Pursuant to Section 19 of Shipping Act, 1920, 46 U.S.C. § 42101, and Part 550 of the Commission’s regulations, Lake Carriers’ Association (LCA) hereby petitions the Federal Maritime Commission (FMC or Commission) to initiate a regulation to meet the unfair competitive conditions created by Transport Canada, an agency of the Government of Canada. Transport Canada has proposed adoption of regulations requiring LCA’s members who operate vessels that operate exclusively on the Great Lakes and St. Lawrence River (such vessels are commonly termed “Lakers”) to install a ballast water management system (BWMS) to treat ballast water that is loaded in Canada and discharged in the United States, even though that requirement is of no environmental benefit to Canada. The regulations would result in driving these U.S. vessels entirely out of the Great Lakes and St. Lawrence River (cross-Lakes) U.S. export trade to Canada. The proposed regulations create a “special condition unfavorable to shipping in the foreign trade” under Section 19 and under the Commission’s regulations, 46 CFR Part 550.301(c) and (e).
Interest of the LCA and its members

Founded in 1880 and one of the oldest active trade associations in the country, the LCA is made up of owners and operators of Great Lakes-licensed, self-propelled vessels, including tug/barge units that operate as self-propelled vessels. LCA promotes the common interests of its members, with special emphasis on legislative and regulatory matters, and strives to maximize the efficiencies of waterborne commerce on the Great Lakes in a manner that respects the environment and the natural treasure these freshwater seas represent. LCA maintains statistical information about the number of ships in service, tracks shipments of major commodities, and, until Canadian vessel operators stopped sharing cargo data, published a Statistical Annual Report that detailed cargo movement in members' vessels and Canadian and 3rd-flag vessels.

LCA has actively engaged with Transport Canada, including by commenting on its regulatory proposals, in an effort to dissuade it from promulgating regulatory restrictions that will drive LCA’s members from the cross-Lakes U.S. export trade to Canada. Canadian carriers already dominate this trade, and the new regulation will drive U.S. Lakers out of the trade.

Relief sought

The Commission is authorized by Section 19 of the 1920 Act to ensure that U.S. foreign commerce is not burdened by non-market barriers to ocean shipping. The Commission may take countervailing action to correct unfavorable shipping conditions in U.S. foreign commerce and may impose penalties to address actions by carriers or foreign governments that adversely affect shipping in the U.S. foreign waterborne trades.

LCA seeks a rule, based on a finding that the Canadian regulations create conditions unfavorable to shipping in the cross-Lakes U.S. export trade to Canada, designed to assure the
access of U.S. carriers to that trade. In particular, the Commission may impose fees on vessels operated by Canadian carriers calling at United States ports, in order to adjust or meet unfavorable conditions caused by the Canadian regulations, or by imposing countervailing burdens on Canadian carriers. See, e.g., Port Restrictions and Requirements in the United States/Japan Trade, 61 Fed. Reg. 58,160, 58,160 (1996)(proposing fees on Japanese carriers to adjust or meet unfavorable conditions in the U.S.-Japan trade). The measures authorized under Section 19 also include limitation of sailings, suspension of carriers' tariffs, suspension of carriers' rights to operate under FMC-filed terminal and other agreements, and any other action deemed necessary and appropriate to adjust or meet the unfavorable condition. 46 U.S.C. § 42106. LCA asks that the Commission consider and impose any such penalties as will be necessary to assure the access of U.S. Lakers to the trade. A proposed rule is included later in this petition.

Applicable statutory and regulatory provisions

Section 19 of the 1920 Act, as now codified at 46 U.S.C. § 42101, reads as follows:

Regulations of the Commission.--

(a) Unfavorable Conditions.-To further the objectives and policy set forth in section 50101 of this title, the Federal Maritime Commission shall prescribe regulations affecting shipping in foreign trade, not in conflict with law, to adjust or meet general or special conditions unfavorable to shipping in foreign trade, whether in a particular trade or on a particular route or in commerce generally, including intermodal movements, terminal operations, cargo solicitation, agency services, ocean transportation intermediary services and operations, and other activities and services integral to transportation systems, and which arise out of or result from laws or regulations of a foreign country or competitive methods, pricing practices, or other practices employed by owners, operators, agents, or masters of vessels of a foreign country.
(b) Initiation of Regulation.-A regulation under subsection (a) may be initiated by the Commission on its own motion or on the petition of any person, including another component of the United States Government.

The Commission’s implementing regulations, included in 46 CFR, Part 550, summarize the types of violations that can be found under Section 19:

46 CFR 550.301. Findings.--For the purposes of this part, conditions created by foreign governmental action or competitive methods, pricing practices or other practices of owners, operators, agents or masters of foreign vessels are found unfavorable to shipping in the foreign trade of the United States, if such conditions:

(a) Impose upon vessels in the foreign trade of the United States fees, charges, requirements, or restrictions different from those imposed on other vessels competing in the trade, or preclude vessels in the foreign trade of the United States from competing in the trade on the same basis as any other vessel;

(b) Reserve substantial cargoes to the national flag or other vessels and fail to provide, on reasonable terms, for effective and equal access to such cargo by vessels in the foreign trade of the United States;

(c) Are discriminatory or unfair as between carriers, shippers, exporters, importers, or ports or between exporters from the United States and their foreign competitors and which cannot be justified under generally accepted international agreements or practices and which operate to the detriment of the foreign commerce or the public interest of the United States;

(d) Restrict or burden a carrier's intermodal movements or shore-based maritime activities, including terminal operations and cargo solicitation; agency services; ocean transportation intermediary services and operations; or other activities and services integral to transportation systems; or

(e) Are otherwise unfavorable to shipping in the foreign trade of the United States.
Concise description and citation of the Government of Canada’s proposed regulations:

As most relevant to LCA’s complaint, the Canadian proposed regulations require certain vessels to install BWMSs, but exempt vessels of a non-signatory party to the International Maritime Organization’s International Convention on the Management of Ships’ Ballast Water and Sediments (the Convention), such as the United States, if they operate exclusively within the Great Lakes Basin (Lakers) and do not “load or release” ballast water into Canadian waters. The key portions of the Canadian regulations are laid out below.

Application

3 (1) Except as otherwise provided, these Regulations apply in respect of the following vessels if they are designed or constructed to carry ballast water:

(a) Canadian vessels everywhere; and

(b) vessels that are not Canadian vessels and are in waters under Canadian jurisdiction.

Non-application

(3) These Regulations do not apply in respect of

(a) vessels operating under the authority of a state that is not a party to the Convention if they operate exclusively in the Great Lakes Basin and if they do not load or release ballast water into waters under Canadian jurisdiction (emphasis added);

(b) vessels that are owned or operated by a state and used only in government non-commercial service; or

(c) vessels that carry only permanent ballast water in sealed tanks such that it is not subject to release.

Quantity

(4) For greater certainty, these Regulations apply to the management of any quantity of ballast water that may be released from a vessel.
Ballast Water Performance Standard

Deemed compliance

12 (1) A vessel using a ballast water management system to meet the ballast water performance standard is deemed to have met that standard in respect of **ballast water loaded on the Great Lakes or the St. Lawrence River** if--

(a) the vessel’s ballast water management system was installed before September 8, 2024;

(b) the vessel meets the requirements of section 8;

(c) the vessel holds and keeps on board a valid IBWM Certificate or an equivalent document referred to in section 23;

(d) the vessel’s ballast water management system is in good working order and has been maintained and operated in accordance with the manufacturer’s instructions; and

(e) ballast water is managed in accordance with the manufacturer’s instructions for the vessel’s ballast water management system, subject to any limiting operating conditions or other restrictions identified in the system’s type approval certificate issued under the BWMS Code.

Vessels of Non-Parties to the Convention

Equivalent document

23 A vessel that is entitled to fly the flag of a state that is not a party to the Convention **must not load** or release **ballast water** in waters under Canadian jurisdiction **unless that vessel holds and keeps on board a document issued by or on behalf of the government of that state that certifies that the vessel meets the requirements of the Convention.** (emphasis added)

Administrative Monetary Penalties and Notices (CSA 2001) Regulations
26 Part 9 of the schedule to the Administrative Monetary Penalties and Notices (CSA 2001) Regulations footnote 17 is replaced by the following:

[See the table of monetary penalties included in the regulations]

A copy of the proposed regulation as published in the official Canadian regulatory Gazette is provided as Attachment 1 to this petition, and is available at http://www.gazette.gc.ca/rp-pr/p1/2019/2019-06-08/html/reg4-eng.html. Because this is an official website maintained by the Government of Canada, LCA respectfully submits that it suffices as a certified copy of the regulation as required by 46 C.F.R. § 550.403(b).

The proposed TC regulations violate Section 19 and the Commission’s implementing regulations

The crux of the LCA’s Section 19 complaint against the Canadian proposed regulations is reflected in the language highlighted above, which provides that they do not apply to U.S. Lakers unless they “load or release” ballast water into Canadian waters. This provision raises the question why the loading of ballast water in Canadian waters, as opposed to its release, should trigger the requirement for a U.S. Laker to install a ballast water management system. Loading ballast water in Canadian waters, as opposed to discharging it, does not result in the potential introduction of nonnative organisms into Canadian waters. There is thus no reason from a Canadian environmental perspective to impose the regulatory requirements on a vessel simply because it loads in a Canadian port ballast water that will be discharged at a U.S. port, and the proposed regulations cite no scientific evidence addressing this particular action. Indeed, since the existing requirement of mandatory ballast water exchange for vessels entering the Great Lakes from overseas was instituted in 2006 no new observable aquatic invasive species attributed to ballast water have been introduced, much less species causing damage that would require costly new regulation.
The apparent anomaly becomes explainable, however, once the competitive situation between U.S. and Canadian vessels is understood. The regulations serve no environmental purpose as applied to U.S. Lakers loading ballast water in Canadian waters, but do serve to advantage Canadian carriers, all or virtually all of which would be required to have ballast water management systems on their vessels in any event because they must discharge ballast water in Canadian waters in order to engage in Canada’s domestic trade. Many of these vessels engage in trade with other countries outside the Great Lakes as well. U.S. Lakers would face no such requirement in the cross-Lakes U.S. to Canada export trade if, as would be environmentally sensible, it were not imposed on them merely for loading ballast water in Canadian waters.

LCA advised Transport Canada throughout the regulatory process that its member carriers could not afford to comply with the regulations merely to engage in the cross-Lakes U.S. export trade to Canada, and that the result of the environmentally senseless requirement that they do so merely because they would be loading ballast water for their return voyage to the United States after discharging their export cargo would drive them out of the trade. Transport Canada has chosen to insist on the requirement however, thus unfairly advantaging Canadian carriers at the expense of U.S. carriers.

By imposing this environmentally unnecessary requirement on U.S. carriers, Transport Canada is not regulating evenhandedly between U.S. and Canadian carriers. Rather, it is disadvantaging U.S. carriers for no legitimate purpose, thus creating a condition unfavorable to shipping in the foreign trade of the United States. The requirement is equivalent, for Section 19 purposes, to the requirement challenged in the U.S.-Japan Section 19 proceeding that all containerized cargo exported from Japan be weighed and measured by harbor workers, regardless of commercial necessity. See 61 Fed. Reg. at 58,162.
In the Japan matter, the question was not whether Japan had the right in the abstract to require carriers to weigh and measure container cargos for some legitimate purpose, just as the question here is not whether Canada has the right in the abstract to promulgate legitimate measures to protect its waters from environmental damage. The proper question here, as in the Japan case, is whether regulations can be promulgated regardless of necessity that burden U.S. carriers participating in a trade. See id. (noting that the Japanese weight and measurement requirement was “not required for any administrative functions or documentary procedures in Japan, nor do carriers require [it].”). Just as Japan’s imposition of weight and measurement requirements not supported by any commercial need violated Section 19, so too the Canadian government’s ballast water requirement as applied to vessels that merely load ballast water in Canadian waters is a violation of Section 19. Indeed, the conclusion applies with even more force here because the Canadian regulation not only imposes a cost on U.S. carriers, but also will have the effect of entirely driving them out of the trade.

We discuss the elements of the Section 19 violation in more detail below.

A. The proposed regulations were issued by a foreign government:

While some Section 19 matters raise an issue as to the extent of foreign governmental involvement in the rule or practice complained of, there is no such issue in the present case. Transport Canada has issued the proposed regulations, and it is an agency of the Government of Canada, a foreign government.

B. The proposed regulation creates conditions unfavorable to shipping in the U.S. foreign trade

1. The regulations would require U.S. Lakers to install BWMSs to engage in the cross-Lakes U.S. to Canada export trade
U.S. Lakers are engaged in foreign trade between the United States and Canada on the Great Lakes. They travel not only from one point in the United States to another, but also carry cargoes between the United States and Canada. By Canadian law, U.S. Lakers are prohibited from carrying cargo between Canadian ports. By their design and U.S. Coast Guard (USCG) certification, U.S. Lakers cannot operate in waters outside of the Great Lakes and St. Lawrence River, so they can only engage in the U.S. domestic trade and cross-Lakes trades.

U.S. Lakers cannot avoid Transport Canada’s proposed regulations and continue to carry U.S. exports to Canada because they must load ballast water as they offload cargo at Canadian ports for vessel safety reasons. Lakers without cargo or ballast water lack adequate dynamic stability to safely operate in a range of environmental conditions. And as discussed more fully below, the requirement in the proposed regulations that U.S. carriers install costly BWMSs merely because they load ballast water in Canadian waters, which is illogical on its face, in fact serves no environmental purpose and has been instituted simply to competitively advantage Canadian carriers.

2. **The harm reasonably be expected to be caused LCA from the proposed regulations would be substantial**

As LCA advised Canada throughout the regulatory process, the proposed regulations would impose a regulatory cost on U.S. Lakers greater than the long-term profitability of that trade. This would result in their exiting the trade, and thus in a prospective cargo loss of the entire amount of the cargo carried in the trade. *See 46 C.F.R. §550.403(d)(1).*

Projections of the future cargo that would be lost are necessarily imprecise, but LCA submits that an average based on the last ten years would offer a sound approximation. For example, in projecting the amount of traffic on the Great Lakes for which pilotage services will be needed, the Coast Guard uses rolling average of traffic for the previous ten years. *See Great*
Lakes Pilotage Rates—2018 Annual Review and Revisions to Methodology, 83 Fed. Reg. 26,162, 26,181-82 (2018). The Coast Guard believes that the use of this period assures that a variety of market conditions are included, thus reducing the likelihood of “dramatic swings from year to year.” Id. at 26,173. LCA thus submits that a ten-year period average is representative within the meaning of 46 C.F.R. §550.403(d)(3). And using any historical period the amount of cargo involved is substantial -- at least one million tons per year and usually over two million tons, often substantially.

Over the past 10 years, U.S. Lakers carried an average of nearly 2.6 million net tons of cross-Lakes U.S. export trade cargo to Canada annually. A chart setting out the annual export volumes over the ten-year period from 2010 to 2019 is attached at Exhibit 1. LCA believes that all of this cargo would be lost to U.S. carriers under the proposed regulation because U.S. Lakers would be unable to comply without expenditures that would dwarf the expected returns from participation in the cross-Lakes trades.

LCA has calculated over the 25-year analysis period of Transport Canada’s proposed regulations (2019-2044, the last 20 years of which a BWMS would be required), the U.S. Laker fleet would have to spend 1.132 billion Canadian dollars to have access to a total of 71.1 million short tons of cargo\(^1\), an average cost of 15.92 Canadian dollars per ton in addition to their current costs. That figure is alone within the range of current all-in U.S. Laker freight rates. This doubling of U.S. Lakers’ freight rates to be eligible to carry cross-Lakes cargo would make them non-competitive with Canadian vessels.

\(^1\) This figure is the product of multiplying the average annual historical U.S. Laker cargo for both directions of the cross-Lakes trade in Exhibit 1 by the 20 years of the analysis period during which a BWMS would be required. Both directions of the cross-Lakes trade are included because, under Transport Canada’s proposed regulations, installing a BWMS would enable a U.S. Laker to participate in both directions of that trade. This assumes that the service life of the BWMS is approximately 20 years.
LCA member U.S. Laker operators would be unable to bear the increased cost of such regulations and stay competitive and thus would have to exit that trade. Canadian vessel operators would directly benefit from the exit of U.S. Lakers from that trade by taking over the portion of the trade formerly conducted by U.S. Lakers and enjoying a de facto monopoly on cross-Lakes U.S. export to Canada waterborne trade. While the proposed regulations also would prevent U.S. Lakers from participating in the cross-Lakes Canada export to U.S. trade by prohibiting the untreated discharge of ballast water into Canadian waters, LCA does not contest Canada’s right to regulate such discharges, does not include this aspect of Transport Canada’s proposed regulations in this petition, and expects that U.S. Lakers also would generally exit that trade rather than incur the costs of installing and operating BWMSs.

C. The proposed regulations are discriminatory and unfair as between U.S. and Canadian carriers

Canadian vessels already carry more than 90 percent of the cross-Lakes trade. The vast majority of U.S. Lakers were built before January 1, 2009, so they are generally older than Canadian vessels, and each fleet is designed for different purposes. U.S. Lakers virtually never operate downstream of Montreal, and rarely operate downstream of Lake Erie, but Canadian vessels routinely operate outside the St. Lawrence River as far north as the Arctic and often overseas. U.S. Lakers are therefore not designed to hold saltwater ballast in their uncoated ballast tanks, while Canadian vessels are. U.S. and Canadian Lakers built before January 1, 2009 are not required by U.S. law or regulations to install BWMSs. U.S. and Canadian Lakers built on or after that date are required by the U.S. Environmental Protection Agency’s (EPA) Vessel General Permit (VGP) to install a BWMS, but the USCG has issued extensions of this BWMS installation deadline to the few such U.S. vessels. Because only Canadian-flag vessels are allowed to engage in the Canadian domestic trade and loading Canadian domestic trade cargo
requires discharging ballast water in Canadian ports, Canadian vessels engaged in Canadian domestic trade will be required by the proposed regulations to install BWMSs. The additional legal requirement in the proposed regulations that they install BWMSs in order to load ballast water in Canadian waters thus has no additional practical effect on Canadian vessels.

Transport Canada’s proposed Regulation 23 (Equivalent document) requires U.S. Lakers loading ballast water in Canadian waters to carry a document issued by the USCG that certifies that the Laker meets the requirements of the Convention. U.S. Lakers would have to install a BWMS in order to obtain this document from the USCG. The imposition of this requirement by the proposed regulations on vessels merely because they load ballast water in Great Lakes Canadian waters that will be discharged in Great Lakes U.S. waters will make U.S. Lakers noncompetitive in the trade, while having no effect on Canadian vessels, and, in the words of the Commission’s regulation, “preclude vessels in the foreign trade of the United States from competing in the trade on the same basis as [Canadian] vessels.”

Transport Canada estimates the cost to install, operate, and maintain BWMSs on all Canadian vessels, including vessels not engaged in the cross-Lakes trade, for the next 25 years to be 632 million Canadian dollars. Because this cost is required for those vessels to remain engaged in the Canadian domestic trade, LCA asserts that there is no additional cost of the regulation to Canadian vessels based on their loading of ballast water in Canadian waters while engaging in the U.S./Canada cross-Lakes trade. At most, since the cross-Lakes trade comprises approximately half of all Canadian fleet annual cargo volumes, only approximately 316 million Canadian dollars in costs should be assigned to the approximately 600 million net tons of cargo that Canadian vessels are projected to carry in the cross-Lakes trade during the same 20-year period used for the U.S. Laker cost estimate. LCA estimates that the cost to install, operate, and
maintain BWMSs on its fleet during this same period is 1.132 billion Canadian dollars. Because the vast majority of these U.S. Lakers were built before January 1, 2009 and are not otherwise required to incur this cost under U.S. law or regulation, and all U.S. lakers built after that date have received extensions of their BWMS installation deadline from the U.S. Coast Guard, LCA asserts that all of this 1.132 billion Canadian dollar cost would have to be incurred simply in order for U.S. Lakers to continue to serve the U.S./Canada cross-Lakes trade. As noted earlier, this more than one billion Canadian dollar cost is far greater than the long-term profitability of that trade (it essentially doubles the U.S. Laker cost of participating in that trade while Canadian carriers would experience less than one Canadian dollar per ton cost increase for that trade). It will preclude U.S. Lakers from competing on the same basis with Canadian vessels with no legitimate purpose, creating a condition unfavorable to shipping in the U.S.-Canada foreign trade in violation of Section 19.

D. The proposed regulations are intentionally targeted at driving U.S. Lakers out of the U.S./Canada cross-Lakes trade.

LCA advised Transport Canada on numerous occasions prior to the publication of its proposed regulations of the implications of regulating U.S. Lakers loading in Canadian waters ballast water that will be discharged in U.S. waters. Because the science cited in the regulations does not show any environmental benefit to Canadian waters from regulating U.S. Lakers loading ballast water in Canadian waters, the inference is strong that that regulation is in fact a shipping regulation disguised as environmental regulation, and has the intent to drive U.S. Lakers out of an important foreign trade.

If a U.S. Laker were to offload U.S. export cargo at one Canadian port (requiring the loading of ballast water) and transit to another Canadian port to load cargo (requiring the discharge of ballast water), the separate Transport Canada requirement that ballast water
discharged in Canadian waters be treated with a BWMS would apply, and the regulation of ballast water loading would not be required in order to protect Canadian waters. And as noted in LCA’s comments on the proposed regulations, Transport Canada’s statement in Gazette Part 1 that “The implementation of the Convention’s performance standard by foreign and domestic vessels would reduce the environmental and economic impacts of invasive species introduced to Canada by foreign vessels, introduced to foreign waters by Canadian vessels, and spread within Canada by domestic vessels,” provides no basis for regulating the loading in Canada by U.S.-flag Lakers of ballast water that will be discharged in U.S. waters, as these discharges would not introduce aquatic non-native species into Canada.

Neither Transport Canada’s proposed regulations nor the science referenced in connection with their promulgation provides any evidence that discharges into U.S. waters by U.S. Lakers of untreated ballast water loaded in Canadian waters risks any environmental harm to Canadian waters. The referenced documents assess only the risks to Canada’s environment of discharges of untreated ballast water into Canadian waters, and identify no specific benefits to Great Lakes Canadian waters of requiring U.S. Lakers to treat ballast water loaded in Canadian waters and discharged in U.S. waters.

LCA’s comments on the proposed regulations demonstrated the following as well:

1. Transport Canada’s statements in Gazette Part I that “In 2014, a peer-reviewed national risk assessment, prepared by Fisheries and Oceans Canada for Transport Canada, found that …. international vessels travelling to the Great Lakes from overseas represented the lowest risk category of vessels, due to full compliance with requirements that they replace ballast water contents with water taken up from the open ocean,” and that “….domestic Great Lakes vessels posed a high risk of spreading invasive species to new areas, exacerbating associated negative effects” are without merit with regard to U.S. Lakers loading ballast water in Canadian waters and discharging it in U.S. waters. The 2014 national risk assessment upon which these statements are based, and the science on which that risk assessment is based, only looked at port-to-port movements of aquatic non-native species by ballast water through discharges in Canadian ports, not the spread of aquatic non-native species
from U.S. ports to neighboring Canadian waters. Therefore, that risk assessment provides no scientific basis to characterize U.S. Laker ballast water loaded in Canadian waters and discharged without treatment into U.S. waters as creating an environmental risk to Canadian waters.

2. Transport Canada cites no scientific evidence that any aquatic non-native species already present in Great Lakes Canadian waters would be more likely to spread to other Great Lakes Canadian waters if it is first loaded by a U.S. Laker and discharged untreated in U.S. waters. Any ballast water loaded in U.S. ports in which such discharges of untreated, Canadian-sourced ballast water had taken place would still be required to be treated before it could be discharged in Canadian waters.

3. Transport Canada’s regulations provide no rationale for Canada to regulate discharges of ballast water into U.S. waters differently based on whether that water was loaded in Canada or the United States. In both instances the appropriate regulator of those discharges is the U.S., not Canada. Transport Canada admits that the U.S. is the appropriate regulator for ballast water loaded in all countries other than Canada that is discharged into U.S. waters, but provides no scientific rationale for asserting that it is nonetheless Transport Canada and not the U.S. that is the appropriate regulator for ballast water loaded in Canada and discharged into U.S. waters.

Because there is no science supporting Transport Canada’s conscious decision to regulate U.S. Lakers simply because they load ballast water in Canadian waters, and because LCA expressly advised Transport Canada that the regulations will have the effect of driving U.S. carriers from the cross-Lakes U.S. export trade to Canada for no legitimate reason, the inference is inescapable that the regulations have been intentionally designed to achieve that result.

Before Transport Canada published its proposed regulations, the agency met privately with Canadian vessel owners and maritime interests regarding their development, but did not invite LCA to participate in these meetings. Canadian vessel owners and maritime interests had previously complained to the agency about the cost of installing a BWMS. The resulting regulations, however, would lead to U.S. Lakers exiting the cross-Lakes U.S. export trade to Canada entirely, allowing Canadian vessel operators to gain the revenue lost by U.S. Lakers in that trade. This would help offset the costs to Canadian vessel operators of installing BWMSs on their vessels.
While Transport Canada is entitled to offer carriers incentives to soften the costs of its regulation, it cannot impose an environmentally senseless requirement on U.S. Lakers for the purpose of advantaging Canadian carriers. That is governmental action creating conditions unfavorable to U.S. shipping, which the Commission has the power to issue a rule to correct.

These proposed regulations also come in the context of repeated attempts by the Government of Canada to discriminate against U.S. Laker operators in the cross-Lakes trades. For example, for years LCA actively protested Canada’s application of its Coast Guard Marine Navigation Services Fee (MNSF) in a manner that discriminated against U.S. Lakers by charging a lower fee to Canadian shipping companies. The overcharges to U.S. Lakers occurred over an extended period between 1998 and 2004. Only after LCA complained to the FMC and the U.S. Department of State did the Canadian Government agree to evaluate the discriminatory nature of the fee, which placed a 3 - 11 cent (Canadian) surcharge per ton on U.S.-flag vessels engaged in the cross-Lakes trade. U.S. vessels making exactly the same cross-Lakes transit as a Canadian vessel and using exactly the same level of Canadian Coast Guard services paid a materially higher fee. Canada finally admitted fault in 2007, and only then agreed to apply the MNSF in a more equitable way and to remit hundreds of thousands of dollars to U.S. Laker operators for overcharges assessed between 1998 and 2004.

Another incident began in October of 2012, when Transport Canada announced that it was considering a “transit standard” to regulate ballast water and other vessel discharges on the Great Lakes. Such a standard would have required vessels transiting through Canadian waters — regardless of whether those vessels loaded or discharged ballast water in Canadian waters — to install multimillion-dollar BWMSs. Transport Canada proposed this transit standard even though the Government of Canada had strongly opposed a similar standard that the State of New
York had proposed only a few years earlier, stating in one official letter, “The proposed requirements for ballast water discharges will have a damaging effect on the highly integrated economy of the Great Lakes region as a whole by severely impeding the movement of Canadian ships, while failing to achieve environmental benefits.”\(^2\) Canada’s prior position is entirely inconsistent with its current proposal to impose a similarly senseless requirement on LCA vessels as a condition of their participation in the cross-Lakes U.S. export to Canada trade.

In another official letter, Canada objected that the New York transit standard “risks creating significant economic harm to our respective industries while having no measurable impact in addressing the threat posed by alien invasive species,”\(^3\) again a position directly at odds with its current position that would favor its own carriers and disadvantage U.S. carriers. Canada also “noted the responsibilities of both countries as set out in the Boundary Waters Treaty of 1909, article 1,” and the Exchange of Notes in 1952, which state that “‘both countries shall use their best endeavors to avoid placing unreasonable restrictions’ on navigation.”\(^4\) In addition, Canada said, “the binational Great Lakes Water Quality Agreement calls for compatible regulations in these shared waters.”\(^5\) The Canadian foreign minister also stated, in words that fully support LCA’s current complaint, that:

> The Great Lakes and St. Lawrence is a shared waterway and the best approach for effective environmental management is through cooperation, not through unilateral measures, especially those which unfairly penalize one party … Of additional concern to Canada is the patchwork of ballast water

\(^2\) Letter from Honourable Lawrence Cannon, Canadian Minster of Foreign Affairs, to the Honourable Condoleezza Rice, U.S. Secretary of State. Dec. 11, 2008. (“Cannon letter”)


\(^4\) Id.

\(^5\) Cannon letter.
regulations emerging in the Great Lakes, as each state in the region introduces differing requirements under EPA’s permit system … We support the development of compatible rules in the United States and the Great Lakes States.⁶

Under withering criticism, especially from Canada, New York first delayed the implementation of its transit standard, and then withdrew it in the fall of 2012. Yet even so, Transport Canada released a discussion paper proposing an apparently retaliatory transit standard of its own, which LCA termed “a regulatory embargo preventing our ships from calling on Canadian Great Lakes ports…”⁷ Despite Transport Canada’s prior calls for “cooperation” and “the development of compatible rules,” the Canadian proposal explicitly contradicted the EPA’s VGP and USCG regulations. Only after LCA requested that the FMC investigate Transport Canada’s proposed transit standard, and at least one FMC Commissioner travelled to Canada and met with Canadian government officials to discuss it, did Transport Canada withdraw its transit standard proposal. However, it has now replaced it with a similarly discriminatory and anticompetitive approach in its current proposed regulation that would disadvantage U.S. Lakers in the cross-Lakes U.S. export to Canada trade under the guise of environmental regulation.

E. The proposed regulations cannot be justified under generally accepted international agreements or practices

Unable to point to any legitimate environmental basis for regulating U.S. Lakers simply because they load ballast water in Canadian waters, Transport Canada has suggested that the regulations are necessary to comply with its obligations under the Convention. There is no such obligation, however.

The Convention imposes a performance standard, described in acceptable concentrations of certain sizes and types of organisms, on ballast water discharged from vessels, and authorizes

⁶ Id. (emphasis added)
⁷ https://www.commerce.senate.gov/services/files/54513728-D349-41C6-86BC-2345DC1F764D
each party to the Convention to enforce this performance standard on vessels discharging ballast water in its waters. It does not mention regulating the loading of ballast water in the regulating country’s waters that will be discharged in the waters of another country, much less require signatories to the Convention to regulate such loading. We are unaware of any other party to the Convention that regulates the loading of ballast water in its waters that will be discharged in another country’s waters, and Transport Canada has pointed to none in its materials supporting the regulation.

Indeed, the current Transport Canada proposal, which would require U.S. Lakers to install a BWMS but not require them to meet any discharge standard, is squarely inconsistent with the IMO Convention, and would conflict with the U.S. Clean Water Act and U.S. EPA requirements as well. Because the IMO has a discharge standard and not an equipment standard, U.S.-flag Lakers calling at Canadian ports would need to meet the discharge standard by installing a BWMS in order to obtain the USCG documentation required to comply with Transport Canada’s proposed implementation of the Convention, specifically proposed Regulation 23. Transport Canada’s rejection of LCA’s proposal that Transport Canada drop its proposed regulation of ballast water loading is inconsistent with the Convention, is certainly not required by the Convention, and as set out above raises a strong inference that Transport Canada’s purpose is anticompetitive, and not to address a legitimate environmental concern.

Transport Canada has suggested that because Canadian vessels engaged in the Canadian domestic and U.S./Canada cross-Lakes trades will have to install BWMSs (even though they would have to do this because they discharge ballast water in Canadian waters), its proposed regulation must require U.S. Lakers to install BWMSs as well so as not to provide “more favourable treatment” under the Convention to U.S. Lakers than to Canadian vessels.
[Paragraph 3 of Article 3 of the Annex to the Convention]. Transport Canada cites no support for the proposition that it is entitled to impose a costly and unnecessary requirement on U.S. Lakers simply to “even out” an otherwise supposed competitive disadvantage of Canadian vessels that currently dominate the cross-Lakes trade. Again, the suggestion itself reveals that the purpose of the requirement is not environmental protection, but to regulate shipping competition to benefit its own carriers.

In any event, the proposed requirement to require installation of a BWMS in order to load ballast water in Canadian waters is unnecessary to provide “not more favourable treatment.” According to a July 2018 study by Martin Associates, Canadian vessels carried a total of 29.6 million net tons of cargo in the cross-Lakes trades in 2017, but U.S. Lakers carried only 2.8 million net tons in the same trades that year.\(^8\) Canadian vessels clearly already have a significant advantage over U.S. Lakers in the cross-Lakes trades, carrying more than 90% of that cargo and enjoying “more favourable treatment” under current conditions. Had Transport Canada retained its current regulatory treatment of U.S. and Canadian Laker ballast water in its proposed regulations, there would be no change in those vessels’ competitive situation due to the proposed regulations and Canadian vessels would have continued to enjoy a competitive advantage over U.S. Lakers.

Had Transport Canada imposed the BWMS requirement only on discharges of ballast water in Canadian waters and not applied it to the loading of ballast water in Canadian waters, Canadian regulations would have been fully consistent with the Convention and the implementation of the Convention by other parties. Under such a system of Canadian regulation,

\(^8\) http://www.lcaships.com/wp-content/uploads/2018/07/Final-Full-Study-Low-Res2.pdf. The LCA-collected cargo data in Exhibit 1 lists 2.9 million net tons of cargo for 2017; there are slight variations in the two totals due to different data collection methods and responses that LCA does not believe are material to this Petition.
in the cross-Lakes U.S. export trade to Canada, U.S. Lakers without BWMSs would compete with Canadian vessels that have installed them, the expected increase in the size of the Canadian fleet would increase their capacity to carry more of this cargo, and other competitive factors favoring Canadian vessels would remain. In the cross-Lakes Canada to U.S. export trade, however, Canadian vessels would have a monopoly, as U.S. Lakers would exit that trade instead of installing a BWMS necessary to allow ballast water to be discharged into Canadian waters. Under such a system of Canadian regulation, each country’s fleet would have this particular regulatory advantage in the export trade of its own country, but the net effect would be that Canadian vessels would likely suffer no net reduction in their share of the total cross-Lakes trade under LCA’s proposal. Under such a system of Canadian regulation, U.S. Lakers would not receive “more favorable treatment” overall in the U.S./Canada cross-Lakes trade on the basis of ballast water regulation, Transport Canada would be in compliance with the Convention, and the factors that support current Canadian vessel dominance in the cross-Lakes trades would be unaffected.

By contrast, the proposed regulations would unambiguously favor Canadian carriers by forcing U.S. Lakers completely out of cross-Lakes trades. Transport Canada cannot hide behind the Convention to justify forcing U.S. Lakers entirely out of the cross-Lakes trades in order to provide Canadian vessels an even greater advantage over U.S. Lakers.

F. The proposed regulations operate to the detriment of the foreign commerce or the public interest of the United States.

Transport Canada’s proposed requirement that U.S. Lakers install BWMSs in order to load in Canadian waters ballast water that will be discharged in U.S. waters is squarely inconsistent with the EPA VGP requirements and USCG regulations applicable to such vessels. No U.S. public interest is served by such inconsistent regulation. U.S. Laker operators would
almost surely be forced to exit the U.S.-Canada cross-Lakes trade entirely rather than bear the increased cost of that regulation. U.S. Laker operators would lose tens of millions of dollars annually in freight revenue due to the loss of this U.S. export cargo and the U.S. Treasury would lose its corresponding portion of taxes related to this U.S. Laker economic activity.

Canadian vessel operators would benefit from the exit of U.S. Lakers from that trade by taking over the portion of the trade formerly conducted by U.S. Lakers and enjoying a de facto monopoly on all U.S./Canada cross-Lakes trade. The evils of such a monopoly are plain, including increased shipping costs paid by U.S. exporters to Canada. None of this serves the public interests of the United States.

**Proposed regulation**

As required by 46 C.F.R. §550.403(e), LCA provides here a recommended regulation. LCA acknowledges that the Commission is in the best position to determine which of the many regulatory options available to it under Section 19 are most appropriate and effective. As noted above, the options include limiting sailings or the amount or type of cargo carried, tariff or agreement suspension, imposition of fees, or requests to refuse clearance or deny entry to Canadian vessels. LCA proposes the following regulation based on what the Commission approved in the Japan case:

(a) **Conditions unfavorable to shipping in the trade.** The Federal Maritime Commission ("Commission") has identified the following conditions unfavorable to shipping in the U.S.-Canada waterborne trade in the Great Lakes Basin (cross-Lakes trade) arising out of or resulting from laws and regulations of the Government of Canada:

(1) Canada has proposed regulations that would require U.S. vessels that operate exclusively within the Great Lakes Basin (U.S. Lakers”) to install ballast water management systems if they load ballast water in Canadian waters, even if they do not discharge any ballast water into Canadian waters.
(2) Loading ballast water in Canadian waters, as opposed to discharging it, does not result in the potential introduction of nonnative organisms into Canadian waters. The risk assessment provided with the proposed regulation does not provide a scientific basis to characterize U.S. Laker ballast water loaded in Canadian waters and discharged without treatment into U.S. waters as creating an environmental risk to Canadian waters.

(3) Over the 25-year analysis period of the proposed regulations the U.S. Laker fleet would have to spend 1.132 billion Canadian dollars to install, operate, and maintain ballast water management systems in order to have access to an estimated total of 71.1 million short tons of cargo, resulting in an average additional cost of 15.92 Canadian dollars per ton of cargo. This increase in U.S. Lakers’ freight rates to be eligible to carry cross-Lakes cargo would make U.S. Lakers non-competitive with Canadian vessels and cause them exit that trade.

(4) Because of their different trade patterns most Canadian carriers would have to install ballast water management systems regardless of the provision of the regulation LCA challenges. Canada’s additional requirement to regulate the loading of ballast water in Canadian waters adds no new costs to Canadian carriers.

(5) The provision LCA challenges serves no environmental purpose and has been instituted simply to competitively advantage Canadian carriers.

(6) Based on the ten-year average of cross-Lakes U.S. export trade cargo carried annually by U.S. Lakers, those U.S. vessels could be expected to lose an average of 2.6 million net tons of cargo annually as a result of Canada’s imposition of the requirements of the regulation on them solely because they load ballast water in Canadian waters.

(7) Any fee assessed by the Commission to a Canadian vessel calling at a U.S. port should serve as a disincentive for Transport Canada to go forward with the provision LCA challenges. LCA proposes the assessment of a fee of sufficient amount to ensure that Canadian carriers increasing their share of the cross-Lakes trade due to the contested provision forfeit an amount approximately equal to the resulting ill-gotten revenue.
(8) As a proxy for actual rates charged by Canadian carriers, which are unknown to LCA, LCA proposes that the fee be calculated by multiplying a rate of 15.00 U.S. dollars per ton by an estimated average 20,000 tons of cargo per Canadian vessel U.S. port call (without regard to whether the vessel carries U.S. export or import cargo on such voyage), which yields a fee of 300,000.00 U.S. dollars per U.S. port call.

(b) **Assessment of fees.** A fee of 300,000.00 U.S. dollars is assessed each time a Canadian vessel enters any port of the United States from any foreign port or place.

(c) **Report and payment.** Each Canadian carrier, on the fifteenth day of each month, shall file with the Secretary of the Federal Maritime Commission a report listing each vessel for which fees were assessed under paragraph (b) during the preceding calendar month, and the date of each vessel's entry. Each report shall be accompanied by a cashier's check or certified check, payable to the Federal Maritime Commission, for the full amount of the fees owed for the month covered by the report. Each report shall be sworn to be true and complete, under oath, by the carrier official responsible for its execution.

(d) **Refusal of clearance by the collector of customs.** If any Canadian carrier subject to this section shall fail to pay any fee or to file any report required by paragraph (c) of this section within the prescribed period, the Commission may request the Secretary of Homeland Security to direct the collectors of customs at U.S. ports to refuse the clearance required by 46 U.S.C. § 60105 to any designated vessel owned or operated by that carrier.

(e) **Denial of entry to or detention at United States ports by the Secretary of Homeland Security.** If any Canadian carrier subject to this section shall fail to pay any fee required by paragraph (b) of this section or to file any report required by paragraph (c) of this section within the prescribed period, the Commission may request the Secretary of Homeland Security to direct the Coast Guard to:

1. Deny entry for purpose of cross-Lakes or oceanborne trade, of any designated non-U.S. flag vessel owned or operated by that carrier to any port or place in the United States or the navigable waters of the United States; or

2. Detain that vessel at the port or place in the United States from which it is about to depart.
(f) Adjustment in fees to meet retaliatory measures. Upon a finding by the Commission that U.S. carriers have been subject to discriminatory fees, restrictions, service disruptions, or other retaliatory measures by the Government of Canada, or any agency, organization, or person under the authority or control thereof, the level of the fee set forth in paragraph (b) shall be increased. The level of the increase shall be equal to the economic harm to U.S. carriers on a per-voyage basis as a result of such retaliatory actions, provided that the total fee assessed under this section shall not exceed one million dollars per voyage.

Request for Discovery

46 C.F.R. §550.502 provides that the Commission may “authorize a party to a proceeding to use depositions, written interrogatories, and discovery procedures that, to the extent practicable, are in conformity with the rules applicable in civil proceedings in the district courts of the United States.” LCA respectfully requests that the Commission authorize it to engage in such discovery to obtain information that is in the possession of Canadian entities that maybe relevant to this petition, or in the alternative seek this information through its own investigative processes. This information includes

1. Any documentation that reflects or discusses any environmental benefits to Canada of requiring BWMSs on vessels that operate only on the Great Lakes and St. Lawrence River and load ballast water in Canadian waters, even if they do not discharge ballast water into Canadian waters.

2. Any documentation that reflects or discusses the costs of requiring BWMSs on vessels that operate only on the Great Lakes and St. Lawrence River.

3. Any documentation that reflects or relates to any communications between any agency or official of the Government of Canada and any other person regarding the requirement in the proposed regulations that BMWSs be installed on vessels
that operate only on the Great Lakes and St. Lawrence River, including but not limited to any communications reflecting the competitive effects of the proposed regulation and any alternatives considered to the proposed regulation.

**Conclusion**

For the reasons set out above, LCA respectfully requests that the Commission find that the Transport Canada proposed regulations requiring LCA’s members who operate vessels exclusively on the Great Lakes and St. Lawrence River to install BWMSs to treat ballast water loaded in Canada and discharged in the United States create a “special condition unfavorable to shipping in the foreign trade” under Section 19 of Shipping Act, 1920, 46 U.S.C. § 42101, and under the Commission’s regulations, 46 CFR Part 550.301(c) and (e). LCA also respectfully requests that the Commission issue a rule based on such finding that is designed to assure the continued access of U.S. Lakers to the cross-Lakes U.S. export to Canada trade, in accordance with the remedial options provided in 46 U.S.C. § 42106.

Respectfully submitted,

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_Counsel to Petitioner Lake Carriers’ Association_

March 6, 2020
VERIFICATION

James H. I. Weakley declares under penalty of perjury pursuant to 28 U.S.C. § 1746 that he is the President of Petitioner Lake Carriers’ Association, that he has read the foregoing Petition, and that the facts stated therein, upon his own knowledge and upon information received from others, he believes to be true.
REGULATORY IMPACT ANALYSIS STATEMENT

(This statement is not part of the Regulations.)

**Issues:** Ballast water, which is important for the safety and stability of vessels, can also introduce aquatic invasive species (e.g. Zebra mussels) into receiving waters. In 2010, Canada acceded to the International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004 (the Convention). Revised ballast water regulations would give effect to Canada's obligations under the Convention and further protect Canadian waters from the introduction and spread of aquatic invasive species and pathogens by Canadian and foreign vessels.

**Description:** This regulatory proposal would repeal Canada's *Ballast Water Control and Management Regulations* (the existing Regulations) and replace them with new *Ballast Water Regulations* (the proposed Regulations). The proposed Regulations would apply to Canadian vessels everywhere and vessels in waters under Canadian jurisdiction. Subject vessels would be required to develop and implement a ballast water management plan and comply with a performance standard that would limit the number of organisms discharged by 2024. Vessels would need to obtain a certificate, keep records of ballast water operations, and be subject to inspections to verify compliance. While most vessels would need to install a ballast water management system (BWMS) to comply with the proposed Regulations, smaller vessels...
would have the option of an equivalent compliance regime more tailored to their operations. The proposed Regulations would take into account differences between the United States regime and the Convention, providing sufficient time for vessel owners to install BWMS for use in the North American market, and certainty that capital investments would be respected given the challenging water quality conditions on the Great Lakes and the St. Lawrence River.

**Rationale:** The proposed Regulations would give effect to Canada’s international obligations under the Convention, which entered into force in 2017, and would further reduce the environmental risks posed by ballast water. The implementation of the Convention’s performance standard by foreign and domestic vessels would reduce the environmental and economic impacts of invasive species introduced to Canada by foreign vessels, introduced to foreign waters by Canadian vessels, and spread within Canada by domestic vessels. In so doing, the proposed Regulations would contribute directly to a clean and healthy environment, align with the need for a strong and mutually beneficial North American partnership, and support a prosperous Canada through global commerce. The proposed Regulations would impose a total present value cost of $632.39 million. Private vessel owners would carry the majority of the costs associated with the proposed Regulations (approximately 96%). The present value total benefits would be $1,296.11 million, resulting in a net benefit of $663.71 million.

**Issues**

Canada has yet to amend its regulations to give effect to the international obligations it took on in acceding to the Convention in 2010. In addition, the existing Canadian regulations exempt domestic vessels, which pose economic and environmental risks associated with the spread of invasive species throughout Canada (and in inland waters shared with the United States).

**Background**

Ballast water is water taken on board a vessel to control the trim, list, draught, stability or stresses of the vessel. For example, it may be taken up or discharged when cargo is unloaded or loaded, or when a vessel needs extra stability in poor weather. Ballast water carried on board a vessel is also a vector by which harmful aquatic organisms and pathogens are unintentionally transported around the world. Invasive species have been implicated in vast reductions in, or outright extinction of, indigenous fish and the devastation of local fisheries. Invasive species also harm plants and animals, facilitate algal blooms, degrade beaches, impair fisheries, disrupt infrastructure, lower property values, and create prevention and control expenses. In addition, ballast water has been shown to transport pathogens, such as cholera, that could potentially have significant impacts on human health.
Canada first introduced voluntary guidelines to address the introduction of invasive species to the Great Lakes by international shipping in 1989. In June 2006, mandatory national rules were introduced pursuant to the former Canada Shipping Act: the Ballast Water Control and Management Regulations. There have been no substantive policy changes to the 2006 regime since its introduction. The existing Regulations were updated on October 27, 2011, to bring them under the regime of the new Canada Shipping Act, 2001, which had entered into force in the interim. On February 22, 2017, the Regulations received minor amendments to address issues that were raised by the Standing Joint Committee for the Scrutiny of Regulations to correct discrepancies between the English and French versions.

As shipping is a global industry and the movement of aquatic invasive species is a global issue, a uniform global approach is needed for its regulation. In 1989, Canada initiated the discussion concerning invasive species in ballast water at the International Maritime Organization. Canada then actively participated in the development of the Convention, which was adopted in 2004 in order to prevent, minimize and ultimately eliminate the risks to the environment, human health, property and resources arising from the transfer of harmful aquatic organisms and pathogens. In 2010, Canada acceded to the Convention, which entered into force on September 8, 2017.

In 2014, a peer-reviewed national risk assessment, prepared by Fisheries and Oceans Canada for Transport Canada, found that all ballast water movements represent a risk for introducing and spreading aquatic invasive species in Canada. This study found that the international vessels travelling to the Great Lakes from overseas represented the lowest risk category of vessels, due to full compliance with requirements that they replace ballast water contents with water taken up from the open ocean. By comparison, international vessels visiting Canada’s Atlantic and Pacific coasts posed a high risk; international vessels visiting the Arctic currently posed an intermediate risk; and domestic Great Lakes vessels posed a high risk of spreading invasive species to new areas, exacerbating associated negative effects.

**Objective**

The objectives of the proposed Regulations are to

- reduce the risk to Canada’s environment and economy associated with the introduction and spread of aquatic invasive species released through the ballast water of foreign and domestic vessels;

- give effect to the Convention in Canada and address Canada’s international obligations, including the protection of foreign environments;

- maximize compatibility with the differing and evolving United States ballast water regime; and

- mitigate, to the extent feasible, technical uncertainty associated with the Convention, notably in the Great Lakes–St. Lawrence River region.

**Description**

[ATTACHMENT 1]
This regulatory proposal would repeal the existing Regulations and replace them with a new set of regulations, the proposed *Ballast Water Regulations*. These proposed Regulations would

- apply to Canadian vessels everywhere and all vessels in waters under Canadian jurisdiction;
- incorporate by reference the Convention’s requirements;
- impose requirements based on the vessel’s length, its ballast water capacity, its date of construction, and its area of operation; and
- maintain some requirements from the existing Regulations.

Vessels to which the proposed Regulations would apply are divided into three groups.  

**1. International vessels**

Vessels that operate internationally would be required to be in compliance with the Convention regime, which requires that vessels

- have on board and implement an approved vessel-specific Ballast Water Management Plan;
- be surveyed and carry a Ballast Water Management Certificate;
- meet a performance standard that limits the number of organisms capable of reproducing in order to reduce the risk of aquatic species invasions (vessels are expected to use a BWMS to meet the performance standard);
- record ballast water operations and maintain a Ballast Water Record Book on board; and
- be subject to inspections in ports or offshore terminals to ensure compliance.

These vessels will also be subject to certain provisions of the existing Regulations that remain relevant and are not part of the Convention regime

- to flush otherwise empty ballast tanks with open ocean water in order to reduce the risk posed by any residual ballast water and sediments;
- to exchange and flush ballast tanks in addition to meeting the performance standard when travelling to Canadian freshwater ports (from outside of waters under Canadian jurisdiction, the Great Lakes and the high seas) until at least September 8, 2024; and
- to report on the provenance and management of ballast water discharged in Canada.

The proposed Regulations would require all vessels travelling internationally to comply with the Convention’s requirements. The Convention requires vessels travelling internationally and built on or after September 8, 2017, to meet the performance standard when the vessel is launched. Conversely, vessels built before September 8, 2017, would be required to meet the performance standard between 2019 and 2024, prior to which date these vessels are required to exchange their ballast water in mid-ocean in order to reduce the number and viability of organisms discharged.

**2. Domestic and Great Lakes vessels**
These vessels include Canadian vessels that operate exclusively in waters under Canadian jurisdiction, and, if applicable, on the high seas or in the United States waters of the Great Lakes Basin. To address the spread of species within Canada, domestic and Great Lakes vessels would be required to comply with the same applicable requirements as vessels in Group 1 above, except those vessels will have until September 8, 2024, to come into compliance with the performance standard. Non-party vessels (e.g. U.S. vessels) that transit through Canadian waters of the Great Lakes Basin without loading or unloading ballast water would be exempt from the proposed Regulations (see “Regulatory Development,” below).

3. Vessels subject to the equivalent compliance regime

The Convention allows Canada to establish equivalent compliance requirements for certain international pleasure and search and rescue craft that carry less than 8 m$^3$ of ballast water and are less than 50 m in length. The proposed Regulations would do so for these vessels by giving effect to the International Maritime Organization guidelines for equivalent compliance. For reasons of practicality and feasibility, the proposed Regulations would also allow vessels less than 50 m in length to follow the equivalent compliance regime if they operate exclusively in waters under Canadian jurisdiction, or in those waters and on the high seas.

Regulatory development

Consultation

Transport Canada has consistently engaged stakeholders concerning ballast water through public meetings of the Canadian Marine Advisory Council since before Canada’s 2010 accession to the Convention. In addition, the proposed Regulations reflect years of dialogue with industry, scientists, engineers, U.S. legislators and regulators, and international partners, notably with

- Canadian and U.S. vessel owners, business associations, scientists, legal associations, landowner associations, U.S. jurisdictions, and BWMS manufacturers who submitted public comments in March 2013 in response to an October 2012 Transport Canada discussion paper on a proposed regulatory approach to give effect to the Convention;
- Vessel owners and academics who participated as scientific peer reviewers for a national risk assessment on ballast water and aquatic invasive species in March and June 2013, as well as for a scientific assessment of ballast water exchange plus treatment in February 2018;
- Expert engineering consultants who undertook studies commissioned by Transport Canada in 2013 on the availability of BWMS for the Great Lakes, and whose subsequent technical dialogue with Canadian and U.S. vessel owners was published by Transport Canada in 2015;
- Members of a Government-Industry Working Group on Ballast Water formed in early 2017, which included representatives of Canadian owners of domestic and international vessels, and which held eight in-person meetings culminating in an agreement in principle to the proposed regulatory approach.
Through these consultations and processes, as well as dozens of International Maritime Organization meetings and many informal and bilateral discussions held with Canadian and U.S. vessel owners, the following notable issues were discussed and taken into consideration during the development of the proposed Regulations.

1. Efficacy of ballast water management systems in Great Lakes conditions

Great Lakes vessel owners expressed concern that the BWMS would not consistently meet performance standards when treating ballast water drawn from the Great Lakes and the St. Lawrence River. The best conditions for BWMS include the slow uptake of clear, temperate ocean ballast water. Great Lakes vessels, in contrast, often contend with rapid ballasting of murky, cold, fresh water.

While Canada recognizes the challenges of managing ballast water in this region, the proposed Regulations would respond to vessel owner concerns by deeming ballast water drawn from the Great Lakes and the St. Lawrence River to be compliant with the performance standard if an approved BWMS is installed, operated and maintained correctly. On the assumption that the performance of this technology would become clearer with time, the approach of deeming compliance would be restricted to vessels that fit a system prior to September 8, 2024. Should experience demonstrate ongoing challenges in treating ballast water in this region, this date could be reconsidered in the future.

2. Feasibility of installing approved BWMS on Great Lakes vessels

Great Lakes vessel owners also expressed the challenge of selecting and fitting BWMS on their vessels. Studies commissioned by Transport Canada concluded that feasible approaches can be found to install BWMS on Canadian and U.S. Great Lakes vessels. However, the United States has only recently begun to approve systems that are also accepted under the Convention, and is currently developing methods to align its performance standards for BWMS with those of the International Maritime Organization. As a result, vessel owners have expressed concern that the Convention timeline for meeting the performance standard would not allow them sufficient time to comply with the requirements of both jurisdictions.

Canada acknowledges that Great Lakes vessels have been particularly delayed in selecting, piloting and installing BWMS. Accordingly, the proposed Regulations would not require Great Lakes vessels to comply with the performance standard of the Convention until September 8, 2024.

3. Exemptions

The Convention provides a mechanism for internationally coordinated time-limited, renewable, risk-based exemptions under its Regulation A-4. Because unmanaged ballast water discharges have been found to pose a high risk in all areas of Canada, Transport Canada does not anticipate that Canada would grant significant numbers of exemptions. Therefore, Transport Canada would accept applications from vessel owners for exemptions that meet Regulation A-4 and are in the public interest. These applications would be considered on a case-by-case basis. Transport Canada would
develop guidelines for applicants, and envisions that applications would be reviewed in conjunction with Fisheries and Oceans Canada. The applicant would be responsible for consulting any other countries that could be adversely affected by an exemption (as required by the Convention) with a view to resolving any identified concerns.

**Consultations with the United States**

Canada and the United States regularly discuss ballast water issues in accordance with the Great Lakes Water Quality Agreement and through other fora. Based on these discussions, the following issues have been explored or approaches adopted to maximize regulatory compatibility.

1. **Transiting Great Lakes vessels**

The United States government has requested that Canada not apply the Convention to its Great Lakes vessels during transits through Canadian waters while carrying cargo between U.S. ports. While the unmanaged ballast water of these vessels poses environmental risks to the shared natural resources of Canada and the United States, it would be better left to the United States to regulate these vessels.

The Convention requires Canada to apply the requirements of the Convention to vessels of non-parties, to ensure that no more favourable treatment is given to such vessels. The Convention’s requirements include the development of approved ballast water management plans for meeting the Convention’s performance standard wherever ballast water is discharged, even if the ballast is ultimately discharged into waters of non-parties. The proposed Regulations would therefore require that vessels that load or discharge ballast water in Canada hold and keep on board a document of compliance issued by, or on behalf of, their flag state that certifies that the vessel meets the requirements of the Convention.

2. **Same location exception**

In accordance with the Convention, the proposed Regulations would not require the management of ballast water loaded and discharged at the same location, providing that no mixing with unmanaged ballast water has occurred. The Convention does not define the term “same location.” The proposed Regulations would align with the U.S. Environmental Protection Agency’s definition in referring to locations within 10 NM, without crossing an obstruction or barrier. This definition would encompass short-distance ferry routes, as well as the operation of support vessels within many Canadian ports.

**Modern treaty obligations and Indigenous engagement and consultations**

In accordance with the Cabinet Directive on the Federal Approach to Modern Treaty Implementation, an analysis was undertaken to determine whether the proposed Regulations are likely to give rise to modern treaty obligations. This assessment examined the geographical scope and subject matter of the regulatory proposal in relation to modern treaties in effect.

[ATTACHMENT 1]
Treaty provisions are identified in the Nunavut Land Claim Agreement, the Nunavik Inuit Land Claims Agreement and the Eeyou Marine Region Land Claims Agreement, which obligate the federal government to consider advice and recommendations regarding marine areas.

Transport Canada has responded to interest from Indigenous groups and rights holders concerning ballast water over an extended period of time. This includes an extended dialogue with the Nunavut Impact Review Board in 2012 during hearings on the Mary River Mine Project, including several in-person appearances by Transport Canada officials, and briefings given to the Chiefs of Ontario by Transport Canada, Ontario Region in the context of the Canada-Ontario Agreement.

Transport Canada has also consulted and is continuing to consult on the proposed Regulations through the regional Canadian Marine Advisory Council, which includes representatives of Indigenous groups. In terms of environmental benefits and impact on vessel owners, the proposed Regulations are expected to affect Indigenous peoples in the same ways as non-Indigenous Canadians.

**Instrument choice**

For this regulatory initiative, no other options were considered, as its intent is to align Canadian regulations with the International Convention for the Control and Management of Ships’ Ballast Water and Sediments, 2004, to which Canada is a party.

**Regulatory analysis**

**Benefits and costs**

The estimated total present value cost of the proposed Regulations is $632.39 million. Private vessel owners would carry the majority of the costs associated with the proposed Regulations (approximately 96%). The benefits quantified in this analysis represent the minimum benefits derived from the proposed Regulations, since they are based only on a Zebra mussel case in Ontario. The present value total benefits would be $1,296.11 million, resulting in a net benefit of $663.71 million.

The information provided in this section is meant only to summarize the findings of the analysis. A full cost-benefit analysis (CBA) report is available upon request.

**Affected stakeholders**

The proposed Regulations would apply to Canadian vessels everywhere and non-Canadian vessels in waters under Canadian jurisdiction and would impose requirements based on the vessel’s length, the ballast water capacity, and where the vessel operates. The Canadian owners of vessels are grouped into three categories

(a) **Canadian vessels operating internationally (excluding the United States)**
According to the Convention, all vessels travelling internationally that use ballast water are anticipated to install a BWMS to meet the Convention’s performance standard consistent with the Convention compliance date. This analysis includes no procurement costs for these vessels, given they must carry these in order to operate in other countries that are parties to the Convention. For the same reasons, the costs associated with sediment management, the training of crews, the approval of the Ballast Water Management Plan, the ballast water record book, survey and certification are expected to be nil.

In terms of operation costs, the existing Regulations would be repealed and replaced with the proposed Regulations. As a result, after September 8, 2024, Canadian vessels operating internationally would no longer need to exchange their ballast water (except those travelling to Canadian freshwater ports from beyond Canadian waters), but would be required to treat ballast water before entering Canada. The expected change in operational costs would be negligible. International vessels discharging their ballast water in the Great Lakes and St. Lawrence Seaway would be required to exchange and treat their ballast water. Only 17 Canadian-flagged vessels fall into this category.

(b) **Canadian vessels operating in Canada and the United States**

Under the existing Regulations, Canadian vessels that operate in both Canada and the United States, but not in the Great Lakes Basin, are required to exchange their ballast water. The proposed Regulations would require this category of vessels to manage their ballast water as required under the Convention.

Under the existing Regulations, Canadian vessels that operate exclusively in Canada and the Great Lakes Basin are exempted from managing their ballast water. The proposed Regulations would require this category of vessels to manage their ballast water as required under the Convention.

(c) **Canadian vessels operating exclusively in Canadian waters**

Under the existing Regulations, Canadian vessels operating exclusively in Canadian waters are exempted from managing their ballast water. The proposed Regulations would require vessels operating within Canada that are longer than 50 m in length to manage their ballast water as required under the Convention. Vessels operating within Canada that are less than 50 m in length would be required to comply with the best-effort equivalent compliance regime.

**Baseline scenario and regulatory scenario**

The cost-benefit analysis evaluates incremental changes for vessel owners and how these changes would impact the environment due to the proposed Regulations. Requirements and their impacts have been examined so that costs and benefits can be compared in both the baseline and regulatory scenarios. Table 1 shows the incremental number of affected vessels based on the vessel's length, ballast water capacity, operating area and the type of incremental requirement these vessels would incur.

[ATTACHMENT 1]
<table>
<thead>
<tr>
<th>Vessel Category</th>
<th>Number of Vessels</th>
<th>Existing Regulations</th>
<th>New Regulations</th>
<th>Incremental Requirements</th>
</tr>
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<tbody>
<tr>
<td>Canadian vessels operating internationally (excluding the United States), discharging ballast water in the Great Lakes Basin</td>
<td>17</td>
<td>Exchanging ballast water before entering Canada</td>
<td>The Convention requirements, plus exchanging ballast water before entering Canada</td>
<td>Only treatment costs</td>
</tr>
<tr>
<td>Canadian vessels operating internationally (excluding the United States), discharging ballast water in coastal waters</td>
<td>4</td>
<td>Exchanging ballast water before entering Canada</td>
<td>The Convention requirements</td>
<td>Incremental cost is negligible</td>
</tr>
<tr>
<td>Canadian vessels operating in Canada and the United States (excluding the Great Lakes Basin)</td>
<td>102</td>
<td>Exchanging ballast water before entering Canada</td>
<td>The Convention requirements</td>
<td>Procurement and operating cost, excluding treatment costs</td>
</tr>
<tr>
<td>Canadian vessels operating in Canada and the United States (exclusively in the Great Lakes Basin)</td>
<td>182</td>
<td>Exempted from managing their ballast water</td>
<td>The Convention requirements</td>
<td>Procurement and operating costs</td>
</tr>
<tr>
<td>Canadian vessels operating domestically that are 50 m in length or longer</td>
<td>829</td>
<td>Exempted from managing their ballast water</td>
<td>The Convention requirements</td>
<td>Procurement, and operating costs</td>
</tr>
<tr>
<td>Canadian vessels operating domestically that are less than 50 m in length</td>
<td>2</td>
<td>Exempted from managing their ballast water</td>
<td>Equivalent compliance regime</td>
<td>Incremental cost is negligible</td>
</tr>
</tbody>
</table>
As vessels affected by the proposed Regulations are only a small portion of all Canadian vessels, the overall growth rate cannot be applied to this category of vessels. Based on the expert opinion of Transport Canada officials, it is expected that the total number of vessels affected by the proposed Regulations would not change over the analytical time frame of this study. However, some of the current vessels might be replaced with new vessels. As per the Convention, all vessels built after 2017 that carry ballast water are required to have a BWMS on board; the cost of acquisition and installation of the BWMS for those vessels is not considered as an incremental cost. The operation cost of those vessels is already included in the analysis.

**Costs**

The costs associated with the proposed Regulations would be carried by two groups: private vessel owners and government. The estimated total present value cost of the proposed Regulations over the 25-year analytical time frame is $632.39 million. Private vessel owners would carry 95.75% of the total cost associated with the proposed Regulations.

**Costs to private vessel owners**

Vessel owners would carry costs for acquisition, installation, and operation of ballast water management equipment, as well as costs for developing an approved Ballast Water Management Plan, training crew members, record keeping, and certification of surveys. The total present value cost to vessel owners is estimated to be $605.51 million.

The acquisition, installation and operation costs are driven from two different studies (described below), while costs associated with the approval of a management plan, record book and certification were informed by consulting stakeholders and subject matter experts.

(a) Acquisition, installation and operation costs

1. *Average cost per vessel longer than 50 m (excluding barges)*

The acquisition, installation and operation costs associated with BWMS would vary depending on the type of vessel, the type of treatment, the ballast water capacity, and the level of difficulty associated with the installation and operation.

The estimated cost for vessels that are 50 m or longer was informed by a study commissioned by Transport Canada, which examined the technical feasibility and costs of acquiring, installing and operating a range of BWMS options for the vessels that could potentially be affected by the proposed Regulations. In total, four different types of BWMS were examined. Each of those has been designed into the following sample of vessels: self-unloader with accommodation aft, self-unloader with accommodation forward and aft, tanker, straight decker, geared bulk carriers, and gearless bulk carriers.

A breakdown of the average acquisition, installation, and operation costs of BWMS is presented in Table 2. Three estimates were provided for each type of vessel, with a low, high and most probable value. The most probable value is based on cost quotations and commercial experience, while the [ATTACHMENT 1]
low and high estimates account for the potential variability in actual outcomes.

Table 2: Average acquisition, installation, and operation costs for vessels longer than 50 m (in millions of 2017 dollars)

<table>
<thead>
<tr>
<th>Vessel Type</th>
<th>Acquisition/Installation Costs</th>
<th>Annual Operation Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Self-unloader with accommodation aft</td>
<td>$2.79</td>
<td>$7.92</td>
</tr>
<tr>
<td>Self-unloader with accommodation forward and aft</td>
<td>$2.39</td>
<td>$4.95</td>
</tr>
<tr>
<td>Tanker</td>
<td>$0.75</td>
<td>$2.08</td>
</tr>
<tr>
<td>Straight decker</td>
<td>$2.13</td>
<td>$4.85</td>
</tr>
<tr>
<td>Geared bulk carriers</td>
<td>$0.76</td>
<td>$2.27</td>
</tr>
<tr>
<td>Gearless bulk carriers</td>
<td>$1.88</td>
<td>$4.34</td>
</tr>
</tbody>
</table>

These average cost estimates have been assigned to Canadian vessels longer than 50 m (except barges) based on the vessels’ characteristics.

II. Average cost per vessel shorter than 50 m

The costs associated with the BWMS of vessels that are shorter than 50 m in length come from a study prepared for Isle Royale National Park (Houghton, Michigan). This study examined seven existing BWMS, based on their compatibility with smaller vessels and ability to meet the performance standard described in Regulation D-2 of the Convention. Among them, only one of the systems was available and compatible with International Maritime Organization standards (Hyde Guardian). The costs associated with that system are used as a proxy for average acquisition, installation, and operation costs of each vessel that is shorter than 50 m.

III. Average cost per barge

Non-self-propelled barges make up the majority of Canadian domestic vessels longer than 50 m and can carry significant amounts of ballast water, posing the same environmental risks as self-propelled vessels. However, barges often lack electrical generation systems and the ballast water piping necessary for the use of a BWMS. Approximately 67% of the Canadian vessels that are longer than 50 m are non-self-propelled barges, and will be required to comply with the proposed Regulations.
Due to the lack of information on the ballast water piping and electrical systems of barges, the costs associated with compliance are not available. It is likely that barges will adopt a case-by-case approach to compliance that cannot be estimated by Transport Canada. However, the cost would not likely exceed that of installing the Hyde Guardian on the M/V Ranger. This cost has therefore been used for barges in this CBA as a conservative estimate of the maximum cost that barge owners could face. It is likely that other less expensive means of compliance would be used for barges.

Considering the expected number of affected vessels and the average acquisition, installation and operation costs, the total present value of costs is estimated. Table 3 summarizes the most probable present value (PV) of total costs for all affected privately owned Canadian vessels.

Table 3: Present value of acquisition, installation and operation costs to privately owned Canadian vessels (in millions of 2017 dollars)

<table>
<thead>
<tr>
<th>Vessel Type</th>
<th>Number of Affected Vessels</th>
<th>Type of Treatment</th>
<th>PV of Acquisition/Installation Costs Probable ($)</th>
<th>PV of Operation Costs Probable ($)</th>
<th>PV of Total Costs Probable ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vessel longer than 50 m</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-unloader with accommodation aft</td>
<td>24</td>
<td>Electrolysis</td>
<td>$103.83</td>
<td>$43.72</td>
<td>$147.55</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ozone</td>
<td>$73.12</td>
<td>$19.61</td>
<td>$92.73</td>
</tr>
<tr>
<td></td>
<td></td>
<td>UV</td>
<td>$82.87</td>
<td>$27.59</td>
<td>$110.45</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chemical injection</td>
<td>$51.75</td>
<td>$33.31</td>
<td>$85.06</td>
</tr>
<tr>
<td>Self-unloader with accommodation forward and aft</td>
<td>10</td>
<td>Electrolysis</td>
<td>$20.99</td>
<td>$13.27</td>
<td>$34.26</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ozone</td>
<td>$21.15</td>
<td>$7.58</td>
<td>$28.74</td>
</tr>
<tr>
<td></td>
<td></td>
<td>UV</td>
<td>$20.49</td>
<td>$9.34</td>
<td>$29.84</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chemical injection</td>
<td>$14.73</td>
<td>$8.53</td>
<td>$23.26</td>
</tr>
<tr>
<td>Vessel Type</td>
<td>Number</td>
<td>Electrolysis</td>
<td>Ozone</td>
<td>UV</td>
<td>Chemical injection</td>
</tr>
<tr>
<td>----------------------</td>
<td>--------</td>
<td>--------------</td>
<td>-------</td>
<td>----</td>
<td>--------------------</td>
</tr>
<tr>
<td>Tanker</td>
<td>24</td>
<td>$20.52</td>
<td>$16.14</td>
<td>$10.61</td>
<td>$16.27</td>
</tr>
<tr>
<td>Straight decker</td>
<td>10</td>
<td>$27.02</td>
<td>$25.26</td>
<td>$25.79</td>
<td>$16.88</td>
</tr>
<tr>
<td>Geared bulk carriers</td>
<td>77</td>
<td>$106.15</td>
<td>$75.04</td>
<td>$50.30</td>
<td>$71.73</td>
</tr>
<tr>
<td>Gearless bulk carriers</td>
<td>13</td>
<td>$34.70</td>
<td>$31.60</td>
<td>$28.82</td>
<td>$21.57</td>
</tr>
<tr>
<td>Total cost</td>
<td></td>
<td>$173.10</td>
<td>$75.57</td>
<td>$248.67</td>
<td></td>
</tr>
</tbody>
</table>

Vessel shorter than 50 m and barge
| Vessel shorter than 50 m and barge | 972 | Hyde Guardian | $250.42 | $25.06 | $275.48 |

Given that all treatment options meet the requirements of the proposed Regulations, in the central analysis, it is assumed that vessel owners would always choose the lowest cost option.

In this scenario, the total present value acquisition, installation, and operation costs to vessel owners would be approximately $524.15 million.

(b) Training costs

Vessel crew would require training to operate a BWMS. Initial training may be delivered by the system vendor as part of their delivery service to the vessel. Over the long term, vessel owners would need to develop training materials and train new crew members.

Training costs are estimated to be between $15,000 and $30,000 per vessel for initial training on delivery of a BWMS (material preparation, trainers, staff time, and travel as needed). Updates and refreshers would be part of ongoing training for crews and are estimated to be an additional $2,000 to $5,000 per vessel, annually. The total present value training costs would be around $46.56 million.

(c) Survey and certification costs

All vessels in scope of the proposed Regulations would be subject to an initial survey before the vessel is put in service, or before the required certification is initially issued. Ballast water management certification is endorsed following a satisfactory annual survey to maintain the validity of the certification. The initial certification would be reissued every five years. Based on the industry consultation, it is estimated that the initial issuance and reissuance (every five years) of the survey would cost between $1,500 and $2,650 per vessel, while the annual endorsement of the survey would additionally cost between $1,500 and $2,650 per vessel (regardless of vessel type). The total cost for this requirement would be approximately $22.92 million.

(d) Record-keeping and reporting costs

All vessels affected by the proposed Regulations would be required to have a separate record book on board for ballast water operations in a prescribed format. Based on the industry consultation, it is estimated that this requirement would cost between $800 and $1,200 per vessel. The total cost associated with record keeping and reporting would be approximately $7.32 million.

(e) Ballast water management plan costs

Canadian vessels would need to develop and implement an approved ballast water management plan. This plan must comply with the Convention provisions, and include matters relating to safety, sediment management, ballast water operations, coordination procedures, and crew responsibilities. Transport Canada delegated approval of the ballast water management plan to recognized [ATTACHMENT 1]
organizations in autumn 2017. Vessels owners/operators would develop the initial management plan (cost varies between $1,500 and $2,000 per vessel) and provide recognized organizations with the designed plan to make sure that it meets performance standards. Reviews may take recognized organizations between two and eight weeks, and cost between $3,400 and $4,600 (for up to two reviews). The total costs to vessel owners associated with developing an approved ballast water management plan are approximately $4.56 million. The cost of approval is considered to be negligible, as it is done by recognized organizations that develop the plans.

**Costs to Government**

The total present value costs to Government are estimated to be $26.88 million over the 25-year analytical time frame.

(a) **Acquisition, installation and operation costs for public vessel owners**

There are 39 government vessels (federal and provincial) that would be affected by the proposed Regulations. The present value of total acquisition, installation, and operation costs of a BWMS for those vessels would be approximately $21.11 million.

(b) **Compliance promotion, enforcement and regulatory administration costs**

The total Government costs associated with the development, promotion, awareness of the regulation, and general administration of the program would be approximately $5.77 million.

There would be no incremental Government costs for Port State Control inspections because the existing inspection program under the *Canada Shipping Act, 2001* is not specific to any regulation. Ballast water inspections would be included within the existing Port State Control regime and would be subject to prioritization with the other regulatory areas, within the overall resources available for Port State Control.

**Benefits**

The benefits associated with the proposed Regulations are presented as monetized and qualitative benefits. To monetize the benefits of the proposed Regulations, the expected reduction in the number of aquatic invasive species is used, together with the economic impact that they would have on Canadians, and the severity of those invasions based on their maturity level. The estimated present value total monetized benefit of the proposed Regulations over the 25-year analytical time frame would be $1,296.11 million. Qualitative benefits consist of avoided environmental and biodiversity impacts to the Canadian marine ecosystem.

**Monetized benefits**

The monetized benefits analysis focuses on the cost savings that would result from preventing the establishment of invasive species in Canadian waters and how it would result in the avoidance of costs to Canadians.
(a) Expected avoided invasive species

In the baseline scenario, it is expected that at least 100.5 non-native species would invade Canadian waters over the next 25 years. In the regulatory scenario, where vessels are complying with required D-2 standards of the Convention (by September 2024), this number would be reduced to 39.79. The proposed Regulations would result in a reduction of 60.71 invasive species, 9.11 of which are expected to cause severe economic or environmental damage. Figure 1 shows the number of invasive species in the baseline and regulatory scenarios over the 25-year analytical time frame.

Figure 1: Number of expected invasive species under the regulatory and baseline scenarios

(b) Cost saving per expected avoided species

The costs related to a species that has not invaded an ecosystem cannot be known. As a precautionary basis for estimating potential cost savings, the impact from species that have already invaded an environment is used as a proxy for the costs of future invasions. Zebra Mussel, for example, is an invasive species that has had significant consequences on Canadian industries which rely on access to water supply.

To monetize the expected cost savings associated with the proposed Regulations, this cost-benefit analysis adopts an avoided cost approach, using the case of Zebra Mussel invasions in Canada. In doing so, a number of Zebra Mussel studies have been evaluated to determine the impact of this introduced species to Canadians.

Marbek (2010) estimated the cost of Zebra Mussels in the Ontario Great Lakes region to determine how a new invasive species could possibly impact different industries. The results suggested that preventing a non-native species from entering the Great Lakes would be more cost-effective than
carrying mitigation costs after invasion. The CBA focused its cost-reduction estimates on the Marbek (2010) study, as it was found to be precise and detailed in estimating the impact of Zebra Mussels, in addition to being specific to Canadian context. The framework used to quantify the impact of Zebra Mussels focused on determining the costs carried by Canadians and industries that depend on the Ontario Great Lakes.

(c) Severity curve of the cost associated with invasive species over years

To estimate the severity of an invasion for different years and to account for maturity levels with respect to the establishment of a species, the spread and density of Zebra Mussels population was used. The dynamic impacts of the introduction of this species are taken as a proxy for the expected costs associated with varying maturity levels of an invasion with significant impact.

Using findings from a study done by the National Research Council and expert opinion from Transport Canada officials, it was determined that the costs associated with an invasion will vary depending on its maturity level. For this reason, the severity rate, which was based on the level of maturity, is applied to the annual cost savings of an invasion. As a conservative measure, it is assumed that the calculated annual costs (for the Zebra Mussels case) are the maximum costs associated with an invasion.

(d) Total cost savings

Using the expected annual cost saving and the severity curve, this analysis estimated how preventing invasion of a species like Zebra Mussels would benefit Canadians in the next 25 years. Since the cost savings are only quantified for Ontario, this analysis accounts for a conservative estimate of the entire cost savings associated with the proposed Regulations.

Using the estimated cost of Zebra Mussels, the monetized cost saving has been calculated, taking into account that it is expected that the proposed Regulations would avoid 0.46 species with severe economic or environmental damage per year.

Assuming each major invasion has the same severity as Zebra Mussels could result in an overestimation of the cost saving. An analysis conducted by the United States Coast Guard in 2012 showed that the cost of an invasive species with severe economic or environmental impact would be on average 34.43% of the cost associated with Zebra Mussels. This parameter is therefore taken into account to calculate the final cost saving that would result from the proposed Regulations.

Of 1,169 Canadian vessels that are expected to comply with the requirements of D-2 Regulation of the Convention, 21 of them travel internationally and are assumed to be in compliance with the proposed requirements already. As such, only 98.20% of the Canadian vessels affected by the proposed Regulations are taken into account to monetize the cost savings.

Table 4 presents the total cost savings associated with the avoided invasions with significant impacts at different years. The present value total cost savings resulting from the proposed Regulations are estimated to be $1,296.11 million over the 25-year analytical time frame.
### PV of Cost Saving of Prevention of Expected Avoided Severe Invasion at Different Years

<table>
<thead>
<tr>
<th>Year</th>
<th>PV of Cost Saving</th>
<th>Year</th>
<th>PV of Cost Saving</th>
</tr>
</thead>
<tbody>
<tr>
<td>2024</td>
<td>$59.02</td>
<td>2034</td>
<td>$60.92</td>
</tr>
<tr>
<td>2025</td>
<td>$163.75</td>
<td>2035</td>
<td>$49.15</td>
</tr>
<tr>
<td>2026</td>
<td>$150.85</td>
<td>2036</td>
<td>$37.71</td>
</tr>
<tr>
<td>2027</td>
<td>$138.35</td>
<td>2037</td>
<td>$26.61</td>
</tr>
<tr>
<td>2028</td>
<td>$126.24</td>
<td>2038</td>
<td>$15.84</td>
</tr>
<tr>
<td>2029</td>
<td>$114.50</td>
<td>2039</td>
<td>$5.37</td>
</tr>
<tr>
<td>2030</td>
<td>$103.12</td>
<td>2040</td>
<td>$0.21</td>
</tr>
<tr>
<td>2031</td>
<td>$92.08</td>
<td>2041</td>
<td>$0</td>
</tr>
<tr>
<td>2032</td>
<td>$81.38</td>
<td>2042</td>
<td>$0</td>
</tr>
<tr>
<td>2033</td>
<td>$71.00</td>
<td>2043</td>
<td>$0</td>
</tr>
</tbody>
</table>

### Qualitative benefits

Non-indigenous species pose a risk to native species, resulting in species reduction and in some cases extinction. Many fish species, such as the blue pike and the Lake Ontario Atlantic salmon, have declined significantly in population, or even disappeared from the Great Lakes due to non-indigenous species. These non-indigenous aquatic organisms are a threat to native species as they can be a direct competition for food and space.

Zebra Mussels, for example, feed on plankton and compete directly with small fish, which then results in fewer food sources for larger fish. Only eight years after the introduction of Zebra Mussels in the Great Lakes, over 20 mollusk species were lost. Another aquatic invasive species believed to have been introduced and spread via ballast water discharge is the Ruffe, a freshwater fish.
commonly found in Europe and Asia. Its introduction has disrupted Lake Superior’s ecosystem as they are able to reproduce quickly and compete with other species (like the yellow perch) for food supply.

Ballast water can also carry invasive species that were not introduced through ballast water, like the Sea Lamprey and the Alewife, facilitating their spread to different water bodies. The proposed Regulations would prevent or delay the spread and establishment of invasive species, preventing associated environmental and economic impacts, including control and management costs.

**Consolidated cost-benefit statement**

The benefits quantified in this analysis represent the minimum benefits derived from the proposed Regulations, since they are based only on the case of Zebra Mussels in Ontario. In the central scenario, the net benefit would be at least $663.71 million over the 25-year time frame. Table 5 presents the expected benefits and costs in the central analysis.

**Table 5: Consolidated cost-benefit statement (in millions of 2017 dollars)**

<table>
<thead>
<tr>
<th>Dollar Year: 2017</th>
<th>Base Year: 2019</th>
<th>Discount Rate: 7%</th>
<th>Final Year: 2043</th>
<th>Net Benefit: $663.71</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Annual Compliance Years: (2022–2024)</td>
<td>Annual Average: (2025–2042)</td>
<td></td>
<td></td>
<td>Total (2019–2043)</td>
</tr>
</tbody>
</table>

**Monetized costs**

**Costs to vessel owners**

| Procurement | $142.22 | $5.27 | $2.61 | $524.15 |
| Training | $5.95 | $1.55 | $0.77 | $46.56 |
| Certificate of surveys | $1.52 | $0.00 | $0.00 | $4.56 |
| Record keeping and reporting | $0.08 | $0.38 | $0.19 | $7.32 |
| Ballast water management plan | $1.10 | $1.07 | $0.46 | $22.92 |
| Total industry | $150.87 | $8.27 | $4.02 | $605.51 |
Costs to Government

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Procurement</td>
<td>$5.48</td>
<td>$0.25</td>
<td>$0.12</td>
<td>$21.11</td>
</tr>
<tr>
<td>Administrative</td>
<td>$0.35</td>
<td>$0.18</td>
<td>$0.09</td>
<td>$5.63</td>
</tr>
<tr>
<td>Training</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.14</td>
</tr>
<tr>
<td>Total Government</td>
<td>$5.82</td>
<td>$0.43</td>
<td>$0.21</td>
<td>$26.88</td>
</tr>
<tr>
<td>Total cost</td>
<td>$156.69</td>
<td>$8.70</td>
<td>$4.23</td>
<td>$632.39</td>
</tr>
</tbody>
</table>

Monetized benefits

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>$0.00</td>
<td>$64.57</td>
<td>$133.89</td>
<td>$1,296.11</td>
</tr>
<tr>
<td>Net present value</td>
<td>$150.87</td>
<td>$56.30</td>
<td>$129.87</td>
<td>$663.71</td>
</tr>
</tbody>
</table>

Qualitative benefits

- Prevent or delay the spread and establishment of invasive species in Canadian waters.
- Transport Canada expects that the proposed Regulations would avoid approximately 60.71 total invasions over the 25-year analytical time frame. However, the cost saving has been monetized only for avoided invasive species with significant impact (9.11 species) and for the Great Lakes region. The cost saving associated with avoided species with low and medium impact (51.60 species) has not been monetized.

Sensitivity analysis

A sensitivity analysis is used to test the effect on the output of selected variables used in the analysis. Uncertainty around these variables can be better contextualized through the use of a sensitivity analysis. The following variables were analyzed: BWMS acquisition, installation and operation costs, severity of expected invasions, analytical time frame, and discount rates. The results are shown below.

Acquisition, installation, operation costs, and severity of expected invasions

Three cost estimates were provided for vessels, with a low, high and most probable value. The most probable value is based on cost quotations and commercial experience, while the low and high estimates account for the potential variability in actual outcomes. The reason for variability could include the fact that competition among manufacturers in future years may reduce equipment costs. Also, the difficulty of installation may be much higher than for the central case. In terms of variability
in benefits, in the central case it is assumed that the cost of an invasive species with severe economic or environmental impact would be on average 34.43% of the cost associated with Zebra mussels. For the purpose of the sensitivity analysis, lower (24.43%) and higher (44.43%) rates of severity of the impact of invasions are considered. The central scenario is based on the most probable estimates. Different cost and benefit values were used in the sensitivity analysis, and the results are presented in Table 6.

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Cost</th>
<th>Low</th>
<th>Probable</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>$370.22</td>
<td>$746.65</td>
<td>$1,123.08</td>
</tr>
<tr>
<td></td>
<td>Probable</td>
<td>$287.29</td>
<td>$663.71</td>
<td>$1,040.14</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>$163.10</td>
<td>$539.52</td>
<td>$915.95</td>
</tr>
</tbody>
</table>

**Analytical time frame**

A 25-year analytical time frame was used for the central analysis to properly represent the expected lifespan of the BWMS technology. The BWMS lifecycle is primarily based on an estimated usage. Considering Canadian-flagged vessels and their average number of voyages, it is expected that a BWMS would last approximately 25 years. As treating ballast water is costly, it is expected that vessel owners would only start treating their ballast water after the compliance date (September 8, 2024). Operational benefits and costs would start only after full implementation of the proposed Regulations. Therefore, the 25-year analytical time frame would imply that the BWMS has been operating for only 20 years. A 30-year time frame was not used for the central analysis, as vessel owners would be required to do major maintenance of the ballast water system and there are many uncertainties about future technological upgrades and the costs associated with them. However, reinstallation costs are expected to be significantly lower than initial installation costs.

It is expected that vessels will install systems over the years 2022, 2023, and 2024, with a uniform number of installations taking place each of the three years. The acquisition and installation of the BWMS is the main portion of the costs that vessel owners would carry (approximately 70% of the total costs). A sensitivity analysis of a 15-year analytical time frame was used to examine the effect of the proposed Regulations in a shorter time framework. The resulting net present value is presented in Table 7.

**Discount rate**
The central analysis used a 7% discount rate as recommended by the Treasury Board Secretariat. For the purpose of the sensitivity analysis, Table 7 presents the results should a 3% discount rate have been used, as well as a 10% discount rate.

**Table 7: Sensitivity analysis (present value in millions of 2017 dollars)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Total Benefits</th>
<th>Total Cost</th>
<th>Net Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Analytical Time Frame</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 years</td>
<td>$1,029.30</td>
<td>$572.43</td>
<td>$456.88</td>
</tr>
<tr>
<td><strong>Discount Rates</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3%</td>
<td>$2,677.55</td>
<td>$819.56</td>
<td>$1,857.99</td>
</tr>
<tr>
<td>10%</td>
<td>$775.46</td>
<td>$530.87</td>
<td>$244.59</td>
</tr>
</tbody>
</table>

**Distributional impact analysis**

The impact of proposed Regulations would affect the Pacific, Ontario, and Quebec regions the most. Approximately, 51% of vessels that would be impacted by the proposed Regulations operate in the Pacific Region, 21% in the region of Ontario, and 12% in Quebec. In terms of costs, these three regions would bear around 84% of the total costs together. A total of 1 130 privately owned Canadian-flagged vessels would be required to manage their ballast water by September 8, 2024. Table 8 shows a breakdown of the number of privately owned affected vessels along with the total cost by different regions over the 2019–2043 period.

**Table 8: Distributional analysis — Costs of privately owned vessels by different regions (in millions of 2017 dollars)**

<table>
<thead>
<tr>
<th>Region</th>
<th>Number of Existing Vessels Longer than 50 m</th>
<th>Number of Existing Vessels Shorter than 50 m Travelling to the United States</th>
<th>Total Cost (in Millions of Dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atlantic</td>
<td>78</td>
<td>19</td>
<td>$61.04</td>
</tr>
<tr>
<td>Ontario</td>
<td>112</td>
<td>121</td>
<td>$184.68</td>
</tr>
<tr>
<td>Pacific</td>
<td>522</td>
<td>51</td>
<td>$216.79</td>
</tr>
<tr>
<td>Region</td>
<td>Number of Vessels</td>
<td>Total Cost (in Millions of Dollars)</td>
<td></td>
</tr>
<tr>
<td>-----------------</td>
<td>-------------------</td>
<td>-------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Prairie</td>
<td>18</td>
<td>$6.93</td>
<td></td>
</tr>
<tr>
<td>Quebec</td>
<td>96</td>
<td>$110.00</td>
<td></td>
</tr>
<tr>
<td>The North</td>
<td>68</td>
<td>$26.07</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>894</td>
<td>$605.51</td>
<td></td>
</tr>
</tbody>
</table>

Of 1,169 vessels affected by the proposed Regulations, 39 are owned by provincial governments or the federal government, while the rest (1,130) are privately owned. Table 9 shows a breakdown of the costs to privately and publicly owned vessels.

Table 9: Distributional analysis — Costs of privately/publicly owned vessels (in millions of 2017 dollars)

<table>
<thead>
<tr>
<th>Ownership Type</th>
<th>Number of Existing Vessels</th>
<th>Total Cost (in Millions of Dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Privately owned</td>
<td>1,130</td>
<td>$605.51</td>
</tr>
<tr>
<td>Publicly owned</td>
<td>39</td>
<td>$21.11</td>
</tr>
</tbody>
</table>

**Small business lens**

The majority of the affected companies are large businesses. In order to minimize the burden on all businesses, a transition period of five years from the coming-into-force date was included and some flexibility has been considered in the management plan.

In the case of certain small vessels that travel internationally (e.g. recreational and rescue vessels), Transport Canada intends to use flexibility provided by the Convention to establish a best-effort equivalent compliance regime. However, such vessels (and those that do not qualify for the Convention’s flexibility) would need to comply with any foreign requirements that are not under Transport Canada’s control. It is not expected that small vessels travelling internationally would be owned by small businesses.

With respect to small vessels that operate only in Canada (or there and on the high seas), Transport Canada intends to apply the equivalent compliance regime to all domestic vessels that are less than 50 m in length (the costs associated with implementing these requirements would be negligible). While the size of the vessel cannot be used as an indicator of the size of the business that operates it, this flexibility is expected to cover most domestic vessels operated by small businesses, dramatically reducing their cost of compliance.
**One-for-one rule**

The proposed Regulations would require vessel owners to have on board a separate record book for ballast water operations in a prescribed format, keep the record book up to date, and retain data of ballast water intakes, treatments, and discharges. Although the record book would be used by Port State Control inspectors to verify compliance, its main purpose is to help vessel owners keep a log of their ballast water actions for their own operational purposes. Therefore, the cost associated with this requirement is not considered an administrative burden on businesses under the one-for-one rule. As a result, the one-for-one rule does not apply to the proposed Regulations.

**Regulatory cooperation and alignment**

This regulatory proposal is being introduced to align Canadian regulations with the Convention, fulfilling Canada's obligations as a party to it. In so doing, it also aims to align to the extent feasible with the differing U.S. regimes for ballast water.

The United States is not a party to the Convention. Instead, multiple overlapping federal and state-level regimes currently apply in U.S. waters, in addition to a performance standard that requires organisms in ballast water discharge to be dead (not merely unable to reproduce, as is the case in the international regime). The United States also requires that any BWMS operated in its waters be approved by the United States Coast Guard using different tests than internationally approved standards. Canadian, U.S. and international vessels will need to comply with the relevant U.S. regimes as well as the Convention when operating on the Great Lakes.

**Strategic environmental assessment**

In accordance with the Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals, a preliminary scan concluded that a strategic environmental assessment is not required.

**Gender-based analysis plus**

No gender-based analysis plus (GBA+) impacts have been identified for this proposal.

**Implementation, compliance and enforcement, and service standards**

**Implementation**

The coming-into-force date of the proposed Regulations would follow the date of its approval by the Governor in Council.

These Regulations will apply to vessels depending on their operations, ballast water capacity and size. For vessels remaining in waters under Canadian jurisdiction and the U.S. waters of the Great Lakes, the proposed Regulations, to meet the performance standard, would apply as of
September 8, 2024. For vessels that operate in waters not under Canadian jurisdiction (or outside of the U.S. waters of the Great Lakes), the proposed Regulations would apply to a vessel following its first vessel-specific international oil pollution prevention renewal survey date after 2019.

**Compliance and enforcement**

The enforcement of the proposed Regulations by Transport Canada, Marine Safety will continue under the overall established compliance and enforcement mechanisms; therefore, marine safety inspectors will continue to enforce the Regulations during normal periodic inspections.

In addition, Canada and the United States continue to co-operate on the implementation of compatible ballast water requirements in accordance with the vessel discharge provisions of the 2012 Canada–United States Great Lakes Water Quality Agreement. This includes annual meetings between responsible authorities.

**Contact**

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Legislative, Regulatory and International Affairs  
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Fax: 613-993-8196  
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**PROPOSED REGULATORY TEXT**

Notice is given that the Governor in Council, pursuant to subsections 35(1) a and 35.1(1) b, section 190 c and paragraphs 244(f) d to (h) e of the Canada Shipping Act, 2001 f, proposes to make the annexed Ballast Water Regulations.

Interested persons may make representations with respect to the proposed Regulations to the Minister of Transport within 90 days after the date of publication of this notice. All such representations must be in writing and cite the Canada Gazette, Part I, and the date of publication of this notice, and be sent to Valérie Jennings, Acting Senior Policy Advisor, Legislative, Regulatory and International Affairs, Marine Safety and Security, Department of Transport, Place de Ville, Tower C, 330 Sparks Street, 10th Floor, Ottawa, Ontario K1A 0N5 (tel.: 613-941-6187; fax: 613-993-8196; email: valerie.jennings@tc.gc.ca (mailto:valerie.jennings@tc.gc.ca)).
Ottawa, May 30, 2019

Julie Adair
Assistant Clerk of the Privy Council

**Ballast Water Regulations**

**Interpretation**

**Definitions**

1 (1) The following definitions apply in these Regulations.

*Act* means the *Canada Shipping Act, 2001.* (Loi)

*Annex* means the annex to the Convention. (Annexe)

*ballast water* has the same meaning as in article 1 of the Convention. (eaux de ballast)

*ballast water capacity* has the same meaning as in regulation A-1 of the Annex. (capacité en eaux de ballast)

*ballast water exchange standard* means the standard set out in regulation D-1 of the Annex. (norme de renouvellement des eaux de ballast)

*ballast water management* has the same meaning as in article 1 of the Convention. (gestion des eaux de ballast)

*ballast water management system* has the same meaning as in the BWMS Code. (système de gestion des eaux de ballast)

*ballast water performance standard* means the standard set out in regulation D-2 of the Annex. (norme de qualité des eaux de ballast)

*BWMS Code* means the *Code for Approval of Ballast Water Management Systems*, published by the International Maritime Organization. (Code BWMS)

*Canadian pleasure craft* means a pleasure craft that

(a) is licensed under Part 10 of the Act; or

(b) is principally maintained or operated in Canada, is not a Canadian vessel and is not registered or licensed under the laws of another state. (embarcation de plaisance canadienne)

*Convention* means the International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004. (Convention)

*Great Lakes Basin* means the waters of the Great Lakes, their connecting and tributary waters, and the St. Lawrence River as far east as the lower exit of the St. Lambert Lock at Montréal, Quebec. (bassin des Grands Lacs)
Guideline G3 means the Guidelines for Ballast Water Management Equivalent Compliance (G3), published by the International Maritime Organization. (lignes directrices G3)

IBWM Certificate means the International Ballast Water Management Certificate issued under regulation E-2 or E-3 of the Annex. (certificat IGEB)

Minister means the Minister of Transport. (ministre)

residual amounts means the quantity of ballast water that cannot be removed from a ballast tank using the equipment installed on the vessel for that purpose. (quantité résiduelle)

sediments has the same meaning as in article 1 of the Convention. (sédiments)

TP 13617 means the document entitled A Guide to Canada’s Ballast Water Regulations, published by the Department of Transport. (TP 13617)

waters under Canadian jurisdiction means Canadian waters and waters in the exclusive economic zone of Canada. (eaux de compétence canadienne)

Authorized representative

(2) For the purposes of these Regulations, a reference to the authorized representative of a pleasure craft that is not a Canadian vessel is to be read as a reference to the owner and operator of the pleasure craft.

Incorporation by reference — as amended from time to time

2 (1) Except as otherwise provided, any reference in these Regulations to a document is a reference to the document as amended from time to time.

Administration

(2) For the purpose of interpreting a document incorporated by reference into these Regulations, “Administration” is to be read as “Minister” in respect of

(a) Canadian vessels;

(b) Canadian pleasure craft; and

(c) floating platforms engaged in the exploration or exploitation of the seabed and subsoil in waters under Canadian jurisdiction, including floating storage units and floating production, storage and off-loading units.

Ship

(3) For the purpose of interpreting a document incorporated by reference into these Regulations, “ship” is to be read as “vessel”.

Same location
(4) For the purpose of interpreting regulation A-3.5 of the Annex, *same location* means within 10 nautical miles from another location without crossing a physical barrier or obstruction.

**Viable organisms**

(5) For the purpose of interpreting regulation D-2 of the Annex, *viable organisms* has the same meaning as in the BWMS Code.

**Application**

3 (1) Except as otherwise provided, these Regulations apply in respect of the following vessels if they are designed or constructed to carry ballast water:

(a) Canadian vessels everywhere; and

(b) vessels that are not Canadian vessels and are in waters under Canadian jurisdiction.

**Oil and gas operations**

(2) These Regulations apply in respect of vessels that are capable of engaging in the drilling for, or the production, conservation or processing of, oil or gas except when the vessel is on location and engaged in the exploration or drilling for, or the production, conservation or processing of, oil or gas, as defined in section 2 of the *Canada Oil and Gas Operations Act*, in an area described in section 3 of that Act.

**Non-application**

(3) These Regulations do not apply in respect of

(a) vessels operating under the authority of a state that is not a party to the Convention if they operate exclusively in the Great Lakes Basin and if they do not load or release ballast water into waters under Canadian jurisdiction;

(b) vessels that are owned or operated by a state and used only in government non-commercial service; or

(c) vessels that carry only permanent ballast water in sealed tanks such that it is not subject to release.

**Quantity**

(4) For greater certainty, these Regulations apply to the management of any quantity of ballast water that may be released from a vessel.

**Compliance**
Authorized representative and master — Annex

4 (1) Except as otherwise indicated in these Regulations, the authorized representative and the master of a vessel must ensure that the requirements of the Annex are met in respect of the vessel.

Authorized representative and master — certain provisions

(2) The authorized representative and the master of a vessel must ensure that the requirements of section 8, subsections 14(1), 15(1) and 16(1), sections 17 to 20, 22 and 23 are met.

Master — ballast water record book

(3) The master must ensure, in respect of the ballast water record book, that

(a) the requirements set out in the Annex to make entries are met;

(b) the signature requirements set out in regulation B-2 of the Annex are met;

(c) all entries are maintained on board the vessel in accordance with the requirements set out in regulation B-2 of the Annex; and

(d) the record book is kept readily available for inspection in accordance with the requirements set out in regulation B-2 of the Annex.

Authorized representative — ballast water record book

(4) The authorized representative of a Canadian vessel or a Canadian pleasure craft must maintain the entries made in the ballast water record book, in accordance with regulation B-2 of the Annex, after the period required by that regulation to maintain the entries on board the vessel.

Authorized representative and master — regulation E-1

(5) The authorized representative and the master of a Canadian vessel or a Canadian pleasure craft must ensure that the following requirements set out in regulation E-1 of the Annex are met:

(a) the reporting requirements if an accident occurs to a vessel or a defect is discovered;

(b) the maintenance requirements; and

(c) the requirement to obtain approval of a change that is made after an inspection.

Regulation A-4 of the Annex — Exemptions

Exemption

5 On application by the authorized representative of a vessel, the Minister must exempt the vessel from the requirements of sections 15 and 16 and those set out in regulation B-3 of the Annex if
(a) the application establishes that the applicable conditions described in regulation A-4 are met; and

(b) the exemption is in the public interest.

**Regulation A-5 of the Annex — Equivalent Compliance**

**Application**

6 (1) This section applies in respect of vessels

(a) that are less than 50 m in overall length and that operate exclusively in

(i) waters under Canadian jurisdiction, or

(ii) waters under Canadian jurisdiction and on the high seas; and

(b) described in regulation A-5 of the Annex.

**Guideline G3**

(2) A vessel described in subsection (1) may, instead of complying with these Regulations, elect to comply with the requirements set out in Guideline G3.

**Guideline G3 — recommendations**

(3) For the purposes of interpreting Guideline G3, “should” is to be read as “must” and recommendations are mandatory.

**Regulation B-1 of the Annex — Ballast Water Management Plan**

**Approval**

7 (1) On application by the authorized representative, the Minister must approve the ballast water management plan of a Canadian vessel or a Canadian pleasure craft if the plan meets the requirements set out in regulation B-1 of the Annex.

**Language of plan**

(2) Despite subsection (1), the ballast water management plan must be written in English or French, or in both.

**Keeping up to date**

8 A vessel must ensure that its ballast water management plan remains up to date and reflects the means by which the vessel complies with the requirements of these Regulations.
Submission to Minister

9 (1) The authorized representative of a Canadian vessel or a Canadian pleasure craft must submit to the Minister any amendment to the ballast water management plan.

Approval of amendments

(2) The Minister must approve any amendment to the ballast water management plan if the amendment meets the requirements in respect of the plan set out in regulation B-1 of the Annex.

Regulation B-2 of the Annex — Ballast Water Record Book

Language of record book

10 Despite the requirements set out in regulation B-2 of the Annex, entries made in the ballast water record book of a Canadian vessel or a Canadian pleasure craft must be written in French or English, or in both.

Regulation B-3 of the Annex — Ballast Water Management

Compliance Timeline

Certain waters

11 (1) Despite the requirements set out in regulation B-3 of the Annex, a vessel that is constructed before September 8, 2017 is not required to conduct ballast water management to meet the ballast water performance standard before September 8, 2024 if it operates exclusively in

(a) waters under Canadian jurisdiction and, if applicable, the United States waters of the Great Lakes Basin; or

(b) waters described in paragraph (a) and on the high seas.

Interpretation — constructed

(2) For the purposes of subsection (1), constructed has the same meaning as in regulation A-1 of the Annex.

Ballast Water Performance Standard

Deemed compliance

12 (1) A vessel using a ballast water management system to meet the ballast water performance standard is deemed to have met that standard in respect of ballast water loaded on the Great Lakes or the St. Lawrence River if

(a) the vessel’s ballast water management system was installed before September 8, 2024;
(b) the vessel meets the requirements of section 8;
(c) the vessel holds and keeps on board a valid IBWM Certificate or an equivalent document referred to in section 23;
(d) the vessel’s ballast water management system is in good working order and has been maintained and operated in accordance with the manufacturer’s instructions; and
(e) ballast water is managed in accordance with the manufacturer’s instructions for the vessel’s ballast water management system, subject to any limiting operating conditions or other restrictions identified in the system’s type approval certificate issued under the BWMS Code.

**Interpretation — St. Lawrence River**

(2) For the purposes of subsection (1), *St. Lawrence River* means the waters of the St. Lawrence River as far seaward as a straight line drawn from Cap-des-Rosiers to West Point, Anticosti Island, and from Anticosti Island to the north shore of the St. Lawrence River along the meridian of longitude 63° W.

**Alternative Methods of Ballast Water Management**

**Approved methods**

13 A vessel may, instead of conducting ballast water management to meet the ballast water exchange standard or the ballast water performance standard, as applicable, conduct ballast water management in accordance with an alternative method referred to in regulation B-3.7 of the Annex if that method has been approved in accordance with the requirements of that regulation.

**Regulation B-4 of the Annex — Ballast Water Exchange**

**Designated areas for exchange — regulation B-4**

14 (1) If a vessel entering waters under Canadian jurisdiction from waters other than the United States waters of the Great Lakes Basin cannot conduct a ballast water exchange in the areas set out in regulation B-4.1 of the Annex, it must conduct the exchange in one of the areas designated by the Minister in TP 13617.

**Record-keeping**

(2) If a vessel does not comply with subsection (1), the master of the vessel must enter the reasons in the ballast water record book.

**Regulation C-1 of the Annex — Additional Measures**

**Discharges at Canadian Freshwater Ports**
Exchange requirement

15 (1) In addition to the requirements of the Convention, before September 8, 2024, a vessel conducting ballast water management to meet the ballast water performance standard must not discharge ballast water at a Canadian freshwater port listed or described in TP 13617, unless that ballast water was exchanged in accordance with the ballast water exchange standard

(a) in the areas referred to in regulation B-4 of the Annex, if the sequential method was used; or

(b) on the high seas, in any other case.

Exception

(2) Subsection (1) does not apply if the ballast water to be discharged was taken on board in waters under Canadian jurisdiction, in the United States waters of the Great Lakes Basin or in waters referred to in regulation B-4, and has not been mixed with residual amounts taken from waters elsewhere than from those waters.

Exception — extraordinary conditions

(3) A vessel is not required to comply with subsection (1) if the master determines, on reasonable grounds, that the exchange would threaten the safety or stability of the vessel, its crew, or its passengers because of adverse weather, vessel design or stress, equipment failure, or any other extraordinary condition.

Record-keeping

(4) If a vessel does not comply with subsection (1), the master of the vessel must enter the reasons in the ballast water record book.

Saltwater Flushing

Residual amounts

16 (1) In addition to the requirements of the Convention, a vessel conducting ballast water management to meet the ballast water exchange standard must conduct a saltwater flushing of tanks that contain only residual amounts of ballast water unless those residual amounts were taken on board in accordance with the ballast water exchange standard and the requirements set out in regulation B-4 of the Annex.

Interpretation — saltwater flushing

(2) For the purposes of subsection (1), saltwater flushing means, in the following order,

(a) the addition of water to the ballast water tanks in accordance with the requirements for ballast water exchange set out in regulation B-4 of the Annex and, if applicable, section 14;
(b) the mixing, through the motion of the vessel, of the water added under paragraph (a) with the residual amounts of ballast water and any sediments that have settled out of them in the tanks; and

(c) the release, in accordance with the requirements for ballast water exchange set out in regulation B-4 of the Annex and, if applicable, section 14, of the waters mixed under paragraph (b) so that the salinity of the resulting residual amounts of ballast water in the tanks exceeds 30 parts per thousand or is as close as possible to 30 parts per thousand.

Regulation D-3 of the Annex — Ballast Water Management Systems

Minister’s approval

17 Any ballast water management system used on a Canadian vessel or Canadian pleasure craft must be approved by the Minister in accordance with regulation D-3 of the Annex.

Type approval certificate

18 A vessel must keep on board a copy of the type approval certificate referred to in the BWMS Code issued in respect of a ballast water management system installed on the vessel.

Regulation D-4 of the Annex — Prototype Ballast Water Treatment Technologies

Statement of compliance

19 A vessel that is participating in a program referred to in regulation D-4 of the Annex must hold and keep on board a valid statement of compliance referred to in the Guidelines for approval and oversight of prototype ballast water treatment technology programmes (G10), published by the International Maritime Organization.

Section E of the Annex — Inspection and Certification Requirements

Certificates

Hold and keep on board

20 Every vessel to which regulation E-1 of the Annex applies must hold and keep on board a valid IBWM Certificate.

Regulation E-2 — Issuance of IBWM Certificate

Issuance of certificate
21 On application by the authorized representative of a Canadian vessel or a Canadian pleasure craft, and subject to paragraphs 16(4)(b) to (d) of the Act, the Minister must issue an IBWM Certificate to the vessel if the requirements of an initial or renewal inspection set out in section E of the Annex are met.

Endorsements

22 A Canadian vessel or a Canadian pleasure craft that holds an IBWM Certificate must ensure that the certificate is endorsed by the Minister as required by section E of the Annex.

Vessels of Non-Parties to the Convention

Equivalent document

23 A vessel that is entitled to fly the flag of a state that is not a party to the Convention must not load or release ballast water in waters under Canadian jurisdiction unless that vessel holds and keeps on board a document issued by or on behalf of the government of that state that certifies that the vessel meets the requirements of the Convention.

Reporting

Ballast Water Reporting Form

24 The master of a vessel that is bound for a port, offshore terminal or anchorage area in Canada must, in the manner specified by the Minister, submit a completed Ballast Water Reporting Form.

Consequential Amendments, Repeal and Coming into Force

Consequential Amendments

Aquatic Invasive Species Regulations

25 (1) Paragraph 17(1)(a) of the Aquatic Invasive Species Regulations is replaced by the following:

(a) in respect of ballast water and sediments, to the persons referred to in subsection 4(1) of the Ballast Water Regulations; or

(2) Paragraph 17(2)(a) of the Regulations is replaced by the following:

(a) ballast water and sediments, in the case of any vessel to which section 3 of the Ballast Water Regulations applies or any vessel exempted under subsection 3(3) of those Regulations from the application of those Regulations; or
26 Part 9 of the schedule to the *Administrative Monetary Penalties and Notices (CSA 2001) Regulations* is replaced by the following:

**PART 9**

**Violations of the Ballast Water Regulations**

<table>
<thead>
<tr>
<th>Item</th>
<th>Column 1</th>
<th>Column 2</th>
<th>Column 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Provision of the <em>Ballast Water Regulations</em></td>
<td>Range of Penalties ($)</td>
<td>Separate Violation for Each Day</td>
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<tr>
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<td>2</td>
<td>Paragraph 4(3)(a)</td>
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<td>3</td>
<td>Paragraph 4(3)(b)</td>
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<td>4</td>
<td>Paragraph 4(3)(c)</td>
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<td>Paragraph 4(3)(d)</td>
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<td>Subsection 4(4)</td>
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<td>Paragraph 4(5)(a)</td>
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<td>Paragraph 4(5)(b)</td>
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<td>Paragraph 4(5)(c)</td>
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<tr>
<td>13</td>
<td>Subsection 15(1)</td>
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<td>Section 24</td>
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**Repeal**

27 The *Ballast Water Control and Management Regulations* ¹⁸ are repealed.

**Coming into Force**

**Registration**

28 These Regulations come into force on the day on which they are registered.

**Footnotes**

1. For the purposes of this Regulatory Impact Analysis Statement, a vessel that could be part of more than one group has been assigned to the last such group in the order listed here.

2. This analysis does not study this category of vessels, as the cost associated with the requirement is negligible.

3. Assessing The Feasibility Study of Ballast Water Treatment System Installation and Operation by Existing Vessels in the Great Lakes and St. Lawrence
Side-stream electro-chlorination, ultraviolet sterilization, ozone injection, and chemical injection


For a detailed analysis on the cost per industry, see section 13.1 of the CBA report.


Level of maturity depends on years after initial introduction.

For a detailed analysis on the severity of the cost associated with an invasion, see section 7.1.3 of the CBA report.


For detailed calculations, see Table 19 of the CBA report.

16  SOR/2015-121

17  SOR/2008-97; SOR/2012-246, s. 1

18  SOR/2011-237

a  S.C. 2012, c. 31, s. 159

b  S.C. 2018, c. 27, s. 692

c  S.C. 2018, c. 27, s. 707

d  S.C. 2014, c. 29, s. 75(1)

e  S.C. 2018, c. 27, s. 709

f  S.C. 2001, c. 26
### Canadian Import and Export Cargo Carried by U.S.-flag Lakers (tons) - ALL REPORTING COMPANIES

<table>
<thead>
<tr>
<th>U.S.-flag carrier</th>
<th>Year</th>
<th>U.S. Exports</th>
<th>Canadian Exports</th>
<th>Total</th>
<th>Individual Port Calls</th>
<th>Vessels Calling on Canada</th>
<th>Number of Vessels in fleet that NEVER call on Canada in the last 10 years</th>
<th>Number of Vessels in fleet that have called on Canada in the last 10 years</th>
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<td>2,676,096</td>
<td>570,887</td>
<td>3,246,983</td>
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<td>29,789</td>
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<td>647,860</td>
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