



Great Lakes Icebreaker Acquisition

June 17, 2020

Fiscal Year 2020 Report to Congress



Homeland
Security

United States Coast Guard

Foreword

June 17, 2020

I am pleased to present the following report, "Great Lakes Icebreaker Acquisition," which has been prepared by the U.S. Coast Guard.

Senate Report 116-125 accompanying the Fiscal Year 2020 Department of Homeland Security Appropriations Act (P.L. 116-93) requires the Coast Guard to provide an acquisition plan, schedule, and funding requirements for procurement of a Great Lakes icebreaker.

Pursuant to congressional requirements, this report is being provided to the following Members of Congress:



The Honorable Lucille Roybal-Allard
Chairwoman, House Appropriations Subcommittee on Homeland Security

The Honorable Chuck Fleischmann
Ranking Member, House Appropriations Subcommittee on Homeland Security

The Honorable Shelley Moore Capito
Chairman, Senate Appropriations Subcommittee on Homeland Security

The Honorable Jon Tester
Ranking Member, Senate Appropriations Subcommittee on Homeland Security.

I am happy to answer any questions you may have, or your staff may contact my Senate Liaison Office at (202) 224-2913 or House Liaison Office at (202) 225-4775.

Sincerely,

A handwritten signature in blue ink that reads "Karl L. Schultz". The signature is stylized and includes a large, sweeping flourish that loops back under the name.

Karl L. Schultz
Admiral, U. S. Coast Guard
Commandant



Great Lakes Icebreaker Acquisition

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I. Legislative Language

This document responds to the language set forth in Senate Report 116-125 accompanying the Fiscal Year (FY) 2020 Department of Homeland Security (DHS) Appropriations Act (P.L. 116-93).

Senate Report 116-125 states:

Great Lakes Icebreaking Capacity.—The Committee is concerned that the Coast Guard cannot provide adequate icebreaking capacity on the Great Lakes, consequently affecting the regional and national economies and the safety of maritime commerce. To enhance icebreaking capacity on the Great Lakes, the Committee provides \$5,000,000 for the Coast Guard to formally charter and establish a major acquisition program office within 180 days of the date of enactment of this act. Such office shall be tasked with implementing an acquisition plan to procure a Great Lakes icebreaker that is at least as capable as USCGC MACKINAW (WLBB-30). Not later than 90 days after the date of enactment of this act, the Coast Guard shall submit to the Committee the acquisition plan, schedule, and funding requirements for procurement of such Great Lakes icebreaker.

II. Discussion

Pursuant to Section 2 of Title 14, United States Code (U.S.C.), the Coast Guard is authorized to perform icebreaking operations, and domestic icebreaking is mandated by Executive Order 7521, dated December 21, 1936. Executive Order 7521 directs the Coast Guard to “assist in keeping open to navigation by means of icebreaking operations, in so far as practicable and as the exigencies may require, channels and harbors in accordance with the reasonable demands of commerce.” The Coast Guard conducts icebreaking operations on the Great Lakes and along the East Coast, from the Chesapeake Bay northward to Maine, keeping certain shipping routes and ports open during the parts of winter when they otherwise would be impassable by commercial vessels. The Coast Guard responds to vessel requests for assistance when they are disabled or are stranded in ice-covered waters. The Coast Guard, in coordination with the U.S. Army Corps of Engineers, also breaks ice to control flooding caused by ice jams during the spring thaw.

Icebreaking on the Great Lakes is conducted by the Ninth Coast Guard District. It facilitates the movement of critical dry- and liquid-bulk cargos carried by commercial traffic on the Great Lakes during the winter months. During a typical winter, the Great Lakes icebreaking program extends the navigation season by 4 months, ensuring the continued flow of maritime commerce.

Ninth District icebreaking vessels include one 240-foot heavy icebreaker (WLBB), six 140-foot icebreaking tugboats (WTGB), and two 225-foot seagoing buoy tenders (WLB). Table 1 provides a summary of assets, capabilities, and the anticipated lifecycle of Coast Guard icebreakers that service the Great Lakes.

Table 1: U.S. Coast Guard Great Lakes Icebreakers

Type	Name	Commissioned	End of Service Life (EOSL)	New Service Life Extension Program (SLEP) EOSL ¹	Icebreaking Capability ² Continuous/ Back and Ram
240-foot WLBB	MACKINAW	2006	2036	n/a	32”/42”
140-foot WTGB	KATMAI BAY	1978	2008	2033	22”/36”
	BISCAYNE BAY	1979	2009	2035	
	MOBILE BAY	1979	2009	2034	
	BRISTOL BAY	1979	2009	2032	
	NEAH BAY	1979	2009	2032	
	MORRO BAY	1980	2010	2030	
225-foot WLB	ALDER	2004	2034	n/a	14”/36”
	HOLLYHOCK	2003	2033	n/a	

¹ In 2014, the Coast Guard embarked upon a SLEP for the 140-foot WTGBs, an acquisition program to extend the service life of the fleet by 15 years. Five of the six Ninth District 140-foot WTGBs have completed their SLEPs, and the final one will be complete this year, restoring the full fleet of Great Lakes icebreakers.

² Continuous icebreaking capability is described as the thickness of ice that a cutter can break while steaming ahead at a speed of 3 knots. Back and ram icebreaking capability refers to the maximum icebreaking potential of a cutter, achieved by backing the vessel away from the ice edge then coming ahead at full throttle to generate momentum and to press into the ice.

Mission Need for Great Lakes Icebreakers

The Coast Guard recognizes that there is an upcoming need to recapitalize the Great Lakes icebreaking fleet and a potential need for additional domestic icebreaking capacity on both the Great Lakes and the East Coast. The Coast Guard currently is conducting pre-acquisition activities for domestic icebreaking to evaluate the potential capability gap and the mission need. A Capability Analysis Report is being developed, which will be followed by the other requirements documents (Mission Needs Statement, Concept of Operations, Preliminary Operational Requirements Document). The Coast Guard expects these and other pre-acquisition documents, as required by 14 U.S.C. Chapter 11 and as implemented by DHS and Coast Guard policy, will be completed by FY 2022.

Successfully managing ice-covered waters on the Great Lakes requires a holistic approach that is viewed better as an integrated system vice individual components. This system requires coordination with Canadian and industry partners, commercial icebreaking services, and operation of Coast Guard assets. No single type of Coast Guard asset alone can provide the maneuvering, icebreaking, and escorting capabilities needed to service the varied waterways and demands of this unique mission. Looking to the future, the Coast Guard will need new icebreakers to continue to meet mission demands on the Great Lakes with at least one possessing capabilities similar to Coast Guard Cutter (CGC) MACKINAW, and the Coast Guard intends to work with stakeholders to identify the systematic solution that best will suit operational requirements. The Coast Guard anticipates that there will be a need to ensure long-term availability of a fleet of smaller, more maneuverable, and less maintenance-intensive icebreaking cutters that is complementary to and works in concert with any larger, more-capable cutters. The Coast Guard recognizes congressional interest in acquiring a second CGC MACKINAW now; however, preliminary analysis indicates a limited operational need for such a vessel in the current Great Lakes fleet mix. Acquisition strategies for both options are presented below.

Acquisition Plan, Schedule, and Funding Requirements for Procurement of Great Lakes Icebreakers

Acquisition Plan: The Coast Guard currently is developing the pre-acquisition documents for Great Lakes icebreaking as required by 14 U.S.C. Chapter 11 for major acquisition programs (Level 1 and 2) as implemented in DHS and Coast Guard policy and is seeking opportunities to accelerate the acquisition utilizing the funds appropriated by Congress to date. The results from the requirements analysis will help to determine the type of assets needed to meet Coast Guard mission needs on the Great Lakes.

If the analysis determines that multiple new vessels are required, the Coast Guard intends to implement a full and open competition for the design and construction of the new class(es) as required by 14 U.S.C. § 1105. If the analysis determines that a single vessel is needed with the same capabilities as CGC MACKINAW, the acquisition strategy would entail a full and open competition to design and construct a vessel based on the CGC MACKINAW's design.

Schedule: Below are notional schedules to increase Great Lakes icebreaking capacity that comply with 14 U.S.C. Chapter 11 as implemented in DHS and Coast Guard acquisition policy. Figure 1 displays a notional schedule for utilizing a full and open competition to acquire a new vessel using the CGC MACKINAW design. Figure 2 displays a notional schedule for a full and open competition to acquire a new fleet of Great Lakes icebreakers. The schedules will vary on the basis of the final acquisition strategy and type of vessels that are acquired. Although the notional schedule for a new class of assets (Figure 2) delivers prior to the EOSL of current Great Lakes icebreakers, the Coast Guard will seek opportunities for acceleration to increase Great Lakes icebreaking capability as soon as possible.

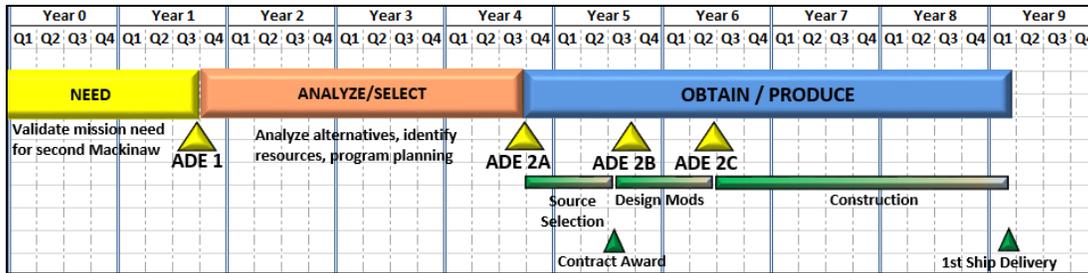


Figure 1: Notional Schedule for New Mackinaw with Full and Open Competition

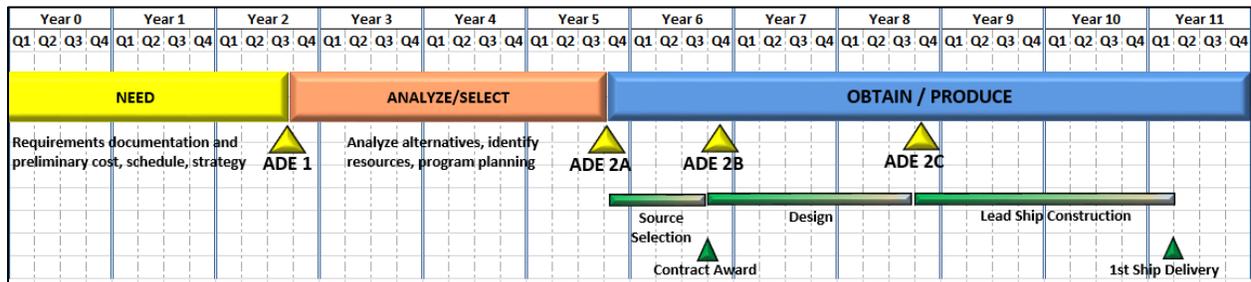


Figure 2: Notional Schedule for New Great Lakes Icebreaker Fleet with Full and Open Competition

Acceleration Potential: If the Coast Guard is directed by Congress to acquire a sister vessel to CGC MACKINAW, time could be saved in the pre-award phases of the acquisition (the Need Phase and the Analyze/Select Phase) if statutory exemptions from some requirements of 14 U.S.C. Chapter 11 were granted or otherwise were authorized. For example, 14 U.S.C. § 1131 mandates that the Commandant complete a gap analysis and develop a mission need statement. If these requirements were waived, per a statute directing the acquisition, some acceleration would result. Similarly, additional exemptions from the analysis and reporting requirements within 14 U.S.C. § 1132 could eliminate or reduce the requirement for pre-award assessments and redevelopment of requirements, testing, and other acquisition documents already created for the original CGC MACKINAW procurement.

If directed by Congress to acquire construction at a specific shipyard, additional time could be saved compared to conducting a full and open competition for the design and construction of the new cutter as required by 14 U.S.C. § 1105(a)(2). Although sole-source contract negotiations could replace some of the time savings (reducing the accelerating effect), such statutory direction would shorten the anticipated 1-year source-selection period, as shown in Figure 3.

Alternatively, the Coast Guard could attempt to justify and approve a contract let on a sole-source basis. Federal Acquisition Regulation Subpart 6.302 describes the circumstances and procedures when an agency seeks to contract outside of full and open competition, including seven specific authorities that may be relied upon in justifying the sole-source contract.

Figure 3 displays a notional schedule for building a second CGC MACKINAW following congressional direction.

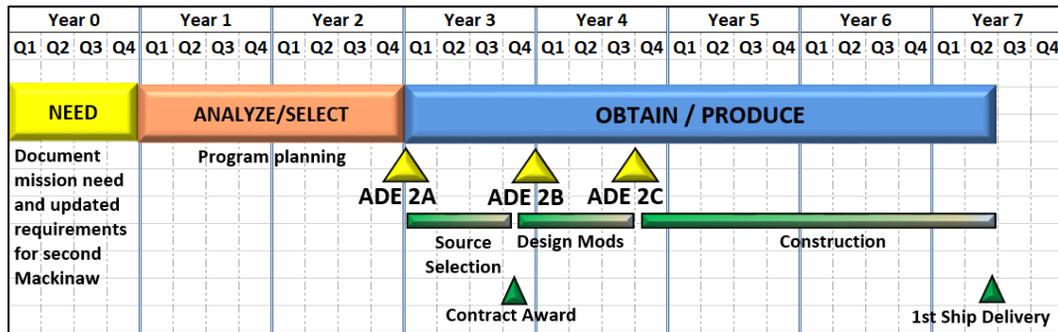


Figure 3: Notional Schedule for New Mackinaw following Congressional Direction

Funding Requirements: A rough order magnitude cost estimate for the program will be developed during the Need Phase of the acquisition lifecycle following development of requirements documentation. For comparison, approximately \$350 million in Procurement, Construction, and Improvements funding (FY 2020 dollars) would be required to deliver a single new Great Lakes icebreaker, at least as capable as CGC MACKINAW, on the basis of the existing design. This does not include program management, data rights, logistics, spares, post-delivery activities, shore infrastructure, personnel, or operational and sustainment costs. Smaller icebreakers would cost proportionally less. The program management costs associated with pre-acquisition activities in the Need Phase are estimated to be approximately \$5 million per year, with increases as the program transitions into the Analyze/Select Phase.

Appendix: List of Abbreviations

Abbreviation	Definition
ADE	Acquisition Decision Event
CGC	Coast Guard Cutter
DHS	Department of Homeland Security
EOSL	End of Service Life
FY	Fiscal Year
SLEP	Service Life Extension Program
U.S.C.	United States Code
WLB	225-foot Seagoing Buoy Tender
WLBB	240-foot Heavy Icebreaker
WTGB	140-foot Icebreaking Tugboat