

Great Lakes Icebreaking Frequently Asked Questions

Q: Why is there a need for more icebreakers on the Great Lakes?

A: The Great Lakes are an interconnected system of ports and waterways, each depending on one another to move cargos critical to the U.S. economy, specifically the manufacturing sector. The shipping season on the Great Lakes is a defined timeframe and is open to navigation from March 25th until January 15th (when the locks in Sault Ste Marie, Michigan close for winter maintenance). Every shipment within this shortened season is vital and delayed shipments damage the national economy. The U.S. Coast Guard (USCG) has systematically cut icebreaking services on the Great Lakes over the past 40-years, reducing their fleet of 14 icebreakers in 1979 down to 9 today. With fewer icebreakers, they cannot address many icebreaking needs within this vast system and that has placed mariners in danger and cost companies millions of dollars in ice-related damage.

Q: What is the impact of not having adequate U.S. Great Lakes icebreakers?

A: Over the past decade, the economy has lost more than \$2 billion and more than 10,000 jobs due to the failure to keep the Great Lakes marine transportation system operating as designed during the winter months. Vessels have been sliced open by ice, costing millions in repair costs and endangering sailors' lives. In 2014, the steel industry was crippled in the spring when critically low iron ore stocks were not replenished at the blast furnaces on the lower lakes due to ice and a lack of capable icebreakers. Our nation's economic security relies on maintaining the movement of raw materials on the Great Lakes in the winter months.

Q: With fewer commercial ships today compared to 1979, doesn't that mean fewer icebreakers are needed?

A: On the contrary, more icebreakers are needed. When there are more commercial ships moving in the system, they keep the waterways open after initial icebreaking is conducted by constantly moving through them. When there is constant traffic, the water does not refreeze as quickly, and ships continue to move. Highways with constant traffic remain passable. Secondary roads with little traffic can quickly become unpassable after the snowplow clears the road. Today's larger sized vessels also require wider tracks, particularly at critical turns in confined waters. The less numerous, modern commercial vessel fleet needs more icebreakers in more places than the fleet in the 1970's and 1980's.

Q: The east coast also has icebreakers. Why are they not complaining about icebreaking services?

A: The USCG allows each individual District to manage the icebreaking mission. In District 1 (Maine to New Jersey), they have defined essentially all their waterways as a priority for icebreaking, designating them with the term "tier 1." There are 35 tier 1 waterways in District 1. Those tier 1 waterways receive individual icebreaker attention and every vessel requesting assistance receives it from the USCG. By contrast, the Great Lakes' District 9 chooses to only categorize four small connecting waterways as tier 1. Those are the only waterways that receive priority icebreaking attention. So, that means if a vessel were stuck in eastern Lake Erie for a week, it would be considered acceptable by District 9. Finally, the east coast is resourced with 25 icebreakers and ice capable USCG cutters, while the Great Lakes has atrophied down to nine. To put that into perspective, Lake Michigan alone has nearly as much shoreline (1,640 miles) as the entire east Coast.

In other words, the distance from Maine to Miami (Portland, ME to Homestead FL) of 1,640 miles contains the same amount of shoreline as Lake Michigan, which is but a small fraction of the U.S. Great Lakes coastline. The Coast Guard has one icebreaker stationed on Lake Michigan. The Great Lakes deserve the same level of icebreaking service as the east coast.

Q: How does the USCG justify their reduction in icebreaking resources on the Great Lakes?

A: They changed the rules. They no longer measure success or failure of the mission based on the Executive Order requirement to keep channels and harbors open to the “reasonable demands of commerce.” Instead they have lowered their performance goals to match the number of resources they employ on the Great Lakes, while raising those goals on the East Coast. The USCG claims success on the Great Lakes regardless of whether maritime traffic moves through the ice-covered system of waterways. The only impact reported is if one of the four small connecting “tier 1 waterways” has two vessels stuck, the second as a result of the first, for more than 24-hours. There is no impact to the USCG’s performance if 46 vessels were stuck for a month in any open lake, harbor, or bay. The USCG has been allowed to substitute their metrics for the “reasonable demands of commerce” on the Great Lakes.

Q: Why doesn’t the commercial shipping industry buy and operate their own icebreakers?

A: USCG icebreakers and buoy tenders are designed and crewed to perform multiple missions including homeland security and law enforcement. Those missions, by law, cannot be performed by commercial vessels. In addition, not only do USCG icebreakers provide national defense through direct operations, they provide national security by keeping the marine transportation system open for the vessels carrying the raw materials which drive the national economy. On the Great Lakes, industry does hire small commercial tugs (where they are available) to clear the docks of ice and assist vessels while getting underway. On the East Coast and in Canadian ports, USCG icebreakers often clear the docks of ice.

Q: Who benefits from USCG icebreaking?

A: The primary beneficiary is the U.S. economy. Coastal and riverside property owners also benefit when USCG icebreakers are used for flood control. Others include: the commercial shipping industry, steel mills, iron ore mines, auto industry, agricultural industry, construction industry, appliance industry, electric power generation facilities and the citizens they service, island communities, coastal communities that suffer from ice jams causing floods, and every port and maritime worker on the Great Lakes. Even Customs and Border Protection benefits. When waterways have open water, it prevents smuggling of people and contraband across the ice from Canada. When ice clogs the marine transportation system, everyone suffers.

Q: Do the Canadians fill the USCG icebreaking void?

A: With only two icebreakers stationed on the Great Lakes, the Canadians do not have the resources to manage icebreaking for even their own commercial fleet, waterways or ports. The Canadians are forced to leverage U.S. icebreaking assets to work Canadian vessels into ice clogged Canadian ports. This stretches the inadequate resources of the USCG. and they are unable to manage both U.S. and Canadian ports. In addition, the Canadians do not prioritize some of their waterways over others, but instead measure their response time in hours to a vessel in need of icebreaking service anywhere on

the Canadian side of the lakes, including all harbors and channels. The U.S. Great Lakes commercial fleet consists of just over 50 vessels and the Canadian Fleet approaches 90 vessels. In addition, oceangoing vessels or salties also sail on the Great Lakes in December, April and May, adding to the icebreaking demand. Historically, Canada has focused its icebreaking resources on the Port of Thunder Bay and Port Colborne, both in Ontario. That leaves the rest of the Great Lakes to be managed by the U.S.

Q: How reliable are the USCG's icebreaking assets on the Great Lakes?

A: When there is a normal ice season, the USCG's icebreaking vessels suffer casualties at an alarming rate, including 246 lost days during the 2017/2018 ice season. That equates to each of the nine ice capable assets losing a month of operations during a five-month period. The six 140-foot WTGB icebreaking tugs are 40-years old or older and incur most of the casualties. They are overburdened, often in conditions that exceed their capability, and are in desperate need of immediate repowering and recapitalization as soon as possible. The only heavy USCG Great Lakes icebreaker, USCGC MACKINAW, is reliable yet remains only one ship to cover the entire Great Lakes system. The two ice capable 225-foot WLB buoy tenders were not designed to break heavy ice and have difficulty turning or backing in moderate ice conditions. They often suffer steering gear and shaft seal problems due to their limitations.

Q: How would another heavy Great Lakes icebreaker as capable as MACKINAW improve the situation?

A: The MACKINAW is one of kind and the only icebreaker capable of managing heavy ice conditions which persist in many geographically dispersed Great Lakes waterways. If the USCG measured their requirement in the Executive Order accurately, the results would illustrate that there are not enough heavy icebreakers on the Great Lakes to manage even a normal winter. Not only are ice conditions an issue, the vast distance between areas that require heavy icebreaking assistance is a challenge.

Q: Would another MACKINAW stationed on the Great Lakes help the USCG with its Polar icebreaking mission?

A: The Great Lakes icebreakers are the steppingstone for future USCG Polar Security Cutter crews. The tactics and techniques used on USCG icebreakers in the Great Lakes are ideal for training and developing the next generation that will lead the new Polar Security Cutters (PSC). One key is the current design of the PSC, which includes a podded azimuth propulsor. The only ship in the USCG's current inventory that has this technology is the MACKINAW. The USCG needs a broader pool of trained icebreaking sailors to adequately crew the PSCs. Given normal personnel attrition from the cutter forces, the PSC program alone will not produce enough trained sailors to sustain its need for experienced icebreaker sailors.

Q: What does the USCG need to procure another heavy Great Lakes icebreaker?

A: In a June 17, 2020 Congressional report, the USCG stated they needed relief from the Federal Acquisition Regulations (FAR) and \$350 million in Procurement, Construction, and Improvements funding to expedite construction of a new heavy icebreaker. Without the acquisition relief and funding now, the USCG will not have any new Great Lakes icebreakers until after 2032. That would put the six 140-foot icebreaking tugs stationed on the Great Lakes at 53-years old and the current MACKINAW at the end of her service life.

Q: Didn't the 140-foot WTGB Service Life Extension Program (SLEP) extend the life of those vessels?

A: Unfortunately, the most important aspect of the SLEP was left on the cutting room floor. Facing budget shortfalls, the USCG chose to cut the main propulsion projects from the program, leaving the 140-foot WTGBs with original 1970's engines and propulsion generators. SLEP did not extend the life of these ships and in fact there have been even more casualties to these ships after they have completed SLEP than before SLEP. The SLEP ensured that while these vessels are immobilized at the pier with broken engines, they have improved habitability for their crews and working auxiliary systems.

Q: Are there commercial icebreaking providers on the Great Lakes?

A: Yes, however they are not capable of breaking the heavy ice that forms in the harbors and channels on the Great Lakes. In fact, those providers need the USCG to break the harbor ice before they are even capable of trying to manage conditions around commercial vessel docks. There have been several occasions where shipping companies have hired a commercial provider because no USCG icebreakers were available. Unfortunately, the providers were often not able to perform the work due to ice thickness until the USCG was able to send a ship, which caused costly shipping delays.