as defined in 36 CFR 800.5(a) (1) and (2). Potential results from decommissioning and excessing of the MACKINAW (WAGB-83) might include:

- physical destruction of or damage to all or part of the property
- alteration of the property that is not consistent with the Secretary of Interior's standards for the treatment of historic properties
- removal of the property from its historic location
- change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance
- introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features
- neglect, which would cause the property's deterioration
- transfer, lease, or sale of the property out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance
- use of the vessel in an artificial reefing program or as an underwater museum.

Detailed analysis of these potential impacts is included in appendix D.

Mitigation measures discussed in Section 2.7.1.1 of this document would provide for the entire vessel being documented, including the interior and exterior, so that information is not lost and adverse effects on the vessel are mitigated to a level of insignificance. Therefore, with mitigation, this alternative would have no significant impacts on cultural resources.

The proposed action of removing the MACKINAW (WAGB-83) from service would contribute to adverse cumulative impacts on cultural resources through elimination of 1940s-era, 180-foot class buoy tenders from the region; however, those impacts would not be significant.

Decommissioning of the USCGC MACKINAW (WAGB-83) and subsequent disposal through the GSA process is expected to result in continued use of the ship by federal, state, or local governments, or the private sector; use of the ship as a museum; or use of the ship in an artificial reefing program. The headings below discuss the potential impacts on cultural resources under these circumstances.

### **Continued Use by Federal, State, or Local Governments, or the Private Sector**

governments, or by the private sector would have adverse impacts on cultural resources because it would potentially result in the USCGC MACKINAW (WAGB-83) being removed of certain equipment and components, removed from its historic location, and transferred out of federal ownership. Mitigation measures discussed in Section 2.7.1.1 of this document would provide for the entire vessel being documented, including the interior and exterior, so that

information is not lost and adverse effects to the vessel are mitigated to a level of insignificance. Therefore, with mitigation, continued use by federal, state, or local governments, or by the private sector, would have no significant impacts and would make no contribution to cumulative impacts on cultural resources.

### **Use of Vessel as a Museum**

Transfer of the USCGC MACKINAW (WAGB-83) for use as a museum is anticipated to have adverse impacts on cultural resources because it would result in the USCGC MACKINAW (WAGB-83) being removed of certain equipment and components, potentially removed from its historic location, and transferred out of federal ownership. Mitigation measures discussed in Section 2.7.1.1 of this document would provide for the entire vessel being documented, including the interior and exterior, so that information is not lost and adverse effects on the vessel are mitigated to a level of insignificance. Therefore, with mitigation, use of the vessel as a museum would have no significant impacts and would make no contribution to cumulative impacts on cultural resources.

### **Use of Vessel in an Artificial Reefing Program or as a Submerged Museum**

Transfer of the USCGC MACKINAW (WAGB-83) to a state for use in an artificial reefing program or as a submerged museum would have adverse impacts on cultural resources because it would result in the USCGC MACKINAW (WAGB-83) being stripped of equipment and components, removed from its historic location, transferred out of federal ownership, and sinking of the ship that would ultimately result in physical destruction. Mitigation measures discussed in Section 2.7.1.1 of this document would provide for the entire vessel being documented, including the interior and exterior, so that information is not lost and adverse effects on the vessel are mitigated to a level of insignificance. Therefore, with mitigation, use of the vessel as an artificial reefing program or submerged museum would have no significant impacts and would make no contribution to cumulative impacts on cultural resources.

## **4.2.3 Alternative 3: Congressional Mandate**

Under this alternative, the USCGC MACKINAW (WAGB-83) would be removed from federal ownership, thus resulting in an adverse impact. Prior to transfer, any weaponry, and any sensitive, technologically advanced, or historically significant equipment or components would be removed, potentially altering the ship in such a way that its historical integrity is diminished. If the congressional mandate would include specific historic preservation protections, then damage to, physical destruction of, or neglect of the vessel (as discussed in Section 4.3.2 above) would no longer be a concern. Even if specific historic preservation protections are employed in the mandate, mitigation measures discussed in Section 2.7.1.1 of this document would be necessary to ensure the entire vessel is documented, including the interior and exterior, so that information is not lost and any adverse effects on the vessel are mitigated to a level of insignificance. Therefore, with mitigation, this alternative would have no significant impacts on cultural resources.

Elimination of the 1940s-era USCGC MACKINAW (WAGB-83) under this alternative would contribute to adverse cumulative impacts on cultural resources resulting from elimination of three 1940s-era, 180-foot class buoy tenders from the region; however, those impacts would not be significant.

Uses of the USCGC MACKINAW (WAGB-83) under Alternative 3 would be continued use by federal, state, or local government; or use of the vessel as a museum. Alternative 3 differs from Alternative 2 in that Alternative 3 carries the potential of specific historic preservation protections that would likely make it impossible for the ship to be used in an artificial reefing program. A congressional mandate with specific historic preservation protections that would result in continued use of the ship by a federal, state, or local government, or the private sector; or use of the ship as a museum would provide for greater long-term protection of the historicity of the vessel. However, these uses would be expected to result in the same impacts on cultural resources as those described under Alternative 2.

### **4.3 Socioeconomics**

Socioeconomic impacts would be considered significant if a proposed action would result in a substantial adverse effect upon demographics, employment, income, or housing within the ROI. Disproportionate environmental health and safety risk impacts on either minority populations or low-income populations would also be considered significant under EO 12898, as would disproportionate environmental health and safety risks to children under EO 13045.

#### **4.3.1 Alternative 1: No Action**

*Effect on USCG Economic Efficiency.* Under the no action alternative, the USCGC MACKINAW (WAGB-83) would become inactive and be maintained at a level based on available funding. The estimated cost for storage of the ship in inactive status at Curtis Bay is \$5,000 per month (Morrison 2005). While the cost of maintaining the inactive ship would not be a large percentage of the USCG budget, the agency would need to meet all operational requirements. Expenditure of funds for storing an antiquated ship would not be beneficial to the public or the USCG, and would hinder the agency in meeting its mission.

Because the new GLIB vessel (WLBB-30) is a new, modern ship, maintenance and repair requirements should be significantly reduced from those for the 60-year old WAGB-83, and need for acquisition of one-of-a-kind parts eliminated.

The new GLIB vessel (WLBB-30) has increased economic efficiencies over the MACKINAW (WAGB-83), resulting in beneficial effects on USCG economic efficiency. Because the new GLIB vessel is designed for a smaller crew than the USCGC MACKINAW (WAGB-83) and has greater storage capacities for fresh water, sewage treatment, and trash, the GLIB vessel would be able to operate longer without returning to port than the USCGC MACKINAW (WAGB-83). However, the GLIB vessel has less than half the fuel oil capacity of the USCGC MACKINAW (WAGB-83), resulting in a shorter maximum range. The GLIB vessel is capable

of circumnavigating a beset 1,000-foot vessel in less than half the time the USCGC MACKINAW (WAGB-83) took to perform the same task. The GLIB vessel is equipped with the same AtoN capabilities as historic buoy tenders, although not a routine part of the GLIB's mission. Therefore, the GLIB's operational capabilities exceed those of the USCGC MACKINAW (WAGB-83) (USCG 2005).

The MACKINAW (WAGB-83) has a crew of 75. When delivered in October 2005, the new GLIB vessel (WLBB-30) requires a crew of 55 and 10 shoreside support personnel (e.g., port engineers, training specialists, and contracting specialists) for a total of 65 (USCG 2004e). The new GLIB vessel has permanent accommodations for 62 personnel of mixed gender (USCG 2005). Reduction in crew size results in increased economic efficiency of the services. Taken together, these impacts and beneficial effects on USCG economic efficiency are not anticipated to be significant.

In terms of cumulative impacts, the future economic impacts associated with maintaining the MACKINAW's (WAGB-83) inactive status under the no action alternative would offset some of the beneficial economic effects resulting from the decommissioning and replacing of the 180-foot class buoy tenders and replacing the USCGC MACKINAW (WAGB-83) with the GLIB vessel. However, cumulative impacts are not anticipated to be significant.

***Effect on the Economy and Community of Cheboygan, Michigan.*** There is no USCG "base" in Cheboygan, just the cutter's moorings and a small shoreside office. All USCGC MACKINAW (WAGB-83) crew members live in the community of Cheboygan. Reduction in the number of crew members stationed in Cheboygan, Michigan, would have a negligible adverse impact on the economy and community of Cheboygan (population 5,295). This reduction represents a decrease of less than one-half of 1% in the population of the city of Cheboygan and a decrease of less than one-quarter of 1% of households in Cheboygan County, and is therefore, not significant.

***Effect on the Economy of the Great Lakes Region.*** The new WLBB-30 is capable of handling all icebreaking, SAR, and routine activities formerly handled by the USCGC MACKINAW (WAGB-83), ensuring continued safe and effective operation of the Great Lakes shipping channels. Because the WLBB-30 is a new, state-of-the-art ship, repairs and routine maintenance should be minimal, perhaps resulting in improved performance of the WLBB-30 over the WAGB-83, which could in turn result in negligible beneficial effects on the economy of the Great Lakes region.

***Social Impacts in the Great Lakes Region.*** Because of the tremendous industrial and agricultural productivity of the Great Lakes region, the USCGC MACKINAW (WAGB-83) has been economically and socially important to the region. The town of Cheboygan, Michigan, is relatively small and limited economically. Under this alternative, the USCGC MACKINAW (WAGB-83) would be inactive and relocated to Curtis Bay, Maryland, if final disposition has not yet been determined. The new GLIB vessel's home port is in Cheboygan, where the MACKINAW (WAGB-83) has been for more than 60 years. This change in ships would have a greater social impact on the small town of Cheboygan than the inactive status and relocation of

USCGC MACKINAW (WAGB-83). The associated impacts are not anticipated to be significant.

The GLIB vessel (WLBB-30) would provide the same level of representation at Great Lakes region communities and events as the MACKINAW (WAGB-83), including participating in the Christmas tree ship charity. Some adverse social impacts could occur because the public would experience the new GLIB vessel participating in the activities rather than the old USCGC MACKINAW (WAGB-83), but those social impacts would not be significant. Elimination of the 1940s-era USCGC MACKINAW (WAGB-83) under the no action alternative would contribute to adverse cumulative social impacts resulting from elimination of three 1940s-era, 180-foot class buoy tenders from the region; however, those impacts would not be significant.

### **4.3.2 Alternative 2: Proposed Action**

***Effect on USCG Economic Efficiency.*** Decommissioning of the USCGC MACKINAW (WAGB-83) would have a beneficial effect on USCG economic efficiency by eliminating the ongoing cost of maintenance and storage of the inactive USCGC MACKINAW (WAGB-83) at Curtis Bay, Maryland. The beneficial effects and contributions to cumulative impacts would not be expected to be significant.

***Social Impacts.*** The MACKINAW (WAGB-83) might be socially important to former military personnel that served on the vessel, to the home port of Cheboygan, Michigan, or to the Great Lakes region in general. The USCG has a large presence in the Great Lakes region, and the USCG plans for the new GLIB vessel to participate in events and handle public relations at the same level as the USCGC MACKINAW (WAGB-83). There could be increased adverse social effects from disposing of the USCGC MACKINAW (WAGB-83) to communities that consider the USCGC MACKINAW (WAGB-83) an important part of their local or national history; however, the actual change in ships would have more of a social impact than the actual disposal of USCGC MACKINAW (WAGB-83).

Decommissioning of the USCGC MACKINAW (WAGB-83) and subsequent disposal through the GSA process is expected to result in continued use of the ship by federal, state, or local governments or the private sector; use of the ship as a museum; or use of the ship in an artificial reefing program. The headings below discuss the potential impacts on socioeconomics under these circumstances.

#### **Continued Use by Federal, State, or Local Governments, or the Private Sector**

Socioeconomic impacts of continued use of the USCGC MACKINAW (WAGB-83) by federal, state, or local governments, or by the private sector are somewhat unknown because those potential uses and locations are unknown. However, since the USCGC MACKINAW (WAGB-83) is freshwater rated and not saltwater rated, it would likely continue to be used in the Great Lakes. Should the USCGC MACKINAW (WAGB-83) continue to be used by federal, state, or local governments, its markings as a USCGC would be removed. The ship would still be

visible and recognizable, but no longer associated with the USCG. This could result in some adverse social impacts; however, those impacts are not anticipated to be significant.

### **Use of Vessel as a Museum**

***Community Impacts at the Museum Location.*** The use of the decommissioned USCGC MACKINAW (WAGB-83) as a museum would provide opportunities for community members as well as visitors to tour the ship and learn about its mission and operations. This would require that the vessel be maintained at a level that is appropriate for use as a museum and for continued human activity. Therefore, the effects on the social or economic setting would be beneficial, and would not result in a significant direct or cumulative adverse effect. The community where the museum is situated might also see an economic benefit; however, it would not be anticipated to be significant.

***Economic Impact on the Recipient of USCGC MACKINAW (WAGB-83).*** Should the USCGC MACKINAW (WAGB-83) be transferred to a state, local, or nonprofit entity, the economic effect on the entity could be beneficial or adverse, depending on the nature of the recipient.

If the USCGC MACKINAW (WAGB-83) were to be maintained as a floating museum, the ship would either need to be dry docked and all areas in the hull designed for water intake welded shut, or a bubbler system would need to be installed to keep water from freezing in the hull of the ship during cold weather. Welding of hull openings in a dry-dock situation is estimated to cost \$40,000 to \$50,000. If the entity relies on a bubbler system to prevent freezing, the ship would need to be monitored on a daily basis, and continuous electrical service provided to ensure the system does not fail. The main cyclic maintenance requirement would be painting of the hull every 6 to 7 years. A contract for painting the hull could range from \$130,000 to \$160,000.

Heating the USCGC MACKINAW (WAGB-83) in a museum situation during the winter would require 75 gallons of diesel fuel per day to heat, at a minimum. Annual winterization, in addition to a bubbler system, would be an alternative to heating the ship. Annual maintenance requirements for the USCGC MACKINAW (WAGB-83) would cost approximately \$40,000 per year (this figure is for direct costs only and does not include overhead costs).

Overhead costs not included in the above estimates would be another financial obligation to be considered when determining the economic viability of using the USCGC MACKINAW (WAGB-83) in a museum setting. In addition, there may be a cost to the organization for dockage if the entity does not own the docks where the ship is housed. Additional costs involved in the operation and maintenance of the USCGC MACKINAW (WAGB-83) might need to be factored into the economic impact on a recipient if the organization does not have the necessary infrastructure and overhead in place.

A key to the economic success of an entity operating the USCGC MACKINAW (WAGB-83) as a museum would be adequate visitation. Visitation to the USCGC MACKINAW (WAGB-83) in a museum setting cannot be estimated due to the fact that the potential locations and other associated attractions are unknown.

Some interest has been expressed in using the USCGC MACKINAW (WAGB-83) as a submerged museum offering recreational diving opportunities. If the USCGC MACKINAW (WAGB-83) were to become an underwater museum, the entity responsible for the museum would incur one-time costs to prepare the vessel to be submerged. These costs would be anticipated to be less than the ongoing costs of upkeep as a floating or dry-docked museum; however, the economic benefit derived from a submerged museum would be less because the attraction and use would be limited to scuba divers.

***Social Impacts in the Great Lakes Region.*** Because the USCGC MACKINAW (WAGB-83) is so well-known throughout the Great Lakes Region, providing the public with the ability to visit the ship in a regional location could result in a beneficial social effect on the region, but it would not be anticipated to be significant.

***Social Impacts on Former USCGC MACKINAW (WAGB-83) Crew Members.*** Former crew members might experience beneficial effects from conversion of the USCGC MACKINAW (WAGB-83) to a museum. The USCGC MACKINAW (WAGB-83) in a museum situation would allow former crew members to visit the ship and share their experiences with others, resulting in a beneficial effect on former crew members and perhaps other public visitors; however, the effect would not be anticipated to be significant.

***Cumulative Economic Impact on Recipient of USCGC MACKINAW (WAGB-83).*** Should the USCGC MACKINAW (WAGB-83) be transferred to a state, local, or nonprofit entity, the beneficial economic effects on the entity could be magnified if visitors were drawn to the USCGC MACKINAW (WAGB-83) for its representation of an era of Great Lakes history, rather than the historical significance of the USCGC MACKINAW (WAGB-83) in itself. This could result in increased visitation and improve the economic viability of the USCGC MACKINAW (WAGB-83) as a museum; however, the beneficial effects would not be anticipated to be significant.

***Cumulative Great Lakes Social Impacts Resulting from Conversion of the Ship to a Museum.*** The potential social benefits of conversion of the USCGC MACKINAW (WAGB-83) to a museum could offset the potential negative social impacts of replacing a total of four ships in the Great Lakes region. Preserving the USCGC MACKINAW (WAGB-83) as a museum might provide communities and visitors with a way to connect to a past era, rather than just connecting with the history of the USCGC MACKINAW (WAGB-83); however, the effect would not be anticipated to be significant.

***Cumulative Social Impacts on Former USCG Crew Members.*** Former crew members of the 1940s-era ships being replaced might experience positive impacts from conversion of the USCGC MACKINAW (WAGB-83) to a museum. The modified USCGC MACKINAW (WAGB-83) in a museum situation would allow former crew members to visit the ship and share their experiences with others. The result could have a beneficial effect on former crew members and perhaps other public visitors; however, the effects would not be anticipated to be significant.

### **Use of Vessel in an Artificial Reefing Program or as a Submerged Museum**

Artificial reefing is intended to benefit marine habitat, which in turn could benefit fishing; while a submerged museum is intended for recreational and educational purposes. Socioeconomic impacts and contribution to cumulative impacts from use of the USCGC MACKINAW (WAGB-83) in an artificial reefing program or as a submerged museum cannot be evaluated because the potential locations are unknown and possibly outside of the ROI for this analysis.

### **4.3.3 Alternative 3: Congressional Mandate**

Uses of the USCGC MACKINAW (WAGB-83) under Alternative 3 would be continued use by federal, state, or local government, use of the vessel as a museum, or use of the vessel in an artificial reefing program. Alternative 3 only differs from Alternative 2 in the method of disposal; therefore, these uses would have the same impacts on socioeconomics as those described under Alternative 2.

## **4.4 Water Resources and Water Quality**

Evaluation of environmental consequences to water resources and water quality considers impacts on water resources (shipping lanes for winter navigation) and water quality. Impacts of an alternative would be considered significant if the alternative would result in directly attributable, measurable changes in the condition of the lakes or their connecting rivers in terms of navigability, sediment load, or water quality.

All motor vessels are at risk of impacting water quality in the Great Lakes by releasing fuel through operations accidents (groundings and collisions) or during refueling operations. The number of releases of cured and refined petroleum products and the total volume released each year to U.S. territorial waters varies widely. While data specific to the USCGC MACKINAW (WAGB-83) are not available, USCG data indicate that very few releases were associated with USCG operations between 1973 and 1985, the years for which USCG data are available (USCG 1996).

USCG operations resulted in typically small releases, which were primarily comprised of engine fuel (gasoline or diesel fuel). Virtually all the hydrocarbons from small gasoline releases on water and most of the hydrocarbons from small diesel fuel releases on water evaporate quickly. Typically, small releases of light fuel oils are not persistent in the aquatic environment and thus, rarely cause lasting injury to the aquatic environment or its biological resources—affected resources recover quickly (USCG 1996).

Operation of propeller-driven craft in shallow water near shoreline habitats might resuspend bottom sediments, resulting in increases in turbidity in the water and reduction of overall water quality. In the Great Lakes, vessel lanes are clearly defined with AtoN, and speed limits are posted for vessels to minimize sediment resuspension and shoreline erosion. The USCG, in

regulating vessel traffic and enforcing speed limits in Great Lakes waters, assists in minimizing physical damage to the aquatic environment resulting from routine commercial and recreational boat operations (USCG 1996).

#### **4.4.1 Alternative 1: No Action**

Routine maintenance of the USCGC MACKINAW (WAGB-83) during relocation and inactive status, as outlined for this alternative, would reduce any potential for leaks resulting from deterioration of the vessel. The risk of operational leaks and spills would be greatly reduced because the vessel would be in operation infrequently. Therefore, no significant impacts on water quality are anticipated as a result of this action. Since no potential impacts on water quality are anticipated, this alternative would make no significant contribution to cumulative impacts on water quality. No impacts, either adverse or beneficial, are anticipated relative to sediment loads.

Replacement of the MACKINAW (WAGB-83) with the multimission GLIB vessel (WLBB-30) would be anticipated to have minor beneficial effects on water quality due to its design and new condition. This new vessel has double-hull construction, zero overboard discharge, and oil recovery capability—a VOSS for pollution response. Since only negligible beneficial effects with respect to water quality are anticipated, no significant contribution to cumulative impacts is expected.

#### **4.4.2 Alternative 2: Proposed Action**

Routine maintenance of the USCGC MACKINAW (WAGB-83) during transportation and storage, as outlined for this alternative, would reduce any potential for leaks resulting from deterioration of the vessel. Operational leaks and spills would no longer pose a risk because the vessel would not be in operation. Therefore, no significant impacts on water quality are anticipated as a result of this action. Since no potential impacts on water quality are anticipated, this alternative would make no significant contribution to cumulative impacts on water quality. No impacts, either adverse or beneficial, are anticipated relative to sediment loads.

Decommissioning of the USCGC MACKINAW (WAGB-83) and subsequent disposal through the GSA process is expected to result in continued use of the ship by federal, state, or local governments, or the private sector; use of the ship as a museum; or use of the ship in an artificial reefing program. The headings below discuss the potential impacts on water quality under these circumstances.

##### **Continued Use by Federal, State, or Local Governments, or the Private Sector**

If the vessel is kept in operation by any entity, there would be, at a minimum, slightly increased potential for negligible adverse impacts on water quality in the region of operation as described for the ROI. If the USCGC MACKINAW (WAGB-83) is acquired by an entity that does not

operate and maintain the vessel to the standards employed by the USCG, the risk for adverse impacts on water quality in the region of operation could increase, and there could be the potential for impacts relative to sediment load should the vessel exit defined vessel lanes, run aground, or exceed posted speed limits to avoid resuspension of solids. However, given that continued use by state or local governments, or the private sector, would still be governed by all applicable laws pertaining to protection of water quality and boating safety, any potential impacts would still be anticipated to be nonsignificant. As such, no significant contribution to cumulative impacts on water quality or water resources would be anticipated.

### **Use of Vessel as a Museum**

Use of a decommissioned vessel as a museum might entail removing the vessel from the water and placing it in a location where it would be accessible to the public. Under this scenario, there would be no adverse impact on water quality if the vessel were removed completely from the aquatic environment. However, given the dimensions of this particular vessel, it is more likely that it would remain in the water and serve as a floating museum. In this instance, water quality could be adversely affected if the vessel were to deteriorate in condition. If the vessel is no longer operable, it is likely that most fluids would be drained and the vessel would be maintained at a level that is appropriate for use as a museum and for continued human activity. Therefore, the level of impacts on water quality would be insignificant. If the vessel is still operable and used as a dynamic (operating) museum, the impacts on water quality would be similar to those described for continued use by federal, state, or local governments; or the private sector. These effects are anticipated to be insignificant. Since no potential significant impacts on water quality or water resources are anticipated, this action would make no significant contribution to cumulative impacts on water quality.

### **Use of Vessel in an Artificial Reefing Program or as a Submerged Museum**

If the USCGC MACKINAW (WAGB-83) is used in an artificial reefing program or as a submerged museum, the ship would need to be prepared prior to being sunk. USCG ships contain a wide variety of materials of concern, including hazardous materials, fuels and oil, asbestos, PCBs, paints, other materials of environmental concern (e.g., mercury, refrigerants), and debris (e.g., vessel debris, floatable material, introduced material). The ship would be prepared in accordance with USEPA best management practices (BMPs). States might have additional environmental preparation requirements, which the state would be responsible for meeting. If these procedures are followed, there should be neither significant impacts on water quality or water resources nor contribution to cumulative impacts on such.

### **4.4.3 Alternative 3: Congressional Mandate**

Under a congressional mandate, with the incorporation in the legislation of environmental protections in addition to those already required under existing environmental laws, no significant adverse impacts on the condition of the lakes or their connecting rivers in terms of sediment load or water quality would be anticipated. Without inclusion of environmental protections beyond those already required under existing environmental laws, the potential for

impacts on the condition of the lakes or their connecting rivers in terms of sediment load, water quality, or navigability could increase, but would still be expected to be insignificant. No significant contribution to cumulative impacts on water quality or sediment load is anticipated under this alternative.

The uses of the USCGC MACKINAW (WAGB-83) under Alternative 3 would be continued use by federal, state, or local government; use of the vessel as a museum; or use of the vessel in an artificial reefing program. Alternative 3 only differs from Alternative 2 in the method of disposal; therefore, these uses would have the same impacts on water resources and water quality as those described under Alternative 2.

## **4.5 Hazardous Materials**

Evaluation of environmental consequences relative to hazardous materials considers the potential for hazardous materials found onboard the USCGC MACKINAW (WAGB-83) to contaminate occupants or the environment in the ROI. Impacts of an alternative would be considered significant if the alternative would result in directly attributable, measurable changes in the exposure of occupants or the environment to the hazardous materials onboard the vessel.

### **4.5.1 Alternative 1: No Action**

In preparation for potential decommissioning, the vessel has already been cleaned of PCBs (USCG 2004a), thus any potential environmental impacts due to PCB contamination from the vessel have been negated. The vessel still contains asbestos as well as lead-based paints (appendix E). However, these materials are fully encapsulated or are in a nonvolatile form and, therefore, not available for exposure to humans or the environment. Therefore, no significant adverse effects from hazardous materials onboard the vessel are anticipated. Since no potential significant effects from hazardous materials are anticipated, this alternative would make no significant contribution to cumulative impacts.

Replacement of the MACKINAW (WAGB-83), with the multimission GLIB vessel (WLBB-30) is anticipated to have negligible beneficial effects relative to hazardous materials due to its modern design, which precludes use of materials containing asbestos, PCBs, or lead-based paints. Furthermore, this new vessel has oil recovery capability—a VOSS for pollution response. Since only negligible beneficial effects with respect to hazardous materials are anticipated, no significant contribution to cumulative impacts is anticipated.

## 4.5.2 Alternative 2: Proposed Action

Impacts from hazardous materials under the proposed action would be the same as those described under the no action alternative. Decommissioning of the USCGC MACKINAW (WAGB-83) and subsequent disposal through the GSA process is expected to result in continued use of the ship by federal, state, or local governments, or the private sector; use of the ship as a museum; or use of the ship in an artificial reefing program. The headings below discuss the potential impacts from hazardous materials under these circumstances.

### **Continued Use by Federal, State, or Local Governments, or the Private Sector**

If the vessel is kept in operation by any entity, there would be the same potential for insignificant impacts relative to hazardous materials as presented under the no action alternative. If the USCGC MACKINAW (WAGB-83) is acquired by an entity that does not operate and maintain the vessel to the standards employed by the USCG, the risk for adverse impacts from hazardous materials could increase, but would still be anticipated to be insignificant. Since no potential significant effects from hazardous materials are anticipated, this action would make no significant contribution to cumulative impacts.

### **Use of Vessel as a Museum**

Use of a decommissioned vessel as a museum might entail removing the vessel from the water and placing it in a location where it would be accessible to the public. However, given the dimensions of this particular vessel, it is more likely that the vessel would remain in the water and serve as an on-water museum. In either instance, the potential for adverse impacts from hazardous materials could increase if the condition of the vessel was allowed to deteriorate, but these would probably still be insignificant. If the vessel is still operable and used as a dynamic (operating) museum, the potential impacts would be similar to those described for continued use by federal, state, or local governments, or the private sector. These effects are anticipated to be insignificant. Since no potential significant effects from hazardous materials are anticipated, this action would make no significant contribution to cumulative impacts.

### **Use of Vessel in an Artificial Reefing Program or as a Submerged Museum**

If the USCGC MACKINAW (WAGB-83) is used in an artificial reefing program or as a submerged museum, the ship would need to be prepared prior to being sunk. The USCG would be responsible for preparing the USCGC MACKINAW (WAGB-83) in accordance with USEPA document "National Guidance: Best Management Practices for Preparing Vessels Intended to Create Artificial Reefs." The USEPA document was developed in response to the Maritime Administration's request for USEPA to provide national environmentally based BMPs for the preparation of vessels to be sunk with the intention of creating artificial reefs in permitted artificial reef construction areas.

USCG ships contain a wide variety of materials of concern, including hazardous materials, fuels and oil, asbestos, PCBs, paints, other materials of environmental concern (e.g., mercury, refrigerants), and debris (e.g., vessel debris, floatable material, introduced material). The ship

would be prepared in accordance with the USEPA BMPs. States might have additional environmental preparation requirements, which the state would be responsible for accomplishing.

Once the ship is prepared in accordance with USEPA BMPs, using the ship in an artificial reefing program or submerged museum would not result in a significant impact from hazardous materials, or contribute significantly to cumulative impacts from hazardous materials.

### **4.5.3 Alternative 3: Congressional Mandate**

Under this alternative, regardless of the inclusion, or lack thereof, in the legislation of environmental protections beyond those already required under existing environmental laws, no significant impacts relative to hazardous materials would be anticipated. Since no potential significant effects from hazardous materials are anticipated, this alternative would make no significant contribution to cumulative impacts relative to hazardous materials.

The uses of the USCGC MACKINAW (WAGB-83) under Alternative 3 would be continued use by federal, state, or local government; use of the vessel as a museum; or use of the vessel in an artificial reefing program. Alternative 3 only differs from Alternative 2 in the method of disposal; therefore, these uses would have the same impacts from hazardous materials as those described under Alternative 2.

## **4.6 Air Quality**

The potential impacts on local and regional air quality conditions of a proposed federal action are determined based on the increases in regulated pollutant emissions relative to existing conditions and ambient air quality. Impacts on air quality in NAAQS “attainment” areas are considered significant if the net changes in project-related emissions result in violation of any national or state ambient air quality standards or in exposure of sensitive receptors to substantially increased pollutant concentrations. Impacts on air quality in NAAQS “nonattainment” areas are considered significant if the net changes in project-related emissions result in violation of any national or state ambient air quality standards, an increase in the frequency or severity of a violation of any ambient air quality standard, exceedance of any significance criteria established in a SIP, or delay of attainment of any standard or other milestone contained in a SIP.

Motor vessel operations are a source of engine exhaust emissions, which can contribute to reductions in air quality. The chemicals of primary concern in engine exhaust are PAHs and related heterocyclic compounds. Concentrations of PAHs in the exhaust emissions of correctly tuned diesel engines are very low and derived primarily from traces of unburned fuel. Most emissions are tightly bound to soot particles and are not bio-available to aquatic organisms (USCG 1996). Currently, neither USEPA nor the states surrounding the Great Lakes regulate vessel emissions.

#### **4.6.1 Alternative 1: No Action**

The power plant for USCGC MACKINAW (WAGB-83) meets the emissions standards that were in place in 1943 when her construction began. USCG maintenance and operations standards minimize the release of regulated compounds in the vessel's exhaust emissions. Relocation of the USCGC MACKINAW (WAGB-83) to the USCG yard in Curtis Bay, Maryland, would result in short-term impacts on air quality because the vessel would have to be navigated from the Great Lakes to the USCG yard. Generally speaking, the power plant for the USCGC MACKINAW (WAGB-83) would only be operated infrequently while the ship is inactive. Impacts on air quality from the inactive USCGC MACKINAW (WAGB-83) would not be significant and would be very short term in duration. Since no significant impacts on air quality are anticipated, implementation of this alternative would make no significant contribution to cumulative impacts.

The power plant for the GLIB vessel (WLBB-30) is International Maritime Organization Tier One compliant for engine emissions (USCG 2004). Replacement of the MACKINAW (WAGB-83), with the multimission GLIB vessel (WLBB-30) is anticipated to have beneficial effects on air quality due to its modern design and new condition; however, no significant contribution to cumulative impacts is anticipated.

#### **4.6.2 Alternative 2: Proposed Action**

Transportation of the USCGC MACKINAW (WAGB-83) to the USCG yard in Curtis Bay, Maryland, for temporary storage would result in short-term impacts on air quality as those described under the no action alternative, because the vessel would have to be navigated from the Great Lakes to the USCG yard.

Decommissioning of the USCGC MACKINAW (WAGB-83) and subsequent disposal through the GSA process is expected to result in continued use of the ship by federal, state, or local governments, or the private sector; use of the ship as a museum; or use of the ship in an artificial reefing program. The headings below discuss the potential impacts on air quality under these circumstances.

##### **Continued Use by Federal, State, or Local Governments, or the Private Sector**

If the vessel is kept in operation by any entity, there would be some potential for minimal adverse impacts on air quality in the region of operation. If the USCGC MACKINAW (WAGB-83) is acquired by an entity that does not operate and maintain the vessel to the standards employed by the USCG, the risk for adverse impacts on air quality in the region of operation could increase. However, any potential impacts would still be anticipated to be insignificant. Since no significant impacts on air quality are anticipated, this action would make no significant contribution to cumulative impacts.

### **Use of Vessel as a Museum**

Use of a decommissioned vessel as a museum might entail removing the vessel from the water and placing it in a location where it would be accessible to the public. However, given the dimensions of this particular vessel, it is more likely that the vessel would remain in the water and serve as an on-water museum. In either instance, air quality is not anticipated to show any measurable effect. If the vessel is still operable and used as a dynamic (operating) museum, the impacts on air quality would be similar to those described for continued use by federal, state, or local governments, or the private sector. These effects are anticipated to be insignificant. Since no significant impacts on air quality are anticipated, this action would make no significant contribution to cumulative impacts.

### **Use of Vessel in an Artificial Reefing Program or as a Submerged Museum**

Reefing or submerging activities would produce few air emissions. There would be low levels of air emissions associated with routine activities of towing the ship to the site and sinking actions / monitoring. Carbon monoxide and ozone are the primary air pollutants resulting from the reefing or submerging activities. The principal sources of these pollutants would be transportation, mechanized equipment, and combustion equipment. Related air emissions would not be different than normal traffic on U.S. waterways. There would be no long-term air quality impacts. Therefore, using the ship in an artificial reefing program or submerging the vessel for a museum would result in no significant impacts on air quality, and would not significantly contribute to cumulative air quality impacts.

### **4.6.3 Alternative 3: Congressional Mandate**

Under this alternative, with or without the incorporation in the legislation of environmental protections in addition to those already required under existing environmental laws, no significant adverse impacts on air quality of the ROI would be anticipated. Since no significant impacts on air quality are anticipated, this alternative would make no significant contribution to cumulative impacts.

The uses of the USCGC MACKINAW (WAGB-83) under Alternative 3 would be continued use by federal, state, or local government; use of the vessel as a museum; or use of the vessel in an artificial reefing program. Alternative 3 only differs from Alternative 2 in the method of disposal; therefore, these uses would have the same impacts on air quality as those described under Alternative 2.

## **4.7 Noise**

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. Noise impacts were only considered within the ROI.

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. The significance of above-water noise impact criteria normally is based on a combination of land use compatibility guidelines, factors related to duration and magnitude of the noise level, including the time of day and the conduct of operations, and the noise level produced relative to ambient noise levels. The significance of waterborne noise impacts is typically based on the duration and magnitude of the noise and the responses of aquatic organisms to the noise.

#### **4.7.1 Alternative 1: No Action**

USCG vessels operate in an environment where they are either in open waters distant from people or they are in nearshore waters where numerous other vessels are also operating. Although information is not available regarding the decibel levels produced by USCGC MACKINAW (WAGB-83), large vessels are typically not considered a major source of noise above the water surface. The USCG helps enforce noise ordinances and maintains its own vehicles to comply with these laws. Additionally, USCG personnel participating in excessive noise-generating activities are required to wear ear protection.

Although icebreakers do generate considerable waterborne noise during icebreaking activities, the duration is short. Relocation of the USCGC MACKINAW (WAGB-83) to the USCG yard in Curtis Bay, Maryland, would result in short-term noise-related impacts because the vessel would have to be navigated from the Great Lakes to the USCG yard. While research indicates that fish and cetaceans exhibit avoidance behavior in response to engine noise, up to a distance of 400 meters away for the noisiest vessels, research also suggests that this response is transient—lasting only until the vessel passes out of the response zone—and therefore poses negligible potential for long-term impacts on these resources (Acoustic Ecology 2001). Once relocated, the USCGC MACKINAW (WAGB-83) would be inactive, and operation of the ship would be infrequent.

Replacement of the MACKINAW (WAGB-83) with the multimission GLIB vessel (WLBB-30) is anticipated to have negligible beneficial effects relative to noise due to its modern design and new condition. The azipod propulsion design, combined with fixed-pitch propellers, should result in less cavitation and quieter operations. Since only negligible beneficial effects relative to noise are anticipated, no significant contribution to cumulative impacts is anticipated.

In conclusion, implementation of the no action alternative is not anticipated to result in significant impacts of noise on either the human or the aquatic environment. Since no significant impacts from noise are anticipated, this alternative would make no contribution to cumulative impacts.

## 4.7.2 Alternative 2: Proposed Action

In the short term, temporary storage of the USCGC MACKINAW (WAGB-83) at the USCG yard in Curtis Bay, Maryland would result in impacts relative to noise similar to, but less than, those described for the no action alternative. The impacts would be similar because the vessel would have to be navigated from the Great Lakes to the USCG yard.

Decommissioning of the USCGC MACKINAW (WAGB-83) and subsequent disposal through the GSA process is expected to result in continued use of the ship by federal, state, or local governments, or the private sector; use of the ship as a museum; or use of the ship in an artificial reefing program. The headings below discuss the potential impacts from noise under these circumstances.

### **Continued Use by Federal, State, or Local Governments, or the Private Sector**

If the vessel is kept in operation by any entity, there would be some potential for noise impacts in the region of operation. If the USCGC MACKINAW (WAGB-83) is acquired by an entity that does not operate and maintain the vessel to the standards employed by the USCG, the risk for adverse impacts relative to noise could increase. However, any potential impacts would still be anticipated to be insignificant. Since no significant impacts from noise are anticipated, this action would make no significant contribution to cumulative impacts.

### **Use of Vessel as a Museum**

Use of a decommissioned vessel as a museum might entail removing the vessel from the water and placing it in a location where it would be accessible to the public. However, given the dimensions of this particular vessel, it is more likely that the vessel would remain in the water and serve as an on-water museum. In either instance, noise impacts are anticipated to be insignificant. If the vessel is still operable and used as a dynamic (operating) museum, the impacts relative to noise would be similar to those described for continued use by federal, state, or local governments, or the private sector. These effects are anticipated to be non-significant. Since no significant impacts from noise are anticipated, this action would make no significant contribution to cumulative impacts.

### **Use of Vessel in an Artificial Reefing Program or as a Submerged Museum**

Use of the vessel in an artificial reefing program or submerging as a museum would result in short-term impacts from noise associated with transporting and sinking of the ship at the reefing site. Longer term impacts from noise might result from increased traffic to the site for fishing and diving. These impacts, along with cumulative impacts from noise, cannot be analyzed at this time as the location of the artificial reefing site and potential magnitude of area use are unknown and outside the ROI for this analysis.

### **4.7.3 Alternative 3: Congressional Mandate**

Under this alternative, with or without incorporation in the legislation of environmental protections in addition to those already required under existing environmental laws, no significant adverse impacts relative to noise would be anticipated. Since no significant impacts from noise are anticipated, this alternative would make no contribution to cumulative impacts.

Uses of the USCGC MACKINAW (WAGB-83) under Alternative 3 would be continued use by federal, state, or local government; use of the vessel as a museum; or use of the vessel in an artificial reefing program. Alternative 3 only differs from Alternative 2 in the method of disposal; therefore, these uses would have the same impacts relative to noise as those described under Alternative 2.

## **4.8 Fisheries**

Impacts on fisheries would be considered significant if the action resulted in adverse impacts on large areas of important habitat, measurable decrease in populations of fish species of concern, or long-term change in fish behavior or distribution.

### **4.8.1 Alternative 1: No Action**

To date, research on fish populations in the Great Lakes has been unable to identify any adverse impacts of winter navigation on the examined fisheries (MDNR 1997a, b; NBS 1996). As discussed under “Noise” (Section 4.7.1), fish show behavioral responses to vessel noise, moving away from the vessels at distances related to intensity of vessel noise. However, these behaviors are transient and the animals appear to return to normal activities once the vessel has passed out of their response zone. Therefore, relocation of the USCGC MACKINAW (WAGB-83) through the Great Lakes to Curtis Bay, Maryland, is not anticipated to have significant adverse impacts on fisheries within that system. Since no significant impacts on fisheries are anticipated, this alternative would make no significant contribution to cumulative impacts on this resource.

### **4.8.2 Alternative 2: Proposed Action**

In the short term, temporary storage of the USCGC MACKINAW (WAGB-83) at the USCG yard in Curtis Bay, Maryland, would result in the same insignificant impacts on fisheries as those described for the no action alternative because the vessel would have to be navigated from the Great Lakes to the USCG yard.

Decommissioning of the USCGC MACKINAW (WAGB-83) and subsequent disposal through the GSA process is expected to result in continued use of the ship by federal, state, or local governments, or the private sector; use of the ship as a museum; or use of the ship in an artificial reefing program. The headings below discuss the potential impacts on fish under these circumstances.

### **Continued Use by Federal, State, or Local Governments, or the Private Sector**

If the vessel is kept in operation by any entity, there would be the same potential for insignificant adverse impacts on fisheries in the region of operation as described for the ROI under the no action alternative. If the USCGC MACKINAW (WAGB-83) is acquired by an entity that does not operate and maintain the vessel to the standards employed by the USCG, the risk for adverse impacts on fisheries in the region of operation could increase through reduction of water quality, increased noise levels, or increased emissions levels. However, such impacts, although undesirable, are not anticipated to reach the level of significance for any fisheries in the ROI. Since no significant impacts on fisheries are anticipated, this action would make no significant contribution to cumulative impacts.

### **Use of Vessel as a Museum**

Use of a decommissioned vessel as a museum might entail removing the vessel from the water and placing it in a location where it would be accessible to the public. However, given the dimensions of this particular vessel, it is more likely that the vessel would remain in the water and serve as an on-water museum. In either instance, no adverse impact on fisheries of the ROI is anticipated. If the vessel is still operable and used as a dynamic (operating) museum, the potential impacts on these fisheries would be similar to those described for continued use by federal, state, or local governments, or the private sector. These effects are anticipated to be insignificant. Since no significant impacts on fisheries are anticipated, this action would make no significant contribution to cumulative impacts.

### **Use of Vessel in an Artificial Reefing Program or as a Submerged Museum**

Sunken vessels, due to high vertical profile, attract both pelagic (animals that live in the open sea away from the sea bottom) and demersal (fish that live on or near the ocean bottom, commonly referred to as benthic) fish. Vertical surfaces produce upswelling conditions, current shadows, and other current speed and direction alterations that are attractive to schooling forage fish, which in turn attract species of commercial and recreational importance. Depending on location, vessels might seasonally hold a large biomass of commercially and recreationally important fish species (Navy 2004). The Great Lakes Fishery Commission stated (Gannon 1990):

“The [Artificial Reef] Task Force concluded that artificial reefs as a fishery management technique are unproven in the Great Lakes. [U]se of artificial reefs as a fishery management technique is in its infancy in the Great Lakes and concludes that artificial reefs should be considered experimental and that they require comprehensive monitoring and long-term evaluation which includes ecological and socio-economic perspectives.”

The primary use of a vessel as a submerged museum is for recreational purposes, and therefore, may only incidentally provide beneficial marine habitat. Specific impacts on fish from using the USCGC MACKINAW (WAGB-83) in an artificial reefing program or as a submerged museum, along with cumulative impacts, cannot be analyzed at this time as the location of the artificial reefing site and the ecology of that potential site are unknown and may be outside the ROI for this analysis.

### **4.8.3 Alternative 3: Congressional Mandate**

Under this alternative, with or without the incorporation in legislation of environmental protections in addition to those already required under existing environmental laws, no significant adverse impacts on fisheries of the ROI would be anticipated. Since no significant impacts on fisheries are anticipated, this alternative would make no significant contribution to cumulative impacts.

The uses of the USCGC MACKINAW (WAGB-83) under Alternative 3 would be continued use by federal, state, or local government; use of the vessel as a museum; or use of the vessel in an artificial reefing program. Alternative 3 only differs from Alternative 2 in the method of disposal; therefore, these uses would have the same impacts on fisheries as those described under Alternative 2.

## **4.9 Threatened and Endangered Species**

Impacts on threatened and endangered species would be considered significant if the action resulted in reductions of populations or important habitats that measurably affect the potential survival of the species.

### **4.9.1 Alternative 1: No Action**

Relocation of the USCGC MACKINAW (WAGB-83) to inactive status at the USCG yard in Curtis Bay, Maryland, would require transit of the vessel through the St. Lawrence River and down the northeast coastal shipping lanes to Chesapeake Bay. The greatest opportunity for impact on any threatened and endangered species would be in the coastal transit as this area is highly used by a variety of cetaceans. However, the USCG has implemented a series of protocols in its Atlantic Protected Living Marine Resources Initiative (USCG 1996) designed to minimize impacts on these marine species. Such procedures include reducing speed when entering mapped high-use areas, posting trained lookouts to spot threatened and endangered species, and vessel maneuvering to avoid disturbance to the species and their critical habitats. Therefore, this single transit of the USCGC MACKINAW (WAGB-83) through these shipping lanes is not anticipated to result in significant adverse impacts on threatened and endangered

species. Since no significant impacts on threatened and endangered species are anticipated, this alternative would make no significant contribution to cumulative impacts.

#### **4.9.2 Alternative 2: Proposed Action**

Temporary storage of the USCGC MACKINAW (WAGB-83) at the USCG yard in Curtis Bay, Maryland, would require transit of the vessel through the St. Lawrence River and down the northeast coastal shipping lanes to Chesapeake Bay, resulting in the same insignificant impacts described under the no action alternative.

Decommissioning of the USCGC MACKINAW (WAGB-83) and subsequent disposal through the GSA process is expected to result in continued use of the ship by federal, state, or local governments, or the private sector; use of the ship as a museum; or use of the ship in an artificial reefing program. The headings below discuss the potential impacts on threatened and endangered species under these circumstances.

##### **Continued Use by Federal, State, or Local Governments, or the Private Sector**

If the vessel is kept in operation by any entity, there would be a slightly increased potential for minimal adverse impacts on threatened and endangered species in the area of operation than that described for the ROI under the no action alternative. Since only minimal adverse impacts on threatened and endangered species are anticipated, this action would make no significant contribution to cumulative impacts.

##### **Use of Vessel as a Museum**

Use of a decommissioned vessel as a museum might entail removing the vessel from the water and placing it in a location where it would be accessible to the public. However, given the dimensions of this particular vessel, it is more likely that the vessel would remain in the water and serve as an on-water museum. In either instance, potential impacts on threatened and endangered species are considered negligible. If the vessel is still operable and used as a dynamic (operating) museum, the potential impacts on threatened and endangered species would be similar to those described for continued use by federal, state, or local governments, or the private sector. These effects are anticipated to be insignificant. Since no significant impacts on threatened and endangered species are anticipated, this action would make no significant contribution to cumulative impacts.

##### **Use of Vessel in an Artificial Reefing Program or as a Submerged Museum**

Specific impacts on threatened and endangered species from using the USCGC MACKINAW (WAGB-83) in an artificial reefing program or as a submerged museum, along with cumulative impacts, cannot be analyzed at this time as the location of the artificial reefing site and the ecology of that potential site are unknown and may be outside the ROI for this analysis.

### **4.9.3 Alternative 3: Congressional Mandate**

Under this alternative, with or without incorporation in the legislation of environmental protections in addition to those already required under existing environmental laws, no significant adverse impacts on threatened and endangered species, either direct, indirect, or cumulative, would be anticipated. Since no significant impacts on threatened and endangered species are identified, this alternative would be anticipated to make no significant contribution to cumulative impacts.

Uses of the USCGC MACKINAW (WAGB-83) under Alternative 3 would be continued use by federal, state, or local government; use of the vessel as a museum; or use of the vessel in an artificial reefing program. Alternative 3 only differs from Alternative 2 in the method of disposal; therefore, these uses would have the same impacts on threatened and endangered species as those described under Alternative 2.

## **4.10 Public Safety**

If implementation of the proposed action were to substantially increase risks associated with the safety of USCG personnel (including MACKINAW crew), workers and visitors, Great Lakes commercial ships or personnel, or the local communities; or substantially hinder the USCG's ability to respond to an emergency, it would represent a significant impact. This document assumes that loss of one or more ships or the loss of life would be significant.

### **4.10.1 Alternative 1: No Action**

Under this alternative, the USCGC MACKINAW (WAGB-83) would remain commissioned but inactive at Curtis Bay, Maryland, upon commissioning of the new GLIB vessel (WLBB-30). Maintaining the inactive ship could have a negative impact on worker safety, but that impact would be expected to be insignificant. There would be no impact on public safety from the USCGC MACKINAW (WAGB-83) remaining inactive. Because the impacts on public safety are not significant, no significant contributions would be made to cumulative impacts.

The GLIB vessel (WLBB-30) improves icebreaking capabilities compared with the USCGC MACKINAW (WAGB-83). Also, the GLIB vessel (WLBB-30) is designed as a multifunction ship allowing it to serve a broader spectrum of functions than the WAGB-83 it is replacing. These changes might have some beneficial effect on public safety. The new WLBB-30 is a state-of-the-art ship, requiring less maintenance and repair than the 60-year-old WAGB-83. Reduction in down time for maintenance and repairs could result in increased time available for icebreaking and other routine functions, which could result in a beneficial effect on public safety. The new GLIB vessel has a stopping distance of less than 1,000 feet, compared with the MACKINAW (WAGB-83) has a stopping distance of greater than 1,000 feet. This feature allows for a potential beneficial effect on crew safety. The new GLIB vessel (WLBB-30) is equipped with six, 50-caliber machine guns, in addition to small arms, compared to the

MACKINAW (WAGB-83), which is only equipped with small arms. The GLIB vessel is better equipped to handle law enforcement situations and homeland security operations than the USCGC MACKINAW (WAGB-83).

In summary, replacement of the USCGC MACKINAW (WAGB-83) with the GLIB vessel would potentially result in several beneficial effects on safety; however, those effects are not anticipated to be significant.

In terms of cumulative impacts, replacement of four 1940s-era ships (the three listed in table 4-1, along with the USCGC MACKINAW (WAGB-83)) with modern, state-of-the-art ships could reduce the down time associated with required repairs and maintenance, thus increasing time available for active duty. The result would be negligible to minor beneficial cumulative effects on public safety through increased hours of operation.

#### **4.10.2 Alternative 2: Proposed Action**

Decommissioning of the USCGC MACKINAW (WAGB-83) and subsequent disposal through the GSA process is expected to result in continued use of the ship by federal, state, or local governments, or the private sector; use of the ship as a museum; or use of the ship in an artificial reefing program. The headings below discuss the potential impacts on public safety under these circumstances.

##### **Continued Use by Federal, State, or Local Governments, or the Private Sector**

If the vessel is kept in operation by any entity, there would be no significant adverse impacts on public safety because there are no known operational safety issues with the ship. Because the USCGC MACKINAW (WAGB-83) is an icebreaker and only fresh water rated, the vessel would likely continue to be used on the Great Lakes. Additional icebreaking services in the region would have a beneficial cumulative effect on public safety; however, this effect would not be anticipated to be significant.

##### **Use of Vessel as a Museum**

If the ship were used as an underwater museum, the new owner would incur increased operating costs over the cost of a floating museum because of the operations and risks associated with diving. However, socioeconomic impacts and contribution to cumulative impacts from use of the USCGC MACKINAW (WAGB-83) in an artificial reefing program or as a submerged museum cannot be evaluated because the potential locations are unknown and possibly outside of the ROI for this analysis.

##### **Use of Vessel in an Artificial Reefing Program or as a Submerged Museum**

Public safety impacts of use of the USCGC MACKINAW (WAGB-83) in an artificial reefing program or as a submerged museum cannot be evaluated because the potential locations are

unknown and may be outside of the ROI for this analysis. Therefore, cumulative impacts on public safety cannot be determined either.

### **4.10.3 Alternative 3: Congressional Mandate**

Under this alternative, the impacts on public safety would be the same as those presented under the proposed action. No significant adverse impacts on public safety would be anticipated. Since no significant impacts on public safety are anticipated, this alternative would make no significant contribution to cumulative impacts.

## 5. List of Preparers

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## **APPENDIX A**

### **PUBLIC NOTICE AND PUBLIC INVOLVEMENT MATERIALS**



**Environmental Assessment and Draft Finding of No Significant Impact for the Decommissioning and Excessing of the U.S. Coast Guard Cutter MACKINAW (WAGB-83)**

[Federal Register: November 2, 2005 (Volume 70, Number 211)]  
[Notices]  
[Page 66452]  
From the Federal Register Online via GPO Access [wais.access.gpo.gov]  
[DOCID:fr02no05-115]

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DEPARTMENT OF HOMELAND SECURITY  
Coast Guard  
[USCG-2005-22850]

Environmental Assessment and Draft Finding of No Significant Impact for the Decommissioning and Excessing of the U.S. Coast Guard Cutter MACKINAW (WAGB-83)

AGENCY: Coast Guard, DHS.  
ACTION: Notice of availability and request for comments.

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SUMMARY: The U.S. Coast Guard (USCG) announces the availability of the Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for the Decommissioning and excessing of the U.S. Coast Guard Cutter USCGC MACKINAW (WAGB-83) in Cheboygan, Michigan and invites comments as part of the National Environmental Policy Act (NEPA) process. The EA evaluates the environmental and socioeconomic impacts of the Proposed Action. The Draft FONSI records the USCG's determination that the Proposed Action would have no significant impact on the environment. The U.S. Coast Guard also announces the development of a Memorandum of Agreement to resolve potential adverse effects to a historic property and invites comments as part of the public involvement process under Section 106 of the National Historic Preservation Act (NHPA).

DATES: Comments and related material must reach Coast Guard Headquarters on or before November 26, 2005.

ADDRESSES: Please submit comments by only one of the following means, and in choosing among the options for submitting your comments, please give due regard to any difficulties and delays associated with delivery of mail through the U.S. Postal Service to Federal facilities:

- (1) Electronically to Susan Hathaway at [SHathaway@comdt.uscg.mil](mailto:SHathaway@comdt.uscg.mil)
- (2) By delivery to Commandant, United States Coast Guard Office of Logistics and Engineering, Environmental Management (CG-443), 2100 Second St. SW., Rm. 6109, Washington, DC 20593 Attn: S. Hathaway.
- (3) By fax send to Susan Hathaway at (202) 267-4219.

FOR FURTHER INFORMATION CONTACT: Commandant, United States Coast Guard, Office of Logistics and Engineering, Environmental Management (CG-443),

2100 Second St. SW., Rm. 6109, Washington, DC 20593 ATTN: Susan Hathaway, or send by fax at (202) 267-4219 or by e-mail at [SHathaway@comdt.uscg.mil](mailto:SHathaway@comdt.uscg.mil).

To view and download the EA and Draft FONSI, please go to <http://www.uscg.mil/systems/gse/gsec-3H.htm> [EXIT disclaimer >](#) and scroll down the left side to: Planning--NEPA, and then to USCGC MACKINAW.

SUPPLEMENTARY INFORMATION:

Request for Comments

We encourage you to submit comments and related material on the EA and the MOA. If you do so, please include your name and address. You may submit your comments and material by mail, hand delivery, fax, or electronic means to the Docket Management Facility at the address under ADDRESSES; but please submit your comments and material by only one means. If you submit them by mail or hand delivery, submit them in an unbound format, no larger than 8 1/2 by 11 inches, suitable for copying and electronic filing. If you submit them by mail and would like to know they reached the Facility, please enclose a stamped, self-addressed postcard or envelope. We will consider all comments and material received during the comment period.

Proposed Action

The USCGC MACKINAW (WAGB-83), constructed in 1944, was the largest and most powerful icebreaker at the time and represented the state of the art in icebreaking technology. After over 60 years of continuous service, USCGC MACKINAW (WAGB-83) has reached the end of its service life. The USCG is required to identify and declare excess property. The USCG would decommission and excess the USCGC MACKINAW (WAGB-83) in 2006 through the Federal Real Property Service Act and Federal Real Property Management Regulations, unless a Congressional mandate to transfer ownership of the vessel to another entity is issued.

Preparation of the EA for the decommissioning and excessing of USCGC MACKINAW (WAGB-83) is being conducted in accordance with the National Environmental Policy Act (NEPA) of 1969 (Section 102[2][c]) and its implementing regulations at Title 40 Code of Federal Regulations, Part 1500.

Environmental Assessment

An EA has been prepared for the proposed action. The EA identifies and examines reasonable alternatives and assesses their potential impact to the environment.

As a result of the USCG reporting the vessel as ``excess personal property,`` as that term is defined in the Federal Property Management Regulations, Title 41, Part 102, Section 36.40 of the Code of Federal Regulations (41 CFR 102-36.40), the vessel could eventually be removed from USCG custody and control, and possibly Federal ownership through one of the following processes: (1) Specific or ``special`` legislation directing or authorizing conveyance of the vessel to a specific entity (requires enactment of legislation by Congress and subsequent signing into law by President); (2) the General Services Administration (GSA) personal property disposal process for transfer to other Federal agencies, (41 CFR 102-36); (3) the GSA personal property disposal process for conveyance to a state or local government, or non-profit

organization (41 CFR 102-37); (4) the GSA personal property disposal process for sale to the highest bidder; (5) direct Coast Guard transfer to the USCG Auxiliary, Service Educational Activities (SEA's), or a non-profit public body or private organization, (14 U.S.C. 641); ) or (6) if transfer of ownership through one of the above processes is not possible, scrapping of the vessel.

The Coast Guard initiated Section 106 consultation under that National Historic Preservation Act. The consultation was conducted with the Michigan State Historic Preservation Officer (MISHPO) acting as the lead State Historic Preservation Officer for states bordering the Great Lakes. USCG and MISHPO developed a Memorandum of Agreement for the decommissioning of the USCGC MACKINAW (WAGB-83) and its declaration as excess property. The General Services Administration and the Illinois State Historic Preservation Officer also participated in consultation and concur with the MOA.

We are requesting your comments on environmental concerns you may have related to the EA.



**Michigan**

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**From:** bthiesen@WisconsinMaritime.Org [mailto:bthiesen@WisconsinMaritime.Org]  
**Sent:** Wednesday, November 23, 2005 3:55 PM  
**To:** Hathaway, Susan  
**Cc:** Bishop, Norma  
**Subject:** ENVIRONMENTAL ASSESSMENT AND DRAFT FINDING OF NO SIGNIFICANT IMPACT FOR THE DECOMMISSIONING OF THE USCGC MACKINAW (WAGB-83)

November 23, 2005

Commandant (CG-443)  
United States coast Guard  
2100 Second Street, S.W., Room 6109  
Washington, DC 20593  
Attn.: S. Hathaway

Dear Ms. Hathaway:

Thank you for your letter of October 12<sup>th</sup> regarding the disposition of the U.S. Coast Guard Cutter MACKINAW (WAGB-83). Our institution has a very strong interest in the future of the MACKINAW and we would like to be included on the list of interested parties kept apprised of her disposition. In our opinion, the MACKINAW is a historically significant vessel and should be preserved for future generations of Americans. Because she holds great historical significance for the Great Lakes, we believe that she should remain in the Great Lakes area, particularly on the Upper Great Lakes where most of her career took place. Furthermore, it is our opinion that the MACKINAW should be placed in the custody of a non-profit institution that has the financial wherewithal and stability to preserve and maintain the vessel and to properly interpret her history for the visiting public.

We would be honored to aid the U.S. Coast Guard in any way to determine the best possible disposition of the MACKINAW after she has been decommissioned. We believe our record with U.S.S. COBIA demonstrates how seriously we take the issue of stewardship of historic vessels. We have exhibited COBIA to visitors for thirty-five years and have the distinction of hosting one of the first historic submarines opened to the public. During those thirty-five years, millions of dollars have been spent on COBIA's restoration and millions of visitors have toured the submarine. In fact, this year we look forward to installing a new state-of-the-art non-intrusive HVAC system that will stabilize COBIA's interior climate conditions and help preserve her World War II-era systems and appointments for generations to come.

Thank you again for your disposition letter of October 12<sup>th</sup> and please keep us apprised of the MACKINAW's disposition. We look forward to hearing from you and assisting your office in any way we can.

Sincerely,  
William H. Thiesen, Ph.D.  
Director of Operations/Curator  
Wisconsin Maritime Museum  
75 Maritime Drive  
Manitowoc, Wisconsin 54220  
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Lake County Convention and Visitors Bureau (LCCVB)  
Robert A. Victor-Multimedia Projects Manager  
7770 Corinne Drive, Hammond, IN 46322  
[bvictor@lakecountycvb.com](mailto:bvictor@lakecountycvb.com) or [bvictor@alllake.org](mailto:bvictor@alllake.org)  
Phone: (219) 989-7770 – Fax: (219) 989-7777

**Plan**  
**For the Decommissioned USCGC Mackinaw**

**Abstract**

**LCCVB Mission Statement:**

The Lake County Convention and Visitors Bureau exists to lead, support, and develop the convention and visitor industry in this area by marketing Lake County to the traveling public in order to increase economic impact and job creation and thus, improve this county's quality of life.

**LCCVB Plan:**

The Lake County Convention and Visitors Bureau would like to procure the USCGC Mackinaw for the Midwest Central Coast of the United States. The vessel would serve three purposes: as a permanent, living instructional vessel that will highlight the mission of the United States Coast Guard, as a children's maritime museum and environmental center and as an environmental learning center for college students located in the quad state area (Indiana, Illinois, Michigan and Wisconsin). All three purposes will also showcase Lake Michigan, one of the Great Lakes, and one of the world's largest fresh water resources.

The LCCVB proposes to permanently moor the vessel on a site in Lake Michigan within Northwest Indiana. Northwest Indiana, also known as the Crossroads of America, is located in the uppermost corner of Indiana. The interstates of I65 and I94 run through Lake County with hundreds of thousands of cars passing through the corridor on a daily basis. Due to its easy accessibility, Northwest Indiana is a perfect location for school children as well as college students from surrounding states to visit the site.

As stated above, the LCCVB proposes a multi-purpose use for the decommissioned USCGC Mackinaw. Its main purpose will be as a maritime museum and learning center for children of all ages. A scientific laboratory will be set up on the ship where children can perform simple

experiments to explore and learn about the environment. The LCCVB would also partner with local colleges and universities to provide learning opportunities for college students who are studying environmental and life sciences. The USCGC Mackinaw can become a “living lab” for the students. They will also have the opportunity to complete internships on the ship in the children’s museum and learning center.

Finally, a space will be reserved on the ship to highlight the Mission of the United States Coast Guard. Here, future guardsmen can come to find out about the rich history of the Coast Guard while retirees can back to touch a piece of their past.

**Vision**

The LCCVB’s research shows that there is no “final mission” of the ship. The USCG Mackinaw will continue to symbolize a rich history of the Maritime Industry on the Great Lakes and the World. It will continue to be a living learning experience for generations to come.

It is hoped that this continued mission is located on the southern shores of Lake Michigan.  
Semper Paratus

Lake County Convention and Visitors Bureau (LCCVB)  
Robert A. Victor-Multimedia Projects Manager  
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Commandant  
United States Coast Guard

2100 Second Street, S.W.  
Washington, DC 20593-0001  
Staff Symbol: CG-443  
Phone: (202) 267-4073  
Fax: (202) 267-4219  
Email: shathaway@comdt.uscg.mil

16475

Dear Interested Party:

The US Coast Guard Office of Engineering and Logistics received your letter submitted during the public comment period for the Environmental Assessment (EA) for the Decommissioning and Excessing of the US Coast Guard Cutter MACKINAW (WAGB-83). Your letter will be part of the official record for the National Environmental Policy Act (NEPA) process.

Your comments focused on the actual disposition of MACKINAW (WAGB-83) therefore, we forwarded your letter of interest in acquiring the MACKINAW (WAGB-83) to the US Coast Guard Office of Internal Control and Asset Management to be included with the vessel file. As such, no changes will be made to the Final EA and Finding of No Significant Impact (FONSI).

If you have any further questions regarding the NEPA process, please contact:

Ms. Susan Hathaway  
Headquarters, United States Coast Guard  
Assistant Commandant for Engineering and Logistics  
Environmental Management, CG-443  
2100 2<sup>nd</sup> Street S.W., Room 6109  
Washington, DC 20593

Your interest and participation in the NEPA process for USCGC MACKINAW (WAGB-83) is important and valuable to the US Coast Guard.

Sincerely,

J.X. Monaghan  
Captain, U.S. Coast Guard  
Office of Cutter Forces  
By direction

Copy: Lynn Brown, CG-842  
Jeff Beach, CG-842  
David Robbins, General Services Administration



**APPENDIX B**  
**AGENCY CONSULTATION**





STATE OF MICHIGAN

DEPARTMENT OF NATURAL RESOURCES  
LANSING

JENNIFER M. GRANHOLM  
GOVERNOR

REBECCA A. HUMPHRIES  
DIRECTOR

April 1, 2005

Ms. Jayne Aaron  
Engineering-Environmental Management, Inc.  
9563 South Kingston Court, Suite 200  
Englewood, CO 80112

Dear Ms. Aaron:

Thank you for your correspondence of March 21, 2005 regarding the proposal to decommission the United States Coast Guard Cutter MACKINAW (WAGB-83). Wildlife Division Chief William Moritz asked me to reply.

The request for a list of potentially impacted state endangered or threatened species is only possible if information describing the location of a proposed action is provided. Regarding this particular action, if the ship will be taken out of the state by normal means, as you describe, there will likely be no impacts to threatened or endangered species.

Thank you in advance for your coordination in addressing the protection of Michigan's natural resource heritage. If and when the ship is disposed of in Michigan waters, please provide the location information to me at the Michigan Department of Natural Resources, Wildlife Division Natural Heritage Program, P.O. Box 30180, Lansing, MI 48909. Please contact me with any questions or concerns as well.

Sincerely,

A handwritten signature in cursive script, appearing to read "Lori G. Sargent".

Lori G. Sargent  
Endangered Species Specialist  
517-373-1263

cc: Susan Hathaway, U.S. Coast Guard  
Dr. William Moritz, DNR

NATURAL RESOURCES COMMISSION  
Keith J. Charters-Chair • Mary Brown • Bob Garner • Gerald Hall • John Madigan • Frank Wheatlake  
STEVENS T. MASON BUILDING • P.O. BOX 30028 • LANSING, MICHIGAN 48909-7528  
[www.michigan.gov/dnr](http://www.michigan.gov/dnr) • (517) 373-2329





IN REPLY REFER TO:

## United States Department of the Interior

### FISH AND WILDLIFE SERVICE

East Lansing Field Office (ES)  
2651 Coolidge Road, Suite 101  
East Lansing, Michigan 48823-6316

April 6, 2005

Ms. Susan Hathaway  
Headquarters, United State Coast Guard  
Office of Civil Engineering  
(G-SEC-3) Room 6109  
2100 2<sup>nd</sup> Street S.W.  
Washington, DC 20593

Re: Endangered Species List Request, Proposed Decommission of U.S. Coast Guard Cutter  
(USCGC) MACKINAW (WAGB-83) Icebreaker, Cheboygan County, Michigan

Dear Ms. Hathaway:

Thank you for your February 9, 2005 request for information regarding federally listed and proposed threatened and endangered species, candidate species, or critical habitat near your project. Your request and this response are made pursuant to section 7 of the Endangered Species Act of 1973, as amended (Act).

We understand that the USCGC MACKINAW (WAGB-83) Icebreaker was permanently stationed on the Great Lakes in Cheboygan County. It is now decommissioned and proposed to be transferred to a permanent location in Baltimore, Maryland. While in transit, it will be placed "In Commission Special" status, meaning it has no mission, but is being transported; however, should a situation arise, it will respond. The MACKINAW will depart Cheboygan for Maryland, by way of Lake Huron, Lake Erie, then on to Port Colbourne. From there, it will travel to St. Catharine's, Ontario via the Welland Canal, then on to Lake Ontario and the St. Lawrence Seaway. Finally, it will reach Baltimore via the Gulf of St. Lawrence and the Atlantic Ocean.

Based on your project description, it is unlikely that any species would be impacted by this project. This precludes the need for further action on this project as required by section 7 of the Act.

If the project is modified or new information about the project becomes available that indicates listed species or critical habitat may be affected in a manner or to an extent not previously considered, you should reinitiate consultation with this office.

Since threatened and endangered species data changes continuously, we recommend you contact this office for an updated federal list of the species that may be present in the project area every six months during the remaining planning and building period.

4-13-05:12:56PM:

:202 267 4219

# 2/ 2

We appreciate the opportunity to provide these comments. Please refer any questions to Tameka Dandridge of this office at [Tameka\\_Dandridge@fws.gov](mailto:Tameka_Dandridge@fws.gov) or (517) 351-8315.

Sincerely,

  
for Craig A. Czarnecki  
Field Supervisor

cc: MDNR, Wildlife Division, Lansing, MI (Attn: Todd Hogrefe)

g: admin/archives/apr05/sc list/USCG-MACKINAW.tnd.doc

**New York State Department of Environmental Conservation  
Regional Director, Region 9**

270 Michigan Avenue, Buffalo, New York, 14203-2999  
Phone: (716) 851-7200 • FAX: (716) 851-7211  
Website: www.dec.state.ny.us



Denise M. Sheehan  
Acting Commissioner

May 27, 2005

Ms. Susan Hathaway  
Headquarters, United States Coast Guard  
Assistant Commandant for Engineering and Logistic  
Environmental Management Division  
2100 Second Street SW, Room 6109  
Washington, DC 20593

Dear Commandant Hathaway:

**USCGC MACKINAW (WAGB-83)**

Thank you for the information regarding the decommissioning of the USCGC MACKINAW. We understand that any potential environmental impacts from pollutant residues on board the ship have been or will be mitigated by the USCG.

Since the new Great Lakes Icebreaker (GLIB) will have the same mission and area of responsibility as the Mackinaw, this Department's concerns pertain to impacts related to potentially more aggressive icebreaking activities that may arise due to the greater versatility and design of the new ship:

1. The new GLIB creates the possibility of an extended ice breaking season. The Department must question what, if any, would be the impact from the new GLIB having a longer operating season and a larger geographic area on riparian property?
2. If the MACKINAW is transferred to the Department of Home Land Security (DHS), presumably it would be used for patrol purposes, rather than ice breaking. However, there is also the potential sale of the MACKINAW to a private concern, with perhaps the intent of keeping a shipping lane, such as the St. Lawrence Seaway, open year round. Such an undertaking would be a definite concern to this Department, primarily in DEC Region 6, Watertown. If two ships were conducting ice breaking on the Great Lakes, would both USCG and DHS allow the operation of the ships in the same geographic region at the same time? Would they coordinate ice breaking operations to prevent or mitigate potential impacts?

Ms. Susan Hathaway  
May 27, 2005  
Page 2

3. The new GLIB will have the same mission and area of operation as the MACKINAW. Would/does the USGC take into account ice breaking activities of private companies as USCG begins its own ice breaking activities? Perhaps the impact of two icebreakers operating in the same geographic area or in the Great Lakes should be reviewed against information contained in the Environmental Impact Statement for Great Lakes Ice Breaking (referenced report dated June 2000).

If you have any questions, please feel free to contact Mr. Steven Miller, Environmental Analyst I, at 716/851-7165.

Sincerely,



Daniel R. David, P.E.  
Acting Regional Director

cc: Mr. Steven J. Doleski, Attn: Mr. Steven Miller, NYSDEC, Division of Environmental Permits  
Mr. Donald Zelazny, NYSDEC, Great Lakes Coordinator  
Ms. Rebecca Anderson, NYSDEC, Division of Water

**New York State Department of Environmental Conservation  
Regional Director, Region 6**

Dulles State Office Building, 317 Washington Street, Watertown, New York 13601-3787  
Phone: (315) 785-2239 • FAX: (315) 785-2242  
Website: www.dec.state.ny.us



Denise M. Sheehan  
Acting  
Commissioner

June 13, 2005

Headquarters, United States Coast Guard  
Office of Civil Engineering  
(G-SEC-3) Rm. 6109  
2100 Second Street S.W.  
Washington, DC 20593

Re: USCGC Mackinaw (WAGB-83) Decommissioning, Excessing, and Replacing

Dear Ms. Hathaway:

This letter is in reply to Captain Yost's letter regarding the decommissioning, excessing, and replacing USCGC Mackinaw (WAGB-83) with a new USCGC Mackinaw (WLBB-30). Region 6 of the New York State Department of Environmental Conservation (Department) agrees with Captain Yost's conclusion that the environmental impacts associated with the decommissioning and excessing should be minimal. However, the Department has concerns about the potential consequences involved with the replacement.

As noted in Captain Yost's letter, the USCGC Mackinaw (WLBB-30) "would have a longer operating season and would service a larger geographic area within the Great Lakes." The Department opposes a longer operating season on the Great Lakes, the connecting waterways, especially the St. Lawrence River. The potential environmental damages resulting from such activity were tacitly recognized when the Army Corps of Engineers did not commence a demonstration project concerning winter navigation on the Great Lakes in the late 1970's. The Department continues to oppose Winter Navigation, or navigation in near winter conditions on the St. Lawrence River and Lake Ontario.

The Department appreciates that the men and women of the United States Coast Guard deserve modern equipment to fulfill their missions. Aside from the environmental concern that I have mentioned above, the Department sees the replacement of the USCGC Mackinaw (WAGB-83) as a positive step. Thank you for the opportunity to comment on this matter.

Sincerely,

Sandra L. LeBarron  
Regional Director  
Region 6

SLL:JK:KAF



**Subject:** FW: Negative Determination for decommissioning of the icebreaker MACKINAW

**From:** Holland, Steven [mailto:Steven.Holland@dnr.state.oh.us]  
**Sent:** Thursday, May 26, 2005 2:07 PM  
**To:** Cheryl Schmidt  
**Subject:** RE: Negative Determination for decommissioning of the icebreaker MACKINAW

Hi Cheryl,

The language you included below should be sufficient. I don't see a need to list each of the policies. Thanks.

**Steve Holland, M.P.A.**  
*Federal Consistency Coordinator*  
Ohio Department of Natural Resources  
Office of Coastal Management  
105 West Shoreline Drive  
Sandusky, Ohio 44870  
Phone: (419) 626-7980 Fax: (419) 626-7983  
[www.ohiodnr.com/coastal](http://www.ohiodnr.com/coastal)

-----Original Message-----

**From:** Cheryl Schmidt [mailto:cschmidt@e2m.net]  
**Sent:** Thursday, May 26, 2005 2:09 PM  
**To:** Holland, Steven  
**Subject:** Negative Determination for decommissioning of the icebreaker MACKINAW

Hello Steve,

Thank you for your guidance this morning. To expedite matters, I have provided below draft language for the letter submitting a negative determination for the decommissioning of the MACKINAW. Preceding the text below would be a description of the MACKINAW, the proposed action, and the alternative actions (very similar to the original scoping letter you received). Following that background information would be the following text. Is such language and approach acceptable; or do I need to list each enforceable policy and then indicate how the proposed action and alternatives are either not applicable, or would have no effect? I would greatly appreciate your feedback on this!

Pursuant to 15 CFR 930, the U.S. Coast Guard has reviewed the enforceable policies of the Ohio Coastal Management Program (OCMP) as presented in Chapter 5 of the program document (United States Department of Commerce, Combined Coastal Management Program and Final Environmental Impact Statement for the State of Ohio, Volume I, March 1997). In light of the impacts analyses conducted for the Environmental Assessment of the proposed action and alternatives, and review of the OCMP and its enforceable policies, the U.S. Coast Guard concludes that neither the proposed action nor the alternatives would have a reasonably foreseeable effect on the resources of Ohio's designated coastal zone.

As directed under 15 CFR 930.35, the U.S. Coast Guard submits this negative determination for review and concurrence by the Ohio Office of Coastal Management. While it is understood that the State agency is not obligated to respond to a negative determination, we would appreciate a brief letter of concurrence or objection at the earliest possible date.

6/22/2005

Thanks Steve!

cas

Cheryl A. Schmidt, PhD  
Natural Resources  
engineering-environmental Management, Inc.  
18897 Eichler Rd  
Newell, SD 57760  
Land 605-456-1473  
Cell 660-351-0596  
FAX 605-456-1471

Steve Holland  
Federal Consistency Coordinator  
Ohio Department of Natural Resources  
105 W Shoreline Drive  
Sandusky, Ohio 44870

Dear Mr. Holland:

The United States Coast Guard (USCG) is proposing to decommission, excess, and replace the United States Coast Guard Cutter (USCGC) MACKINAW (WAGB-83) with a new state-of-the-art Great Lakes icebreaker (GLIB) MACKINAW (WLBB-30). In accordance with the National Environmental Policy Act (NEPA) of 1969 the USCG is developing an environmental assessment (EA) for the proposed action. This EA will analyze the potential environmental impacts associated with the Proposed Action and its alternatives. Though the EA will briefly describe environmental impacts from the proposed action, the documentation will focus mostly on cultural resources issues associated with the decommissioning of USCGC MACKINAW (WAGB-83). Impacts to the environment are expected to be minimal for the decommissioning of MACKINAW (WAGB-83) and for the operation of the new replacement vessel, MACKINAW (WLBB-30). The environmental impacts associated with the icebreaking functions of the MACKINAW (WLBB-30) are addressed in *Final Environmental Impact Statement Great Lakes Icebreaking*, June 2000, prepared for the Ninth District USCG (Tetra Tech 2000).

The purpose of this letter is to submit a negative determination for the potential impacts of the Proposed Action and alternatives relative to the enforceable policies of the Ohio Coastal Zone Management Program. Brief descriptions of the USCGC MACKINAW, the Proposed Action, and the alternatives are provided below for your reference.

The USCGC MACKINAW is a 290-foot icebreaking ship that was permanently stationed on the Great Lakes after its construction in 1944. Due to the age of the MACKINAW and associated operating and maintenance costs, the Coast Guard is proposing to decommission, excess, and replace the MACKINAW in 2006 with a new state-of-the-art Great Lakes icebreaker (GLIB) MACKINAW (WLBB-30). The USCG conducted a contamination survey of MACKINAW. The vessel was cleaned of PCBs in November 2004 to allow for numerous disposal options.

Alternatives include:

**Alternative 1:** No Action – Under the No Action Alternative, the USCGC MACKINAW (WAGB-83) would not be decommissioned. The new GLIB vessel (WLBB-30) would be commissioned and delivered to assume icebreaking duties in the Great Lakes. Upon commissioning of the new GLIB vessel (WLBB-30), the MACKINAW (WAGB-83) would be relocated to a storage facility at Curtis Bay, Maryland, where the vessel would become inactive and maintained at a level based on available funding.





## Ohio Department of Natural Resources

HOB TAFT, GOVERNOR

SAMUEL W. SPECK, DIRECTOR

OFFICE OF COASTAL MANAGEMENT  
105 WEST SHORELINE DRIVE  
SANDUSKY, OHIO 44870  
(419) 626-7980  
FAX (419) 626-7983

July 5, 2005

Ms. Susan Hathaway  
Headquarters, U.S. Coast Guard  
Environmental Management  
CG-443 Room 6109  
2100 2<sup>nd</sup> Street S.W.  
Washington, D.C. 20593

RE: Decommissioning, Excessing, and Replacing USCGC Mackinaw (# 16475)

Dear Ms. Hathaway:

This letter regards the negative federal consistency determination sent by Carl Uchtyl for the proposed decommissioning and replacement of the U.S. Coast Guard Cutter Mackinaw. The determination was received by the Ohio Department of Natural Resources (ODNR) on June 28, 2005.

This letter is to inform you that ODNR concurs with your federal consistency determination. No further coordination with this office regarding this determination is necessary. If you need additional information or have any questions regarding this consistency review, please contact me at (419) 626-7980.

Sincerely,

A handwritten signature in black ink, appearing to read "Steve Holland".

Steve Holland, M.P.A.  
*Federal Consistency Coordinator*

cc: David Mackey, P.E., Chief, Office of Coastal Management  
Randy Sanders, Division of Real Estate and Land Management

DNR 0001



**From:** Davis, John [JDavis@dnr.IN.gov]  
**Sent:** Friday, November 18, 2005 2:54 PM  
**To:** Hathaway, Susan  
**Subject:** Environmental Assessment and draft FONSI - USCGC MACKINAW

To: Susan Hathaway

The Indiana Department of Natural Resources (IDNR) concurs with the finding of no significant impact regarding this action.

John M. Davis, Deputy Director IDNR



**From:** Sanders, Randy [mailto:Randy.Sanders@dnr.state.oh.us]  
**Sent:** Monday, April 04, 2005 3:53 PM  
**To:** Hathaway, Susan  
**Subject:** 05-0055; EA for U.S. Coast Guard.

**ODNR COMMENTS TO Ms. Susan Hathaway, Headquarters, United States Coast Guard, Office of Civil Engineering, (G-SEC-30) Room 6109, 2100 2nd Street S.W., Washington, DC 20593.**

**Location:** Great Lakes area.

**Project:** The United States Coast Guard is planning to decommission, excess, and replace the MACKINAW in 2006 with a new state-of-the-art Great Lakes icebreaker. This is an EA that will analyze the potential impacts associated with the Proposed Action and Alternatives.

The Ohio Department of Natural Resources (ODNR) has completed a review of the above referenced project. These comments were generated by an inter-disciplinary review within the Department. These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the National Environmental Policy Act, the Coastal Zone Management Act, Ohio Revised Code and other applicable laws and regulations. These comments are also based on ODNR's experience as the state natural resource management agency and do not supersede or replace the regulatory authority of any local, state or federal agency nor relieve the applicant of the obligation to comply with any local, state or federal laws or regulations.

**Rare and Endangered Species:** The ODNR Division of Natural Areas and Preserves has no comments on this project.

**Fish and Wildlife:** The ODNR Division of Wildlife has no comments regarding this project.

**Boating and Navigation:** The ODNR Division of Watercraft does not predict any negative impact to recreational boating by this proposal.

ODNR appreciates the opportunity to provide these comments. Please contact Randy Sanders at 614.265.6344 if you have questions about these comments or need additional information.

Randall E. Sanders  
Environmental Administrator  
Division of Real Estate & Land Management  
Ohio Department of Natural Resources  
2045 Morse Rd, C4  
Columbus, Ohio 43229-6693  
614.265.6344  
Fax 614.267.4764  
randy.sanders@dnr.state.oh.us



<p>Membership Chair Council of American Maritime Museums Mystic Seaport Museum PO Box 6000 Mystic, Connecticut 06355-0990</p>	<p>Timothy Harrison Chairman American Lighthouse Foundation PO Box 889 Wells, Maine 04090</p>
<p>John Sculley Executive Director Norwalk Seaport Association 132 Water Street South Norwalk, Connecticut 06854</p>	<p>Kenneth Hagan Director United States Naval Academy United States Naval Academy Museum Annapolis, Maryland 21402</p>
<p>Director U.S. Lighthouse Society 244 Kearny Street Fifth Floor San Francisco, CA 94108</p>	<p>James W. Cheevers Senior Curator United States Naval Academy Museum 118 Maryland Avenue Annapolis, Maryland 21402-5034</p>
<p>William L Wheeler Illinois Historic Preservation Agency Preservation Services Division 1 Old State Capitol Plaza Springfield, Illinois 62701-1512</p>	<p>Nautical Research Guild Department H 12021 Kerwood Road Silver Spring, Maryland 20904-2815</p>
<p>Chicago Maritime Society 310 South Racine Street Chicago Illinois 60607</p>	<p>Mr. Brian D. Conway State Historic Preservation Office Michigan Historical Center 717 West Allegan Street Lansing, Michigan 48918</p>
<p>John R. Goss Department of Natural Resources 402 West Washington Street Indiana Government Center South Room W256 Indianapolis, IN 46204</p>	<p>Representative Bart Stupak Michigan 1st district 2352 Rayburn House Office Building Washington, DC 20515</p>
<p>Robert A. Victor Multimedia Projects Manager Lake County Convention and Visitors 770 Corinne Drive Hammond, Indiana 46323</p>	<p>Senator Carl Levin 269 Russell Office Building U.S. Senate Washington, DC 20510-2202</p>
<p>Glenn Dawson Holly Marine Towing Chicago, IL</p>	<p>Jerry Broad President Thunder Bay Island Preservation Society PO Box 212 Alpena, Michigan 49707</p>

<p>Sam Turner  President  Institute of Maritime History  122 W. 5th Street  Frederick, MD 21701</p>	<p>City of Cheboygan  Cheboygan City Hall  403 North Huron Street  Cheboygan, Michigan 49721</p>
<p>City of Mackinaw  Village of Mackinaw City  102 South Huron Avenue  Mackinaw, Michigan 49701</p>	<p>Senator Debbie Stabenow  702 Hart Senate Office Building  Washington, DC 20510</p>
<p>United States Life-Saving Service Heritage Association  PO Box 75  Caledonia, Michigan 49316-0075</p>	<p>David H Thomas, Vice President  Keweenaw County Historical Society  HC-1, Box 265L  Eagle Harbor, Michigan 49950</p>
<p>Michigan Historic Preservation Network  PO Box 398  Clarkston, Michigan 48347</p>	<p>Luther Barrett  Delta County Historical Society  101 South 2<sup>nd</sup> Street  Escanaba, Michigan 49829</p>
<p>Richard Moehl, President  Great Lakes Lighthouse Keepers  206 Lake Street  PO Box 219  Mackinaw City, Michigan 49701</p>	<p>Ryan Cotton, (City Manager)  City of Grand Haven  City Hall  519 Washington Street  Grand Haven, Michigan 49417</p>
<p>John Polacsek  Curator of Marine History  Dossin Great Lakes Museum  100 Strand/Belle Isle  Detroit, Michigan 48207</p>	<p>Marilyn Fischer  C/o Gulliver Historical Society  Route 1, Box 1  Gulliver, Michigan 49840</p>
<p>Maurice E Gibbs  Executive Director  Nantucket Life-Saving Museum  158 Poplis Rd  Nantucket MA 02554-2320</p>	<p>George A Kilborn  Superintendent  Harbor Point Association  PO Box 438  Harbor Springs, Michigan 49740</p>
<p>Thomas G Friggens  Regional Historian Museums Section  Mich Historical CTR/Iron Industry Museum  73 Forge Road  Negaunee, Michigan 49866</p>	<p>Jason Hodges  Secretary  Alcona Historical Society  Box 174  Harrisville, Michigan 48740</p>

<p>Ruth Ristola                  Director                  Ontonagon Historical Society Museum                  PO Box 92                  Ontonagon, Michigan 49953</p>	<p>John Bloswick                  Great Lakes Center for Marine History                  2911 Leon Avenue                  Lansing, Michigan 48906</p>
<p>Museum of Arts and History                  1115 Sixth Street                  Port Huron, Michigan 48060</p>	<p>Bruce Nelson, Director                  Great Lakes Lighthouse Keepers Association                  403 North Park Street                  Ludington, Michigan 49431-1643</p>
<p>Tom Farnquist                  President                  Great Lakes Shipwreck Society                  111 Ashmun Street                  Sault Ste Marie, Michigan 49783</p>	<p>Ray Beauchamp, President                  Marquette Maritime Museum                  Lakeshore Drive                  PO Box 1096                  Marquette, Michigan 49855</p>
<p>Dorris Akers, Director                  Lake Michigan Maritime Museum                  PO Box 534                  South Haven, Michigan 49090</p>	<p>Robert Morin, (Chairman)                  USS Silversides Naval and Maritime Museum                  PO Box 1692                  Muskegon, Michigan 49443</p>
<p>Greg Sirgoskin                  Great Lakes Maritime Academy                  Northwestern Michigan College                  1701 East Front Street                  Traverse City, Michigan 49686-3061</p>	<p>Maritime Industry Museum at Fort Schuyler                  New York State Maritime College                  Fort Schuyler, Throggs Neck                  The Bronx, New York 10465</p>
<p>Dr. Nina M. Archabal                  State Historic Preservation Officer                  Minnesota Historical Society                  345 Kellogg Boulevard West                  St. Paul, Minnesota 55102-1906</p>	<p>State University of New York Maritime College                  6 Pennyfield Avenue                  Throggs Neck, New York 10465</p>
<p>Daniel Russell                  Executive Director                  Duluth Entertainment Convention Center                  350 Harbor Drive                  Duluth, Minnesota 55802-2698</p>	<p>Saint Lawrence County Historical Society                  Association History Center                  3 East Main Street                  PO Box 8                  Canton, New York 13617                  (315) 386-8133</p>
<p>William G. Meierhoff                  Marine Iron and Shipbuilding Corporation                  325 Lake Avenue South                  Duluth, Minnesota 55802</p>	<p>New York New York Shipping and Finance LLC                  Thomas Gallagher                  437 Madison Avenue                  New York, New York 10022</p>

<p>Lake Superior Marine Museum Association PO Box 177 Duluth, Minnesota 55801-0177</p>	<p>Director South Street Seaport Museum 207 Front Street New York NY 10038</p>
<p>Jerry Kimball 2623 East Superior Street Duluth, Minnesota 55812</p>	<p>Rachel M Tooker State Historic Preservation Officer 567 East Hudson Street Columbus, Ohio 43211-1030</p>
<p>Charles M Resnick American Merchant Marine Museum United States Merchant Marine Academy Steamboat Road Kings Point, New York 11024</p>	<p>Elizabeth Carnegie Ashtabula Marine Museum United States Coast Guard Memorial PO Box 2855 Ashtabula, Ohio 44005</p>
<p>State Historic Preservation Officer Parks, Recreation and Historic Pebbles Island PO Box 189 Waterford, New York 12188-0189</p>	<p>Association for Great Lakes Maritime History PO Box 7365 Bowling Green, Ohio 43402</p>
<p>Mercedes Neiss H. Lee White Marine Museum Oswego Port Authority PO Box 101 Oswego, New York 13126</p>	<p>Robert T Pocotte, (Treasurer) The Marine Historical Society of Detroit Department W 606 Laurel Avenue Port Clinton, Ohio 43452</p>
<p>Peter Stanford, President National Maritime Historical Society 5 John Walsh Boulevard PO Box 68 Peekskill, New York 10566</p>	<p>Joan Cutler, Director Bureau for Historic Preservation Commonwealth Keystone Building 400 North Street Harrisburg, PA 17120-0093</p>
<p>Erie Maritime Museum 150 East Front Street Erie, Pennsylvania 16501</p>	<p>The Great Lakes Historical Society Inland Seas Maritime Museum 480 Main Street, P.O. Box 435 Vermilion, Ohio 44089-0435</p>
<p>Michael S. Knecht, Executive Director Erie County Historical Society and Museums 417-419 State Street Erie, Pennsylvania 16501</p>	<p>John E Laczko Trustee Fairport Harbor Marine Museum 129 Second Street Fairport Harbor, Ohio 44077-5831</p>

<p>John B Hightower  President  The Mariners' Museum  100 Museum Drive  Newport News, Virginia 23606</p>	<p>Douglas Henderson  Director  Door County Maritime Museum  120 North Madison Avenue  Sturgeon Bay, Wisconsin 54235</p>
<p>Jeff Nilsson  Executive Director  Historic Naval Ships  5245 Cleveland Street, #207,  Virginia Beach, Virginia 23462- 6505</p>	<p>Wisconsin Marine Historical Society  814 West Wisconsin Avenue  Milwaukee, Wisconsin 53233-2385</p>
<p>R Angus Murdoch, Director  Virginia Beach Maritime Museum, Inc.  The Life-Saving Museum of Virginia  PO Box 24  Virginia Beach, Virginia 23458</p>	<p>Damon Anderson  Secretary  Port Washington Historical Society  PO Box 491  Port Washington, Wisconsin 53074</p>
<p>Curator  Coast Guard Museum Northwest  1519 Alaskan Way South  Seattle, Washington 98134</p>	<p>Stephen B. Daniel, President  Great Lakes Shipwreck Preservation Society  7416 Wyndham Way  Woodbury, MN 55125</p>
<p>Dr. Kim Nielson  Director  Naval Historical Center  Washington Navy Yard  Washington DC 20374-0571</p>	<p>Scott Anfinson, PhD  Underwater Archaeologist  Minnesota Historical Society/SHPO  345 Kellogg Boulevard West  St. Paul, MN 55102-1906</p>
<p>Dr. Paul Johnston  Curator of Maritime History  Smithsonian Institute  National Museum of American History  Washington DC, 20560</p>	<p>Burt Logan  Director  Wisconsin Maritime Museum  75 Maritime Drive  Manitowoc, Wisconsin 54220</p>
<p>Edward Werner  Lighthouse Historian  Kenosha County Historical Society  6300 Third Avenue  Kenosha, Wisconsin 53143</p>	



## **APPENDIX C**

### **APPLICABLE LAWS AND EXECUTIVE ORDERS**



**Table C – Applicable Regulations**

<b>Executive Orders</b>	
<i>Executive Order (EO) 11593, Protection and Enhancement of the Cultural Environment</i>	All federal agencies are required to locate, identify, and record all cultural and natural resources. Cultural resources include sites of archaeological, historical, or architectural significance. Natural resources include the presence of endangered species, critical habitat, and areas of special biological significance.
<i>EO 11990, Protection of Wetlands</i>	Requires federal agencies to avoid undertaking or providing assistance for new construction located in wetlands unless there is no practicable alternative, and all practicable measures to minimize harm to wetlands has been implemented.
<i>EO 11988, Floodplain Management</i>	Provides direction regarding actions of federal agencies in floodplains, and requires permits from state and federal review agencies for any construction within a 100-year floodplain.
<i>EO 12372, Intergovernmental Review of federal Programs (as amended by EO 12416)</i>	Requires federal agencies to consult with state and local governments when proposed federal financial assistance or direct federal development has an impact on interstate metropolitan urban centers or other interstate areas.
<i>EO 12856, Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements</i>	Requires federal agencies to plan for chemical emergencies. Facilities that store, use, or release certain chemicals are subject to various reporting requirements. Reported information is made available to the public.
<i>EO 12898, Environmental Justice</i>	Requires certain federal agencies, including the Department of Defense (DoD), to the greatest extent practicable permitted by law, to make environmental justice part of their missions by identifying and addressing disproportionately high and adverse health or environmental effects on minority and low-income populations.
<i>EO 13007, Indian Sacred Sites</i>	Requires federal agencies to accommodate access to, and ceremonial use of, sacred sites by practitioners and avoid adversely affecting the physical integrity of such sites.
<i>EO 13045, Protection of Children from Environmental Health and Safety Risks</i>	Makes it a high priority to identify and assess environmental health and safety risks that may disproportionately affect children. It also directs agencies to ensure that policies, programs, activities, and standards address such risks if identified.
<i>EO 13158, Marine Protected Areas</i>	Requires federal agencies whose actions affect the natural and cultural resources protected by a marine protected area (MPA) to identify such actions, and, to the extent practicable and permitted by law, to avoid harming the natural and cultural resources that are protected by an MPA.

**Table C – Applicable Regulations**

<p><i>EO 13175, Consultation and Coordination with Indian Tribal Governments</i></p>	<p>Requires federal agencies to have an accountable process to ensure meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications.</p>
<p><i>EO 13186, Responsibilities of Federal Agencies to Protect Migratory Birds</i></p>	<p>Requires federal agencies to take steps to protect migratory birds, including restoring and enhancing habitat, preventing or abating pollution affecting birds, and incorporating migratory bird conservation into agency planning processes whenever possible.</p>
<p><b>Federal Laws</b></p>	
<p><i>American Indian Religious Freedom Act, 42 United States Code (USC) 1996, Public Law (P.L.) 95-341</i></p>	<p>Protects and preserves the rights of American Indians, Eskimos, Aleuts, and Native Hawaiians to exercise their traditional religions. These rights include, but are not limited to, access to sites, use and possession of sacred objects, and the freedom to worship through ceremony and traditional rites.</p>
<p><i>Antiquities Act of 1906, 16 USC 431-433, P.L. 59-209</i></p>	<p>Provides for the protection of historic and prehistoric ruins and objects of antiquity on lands owned or controlled by the federal government. Authorizes scientific investigation of antiquities on federal lands. Authorizes the establishment of national landmarks.</p>
<p><i>Archaeological and Historical Preservation Act, 16 USC 469</i></p>	<p>Protects and preserves historical and archaeological data. Requires federal agencies to identify and recover data from archaeological sites threatened by their actions.</p>
<p><i>Archaeological Resources Protection Act of 1979, 16 USC 470 et seq., P.L. 96-95</i></p>	<p>Enacted to preserve and protect resources and sites on federal and Indian lands. Fosters cooperation between governmental authorities, professionals, and the public. Prohibits the removal, sale, receipt, and interstate transportation of archaeological resources obtained illegally from public or Indian lands.</p>
<p><i>Clean Air Act, 42 USC 7401-7671q, July 14, 1955, as amended</i></p>	<p>This Act, as amended, is known as the Clean Air Act of 1970. The amendments made in 1970 established the core of the clean air program. The primary objective is to establish federal standards for air pollutants. It is designed to improve air quality in areas of the country, which do not meet federal standards and to prevent significant deterioration in areas where air quality exceeds those standards.</p>
<p><i>Coastal Zone Management Act of 1972, 16 USC 1451-1464, P.L. 92-583</i></p>	<p>Establishes a policy to preserve, protect, develop, and, where possible, restore and enhance the resources of the nation's coastal zone. Encourages and assists states through the development and implementation of coastal zone management programs.</p>
<p><i>Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), 42 USC 9601-9675, P.L. 96-510, amended by Superfund Amendments and Reauthorization Act of 1986 (SARA), P.L. 99-499</i></p>	<p>Also known as "Superfund," provides for liability, compensation, cleanup, and emergency response for hazardous substances released into the environment and cleanup of inactive hazardous substances disposal sites. Also established a fund financed by hazardous waste generators to support cleanup and response actions.</p>

**Table C – Applicable Regulations**

<i>Department of Transportation Act, Section 4(f)</i>	Requires the Department of Transportation (DOT) to avoid or mitigate impacts to public parks and wildlife areas when approving transportation programs or projects.
<i>Endangered Species Act of 1973, as amended, 16 USC 1531 et seq., P.L. 93-205</i>	Protects threatened, endangered, and candidate species of fish, wildlife, and plants and their designated critical habitats. Under this law, no federal action is allowed to jeopardize the continued existence of an endangered or threatened species. The Endangered Species Act also requires consultation with USFWS and the National Marine Fisheries Service (NMFS) and the preparation of a biological assessment when such species are present in an area that is affected by government activities.
<i>Federal Property and Administrative Services Act of 1949</i>	Guides the process for transferring government property.
<i>Federal Records Act</i>	Requires federal agencies to preserve federal records of potential historic value.
<i>Federal Water Pollution Control Act (Clean Water Act), 33 USC 1251-1387</i>	The Clean Water Act is a comprehensive statute aimed at restoring and maintaining the chemical, physical, and biological integrity of the nation's waters. Primary authority for the implementation and enforcement rests with the U.S. Environmental Protection Agency (USEPA).
<i>Fish and Wildlife Conservation Act Coordination Act, 16 USC 661 et seq., P.L. Chapter 55</i>	The purpose of this Act is to ensure that wildlife conservation receives equal consideration and be coordinated with other features of water-resources development programs.
<i>Historic Sites Act of 1935, 16 USC 461-467, P.L. Chapter 593</i>	Establishes a national policy to preserve for public use, historic sites, buildings, and objects of national significance.
<i>Historical and Archaeological Data-Preservation, 16 USC 469et seq., P.L. 93-291</i>	Protects and preserves historical and archaeological data caused as a result of federal construction projects. Directs federal agencies to notify the Secretary of the Interior when the construction project may cause irreparable loss or destruction of significant resources or data. Provides a mechanism through which resources can be salvaged from a construction site.
<i>Magnuson-Stevens Fishery Conservation and Management Act, as amended through October 11, 1996, 16 USC 1801 et seq., P.L. 94-265</i>	Establishes regional fisheries councils that set fishing quotas and restrictions in U.S. waters. Federal agencies must consult with NMFS on all actions, authorized, funded, or undertaken by the agency that may adversely affect essential fish habitat.
<i>Marine Mammal Protection Act of 1972, 16 USC 1361 et seq., 1401-1407, 1538, 4107</i>	Establishes a moratorium on the taking and importation of marine mammals including harassment, hunting, capturing, collecting, or killing, or attempting the above actions. Requires permits for taking marine mammals. Requires consultations with USFWS and NMFS if impacts to marine mammals are possible.

**Table C – Applicable Regulations**

<p><i>Migratory Bird Treaty Act 16 USC 703-712</i></p>	<p>The Migratory Bird Treaty Act implements various treaties and is for the protection of migratory birds. Under the Act, taking, killing, or possessing migratory birds is unlawful.</p>
<p><i>National Environmental Policy Act of 1969 (NEPA), as amended; P.L. 91-190, 42 USC 4321 et seq.</i></p>	<p>Requires federal agencies to utilize a systematic approach when assessing environmental impacts of government activities. NEPA proposes an interdisciplinary approach in a decision-making process designed to identify unacceptable or unnecessary impacts to the environment.</p>
<p><i>National Historic Preservation Act, 16 USC 470 et seq.</i></p>	<p>Requires federal agencies to take account of the effect of any federally assisted undertaking or licensing on any district, site, building, structure, or object eligible or listed for inclusion in the NRHP. Provides for the nomination, identification (through listing on the NRHP), and protection of historical and cultural properties of significance.</p>
<p><i>National Invasive Species Act of 1996, 16 USC 4701 et seq., P.L. 104-332</i></p>	<p>Reauthorizes and amends the Nonindigenous Aquatic Nuisance Prevention Control Act of 1990. Establishes ballast water information and requires guidelines to be issued for the Great Lakes.</p>
<p><i>Noise Control Act of 1972, 42 USC 4901-4918, P.L. 92-574</i></p>	<p>Establishes a national policy to promote an environment free from noise that jeopardizes their health and welfare. Authorizes the establishment of federal noise emissions standards and provides information to the public.</p>
<p><i>Nonindigenous Aquatic Nuisance Prevention Control Act of 1990, 16 USC 4701 et seq., P.L. 101-646</i></p>	<p>Establishes aquatic nuisance species.</p>
<p><i>Occupational Safety and Health Act</i></p>	<p>Establishes standards to protect workers, including standards on industrial safety, noise, and health standards.</p>
<p><i>Resource Conservation and Recovery Act, 42 USC 6901, P.L. 94-580</i></p>	<p>Establishes requirements for safely managing and disposing of solid and hazardous waste and underground storage tanks. Federal agencies must comply with waste management requirements.</p>

**APPENDIX D**  
**HISTORIC CONTEXT STUDY**



**Historic Context Study  
Decommissioning And Excessing the USCGC MACKINAW**



**August 2004**

United States Coast Guard  
2100 Second Street, SW  
Washington, D.C. 20593



# **Decommissioning And Excessing the USCGC MACKINAW**

## **INTRODUCTION**

The United States Coast Guard (USCG) is proposing to decommission (take out of service) and excess the USCG Cutter MACKINAW (WAGB-83) to the General Services Administration (GSA). The MACKINAW (WAGB-83) is an ice breaker currently in operation. Due to the age and life of service of the vessel, the USCG began construction of a new vessel. The new vessel is designated as a multi mission Great Lakes Icebreaker (GLIB) named MACKINAW (WAGB-30). It will assume the ice breaking missions of MACKINAW (WAGB-83) and has increased operational capabilities for multiple mission service.

In accordance with the National Historic Preservation Act (NHPA) of 1966, as amended, the USCG considers decommissioning and excessing the MACKINAW an undertaking that may affect a property (MACKINAW) that meets the criteria of eligibility for listing to the National Register of Historic Places (NRHP). The MACKINAW is greater than 50 years in age and is potentially eligible for listing to the NRHP under Criterion A and Criterion C.

The file search for the following sections included a document and photograph review at the Historian's Office of the USCG Headquarters in Washington, DC. Other archival records and historical information, including the Historic American Engineering Record (HAER), was obtained from the Library of Congress website and the USCG Internal Controls and Asset Management Division. Additional information was gathered from the internet. The following sections provide background information on the undertaking, historic context and a statement of significance for the MACKINAW.

## **USCG DECOMMISSIONING, EXCESSING AND DISPOSAL**

The USCG follows specific legally required procedures for the decommissioning, excessing and disposal of all USCG vessels. The Federal Property and Administrative Services Act (FPASA) of 1949, as amended, requires that property excess to the needs of the USCG and Department of Homeland Security (DHS) must be reported to the GSA for disposal. GSA must first check to see if there is a need for the vessel within other federal agencies. Excess property no longer required for federal use is then determined surplus by GSA. If the vessel is determined surplus by GSA, several options exist for disposal in accordance with 41 CFR 101-43. This includes continued use, transfer, sale or donation, or scrap. The options for disposal are broadened if the vessel is clean of certain hazardous materials. The disposition options are thus specific to the vessel (Figure 1).

Due to operational, economic and legal requirements, the USCG must cost-effectively rid itself of obsolete and inefficient vessels no longer capable of effectively carrying out USCG missions. The FPASA of 1949, as amended, requires that property excess to the needs of the USCG and Department of Homeland Security (DHS) must be reported to the GSA for disposal.

The USCG determined that the MACKINAW has reached the end of its useful service life based on the following operational and economic reasons and in compliance with the FPASA;

- Costly maintenance problems,
- Difficulty servicing the vessel due to limited availability of parts,
- Habitability and the general quality aboard ship needs improvement since much of the quarters and facilities are limited and outdated,
- Not equipped to accommodate women aboard for extended missions,
- Limited multiple mission capability,
- Construction of WAGB-30,
- Aggregated, the above factors sum costs beyond efficiency. MACKINAW breaks ice approximately 70 days of the year, has limited multi-mission capability and costly maintenance and parts.

For the above reasons, the USCG proposes to decommission the vessel at the end of the 2005/2006 ice-season. GSA will not accept property declared excess by an agency that is contaminated with unacceptable limits of hazardous materials such as PCBs. The vessel was surveyed for Polychlorinated Biphenyls (PCBs), asbestos containing material (ACM) and lead-based paint (McMenamin 2001). The USCG will clean MACKINAW of PCBs in 2004. The USCG has very limited decision-making power regarding the ultimate disposition of a clean operable vessel or clean inoperable vessel through the legally required GSA disposal process.

## **HISTORICAL CONTEXT**

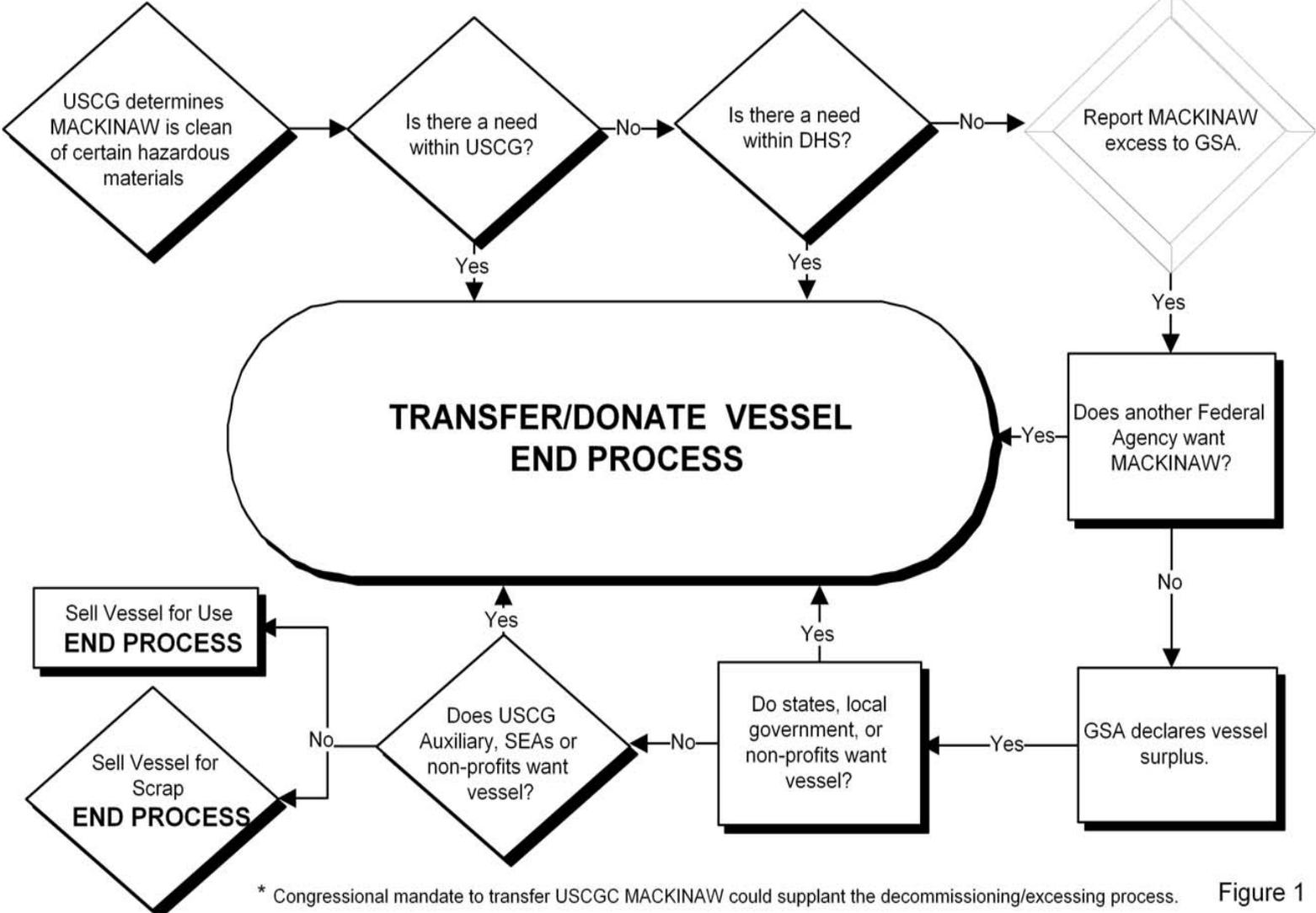
The Great Lakes region, particularly around Lake Superior, is rich in iron and copper ore. In the early 20th century, the Great Lakes region was one of the world's major supplies of iron ore. The lower lakes region was a major supplier of steel. Other commerce produced in the region also included limestone, coal, petroleum products and grain. Iron production for the region decreased into the 21st century, as has steel production. Though ore transport along the Great Lakes shipping network declined, it still accounts for most cargo shipped on the Great Lakes. Currently, it is estimated that more than 70 million tons of iron ore and 41 million tons of coal pass through the Great Lakes each year, compared to an estimated 35 million tons of iron ore in 1906 (Wine 2004).

During World War II, demands on the iron ore, limestone, coal and other raw material industries increased remarkably. The flow of these products from the Great Lakes region and the extension of the shipping season through the winter were imperative to the war effort. Meanwhile, federal vessels from around the US were transferred to the North Atlantic to support the war. As a result, the Great Lakes region was absent of the ice breakers that enabled freighters and other craft to travel the needed shipping lanes during the ice season.

**DECOMMISSIONING, EXCESSING, AND DISPOSAL STEPS FOR**

 = GSA Action  
 = USCG Actic

**USCGC MACKINAW\***



\* Congressional mandate to transfer USCGC MACKINAW could supplant the decommissioning/excessing process.

Figure 1

Ice breakers (WAGB) are the largest cutters operated by the Coast Guard. Ice breakers are generally designed such that the bow rises above the ice allowing the weight of the vessel to crush the ice beneath it. Ice breakers are also equipped with reinforced steel hulls to ram the ice and with a heeling system (rapid shift ballast systems) to aid in ice breaking operations (Krietmeyer 1991).

In 1943 Congressman Bradley (MI) proposed that an ice breaker be commissioned for use only within the Great Lakes. Plans for the nation's largest and strongest ice breaker, USCGC MACKINAW, commenced. The vessel's primary initial mission would be ice breaking in order to keep shipping lanes passable and maintained throughout and only within the Great Lakes (USCG 1967). The construction of MACKINAW would continue domestic coal supplies moving westward and iron ore and grain flowing eastward to support the war.

The keel of the MACKINAW was laid March 20, 1943 by Toledo Shipbuilding Company, Toledo Ohio. American Shipbuilding and Drydock Company, Cleveland, Ohio subsequently assumed the construction of the MACKINAW when the Toledo Shipbuilding Company declared bankruptcy. The vessel cost \$10 million to build. The MACKINAW is the only ice breaking cutter in the *MACKINAW* Class of vessels.

The vessel was launched March 4, 1944 and was commissioned in December 1944. USCGC MACKINAW has been homeported in Cheboygan, Michigan for 60 years.

The MACKINAW's original specifications included a standard displacement of 5,252 tons; a length of 290', a 74' 5" beam, and a 19'2" draft. The MACKINAW has a maximum speed of 20 knots. The vessel's propulsion system is diesel-electric. The system includes six (6) Fairbanks-Morse diesel engines at 2000 hp per engine (USCG 1967). MACKINAW has the capability to tow up to 120,000 lbs. The vessel is painted in typical Coast Guard red with white "racing stripe" bearing the USCG insignia. The vessel typically hosts approximately 75 Coast Guardsmen. The MACKINAW is equipped only with living accommodation space for men. The vessel was never retrofit for additional quarters for women.

The MACKINAW was originally equipped with forty (40) M-1 Rifles, seventeen (17) .45 caliber pistols, two (2) Thompson submachine guns, and two (2) .30 caliber rifles. Since 2003, the vessel currently hosts an M-60 emplacement. Though the vessel is not normally aircraft carrying, some aircraft have landed on it since the deck is wide enough to accommodate certain aircraft ([www.uscgaviationhistory.aoptero.org](http://www.uscgaviationhistory.aoptero.org)).

The MACKINAW was designed by Gibbs and Cox, Naval Architects. Per the original 1940's proposal by Congressman Bradley (MI), the vessel plans were expressly designed for ice breaking missions only within the Great Lakes. Due to the width of the locks in the St. Lawrence River and the width to which the vessel design called for, MACKINAW was restricted to the Great Lakes and could not navigate the St. Lawrence or the Chicago River. Since then, the St. Lawrence River lock system was widened and, though it has not yet been attempted, it is now feasible that the vessel could navigate the St. Lawrence to open seas.

The initial primary design and mission of the vessel was ice-breaking. The MACKINAW's primary mission remains ice-breaking. The vessel breaks ice approximately 70 days of the year. Since WWII, other missions are also executed. Such missions include: domestic operations, marine science, search and rescue, flood relief, and charitable operations. When the ice season is over, the vessel typically returns to homeport in Cheboygan, Michigan for maintenance. During the off-season, visitors are allowed aboard ship for tours of the MACKINAW.

The MACKINAW is well known and easily recognized in the Great Lakes region. There is no USCG vessel on the Great Lakes that compares in size and shape. The vessel hull design is often referred to as the shape of a football cut in half. The fantail is one of the vessel distinguishing characteristics. MACKINAW is also respected and known as the most reliable vessel faring the Great Lakes. Countless freighters and other craft that became ice locked were rescued by the MACKINAW. Of particular note for the MACKINAW is the 1948 ice season. In 1948, in the lower lakes region nearby Buffalo, New York, twelve (12) vessels became ice locked. MACKINAW freed each of the vessels. In 1976, MACKINAW was clearing lanes and slowed down due to some especially thick ice. The freighter, CLARK, following, could not slow down and struck MACKINAW (Walsh 1994).

MACKINAW participates in Tall Ships and racing events around Great Lakes cities such as Chicago. Charitable operations that the MACKINAW participates in include the Christmas tree donations in Chicago, IL. Christmas trees are distributed from the decks of the Mackinaw where it docks on the wall by Navy pier near the original location of the 1900's Christmas Tree Ship *Rouse Simmons* ([http://www.fomc.net/news12\\_02.htm](http://www.fomc.net/news12_02.htm)).

## **USCGC MACKINAW AND ELIGIBILITY FOR LISTING TO THE NATIONAL REGISTER OF HISTORIC PLACES**

All National Register properties, whether listed or eligible, must have integrity and significance and meet certain criteria. Consideration is given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the NRHP. The National Register defines significance, integrity and qualifying criteria as follows:

“The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and,

- (a) that are associated with events that have made a significant contribution to the broad patterns of history, or
- (b) that are associated with the lives of persons significant in our past, or
- (c) embodies distinctive characteristics of a type, period, or method of construction or represent the work of a master, or possess high artistic values, or represent a significant and distinguishable entity whose components lack individual distinction, or

- (d) that have yielded or may be likely to yield information important in prehistory or history.”  
(36 CFR 60.4)

Concerning vessels, there are five (5) historic types that may render a vessel eligible for listing to the NRHP. The types include: floating historic vessels that are generally greater than 40’ in length and greater than 20 tons in weight; dry-berthed historic vessels; small crafts less than 40’ in length; hulks – substantially intact abandoned vessels not afloat; and shipwrecks (Delgado 1985).

Based on the current research and including age, vessel type, significance and integrity, the USCG finds there is sufficient potential to address NRHP criteria for listing of the MACKINAW to the NRHP. The MACKINAW is greater than 50 years in age. The MACKINAW is a floating vessel greater than 40’ in length and greater than 20 tons in weight. The MACKINAW qualifies for listing to the NRHP under both Criterion A and Criterion C. The MACKINAW was involved with important maritime heritage, commercial activity and government activities. The MACKINAW is the sole vessel in the *MACKINAW* Class.

Under Criterion A, the MACKINAW is associated with a pattern of events. The MACKINAW facilitated the flow of commerce from the Great Lakes that was imperative to the WWII effort. Since then, the MACKINAW continued to keep open and maintain shipping lanes of the Great Lakes for over 60 years. Thus, the MACKINAW is associated with the continued trend of keeping passable vital transportation networks for extended winter seasons that it originally commenced during WWII. The service of the MACKINAW may account for 60 years of economic sustainability for certain industries of the Great Lakes region. Without the ice-breaking capabilities of MACKINAW this would not otherwise be possible. MACKINAW itself is important for contributing to the development and growth of Great Lakes industries. The MACKINAW represents significant, extensive and enduring maritime heritage for the US and particularly for the Great Lakes region.

MACKINAW is eligible for listing to the NRHP under Criterion C for physical design or construction that embodies distinctive characteristics of a type, period or method of construction. The vessel is the only cutter in the Mackinaw class of vessels. The vessel was specifically designed for use only within the Great Lakes and is the oldest working ice-breaker in the Great Lakes. At the time it was built, the vessel was designed on a massive scale, larger and far exceeding in power other ice breakers. The vessel specifications were unprecedented. The hull itself was made with 1 5/8” thick steel. The vessel was designed in association with a single purpose of national importance, even securing “Special Presidential Funds” for construction of high priority projects in the 1940’s. In order not to slow the war effort, the designers “knew that the MACKINAW would have to accomplish in one pass what smaller ice breakers had to make in 3-4 passes. This design, thus took into account a massive keel, an unparalleled displacement and special features for working in ice.

Ice breaking design functions were foremost and also included a propeller at the bow. The propeller at the bow was innovative. The notion of a front propeller was dual purpose. The propeller can draw water out from underneath the ice, allowing the weight of the ice itself to cause the ice sheets to weaken. The bow propeller can also “mill” crushed ice in to slush,

delaying refreezing; this design, in particular, is a distinguishing characteristic of the MACKINAW. The displacement of the vessel is another feature designed expressly for working in ice. The MACKINAW has a “heeling system” that allows the vessel to rapidly shift ballast water. The shifting of the ballast causes the vessel to rock side to side so that it can free itself from being ice-locked. The vessel fantail is distinctive also. It is large and easily recognized due to its size and design. And, the decks are still wood. These features account for the distinctive characteristics contributing under Criterion C. These features aided the vessel to manage and successfully break ice and work in varied weather conditions stressful for both the crew and the machinery for 60 years. The MACKINAW represents the distinctive and successful type of period of vessel design and construction.

The MACKINAW retains integrity of location, design, setting, materials, workmanship, feeling and association. Although MACKINAW underwent some systems upgrades and general modifications, the vessel still evokes the aforementioned characteristics of integrity as defined by the National Register. Notably, MACKINAW for over 60 years has known no other waters than the Great Lakes and outwardly is the original design to which the vessel was specified.

An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. The USCG determined that the decommissioning of the MACKINAW would result in an adverse effect to the vessel as defined in 36 CFR 800.5(a)(1) and (2) (Appendix A). The proposed USCG decommissioning and excessing of MACKINAW could result in the transfer of ownership outside the Federal government through Coast Guard direct transfer authority under 14 U.S.C. 641, or legislative or Presidential mandate. Appendix A outlines potential adverse effects to the MACKINAW upon decommissioning that are considered reasonably foreseeable and/or cumulative.

## **Appendix A**

Pursuant to Section 106 of the National Historic Preservation Act (NHPA) of 1966 the USCG must consider whether their actions may affect properties meeting the criteria of eligibility for listing to the National Register of Historic Places (NRHP). If the USCG undertaking is the type which could affect historic properties if they were present, the USCG must consult with the appropriate State Historic Preservation Officer(s) (SHPO), the Advisory Council on Historic Preservation (ACHP), as appropriate, and local interested parties to identify the potentially effected property, assess its effects and seek ways to avoid, minimize or mitigate any adverse effects on historic properties (36 CFR 800.1(a)). Examples of defined adverse effects per 36 CFR 800, 36 CFR 60, 36 CFR 65 that could occur if the MACKINAW is decommissioned and declared excess include, but are not limited to:

**(i) Physical destruction of or damage to all or part of the property.**

Upon reporting the MACKINAW excess to the needs of the Coast Guard, other federal agencies are afforded the opportunity to assume the vessel through GSA. Should no other federal agency stake claim to the vessel, GSA determines if a state agency customer is interested in obtaining the vessel. The vessel must be “PCB-free” prior to donation to a state agency. If the vessel contains PCBs or if no state agency expresses interest in obtaining the vessel it may be transferred, or sold or scrapped. If the decommissioning / excessing process results in sale or scrapping, there would be complete destruction or possible damage to the property. If the decommissioning/excessing process results in donation to a state, it is possible that destruction or damage could occur under programs such as artificial reefing. Should the undertaking result in donation to a state for the use as a museum, a certain amount of repair, accessibility construction or other work could result in damage to the vessel.

**(ii) Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the Secretary's standards for the treatment of historic properties (36 CFR part 68) and applicable guidelines.**

Should no other federal agency stake claim to the vessel, GSA determines if a state agency customer is interested in obtaining the vessel. If the vessel is transferred to a state or agency/group or individual identified by the donee state, federal regulation no longer applies and the USCG assumes no assurance that any alterations would be performed according to the Secretary's Standards for the Treatment of Historic Properties.

**(iii) Removal of the property from its historic location.**

The removal of the MACKINAW from the Great Lakes would result in an adverse effect and may impact the vessel's historic value. The MACKINAW's entire life of service is within the Great Lakes. The vessel was designed expressly for ice breaking missions in the Great Lakes. The ultimate final location of the vessel upon its eventual disposal may also adversely affect the physical integrity since the vessel is freshwater faring and has never operated in saltwater. Under the options for decommissioning and excessing, the only reason to remove the vessel

from the Great Lakes region is for storage, scrap or transfer. This scenario could result in damage, vandalism, or destruction for scrap.

**(iv) Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance.**

The vessel's physical features may be altered as a result of the proposed decommissioning. The vessel may be stored after decommissioning and prior to disposal and could be painted over, retrofitted to suit another agency, scavenged for parts including parts that may play a role in defining the historic character of the vessels, such as the bell, vandalized and/or allowed to deteriorate.

**(v) Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features.**

An adverse effect could occur should the vessel be placed in a location incongruous with its historic elements.

**(vi) Neglect of a property, which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization.**

Should the MACKINAW be transferred to temporary storage, it is possible that the vessel could be neglected and/ or vandalized, causing damage to its historic integrity. Under the options for decommissioning and excessing the vessel, the USCG cannot be assured that such an adverse effect would not occur.

**(vii) Transfer, lease, or sale of property out of Federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.**

The USCG has very limited decision-making authority regarding the ultimate disposition of a clean (PCB-free) operable vessel or clean (PCB-free) inoperable vessel through GSA's legally required personal property disposal process. The USCG also may not have the authority or ability to propose or implement restrictions for long term preservation of personal property such as MACKINAW. It is not possible for the USCG to stipulate restrictions on a bill of sale for personal property that would be in effect for perpetuity. Therefore, the USCG cannot be sure that the ultimate outcome of that process would not be destruction of the vessel or transfer outside of Federal ownership.



**APPENDIX E**  
**HAZARDOUS MATERIALS AND WASTE SURVEY**



## Hazardous Materials and Waste Survey of the Vessel

**Table E-1. Location of Items Sampled and Results of Tests for Asbestos Onboard the USCGS MACKINAW**

Location	Material	Results
Bridge, Bulkhead Insulation	Cork	NAD
Cos Office, OVHD, BKHD Insulation	Cork	NAD
Forward Hold, Storage, OVHD, Pipe Insulation	White fibrous material	50% C
1-50-1, BKHD Insulation	Cork	NAD
Forward Motor Room OVHD, 4" Pipe Insulation	Black Mastic	<1%
#3 Engine Room, Starboard Side, Lower Level, 1½" Line	White joint compound	NAD

Source: USCG 2001

Note: NAD – No Asbestos Detected

**Table E-2. Location, Color, and Sample Number of Paints Tested for Lead (results greater than 1.0 mg/cm<sup>2</sup> is considered lead-based paint.**

Sample #	Result (mg/cm <sup>2</sup> )	Location	Color of outer layer
1	1.6	Bridge, Starboard, Aft BKHD	White
2	3.3	Bridge, Starboard, Aft BKHD	Dark grey
3	0.1	Conning Station, Stiffener	Dark grey
4	0	Bridge, Starboard Bridge Wing, Deck	Dark grey
5	0	Bridge Starboard BKHD, Outside	White
6	0.2	Flying Bridge, Forward Mast	SPAR
7	0	Main Mast	Black
8	4.1	Stack, Forward	SPAR
9	4.1	Stack Forward	Black
10	1.8	Flying Bridge, Radio ID Letters	Red
11	9.2	Flying Bridge, Starboard Deck	Dark Grey
12	3.7	Flying Bridge, Port Handrail	White
13	8.3	Bridge, Port Bridge Wing, Ladder to Flying Bridge	White
14	0.8	ET Shop, Fwd BKHD	Light Blue
15	3.6	CO's Pantry, Aft BKHD	White
16	0.1	01-66-0-Q, Deck	Yellow
17	0.3	01-66-0-Q, Deck	Red
18	0	01-66-0-Q, OVHD	Beige
19	17	Fos'c'le, Green Valve Handle	Green
20	0	Fos'c'le, Port Bit	SPAR
21	0	Fos'c'le, Deck	Dark Grey
22	0	Fos'c'le, Weathershield	White
23	0.3	Fos'c'le, Portside, Letter "E"	Blue
24	0.1	Fos'c'le, Portside, FP 01-68-2	Red
25	17	Fos'c'le, Portside, FP 01-68-2, Fire Station Valve Handle	Red
26	2.7	Hatch 1-12-0	Orange
27	3.2	Lower MAA/QM Stores, Aft BKHD	Light Yellow
28	2.2	Lower MAA/QM Stores, Deck	Dark Red
29	2.3	Fwd Hold, Deck	Dark Grey
30	13	Fwd Hold, 4" Pipe	Yellow
31	0	Fwd Hold, Ladder	White
32	0	Wardroom, Fwd BKHD, Under Paneling	Light Green
33	0	Dry Stores, Aft BKHD	White
34	0	Dry Stores, Aft BKHD, FP 2-56-4	Red

**Table E-2. Location, Color, and Sample Number of Paints Tested for Lead (results greater than 1.0 mg/cm<sup>2</sup> is considered lead-based paint.**

Sample #	Result (mg/cm <sup>2</sup> )	Location	Color of outer layer
35	2.5	Dry Stores, Deck	Dark Grey
36	2	Fwd Motor Rm., Deck Safety Lines	Yellow
37	0.12	Fwd Motor Rm., Deck	Red
38	1.4	Fwd Motor Rm., Deck Safety Lines	Black
39	0	Fwd Motor Rm., Aft BKHD	White
40	0	#1 Engine Rm., Upper Level	Dark Red
41	0	#1 Engine Rm., Aft Portside BKHD, Upper Level	White
42	0.5	#1 Engine Rm., Lower Level, Portside Hull	Dark Red
43	4.9	#1 Engine Rm., Lower Level, Deck	Dark Red
44	0	#2 Engine Rm., Deck, Upper Level	Dark Red
45	0	#2 Engine Rm., Trimming Pump, Electrical Box	Blue
46	0.1	#3 Engine Rm., Aft BKHD	White
47	23	#3 Engine Rm., Aft BKHD	Red
48	0	Motor Rm., Upper Level, Portside, Fire Main	Red
49	0.1	Motor Rm., Upper Level, Portside, Deck	Dark Red
50	0.8	Motor Rm., Upper Level, Portside, Safety Lines	Yellow
51	3.4	Bos'n Hole, Deck	Dark Grey
52	0.3	Bos'n Hole, Fwd BKHD	White
53	0	DC Shop, Deck	Dark Grey
54	0.1	DC Shop, Fwd BKHD	Dark Grey
55	0	DC Shop, Fwd BKHD	White
56	0	Aftersteering, Deck	Dark Red
57	2.9	Aftersteering, Starboard Stiffener	White
58	0	Aftersteering, Steering Bar	Grey
59	0	Fantail, Deck	Dark Grey
60	0	Fantail, Aft, Port bit	SPAR
61	0	Fantail Hatch to Aft Steering	White
62	0	Port Main Deck, BKHD	White

Table E-3. Location of Items Sampled and Results of Tests for PCBs Onboard the USCGC MACKINAW

Sample #	Result (µg/g)	Location	Material	Picture #
1867	ND	Bridge, Starboard Heating Unit Line, Pipe Insulation	Black Foam	1
1868	ND	ET Shop, Blue Mat	Black Foam	2
1869	ND	CO's Head, Under Sink, CW Line, Pipe Insulation	Blue Rubber	3
1870	ND	CO's Pantry, Starboard, Pipe Insulation	Black Foam	4
1871	ND	01 Deck, Outside, Starboard, Pipe Insulation	Black Foam	5
1872	ND	Windlass Rm, Portside, Pipe Insulation	Grey Foam	6
1873	ND	Fwd Hold, Storage, Starboard, Heating/AC Line, Pipe Insulation	Black Foam	7
1874	ND	Reserve Crew Berthing A, OVHD, Pipe Insulation	Black Foam	8
1875	ND	Reserve Crew Berthing B, OVHD, Pipe Insulation	Black Foam	9
1876	ND	Hatch to Sewage Space, Non-skid	Black Foam	10
1877	ND	Sewage Space, Portside, 4" "Receive" Line, Pipe Insulation	Non-skid Adhesive	11
1878	ND	Sewage Space, #1 Evap, Fwd, Insulation	Black Foam	12
1879	ND	Sewage Space, Sewage Tank Access Hatch Gasket	Black Foam	13
1880	ND	Passageway 1-57-2, HW Tank, Pipe Insulation	Cork/Rubber	14
1881	ND	Reefer Flat, Aft BKHD, Grey Water Line, Pipe Insulation	Black Foam	15
1882	ND	Reefer Flat, Portside Reefer, ½" Tubing, Pipe Hanger	Black Mastic	15
1883	85	Commissary, Dry Stores, OVHD, 2" Line, Pipe Hanger	Black Foam	15
1884	ND	Male Head 2-59-1, OVHD, 2" Line, Pipe Hanger	Black Rubber	16
1885	ND	Male Head 2-59-1, OVHD, Potable Water Line, Pipe Insulation	Black Foam	17
1886	13	Fwd Motor Room, OVHD 4" Line, Pipe Insulation	Black Mastic	18
1887	44	Fwd Motor Room, Aft, OVHD 4" Line, Pipe Insulation	Felt (Not Chromelock)	19
1888	ND	Lower Fwd Motor Room, Tank Suction Manifold, 3" Pipe Hanger	Black Rubber	20
1889	ND	Messdeck, Aft BKHD, AC/HW Heating Vent, 1" Line, Pipe Insulation	Black Foam	21
1890	ND	Ships Office, Aft BKHD, A/C Line, Pipe Insulation	Black Foam	22
1891	ND	1st Class Lounge, Seat Cushions	Yellow Foam	23
1892	ND	1st Class Lounge, Seat Cushions	Blue Vinyl	23

Table E-3. Location of Items Sampled and Results of Tests for PCBs Onboard the USCGC MACKINAW

Sample #	Result (µg/g)	Location	Material	Picture #
1893	ND	CrewsLounge, Seat Cushion	Yellow Foam	24
1894	ND	Crews Lounge, Seat Cushion	Blue/Green Vinyl	24
1895	ND	Crews Lounge, OVHD, Heating/AC Line, Pipe Insulation	Black Foam	25
1896	ND	#1 Engine Room, Starboard, ½" Tubing for Eye Wash Station, Pipe Hanger	Black Rubber	26
1897	ND	#1 Engine Room, Portside, Grey Mat in Front of Electrical Panel	Grey Rubber	27
1898	ND	#1 Engine Room, Aft Portside, 1" Line Pipe Insulation	Black Foam	28
1899	ND	#2 Engine Room, OVHD Starboard, 2" Uninstalled Line, Pipe Hanger	Red Rubber	29
1900	ND	#3 Engine Room, Portside Aft, 1" Fuel Line, Pipe Hanger	Black Rubber	30
1901	ND	#3 Engine Room, Lower Level, 4" Steam Line Insulation	Black Foam	31
1902	25	Aft Motor Room, Lower Level, Portside, FP 4-141-2, Flange Gasket	Black Rubber	32
1903	ND	Spare Parts, Starboard OVHD, Condensate Line, Pipe Insulation	Black Foam	33
1904	ND	DC Shop, Bench Mat	Blue Rubber	34
1905	ND	Port Main Deck, Deck Mat	Black Rubber	35



## **APPENDIX F**

### **MEMORANDUM OF AGREEMENT BETWEEN USCG AND MICHIGAN SHPO**



U.S. Department of  
Homeland Security

United States  
Coast Guard



Commandant  
United States Coast Guard

2100 Second Street, S.W.  
Washington, DC 20593-0001  
Staff Symbol: CG-443  
Phone: (202) 267-4073  
Fax: (202) 267-4219  
Email: shathaway@comdt.uscg.mil

OCT 12 2005

Mr. Brian D. Conway  
Michigan State Historic Preservation Officer  
Michigan Historical Center  
P.O. Box 30740  
702 W. Kalamazoo St.  
Lansing, MI 48909-8240  
Project \_ #ER-05-42

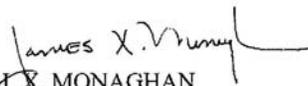
Dear Mr. Conway:

The United States Coast Guard and the Michigan State Historic Preservation Officer (MISHPO) entered into Section 106 consultation under the NHPA. The MISHPO acts as lead SHPO on behalf of all the Great Lakes' SHPOs. The USCG and MISHPO developed a Memorandum of Agreement (MOA) to resolve potential adverse effects as the result of our proposed action of decommissioning and declaring excess the United States Coast Guard Cutter (USCGC) MACKINAW (WAGB-83).

The MOA is enclosed for your signature (enclosure (1)). Please sign the MOA four (4) times and return all signed copies to us via Fedex, as postal service to a federal facility is extremely time consuming. We will provide you with an original signed copy as soon as all parties have signed the MOA.

It has been a pleasure working with your office. USCG especially appreciates the efforts of Ms. Martha McFarlane-Faes and Mr. Nick Bozen for their input and review of the MOA. The United States Coast Guard looks forward to a continuing successful relationship with the MISHPO.

Sincerely,

  
J. X. MONAGHAN  
Captain, U.S. Coast Guard  
Chief, Office of Cutter Forces  
By direction

Enclosure(s): Memorandum of Agreement between USCG and MISHPO



U.S. Department of  
Homeland Security

United States  
Coast Guard



Commandant  
United States Coast Guard

2100 Second Street, S.W.  
Washington, DC 20593-0001  
Staff Symbol: CG-443  
Phone: (202) 267-4073  
Fax: (202) 267-4219  
Email: shathaway@comdt.uscg.mil

OCT 12 2005

Ms. Anne E. Haaker  
Illinois Historic Preservation Deputy Officer  
Illinois Historic Preservation Agency  
1 Old State Capitol Plaza  
Springfield, IL 62701-1512

Dear Ms. Haaker:

The United States Coast Guard and the Michigan State Historic Preservation Officer (MISHPO) entered into Section 106 consultation under the NHPA. The MISHPO acted as lead SHPO on behalf of all the Great Lakes' SHPOs. To resolve potential adverse effects as the result of our action the USCG and MISHPO developed a Memorandum of Agreement (MOA) for the decommissioning and declaration of excess of the United States Coast Guard Cutter (USCGC) MACKINAW (WAGB-83). You requested to sign as a concurring party to the MOA.

I am pleased to announce that the MOA is enclosed for your signature (enclosure (1)). Please sign the MOA four (4) times and return all signed copies to us via Fedex, as postal service to a federal facility is extremely time consuming. We will provide you with an original signed copy as soon as all parties have signed the MOA.

It has been a pleasure working with your office and specifically, Mr. Cody Wright. The United States Coast Guard looks forward to a continuing successful relationship with the Illinois State Historic Preservation Office.

Sincerely,

  
J. X. MONAGHAN  
Captain, U.S. Coast Guard  
Chief, Office of Cutter Forces  
By direction

Enclosure(s): Memorandum of Agreement between USCG and MISHPO



Encl. (1) to COMDTINST 5216.18

**MEMORANDUM OF AGREEMENT  
BETWEEN  
THE UNITED STATES COAST GUARD AND  
THE MICHIGAN STATE HISTORIC PRESERVATION OFFICER  
REGARDING THE DECOMMISSIONING AND DECLARATION OF EXCESS  
OF THE UNITED STATES COAST GUARD CUTTER MACKINAW (WAGB-83)**

1. **PARTIES.** The parties to this Memorandum of Agreement (Agreement) are the United States Coast Guard (USCG) and the Michigan State Historic Preservation Officer (MISHPO). The United States General Services Administration (GSA) has participated in the consultation and concurs in this Agreement.
2. **AUTHORITY.** This Agreement is authorized under the provisions of Section 106 of the National Historic Preservation Act (NHPA, 16 U.S.C. 470f) and its implementing regulations (36 CFR § 800). The USCG has consulted with MISHPO in accordance with the above provisions.
3. **PURPOSE.** The United States Coast Guard (USCG) is proposing to decommission and report as excess personal property to GSA, the United States Coast Guard Cutter (USCGC) MACKINAW (WAGB-83) (Undertaking). USCGC MACKINAW appears to meet the criteria for listing in the National Register of Historic Places, according to consultation with MISHPO, consultation with interested parties and documentation found in *Historical Context and Statement of Significance* (USCG 2004). USCG determined that the process of decommissioning and declaring the USCGC MACKINAW as excess personal property constitutes an adverse effect as defined in 36 CFR Part 800.5(a)(1). The purpose of this Agreement is to set forth terms by which the USCG will mitigate adverse effects of the proposed undertaking.
4. **FEDERAL EXCESSING PROCESS**  
As a result of the USCG reporting the vessel as "excess personal property," as that term is defined in the Federal Property Management Regulations, Title 41, Part 102, Section 36.40 of the Code of Federal Regulations (41 C.F.R. § 102-36.40), the vessel could eventually be removed from USCG custody and control, and possibly Federal ownership through one of the following processes: 1) specific or "special" legislation directing or authorizing conveyance of the vessel to a specific entity (requires enactment of legislation by Congress and subsequent signing into law by President); 2) the General Services Administration (GSA) personal property disposal process for transfer to other Federal agencies, (41 CFR §102-36); 3) the GSA personal property disposal process for conveyance to a state or local government, or non-profit organization (41 CFR §102-37); 4) the GSA personal property disposal process for sale to the highest bidder; 5) direct Coast Guard transfer to the USCG Auxiliary, Service Educational Activities (SEA's), or a non-profit public body or private organization, (14 USC 641); ) or 6) if transfer of ownership through one of the above processes is not possible, scrapping of the vessel.

5. RESPONSIBILITIES:

a. The USCG shall ensure that the following actions are completed:

1. Historic American Engineering Record (HAER). The USCG shall complete the HAER recordation in order to provide a permanent record of the USCGC MACKINAW (WAGB-83). Recordation shall follow standards outlined in the Secretary of the Interior's "Recording Historic Structures and Sites for the HISTORIC AMERICAN ENGINEERING RECORD," and will include:

A. Large Format Photography of the USCGC MACKINAW (WAGB-83)

The USCG completed compilation of photographic documentation in accordance with HAER standards. The photographs are available at the Library of Congress and on the Library of Congress website.

B. Measured Drawings of the USCGC MACKINAW – USCG will complete a set of measured drawings of the USCGC MACKINAW (WAGB-83) for inclusion within the HAER.

C. Historical Report of the USCGC MACKINAW (WAGB-83)

The USCG shall prepare a narrative report describing the vessel's history, engineering and mission of the USCGC MACKINAW (WAGB-83). The report is to be consistent with the Secretary of the Interior's "Standards and Guidelines for Architectural and Engineering Documentation." The report shall include, but will not be limited to, a description of the design elements, construction, technology and a general service record of the USCGC MACKINAW (WAGB-83). The report shall outline the history of the vessel's essential systems and its place within the history of naval architecture. This shall include information about where the vessel was stationed, its length of service, and important programs, incidents, missions, or operations in which the vessel was involved. Emphasis shall be placed on the vessel's primary service of keeping shipping lanes passable during and after World War II.

Copies of selected available archived photographs from the USCG Historian's office in Washington, D.C. will also be included in the historical report in order to portray the USCGC MACKINAW's mission, history, systems or engineering discussed in the text. These will provide a visual record of the USCGC MACKINAW (WAGB-83) during its construction, during operations and in port. This record also will demonstrate the cutter's mission, history, systems or engineering discussed in the text.

A draft version of the narrative history shall be submitted to the MISHPO for review and comment. The comments shall be incorporated into the document prior to finalization.

## 2. Video

The USCG or approved entity shall complete a video of current missions and life aboard the USCGC MACKINAW to provide to the MISHPO and the USCG Historians Office. The video will document the vessel's successes, will follow the vessel on ice-breaking missions, and will document personal interviews with the Coast Guardsmen aboard ship.

## 3. Artifact Recovery

- A. USCG shall ensure that significant artifacts from the MACKINAW are removed in an appropriate manner and transferred to the USCG's repository in Forestville, Maryland, for permanent curation.
- B. These artifacts shall include but are not limited to: ship's bell; ship's plaque; and any other objects deemed appropriate by the USCG's curatorial and historical staff.
- C. The USCG shall ensure that the objects removed from the MACKINAW are stored in compliance with provisions outlined in 36 CFR Part 79. The USCG shall also ensure that these artifacts are made available to museums or institutions in accordance with the provisions of 36 CFR Part 79 as well as appropriate USCG guidelines. Upon execution of this Agreement, the USCG will maintain a record of items loaned to museums or institutions.
- D. The USCG may loan available artifacts from the USCGC MACKINAW (WAGB-83). Such a loan will follow the standards of USCG's Property Management Manual, "Agreement for Outgoing Loan."
- E. An Inventory of Artifacts will be provided to MISHPO and will be permanently retained and maintained by the USCG.

## 4. Distribution Plan

- A. The USCG shall prepare a minimum of three (3) archivally stable copies of the final HAER recordation for distribution to MISHPO and the USCG Historian's Office and for submittal to the United States Library of Congress (LOC). The USCG will distribute non-archivally stable copies of the same documentation to the following institutions:
  - 1. U.S. Coast Guard Academy
  - 2. National Park Service Maritime Heritage Initiative

3. U.S. Coast Guard Program Offices selected in consultation with MISHPO
  4. Maritime museums selected in consultation with MISHPO
  5. Other interested parties selected in consultation with MISHPO
- b. The SHPO shall
1. Respond within thirty (30) calendar days to any requests for review and comment on documentation created in accordance with this Agreement.

#### 6. SCHEDULE FOR COMPLETION

The terms of this agreement will become effective on . . . [DATE OF SIGN] and shall follow a schedule for completion as follows

- A. HAER Recordation and Video preparation shall be completed in full prior to decommissioning and reporting the USCGC MACKINAW (WAGB-83) as excess personal property.
- B. HAER Recordation shall be completed within two (2) years from the date of execution of this Agreement.
- C. The USCG shall distribute the documentation to parties specified in the Distribution Plan within three (3) years of the date of execution of this Agreement.
- D. If the USCG is unable to meet this schedule for completion, the USCG shall consult with the MISHPO to discuss the reasons for the delay and to determine reasonable new dates for completion of the mitigation. New dates for completion dates shall be agreed upon in writing among the consulting parties but shall not require amending this Agreement.

#### 7. REPORTING

The USCG shall provide the MISHPO with a brief written report of its progress in completing the above mitigation measures beginning one year from the date of execution of this agreement and proceeding annually each year thereafter until completed.

#### 8. POINTS OF CONTACT.

The USCG Point of Contact (POC) will be Headquarters, United States Coast Guard, Assistant Commandant for Engineering and Logistics, Environmental Management 2100 Second St SW, Rm. 6109, Washington DC 20593, ATTN: Susan G Hathaway at (202) 267 - 4073. The POC for the MISHPO will be Martha MacFarlane-Faes, *Environmental Review Coordinator, State Historic Preservation Office, 702 W.*

*Kalamazoo Street, PO Box 30740, Lansing, MI 48909-8240. ph 517-335-2720; fax 517-335-034,8 email: faesm@michigan.gov.*

9. AMENDMENT AND MODIFICATION.

This Agreement may be modified upon the mutual [*written*] consent of the parties in accordance with 36 CFR § 800.6(c)(7).

10. DISPUTE RESOLUTION

A. Objections from the Public- If an objection is raised by a member of the public during the implementation of the measures stipulated in this Agreement, the USCG shall take the objection into account and shall consult with the objecting party, MISHPO, and the GSA to resolve the objection.

B. Objections from Parties to the Agreement - Should any party to this Agreement object within thirty (30) days to any actions pursuant to this Agreement, then the USCG shall consult with the objecting party to resolve the objection. If the USCG determines that the objection cannot be resolved, the USCG shall forward all documentation relevant to the dispute to the Advisory Council on Historic Preservation (Council). Within forty-five (45) days after receipt of all pertinent documentation, the Council shall provide the USCG with comments pursuant to 36 CFR § 800.7(c) the USCG shall take into account in reaching a final decision regarding the dispute in accordance with 36 CFR § 800.7(c)(4). The USCG's responsibility to carry out all actions under this Agreement that are not subjects of the dispute will remain unchanged.

11. TERMINATION.

A. If the USCG determines that it cannot implement the terms of the Agreement, or if MISHPO determines that the Agreement is not being properly implemented, the USCG or MISHPO shall propose to the other parties to this Agreement that it be terminated.

B. The party proposing to terminate the Agreement shall so notify all parties to this Agreement explaining the reasons for termination and affording at least sixty (60) days to consult and seek alternatives to termination. The parties shall then consult.

C. Should such consultation fail, the USCG or the MISHPO may terminate the Agreement by so notifying all parties. Should this Agreement be terminated, the USCG shall either:

- i. Consult in accordance with 36 CFR § 800.6(a) in an effort to resolve any adverse effects, or
- ii. Terminate consultation and request the Council comment in accordance with 36 CFR § 800.7(c).

13. OTHER PROVISIONS.

Nothing in this Agreement is intended to conflict with current law or regulation or the directives of the United States Coast Guard or the Department of Homeland Security. If a term of this agreement is inconsistent with such authority, then that term shall be invalid, but the remaining terms and conditions of this agreement shall remain in full force and effect.

**APPROVED BY:**

**UNITED STATES COAST GUARD**

By: James X. Monaghan Date: 10/12/05  
J.X. Monaghan, Captain, U.S. Coast Guard  
Chief, Office of Cutter Management

**STATE HISTORIC PRESERVATION OFFICER**

By: Brian D. Conway Date: 11/27/05  
Mr. Brian D. Conway, State Historic Preservation Officer  
State of Michigan, Department of History, Arts and Libraries

**CONCURRING:**

**GENERAL SERVICES ADMINISTRATION**

By: David M. Robbins Date: Sept 28 2005  
Mr. David Robbins, Director  
Property Management Division

**ILLINOIS STATE HISTORIC PRESERVATION OFFICER**

By: Anne E. Haaker Date: 12/13/05  
Ms. Anne Haaker, State Historic Preservation Officer  
State of Illinois, Illinois Historic Preservation Agency

**APPENDIX G**  
**IMPACT SUMMARY MATRIX**



	Alternative 2: Proposed Action					
	Alternative 1: No Action	General	Continued Use as a Ship	Use as a Museum	Use in a Certified Artificial Reefing Program or as a Submerged Museum	Alternative 3: Congressional Mandate
<b>Cultural Resources</b>	<b>No significant impacts and would make no contribution to cumulative impacts with mitigation. No significant contribution to cumulative impacts.</b> The ship would continue to be under federal ownership, classified as inactive and maintained at a level based on available funding, resulting in adverse impacts to its historic value since the vessel would not continue to be manned, and would not continue to carry out the mission that made it eligible for listing on the NRHP.	<b>No significant impacts and would make no contribution to cumulative impacts with mitigation. No significant contribution to cumulative impacts.</b> Decommissioning of the MACKINAW would result in an adverse effect to the vessel.	<b>No significant impacts and would make no contribution to cumulative impacts with mitigation. No significant contribution to cumulative impacts.</b> Continued use of the MACKINAW by federal, state, or local governments, or by the private sector would have adverse impacts to cultural resources because it would potentially result in the ship being removed of equipment and components, removed from its historic location, and transferred out of federal ownership.	<b>No significant impacts and would make no contribution to cumulative impacts with mitigation. No significant contribution to cumulative impacts.</b> Transfer of the MACKINAW for use as a museum would have adverse impacts to cultural resources because it would potentially result in the ship being removed of equipment and components, removed from its historic location, and transferred out of federal ownership.	<b>No significant impacts and would make no contribution to cumulative impacts with mitigation. No significant contribution to cumulative impacts.</b> Transfer of the MACKINAW to a state for use in a certified artificial reefing program would have adverse impacts to cultural resources because it would result in the ship being stripped of equipment and components, removed from its historic location, transferred out of federal ownership, and sinking of the ship that would ultimately result in physical destruction.	<b>No significant impacts and would make no contribution to cumulative impacts with mitigation.</b> The MACKINAW would be removed from federal ownership, thus resulting in an adverse impact; equipment or components would be removed, altering the ship so that the historicity is diminished. If the congressional mandate includes specific historic preservation protections, damage to, physical destruction of, or neglect of the vessel would no longer be a concern.  Uses of the MACKINAW under Alternative 3 would include continued use by federal, state, or local government or use of the vessel as a museum. See descriptions under Alternative 2.
<b>Socio-economics</b>	<b>No significant impacts. No significant contribution to cumulative impacts.</b> The cost of maintaining the inactive ship would not be a significant impact on USCG economic efficiency. Social impacts would not be significant as the GLIB will provide the same level of representation at Great Lakes region communities and events as the MACKINAW, including participating in the Christmas Tree Ship charity.  Replacement of the MACKINAW with the GLIB will potentially result in: <ul style="list-style-type: none"> <li>• Several beneficial effects on USCG economic efficiency; however, those effects are not anticipated to be significant.</li> <li>• Negligible beneficial effects on the economy of the Great Lakes region.</li> <li>• A decrease in the community of Cheboygan, Michigan, that is not anticipated to be significant.</li> </ul>	<b>Economic Impacts: No significant impacts. No significant contribution to cumulative impacts.</b> Beneficial effects to USCG economic efficiency would not be significant.  <b>Social Impacts: No significant impacts and would make no contribution to cumulative impacts with mitigation. No significant contribution to cumulative impacts.</b> The MACKINAW may be socially important to the home port of Cheboygan, Michigan, or to the Great Lakes region in general.	<b>Cannot be determined.</b>	<b>No significant impacts. No significant contribution to cumulative impacts.</b> <b>Economic:</b> The economic impact on the entity operating the ship as a museum could be beneficial or adverse, depending on the nature of the entity. Beneficial economic effects on the entity could be magnified if visitors were drawn to the MACKINAW as representing an era in the Great Lakes, rather than just the historical significance of the MACKINAW by itself.  <b>Social:</b> The use of the decommissioned USCGC MACKINAW (WAGB-83) as a museum would provide opportunities for community members and visitors to tour the ship and learn about its mission and operations, and former service members to reconnect with the ship. Former crew members of the 1940s-era ships being replaced may experience positive impacts from conversion of the MACKINAW to a museum.	<b>Cannot be determined.</b>	Uses of the MACKINAW under Alternative 3 would be continued use by federal, state, or local government, use of the vessel as a museum, or use of the vessel in a certified artificial reefing program. See descriptions under Alternative 2.
<b>Water Resources and Water Quality</b>	<b>No significant impacts. No significant contribution to cumulative impacts.</b> Routine maintenance of the MACKINAW during relocation and inactive status would reduce any potential for leaks resulting from deterioration of the vessel. Operational leaks and spills would no longer pose a risk because the vessel would be in operation infrequently.  Operation of the GLIB is anticipated to have minor beneficial effects to water quality due to its design and new condition.	<b>No significant impacts. No significant contribution to cumulative impacts.</b> Routine maintenance of the MACKINAW during transportation and storage would reduce any potential for leaks resulting from deterioration of the vessel. Operational leaks and spills would no longer pose a risk because the vessel would not be in operation.	<b>No significant impacts. No significant contribution to cumulative impacts.</b> If the vessel is kept in operation by any entity, there would be, at a minimum, slightly increased potential for negligible adverse impacts to water quality in the region of operation as described for the ROI.	<b>No significant impacts. No significant contribution to cumulative impacts.</b> Water quality could be adversely affected if the vessel were to deteriorate in condition. If the vessel is no longer operable, it is likely that most fluids would be drained and the vessel would be maintained to a level that is appropriate for use as a museum and for continued human activity.	<b>No significant impacts. No significant contribution to cumulative impacts</b> if the ship is prepared in accordance with EPA BMPs.	With inclusion of environmental protections, <b>no significant impacts; no significant contribution to cumulative impacts.</b> Without inclusion of environmental protections beyond those already required under existing environmental laws, the potential for impacts to the condition of the lakes or their connecting rivers in terms of sediment load and water quality may be anticipated to increase, but would still be anticipated to be <b>non-significant.</b>  Uses of the MACKINAW under Alternative 3 would be continued use by federal, state, or local government, use of the vessel as a museum, or use of the vessel in a certified artificial reefing program. See descriptions under Alternative 2.

	Alternative 1: No Action	Alternative 2: Proposed Action				Alternative 3: Congressional Mandate
		General	Continued Use as a Ship	Use as a Museum	Use in a Certified Artificial Reefing Program or as a Submerged Museum	
<b>Hazardous Materials</b>	<p><b>No significant impacts. No significant contribution to cumulative impacts.</b> The vessel has already been cleaned of PCBs; the vessel does still contain asbestos as well as lead-based paints; however, these materials are fully encapsulated or are in a non-volatile form and, therefore, not available for exposure to humans or the environment.</p> <p>Operation of the GLIB is anticipated to have negligible beneficial effects relative to hazardous materials due to its modern design which precludes use of materials containing asbestos, PCBs, or lead-based paints.</p>	<p><b>No significant impacts. No significant contribution to cumulative impacts.</b> Impacts from hazardous materials under the proposed action would be the same as those described under the no action alternative.</p>	<p><b>No significant impacts. No significant contribution to cumulative impacts.</b> If the vessel is kept in operation by any entity, there would be the same potential for non-significant impacts relative to hazardous materials as presented under the no action alternative.</p>	<p><b>No significant impacts. No significant contribution to cumulative impacts.</b> The potential for adverse impacts relative to hazardous materials could increase if the vessel were allowed to deteriorate in condition, but would probably still be non-significant. If the vessel is still operable and used as a dynamic (operating) museum, the potential impacts would be similar to those described for continued use.</p>	<p>Once the ship is prepared in accordance with EPA BMPs, using the ship in a certified artificial reefing program <b>would not result in a significant impact from hazardous materials or contribute significantly to cumulative impacts from hazardous materials.</b></p>	<p>Regardless of the lack of inclusion in the legislation of environmental protections beyond those already required under existing environmental laws, <b>no significant impacts relative to hazardous materials would be anticipated.</b></p> <p>Uses of the MACKINAW under Alternative 3 would be continued use by federal, state, or local government, use of the vessel as a museum, or use of the vessel in a certified artificial reefing program. See descriptions under Alternative 2.</p>
<b>Air Quality</b>	<p><b>No significant impacts. No significant contribution to cumulative impacts.</b> Relocation of the USCGC MACKINAW to the USCG yard in Curtis Bay, Maryland, would result in the short term in impacts on air quality because the vessel would have to be navigated from the Great Lakes to the USCG yard. Generally speaking, the power plant for the USCGC MACKINAW would only be operated infrequently while the ship is inactive.</p> <p>The GLIB is anticipated to have negligible beneficial effects to air quality due to its modern design and new condition.</p>	<p><b>No significant impacts. No significant contribution to cumulative impacts.</b> Transportation of the USCGC MACKINAW to the USCG yard in Curtis Bay, Maryland, for temporary storage would result in the short term in impacts on air quality because the vessel would have to be navigated from the Great Lakes to the USCG yard.</p>	<p><b>No significant impacts. No significant contribution to cumulative impacts.</b> If the vessel is kept in operation by any entity, there would be some potential for minimal adverse impacts to air quality in the region of operation. If the MACKINAW is acquired by an entity that does not operate and maintain the vessel to the standards employed by the USCG, the risk for adverse impacts to air quality in the region of operation may increase.</p>	<p><b>No significant impacts. No significant contribution to cumulative impacts.</b> Air quality is not anticipated to show any measurable effect. If the vessel is still operable and used as a dynamic (operating) museum, the impacts on air quality would be similar to those described for continued use.</p>	<p><b>No significant impacts. No significant contribution to cumulative impacts.</b> Reefing activities would produce few air emissions. Related air emissions would not be different than normal traffic on U.S. waterways.</p>	<p>With or without the incorporation in the legislation of environmental protections in addition to those already required under existing environmental laws, <b>no significant adverse impacts to air quality of the ROI would be anticipated.</b></p> <p>Uses of the MACKINAW under Alternative 3 would be continued use by federal, state, or local government, use of the vessel as a museum, or use of the vessel in a certified artificial reefing program. See descriptions under Alternative 2.</p>
<b>Noise</b>	<p><b>No significant impacts. No significant contribution to cumulative impacts.</b> Relocation of the MACKINAW to the USCG yard in Curtis Bay, Maryland, would result in the short term in impacts from noise because the vessel would have to be navigated from the Great Lakes. Once relocated, the MACKINAW would be inactive and operation of the ship would be infrequent.</p> <p>The GLIB is anticipated to have negligible beneficial effects relative to noise due its modern design and new condition.</p>	<p><b>No significant impacts. No significant contribution to cumulative impacts.</b> Temporary storage of the MACKINAW at the USCG yard in Curtis Bay, Maryland, would result in impacts relative to noise similar to, but less than, those described for the no action alternative. The impacts would be similar because the vessel would have to be navigated from the Great Lakes to the USCG yard.</p>	<p><b>No significant impacts. No significant contribution to cumulative impacts.</b> If the vessel is kept in operation by any entity, there would be some potential for noise impacts in the region of operation. If the MACKINAW is acquired by an entity that does not operate and maintain the vessel to the standards employed by the USCG, the risk for adverse impacts relative to noise may increase.</p>	<p><b>No significant impacts. No significant contribution to cumulative impacts.</b> If the vessel is still operable and used as a dynamic (operating) museum, the impacts relative to noise would be similar to those described for continued use.</p>	<p><b>Cannot be determined.</b></p>	<p>With or without the incorporation in the legislation of environmental protections in addition to those already required under existing environmental laws, <b>no significant adverse impacts relative to noise would be anticipated.</b></p> <p>Uses of the MACKINAW under Alternative 3 would be continued use by federal, state, or local government, use of the vessel as a museum, or use of the vessel in a certified artificial reefing program. See descriptions under Alternative 2.</p>

	Alternative 1: No Action	Alternative 2: Proposed Action				Alternative 3: Congressional Mandate
		General	Continued Use as a Ship	Use as a Museum	Use in a Certified Artificial Reefing Program or as a Submerged Museum	
<b>Fisheries</b>	<b>No significant impacts. No significant contribution to cumulative impacts.</b> Fish show behavioral responses to vessel noise, moving away from the vessels at distances related to the intensity of vessel noise. These behaviors are transient and the animals appear to return to normal activities once the vessel has passed out of their response zone.	<b>No significant impacts. No significant contribution to cumulative impacts.</b> In the short term, temporary storage of the USCGC MACKINAW (WAGB-83) at the USCG yard in Curtis Bay, Maryland, would result in the same non-significant impacts on fisheries as those described for the no action alternative because the vessel would have to be navigated from the Great Lakes to the USCG yard.	<b>No significant impacts. No significant contribution to cumulative impacts.</b> If the vessel is kept in operation by any entity, there would be the same potential for non-significant adverse impacts to fisheries in the region of operation as described for the ROI under the no action alternative. If the MACKINAW is acquired by an entity that does not operate and maintain the vessel to the standards employed by the USCG, the risk for adverse impacts to fisheries in the region of operation may increase.	<b>No significant impacts. No significant contribution to cumulative impacts.</b> If the vessel is still operable and used as a dynamic (operating) museum, the potential impacts on these fisheries would be similar to those described for continued use.	<b>Cannot be determined.</b> "The [Artificial Reef] Task Force concluded that artificial reefs as a fishery management technique are unproven in the Great Lakes. [U]se of artificial reefs as a fishery management technique is in its infancy in the Great Lakes and concludes that artificial reefs should be considered experimental and that they require comprehensive monitoring and long-term evaluation which includes ecological and socio-economic perspectives."	With or without the incorporation in the legislation of environmental protections in addition to those already required under existing environmental laws, <b>no significant adverse impacts on fisheries of the ROI would be anticipated.</b>  Uses of the MACKINAW under Alternative 3 would be continued use by federal, state, or local government, use of the vessel as a museum, or use of the vessel in a certified artificial reefing program. See descriptions under Alternative 2.
<b>Threatened and Endangered Species</b>	<b>No significant impacts. No significant contribution to cumulative impacts.</b> The greatest opportunity for impact to any T&E species would be in the coastal transit as this area supports high use by a variety of cetaceans. This single transit of the MACKINAW through these shipping lanes is not anticipated to result in significant adverse impacts on T&E species.	<b>No significant impacts. No significant contribution to cumulative impacts.</b> Temporary storage of the MACKINAW at the USCG yard in Curtis Bay, Maryland, would require transit of the vessel through the St. Lawrence River and down the northeast coastal shipping lanes to Chesapeake Bay, resulting in the same non-significant impacts described under the no action alternative.	<b>No significant impacts. No significant contribution to cumulative impacts.</b> If the vessel is kept in operation by any entity, there would be a slightly increased potential for minimal adverse impacts to T&E species in the area of operation than that described for the ROI under the no action alternative.	<b>No significant impacts. No significant contribution to cumulative impacts.</b> Potential impacts to T&E species are considered negligible. If the vessel is still operable and used as a dynamic (operating) museum, the potential impacts to T&E species would be similar to those described for continued use.	<b>Cannot be determined.</b>	With or without the incorporation in the legislation of environmental protections in addition to those already required under existing environmental laws, <b>no significant adverse impacts to T&amp;E species, either direct, indirect, or cumulative, would be anticipated.</b>  Uses of the MACKINAW under Alternative 3 would be continued use by federal, state or local government, use of the vessel as a museum, or use of the vessel in a certified artificial reefing program. See descriptions under Alternative 2.
<b>Public Safety</b>	<b>No significant impacts. No significant contribution to cumulative impacts.</b> Maintaining the inactive ship may have a negative impact on worker safety; there would be no impact to public safety from the MACKINAW remaining inactive.  Replacement of the MACKINAW with the GLIB will potentially result in several beneficial effects on safety, however those effects are not anticipated to be significant.	<b>No significant impacts. No significant contribution to cumulative impacts.</b>	<b>No significant impacts. No significant contribution to cumulative impacts.</b>	<b>No significant impacts. No significant contribution to cumulative impacts.</b>	<b>Cannot be determined.</b>	<b>No significant impacts. No significant contribution to cumulative impacts.</b> Impacts to public safety would be the same as those presented under the proposed action.