

2020 Navigation Season Year-Opening Review



Wind blades at Port of Indiana-Burns Harbor

The 2020 Saint Lawrence Seaway navigation season has begun, and despite some unforeseen challenges, there have been some positive cargo movements throughout the Great Lakes Seaway System. Overall through May 31, the Seaway has posted a total of 7.7 million metric tons (mmt) of cargo through the Seaway, a 10.22 percent decrease over the previous year. Even with this decline, there are some key cargo segments exceeding or maintaining their pace of last season. The key cargo performer this season is in the general cargo sector where there has been a 3.5 percent gain in year-over-year shipments. This increase is being driven by the number of ships hauling wind energy components and steel slabs to both U.S. and Canadian ports.

The momentum of wind energy equipment delivered into the system during the 2019 navigation season continues this season, and its strength is best exemplified by the number of ports handling this massive project cargo. So far, eight U.S. Great Lakes ports have received blades, towers, and generators. Those ports include: Ogdensburg and Buffalo, N.Y.; Erie, Pa.; Monroe and Bay City, Mich.; Burns Harbor, Ind.; Chicago, Ill.; and Menominee, Wis.

CONTINUED ON PAGE 2

DEPUTY ADMINISTRATOR'S COLUMN

Water Levels—What A Difference A Year Makes



Craig Middlebrook
Deputy Administrator

At this time in June a year ago, water levels on Lake Ontario were at all-time highs, at a level of 249 feet (75.9m) and still rising. Flooding not seen in a generation along the lake was causing hardship and raising tensions. It was the second year out of three with unprecedented

CONTINUED ON PAGE 4

GUEST COLUMNIST

David F. Reid, PhD Consultant

Ballast Water Treatment Systems— State of Play in 2020



Ballast water management started in the early 1990s with ballast water exchange (BWE) as a temporary method to reduce the risk of invasive species introductions into aquatic ecosystems. It led to establishment of two similar technology-based programs guided by two separate regulatory

CONTINUED ON PAGE 3

ALSO IN THIS ISSUE:

- Great Lakes Ballast Water Working Group
- 2019 Pacesetter Awards Announced for U.S. Ports
- SLSDC FY 2019 Annual Report Released
- Spring Buoy Run
- New Tug Construction Update
- Personnel News
- Save the Date

2020 NAVIGATION SEASON YEAR-OPENING
REVIEW
CONTINUED FROM PAGE 1

Also showing strong gains in the general cargo category is the 450 percent increase in steel slabs. Even though overall steel volume is down, tinplate material movement into the system remains strong. Most likely, this is due to the high demand in the food beverage sectors for canned products. Within the dry bulk sector, there are increases in commodities including salt, potash, and gypsum.

Cargo activity has been spread throughout the system with several navigation-season highlights so far in 2020. There have been sugar shipments into the Port of Buffalo and Brazilian wood pulp into the Port of Green Bay to support the high demand for paper products. The first shipment of Kaolin to the Port of Duluth-Superior arrived from Brazil. Additionally, aluminum ingots have

moved into both Toledo and Oswego, and substantial project cargo movement has taken place in Burns Harbor. The Port of Cleveland has been receiving its scheduled liner service vessels carrying containers, steel, machinery, and general cargo including two mega yachts. On the U.S. export lane, the Port of Duluth-Superior has seen vessels departing with iron ore and wheat while Conneaut is seeing a large increase in iron ore exports to the lower St. Lawrence ports. Overall, grain exports leaving the system have managed to keep on pace year-over-year with 2020 volumes through May being within one percent of 2019.

The positive gains seen so far in the 2020 season have not, however, been able to overcome significant volume declines in traditionally strong staples of the system including inbound steel for the manufacturing sector, iron ore,

coal, U.S. grain, and liquid bulk. Each one of these sectors has seen significant declines in volume moving through the system year-over-year through May.

In summary, there are areas of anticipated growth in the 2020 navigation season. The U.S. agricultural crop within the Great Lakes region is on track to rebound with the planting of crops well underway. Shippers are optimistic that grain exports from both Canada and the U.S. will be strong this fall. Project cargo will remain strong with more shiploads of wind energy components expected throughout the season. The Great Lakes St. Lawrence Seaway System has withstood some significant challenges right out of the gate (actually, before the gate even opened), but many elements are in place to keep us on pace with the 2019 navigation season. ■■■

Great Lakes Ballast Water Working Group



Since 2006, the Great Lakes Seaway Ballast Water Working Group (BWWG) has verified compliance by conducting ballast verification exams on all vessels entering the Great Lakes from outside the Canadian Exclusive Economic Zone (EEZ). Four agencies: Saint Lawrence Seaway

Development Corporation (SLSDC), The St. Lawrence Seaway Management Corporation (SLSMC), Transport Canada Marine Safety (TCMS), and the U.S. Coast Guard (USCG), collaboratively comprise the BWWG.

All ballast water and residuals inside any ballast tank identified in a vessel's Ballast Water Management Plan (BWMP), will be tested or administratively-verified and shall comply with Ballast Water Regulations. If any tank is found non-compliant, the vessel may not discharge any water or sediment from the specified tank during its Great Lakes transit. The specific non-compliant tanks are also verified on their outbound transit, ensuring the water or sediment in the tank was retained.

In the video, SLSDC Lock Operations Division Chief Ryan Chatland walks us through a ballast water examination process on the *Federal Rideau*: bit.ly/3hgulam. ■■■

regimes, the International Maritime Organization (IMO) under the 2004 Ballast Water Convention, and the U.S. Ballast Water Management Program. The U.S. program began in 1991, has seen numerous changes, and was most recently revised by the Vessel Incidental Discharge Act in 2018.

VIDA clarified the roles and assigned complementary responsibilities to the U.S. Environmental Protection Agency (USEPA) and U.S. Coast Guard (USCG), the details of which are still being worked out. The U.S. is not a signatory of the IMO Ballast Water Convention and thus, has its own requirements.

An excellent summary of these two management regimes can be found in the open access journal article by Čampara et al (2019), at <https://www.mdpi.com/2077-1312/7/9/283>.

A major hurdle to fully implementing both management regimes has been the availability of type-approved ballast water management systems (BWMS). While many IMO-approved BWMS have been granted temporary acceptance by the USCG, temporary approvals will expire over the next several years. Thereafter, unless additional extensions are granted, only systems with U.S. type-approval certificates can be used in U.S. waters.

The first USCG type-approval certificate was issued in December 2016. As of June 1, 2020, there are 33 USCG-approved systems. Six more are under review. Primary treatments used by the approved systems vary: 16 utilize ultra-violet light, 14 use an active substance, usually a form of chlorine generated by electrolysis or inserted by chemical injection, two use ozone, and one is based on heat. Almost all use filtration as a pretreatment. Three are not approved for freshwater (defined as <1 psu).

Ballast water treatment to reduce the risk of aquatic invasive species movement by ships has come a long way. Within the next five years (allowing for possible extensions to compliance deadlines), essentially all significant ballast water discharges to U.S. waters will be treated. That's good news, and the USEPA and USCG should be applauded for the carefully crafted scientific and technological approaches they have taken to establish and maintain the U.S. regulatory structure.

However, as might be expected of any new technology applied to a (relatively) new problem, there are concerns about the reliability and performance of these systems. A 2019 American Bureau of Shipping report identified common problems leading to BWMS not operating reliably, such as critical system sensor instability, premature UV lamp failure,

clogging of pretreatment filters, and poor performance in low-salinity waters. In response, IMO introduced a plan to gather and analyze BWMS performance data during a five-year "experience-building phase" that will end in 2022. The outcome of the analyses of data gathered during the experience-building phase will shed light on the reliability of BWMS, and lead to proposals to improve the Ballast Water Convention.

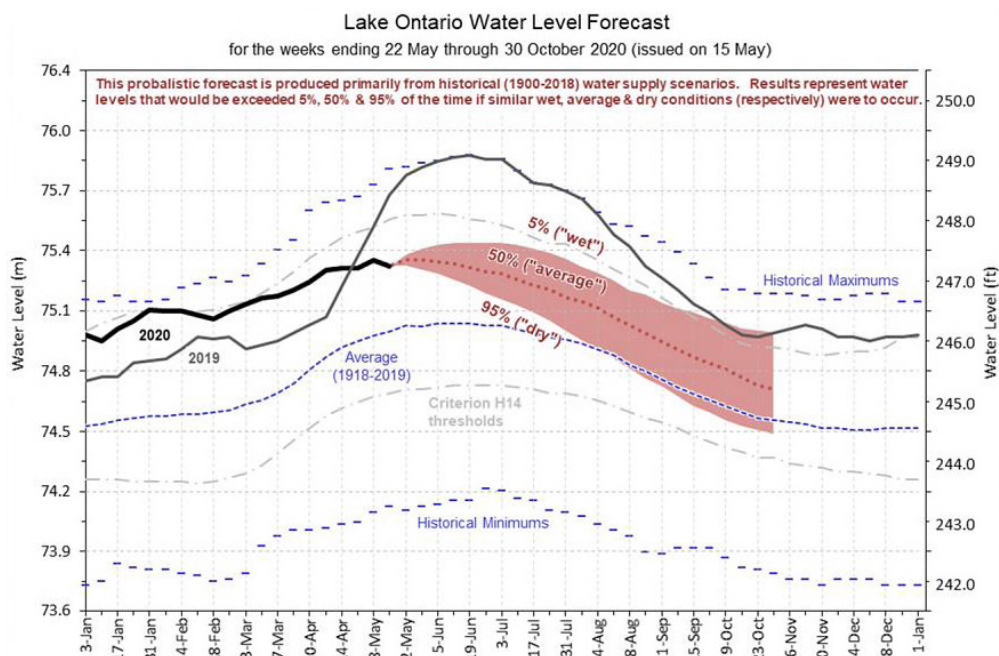
Until we can be assured that BWMS operate reliably, and consistently meet discharge standards under all but the most extreme and unusual conditions, it is concerning that we should rely solely on BWMS, some of which may not perform as expected. Fortunately, VIDA reduced that concern for the Great Lakes-St. Lawrence Seaway System by requiring continued use of BWE in addition to treatment with approved BWMS for ships entering the System. Salinity can be a powerful barrier to many freshwater aquatic species. Failure of a BWMS when treating foreign ballast water discharging into the Seaway System should be mitigated by the likelihood that whatever live species are discharged will be predominantly saltwater-adapted, and should die, or will be unlikely to reproduce in our freshwater ecosystems. And that's also good news! ■■■



high-water conditions on the lake. The situation today is mercifully different, with lake levels almost two feet (.6 meters) below last year's levels. While this is still almost a foot above the 100-year average, this decline is a welcome change from 12 months ago. To what do we owe this dramatic reversal? In my view, there is one definitive reason why water level conditions this year are so much better than last year or in 2017. But before I refer to that, I want to recognize the good work of several entities that have contributed to alleviating the high Lake Ontario water levels since last fall.

The first is the work of the International Lake Ontario St. Lawrence River Board, which since the Seaway closed in December has closely and carefully managed the outflows through the Moses-Saunders dam through the St. Lawrence River. Since early January, the Board has ensured that outflows have been appropriately maximized on a day-to-day, and sometimes within-the-day basis. The results of their outflow management are notable: Lake Ontario outflows for January, February, and March all set records.

I also wanted to highlight the significant efforts of the Seaway Corporations and commercial navigation operators to allow for greater outflows from Lake Ontario while preserving the safety of navigation. Under the 1909 Boundary Waters Treaty, commercial navigation enjoys the second-highest priority use of the shared waters, second only to sanitary and domestic uses. Whatever outflow strategy the Board chooses, it must respect this right. Since September of last year, however, given the extraordinary circumstances, the two Seaway Corporations went above and beyond what they were required to do to help lower water levels, most notably by delaying the opening of this year's navigation season. Moreover,



in addition to the Canadian Seaway having a representative on the Board, the U.S. Seaway has been chairing a "Technical Working Group", which has been working with commercial mariners and the Board's technical experts to find ways to increase outflows without impacting the safety of navigation. For their part, commercial operators through the St. Lawrence Seaway have been committed to numerous safety measures such as speed and load restrictions to draw more water off Lake Ontario during these exceptional conditions. Under the 1909 Treaty, none of these mitigation actions were required, yet the Seaway Corporations and their commercial navigation stakeholders determined that extraordinary actions were required.

All these efforts made a difference, but at the end of the day, the most significant means of lowering water levels came not from the hands of humans, but from... the weather. Human-related efforts do play a role in mitigating high water conditions, but those efforts are merely incremental when compared to the exponential effects of how much precipitation as well as inflow from the upper Great Lakes is going into the lake every month. The National Weather Service

calculated that the period from April 2018 to April 2019 was the wettest 12-month period on record for the entire contiguous United States. Nowhere was this more evident than in the Lake Ontario basin. The first half of this year around Lake Ontario, however, has been much closer to normal, with some months drier than average. Nature helped in other ways as well as ice conditions in the St. Lawrence River allowed the Board to maximize outflows prior the opening of the Seaway.

My observation here is not to say that there is little that humans can do to lower lake levels. Indeed, the herculean efforts of the Board, the Seaway Corporations, and commercial navigation interests all made a difference. But that contribution must be compared to the larger effects of nature on lake levels, particularly during extreme occurrences of precipitation (or dare I say it, drought). When you do that, nature, as it always does, establishes itself as the overwhelmingly determinative factor. That realization should not make us feel insignificant. Rather, it's always good to be reminded of what our mothers taught us: a little humility goes a long way. ■■■

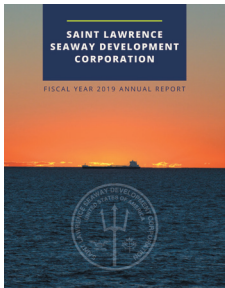
2019 Pacesetter Awards Announced for U.S. Ports

Five U.S. ports in the Great Lakes St. Lawrence Seaway System earned the SLSDC's Robert J. Lewis Pacesetter Award for registering increases in international tonnage shipped through their ports during the 2019 navigation season. The SLSDC annually recognizes U.S. Great Lakes ports that increase international tonnage shipped through the St. Lawrence Seaway compared to the

previous year. Since the award was first issued 28 years ago, the SLSDC has distributed over 150 Pacesetter Awards to 15 different U.S. ports in the Great Lakes Seaway System. The five recipients of the Pacesetter Award for 2019 are the Port of Chicago (Ill.), the Port of Duluth-Superior (Minn.), the Port of Green Bay (Wis.), the Port of Monroe (Mich.), and the Port of Oswego Authority (N.Y.).

The SLSDC's Pacesetter Award serves to raise awareness among the wider community about how important ports are as assets to the local, regional, and national economy. Great Lakes ports are working harder than ever to handle more commerce safely and efficiently. ■■■

SLSDC FY 2019 Annual Report Released



In May 2020, the Saint Lawrence Seaway Development (SLSDC) presented its 56th consecutive unmodified audit opinion, dating back to its first financial audit in 1955. This annual management report and financial audit of the SLSDC is for the Fiscal Year (FY) ending September 30, 2019 and highlights several major projects completed to rehabilitate and modernize our infrastructure including: obligating \$8.6 million on 24 ARP projects, successfully deploying the Hands Free Mooring (HFM) system throughout the Seaway, overseeing continued progress on the construction of the SLSDC's new ice-class tugboat, *Seaway Guardian*, and observing the 60th anniversary of the St. Lawrence Seaway in Massena, N.Y.

Read the entire Report here: bit.ly/FY2019AnnualReport. ■■■

Spring Buoy Run

The annual spring buoy run to commission the floating aids to navigation within the U.S. sectors of the St. Lawrence River began on April 1. The Saint Lawrence Seaway Development Corporation's (SLSDC) Marine Division completed the Spring Buoy Run on April 8 when the final buoy was commissioned for the navigation season below Snell Lock.

This year's buoy run had its challenges due to the exceptionally high water levels throughout the Great Lakes. Because of the high water levels, the flow rate had to be increased to bring the levels down, and in doing so, it created operating challenges for the SLSDC's *Robinson Bay*. The flow rate below the Snell Lock exceeded the *Robinson Bay*'s capabilities, so the Canadian



Preparing to commission LB 211 while being overtaken by CCG vessel

Coast Guard (CCG) provided assistance. The CCGS Griffon was dispatched and set several buoys below Snell Lock.

In the meantime, the *Robinson Bay*, while pushing the Corporation's buoy barge, proceeded upriver to Ogdensburg Harbor at

a fast pace and started setting lighted buoys along the way. Next, the *Robinson Bay* moved onward to Clayton Harbor at the same fast pace, and again started setting lighted buoys along the way. At times, well over twenty buoys a day were commissioned.

Due to the crew's hard work and "can do" attitude, they did an outstanding job and managed to complete this year's buoy run under less than ideal circumstances.

The *Robinson Bay* will soon be joined by the new tug *Seaway Guardian* later this summer and *Performance* in Spring 2021. Until then, the *Robinson Bay* is still the queen of the SLSDC fleet and will continue to be the Corporation's work-horse tug. ■■■

New Tug Construction Update

Construction on the Seaway Guardian is 99 percent complete as all owner dock trials have been approved. The vessel continues to undergo minor fit and finish work to both the interior and exterior.



Seaway Guardian stern

Fit and finish work consists of clearing items on the vessel's punch list report, loading vessel spare parts and SLSDC supplied vessel stores, completion of the vessel's safety plan, and labeling all safety systems and safety gear to meet IMO and USCG regulations.

The vessel will be drydocked for a final hull cleaning and prepared for towing to Port Fourchon, LA for sea trials in the Gulf of Mexico. Bollard Pull trials will follow in Pascagoula, Miss. with the delivery voyage. Finally, the vessel will travel up the Eastern Coast of the United States and into the St. Lawrence River to Massena, N.Y. with a final handover of the vessel to the SLSDC in July. ■ ■ ■



Pilot House Console



Seaway Guardian

DID YOU KNOW?

2020 Navigation Season

- During FY 2020, dredging work will be completed to increase navigational depths near the SLSDC's marine base and spare miter gate erection facilities. This will make more "room" for the anticipated arrival of the *Seaway Guardian* later this year and of the *Performance* replacement tug in early 2021.
- Like clockwork, the U.S. locks were ready for the opening of the 2020 navigation season after a productive winter work season. The mild weather was welcomed this year by the SLSDC's dedicated employees as they successfully completed the work needed to ensure the U.S. locks were ready for another busy shipping season.



Personnel News



In June 2020, the United States Environmental Protection Agency announced its appointees to the Great Lakes Advisory Board, a

federal committee established to provide ongoing recommendations regarding the Great Lakes Restoration Initiative and the Great Lakes Water Quality Agreement between the U.S. and Canada. The

appointees included **Jeff Stollenwerk**, Duluth Seaway Port Authority director of government and environmental affairs.

The 14 selectees represent a broad range of business groups, environmental organizations, academia and local, state and tribal governments. Collectively, the group will work with the EPA to find solutions for restoring and protecting the Great Lakes.

The EPA's Great Lakes Advisory Board originated in 2012 to advise on protection and restoration policy. It was re-established in December 2018. ■ ■ ■

Save the Date

August

August 13

Wisconsin Commercial Ports Association Annual Meeting

Virtual Meeting

Contact: dluty@milwaukee.gov



Wisconsin
COMMERCIAL PORTS ASSOCIATION