

Duluth Seaway Port Authority

FALL 2017

NORTH STAR PORT

THE HARBOR LINE

Strengthening Duluth's industrial economy

One of the many empowerment tools that the State of Minnesota bestowed upon the Port Authority in our governing legislation some 60 years ago was granting us the ability to analyze industrial development needs and study desirable patterns for industrial land use and opportunities for community growth.

We have engaged in a variety of research studies through the years—from analyzing infrastructure investment needs and the economic impacts of the Port to conducting safety studies and a valuation of all transportation assets here in Duluth-Superior. Today we are at a point in our history that we must reach deeper into the community in order to realize the full potential of our stated mission:

To bring business to the Port and economic development to the region, plus advocate for the maritime and transportation logistics industries

Entrusted with this mission, we consistently tout the benefits of living and working in this community—at the nexus of five highly integrated modes of transportation: air, pipeline, water, road and rail. That kind of connectivity to the global economy inspires and informs all Port Authority decision-making.

We work to incentivize expansion and attract new business. We have remained diligent in building up the real estate and logistics facets of our business. We are growing, adding more customers and developing new services like our CN Duluth Intermodal Terminal.

Our team is determined to leverage this momentum



Courtesy Altec Industries

A birds-eye view of the assembly line at Altec Industries in Duluth.



Vanta E. Coda II
Port Director

and eager to develop the manufacturing and industrial assets within this community—assets in which we see potential for increased job creation, a broadened tax base and sustainable economic growth.

The Port Authority recently made a commitment to stimulate greater engagement—to articulate how important our industrial sector is to a healthy, vibrant community. This fall, we initiated an exciting study and contracted with the Initiative for a Competitive Inner City (ICIC) to analyze and benchmark Duluth's industrial economy.

The goal of the assessment is to deliver compelling data that articulates the long-term importance and economic value of Duluth's manufacturing and industrial assets. Our intent is that information presented will be adaptable across several stakeholder organizations and that the study will provide a common set of facts to inform and compel action—a set of data points to demonstrate the return on investment for building a more diversified Duluth.

We strongly believe that the study will be an asset through which to support the city's visioning process and workforce development initiatives. Putting this well-researched information in the hands of engaged leaders will lead to greater investment in people, programs and facilities. The data also can be used across tourism, academic and healthcare clusters to demonstrate that industry can be an engine to leverage growth across all business sectors.

The Port Authority has convened a local advisory board of engaged citizens from the education, government, nonprofit, business and economic development sectors to provide input throughout the process. The research will be conducted from now through May 2018 and will culminate in a set of policy recommendations for sustaining and enhancing Duluth's industrial sector. We trust that our partnership with ICIC will produce a roadmap to focus all community stakeholders on the common goal of growing the number of productive jobs with sustainable wages that will support the future of this incredible community.

ICIC is a national nonprofit research and advisory organization based in Boston and established in 1994 by Harvard Business School Professor Michael Porter. ICIC's mission is to drive economic prosperity in America's inner cities through private sector investment. ICIC has previously worked with the Saint Paul Port Authority to conduct a similar, comprehensive study of that city's industrial economy.

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About North Star Port

This magazine is produced by the Duluth Seaway Port Authority, Adele Yorde, publisher. Editorial assistance provided by Julie Zenner; graphic design by Erin Makela.



Terry White

The new *Federal Mosel* made her maiden voyage to the Twin Ports in September to load grain at CHS.

Inside your
NORTH STAR PORT

Fall 2017 / Volume 49, Number 3



4 Mapping the Future
Denfeld teens excel at high-tech GIS mapping



6 Wave Action
The science behind forecasting waves on the Great Lakes



10 Tons of Momentum
Iron ore shipments boost 2017 season tonnage



12 Around the Port
From Superior to the Soo and on to San Antonio



19 In Focus: Travis Chadwick
Profiling the photographers who capture life on the Great Lakes

On the covers



Terry White

On the front:

Monster waves batter the Wisconsin Point Lighthouse and Superior Entry during a 2017 storm.

On the back:

The recently renamed *Erie Trader*/Clyde S. VanEnkevort arrives with the sun in late August.



Jane Herrick

Teens map a strong course for the future

BY JULIE ZENNER

Many teens start to map out their lives during high school, but most don't use a high tech mapping and analytics platform like ArcGIS to do it. Duluth Denfeld High School students Alyssa Isaacson and Keeli Gustafson are possible exceptions. The young women recently took top honors in a statewide mapping contest, and Isaacson went on to win the national title. Their accomplishments have helped put their school on the map for geographic information system (GIS) learning and placed these talented scholars on the radar of multiple colleges and potential employers.

The journey started last winter when Alyssa and Keeli were sophomores in an Advanced Placement U.S. History class taught by Gina Holliday. Although GIS was not part of the regular curriculum, Holliday offered students extra credit for entering the Minnesota Map Contest 2017. Their task was to present an interesting and important story about their Minnesota hometown as an ArcGIS Story Map.

"Seeing real-life applications for why we study history and learn technologies is good for students," said Holliday, explaining why she encouraged students to enter the contest. "I also have a strong background in GIS, so I could model examples and show them how it is done."

Alyssa chose Iron Range mining as her topic, hoping to learn more about its impact on her hometown of Virginia, Minn., and the surrounding region. Her ArcGIS project mapped mine sites, soil types and ore deposits for the entire Iron Range, then focused on five key mines: Soudan, Hull Rust Mahoning, Hill Annex, Hawkins and Rouchleau. She used a combination of maps, photographs and text to demonstrate the historic and regional significance of each.

"I knew it was going to take a lot of work and dedication, but some of my previous classes, such as English and practicing DBQs (data based questions) in history, helped me produce quality information," Alyssa said. "I had a few troubleshooting issues with the (ArcGIS) program, but it



Gina Holliday, Alyssa Isaacson and Keeli Gustafson

turned out that they were not on my end."

Her final presentation wowed state judges. It also earned Alyssa first place in the first national ArcGIS Online Competition for U.S. High Schools and a trip to the Esri User Conference in San Diego with her teacher in July 2017.

Keeli's ArcGIS project took second place in the statewide mapping contest. Her maps, images and narrative tell the story of Morgan Park, a planned industrial community built by U.S. Steel in 1913 to provide housing for steel plant workers. She also used maps to explain ecological consequences of the development, including deforestation and legacy contamination.

"Morgan Park really tied in a lot of the region's history," said Keeli. "There were connections to mining because it was a steel town that needed raw materials and to Lake Superior with shipping."

Alyssa found similar regional connections as she researched Iron Range mines. In one section, she noted, "By confining the majority of Iron Range mines to a determined region, industries and companies were able to provide and ship more resources to benefit Minnesota's economy."

The maturity of these insights impressed Adele Yorde, public relations director for the Duluth Seaway Port Authority, who works with area schools to encourage careers in maritime and related industries.

"For you two to recognize at your ages the connectivity between Duluth and the rest of Northeast Minnesota is something people twice your age haven't figured out," Yorde told Alyssa and Keeli during a recent classroom visit. "It is a great knowledge base to work with as you start thinking about careers."

"I have gotten a couple of e-mails and congratulations from mapping colleges," said Alyssa, who had not considered this field of study before working on this extra credit project. "It does sound interesting, and, once you understand the program, it is actually a lot of fun."

Mapping and GIS are vital skills that will be needed



Alyssa Isaacson

A satellite soil map, part of Alyssa's contest entry on Iron Range mining

down the road as goods are produced and cargos continue to move through the region's multi-modal transportation system. Onboard weather observation and charting of courses have become very technologically advanced. So have the processes for loading and unloading cargo.

"These technical skills translate into a variety of career opportunities on the working waterfront," Yorde told the students. "Everything is mapped out when a conveyor moves so cargo goes into the right holds. We also work with engineers who need to use mapping and GIS to redesign dock walls, figure out riparian rights, and plan expansions on dock facilities."

Yorde praised Hollinday for encouraging students to explore the region's history and to learn new technologies that will help shape its future.

"I applaud instructors who have so much on their plates already and still think outside the box," Yorde said. "We have a lot of discussions at the Port Authority about how the next generation will staff the working waterfront. So when we hear stories of young people being encouraged to



Keeli Gustafson

One of Keeli's story maps indicates pollution and the steel plant's environmental impact today.

explore the region they live in and the industries that support the Port, it bodes well for all of us."

To see more of their work: <https://sites.google.com/site/mnmapcontest17/prize-maps>

IMA celebrates silver anniversary

The Iron Mining Association (IMA) of Minnesota is celebrating 25 years of promoting a healthy iron mining industry in this state. The IMA grew out of the Lake Superior Industrial Bureau, which represented Minnesota's mining industry for several decades starting in 1913. The organization became the IMA in 1992 and expanded its membership to include suppliers and other industry supporters.

Up until 1992, the only members of its predecessor association had been mining companies. "Which was fine when there were 75 red ore operations from Grand Rapids to Babbitt," recounted Jerry Fryberger of Hallett Dock Co. "They had great representation at the Capitol."

After the red ore was depleted to secure Allied victories in both world wars, those mines closed, and the Minnesota iron mining process evolved to the taconite industry we know today. In 1992, the IMA was founded, expanding membership to include vendors like Hallett Dock, whose business had close ties to the mines. Of the commodities stored at its facilities in the Duluth-Superior harbor (limestone, coal and bentonite clay), up to 75 percent are for the iron mining industry.

"Today, vendors participate much more in the IMA," said Fryberger, who was one of its founding board members. "I'm very pleased with how the association has progressed." Through the IMA, he has spoken on behalf of the iron mining

vendor community in St. Paul, served on numerous committees and sat on the board several times. "It's been a wonderful, enriching experience."

As part of its anniversary celebration, the IMA is profiling on its website some of the 11 founding vendor board members including Fryberger, plus Jim Hoolihan of Industrial Lubricant Company in Grand Rapids, Minn.

"We got started in business because of mining, and it has remained a core of our business and our focus," said Hoolihan recently. "We remain connected to the Range and our mining industry here because taconite is a critical and growing part of our business."

Today's IMA describes its role as working to promote an iron ore industry that will provide long-term growth and prosperity for all stakeholders through profitability in a competitive global market. It pursues this mission through public education and information, working on public policies that affect iron mining and partnering with educational institutions.

"As we begin to see a turnaround, it is a perfect time to celebrate all the things that make Minnesota-mined iron the best in the world," said IMA President Kelsey Johnson. "We are excited to be celebrating our 25th year and to highlight members who have been with us through thick and thin."

www.taconite.org



Jerry Fryberger



Jim Hoolihan



Kelsey Johnson

Forecasting waves on the Great Lakes is a science

BY PATRICK LAPINSKI

Weather can be a real trickster, often catching us off-guard or lulling us into a false sense of security. Separating our innate human senses into predictable patterns and accurate forecasts is the job of modern-day meteorologists. The more knowledge they have about weather, the better able they are to respond to its vagaries and dimensions, everything from a severe localized thunderstorm to a massive low pressure area affecting the entire Northland.



Dan Miller

For Great Lakes meteorologists, the two biggest components taken into account when creating a marine forecast are wind and wave height. At a very basic level, a wave is created when wind makes contact with the surface of the water, causing a stippling effect, like what you see when a gust hits a shallow pool of water in a parking lot. On a deeper body of water, like Lake Superior, this stippling allows the wind to get a better grip on the surface of the water, increasing its pull and making wavelets which progressively increase in size as the wind continues blowing across its surface. So, how do these wavelets get to be six-foot waves? Let's take a step back to break down common characteristics of waves.

All waves have peaks and valleys; the highest part of a wave is its crest and the lowest point is its trough. The distance between crests is the wavelength, and, similarly, the vertical distance between the trough and the crest is the wave height. The length of distance that the wind can push on the water to produce waves is called its fetch. On the Great Lakes, this is where bathymetry, or underwater topography, comes into play.

"If you have a storm out in the middle of the ocean, it doesn't really matter where the storm is, all of the winds are over water. So, it's going to produce waves pretty much everywhere," said Dan Miller, science and operations officer with the National Weather Service (NWS) in Duluth. "Here on the shores of Lake Superior, the *direction* of the wind makes a very big difference as to what kind of wave response that you get."

Consider a northwest wind blowing roughly from Two Harbors toward Port Wing on the Wisconsin shore.

"At about 20 miles, it isn't a large fetch but still long enough to create some good waves," said Miller as he moved his hand eastward across the surface of a small map toward the center of the Lake. "Take that same wind direction and put it offshore from Thunder Bay. Here the fetch length is about a hundred miles versus maybe only 20 miles between Two Harbors and Port Wing, so you're going to get much bigger waves over the open waters."



Paul Sundberg

Waves pummel the North Shore of Lake Superior on Oct. 24.

Now rotate that axis to blow from the northeast, and the gale warning flags go up in Duluth as that long fetch pushes big waves directly toward the Twin Ports across the entire length of Lake Superior. It is a phenomenon well known to Great Lakes seafarers.

"Sometimes you'll get north of Isle Royale and you'll think you've got a straight shot down to Whitefish, but that takes you down through Superior Shoals and all of that stuff, so you've got to be kind of careful when you get down there," said Jack, a 40-year veteran of the lakes, explaining that it is important to get the sea on the stern so the boat will ride better. "You go full-speed and try to stay ahead of the waves as much as you can."

Jack has been on the thousand-footers for a long time. The pilothouse is a long way up, and sometimes it's hard to judge the wave height from that angle and distance.

"I don't know about any rogue waves, but I've seen some pretty big ones," he said. "I know about the three sisters, too. The first one will come underneath you, you'll roll up, you'll see it rolling underneath you and before that one gets back to the midway mark, you got the second one in there, so that's gonna lift you up even higher ... and about the time the third one gets there the first one is getting by your stern so it just kind of plunges your bow right down in the wave and the wave will wash over the bow."

The combination of wind speed and duration, coupled with an area of fetch determined by wind direction, allows forecasters to predict where the seas will build to dangerous levels. Wave forecasting is not really new science, but it's growing more complex, more intelligent and increasingly data driven. In addition to visual observations, such as reports from shore or vessels at sea, the National Weather Service relies on data it receives from open-water buoys, radar

and satellites. This field of remote sensing is at the leading edge of the science today. It sounds really impressive, right? Not so fast.

“Satellite data is really good for looking at the Lake in terms of ice coverage and how it has changed since yesterday or last week,” said Miller. “But it doesn’t really tell me all that much about the wave height.”

Predicting wave height is like chasing the Holy Grail. Some days you’ve almost got it, and other days it slips through your fingers.

“Buoys are preferred, certainly by scientists, for a few reasons: number one, they’re usually at the same latitude-longitude every year so the data sets from year to year are comparable,” Miller explained. “They are also right there, going up and down with the waves, so it’s an actual measurement of the swell or the wave and the wind.”

The downside is that buoys are located at fixed points, so what is happening in one location could be very different from what a ship is experiencing a hundred miles away. There are three open water buoys on Lake Superior operated by the National Oceanic and Atmospheric Administration and similar numbers on the other Great Lakes. Private research buoys owned and operated by various universities and collaborative research projects, such as the University of Minnesota-Duluth Large Lakes Observatory and the Canadian government, also are deployed around the lakes. For instance, mid-Superior buoy station #45001 sits deep in the heart of Lake Superior, 60 nautical miles north-northeast of Hancock, Mich. Moored in over 800 feet of water, the buoy’s instrumentation sends a string of data on air temperature, wind speed, sea temperature, barometric pressure and significant wave height data back to the National Data Buoy Center in Stennis Space Center, Miss., where it is combined with information from radar and satellite feeds into various weather models for analysis by the NWS.

Wave height also is influenced by seasonality. If you’ve



Matt Silverness

The Exeborg navigates the Superior Entry during an April storm.

ever wondered why it’s often rougher on the Lake for a similar given wind speed in the fall versus the spring, this is due to the seasonal changeover that all lakes go through, even one the size of Superior. Miller defines these yearly periods as the “unstable season” (fall), and the “stable season” (spring and early summer). These are times when the Lake’s surface temperature is either warmer (fall) or colder (spring/early summer) than the air temperature. While wind will always be the number one driver for wave production, the seasonal stability impacts how the air interacts with the surface of the water, right at the point where it is pushing on the surface. Warm water and cold air allow a coupling, thus an easier push.

“In the unstable season, since the Lake is a constant heat source, it tends to keep what we call a mixed boundary layer over the water, so winds tend to be stronger and the wave generation tends to be much more efficient,” said Miller. “Let’s say for a given wind speed you normally get a 10-foot wave. During the unstable season, you might get more like an 11 or 12 foot wave. In the stable season, you might get an eight or nine foot wave.”

Jack recalls a day on Lake Superior about 10 years ago. The weather report was forecasting winds late in the day or early morning, but nothing their vessel couldn’t handle, so they followed a routine plan when a storm was coming—to get under Isle Royale and head over to the North Shore. Conditions changed very quickly.

“We got just about to the Keweenaw and all of a sudden we had 130 mph winds,” Jack remembers. “We were pretty much just heading right into it because we couldn’t turn to go for shelter. We were coming from the Soo, going to Superior, Midwest Energy, so we were light and didn’t want to turn and put it in the gut because usually it would roll the s**t out of you, so we just checked everything back and headed right



Donald F. Donovan

A storm rolls in on Lake Superior.

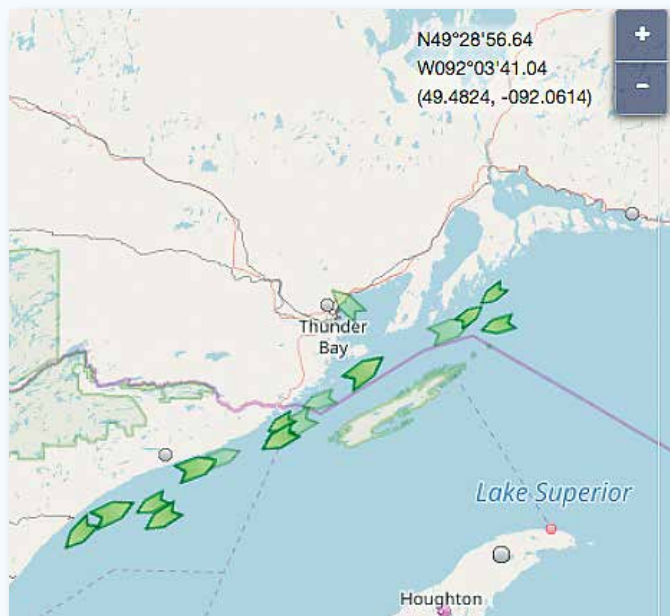
“Wave Action” Continued on page 8

Legendary gales: A show of force

Sustained wind and waves often whip up the Great Lakes as winter approaches. Singer-songwriter Gordon Lightfoot immortalized the “gales of November” in *The Wreck of the Edmund Fitzgerald*, but sailors knew of their treachery long before that fateful day on Nov. 10, 1975.

This year, the gales struck early. On Tuesday, Oct. 24, a storm front produced monster waves on Lake Superior. One measured 28.8 feet at the Granite Island buoy located north of Marquette—the highest recorded on the big lake with modern technology.

A second high wind event hit the area three days later, with winds gusting to more than 60 mph and waves topping 15 feet. With water levels more than 10 inches above average, the surge created gigantic walls of waves that slammed against shorelines in Duluth-Superior, causing widespread property damage. Most vessels on Lake Superior altered their courses to sail in more sheltered waters. Several hugged the North Shore, while another group clustered northeast of Whitefish Point to wait out the storm.



Great Lakes tracking map shows ships taking refuge from the wind and waves of the Oct. 24 storm on Lake Superior.

“Wave Action” Continued from page 7

into it till we got over to the lee of the lake and then turned down. There were some pretty good waves there. That storm took housings off the deck winches up forward and blew them all the way down the deck. We buried the bow a couple of times... so you gotta figure that’s a good 25-foot sea there.”

For marine forecasters, predicting what is called “significant wave height” is mission critical. By definition, significant wave height is the mean wave height of the highest third of all waves. Miller said if there is a misconception about waves, this is where you’ll find it.

“It’s important for people to remember that over the course of a three to six-hour wave event there should be a few waves in there that are on the order of 50 to 75 percent higher than that,” said Miller. “So, for a forecast of four to six-foot waves in the nearshore forecast, it should be expected that there will be at least a couple waves an hour on the order of eight to nine feet. The way energy distribution works, the maximum expected wave height for any event with a duration longer than about six hours should be roughly double that of the significant wave height forecast.”

Nothing brings people to the waterfront like a big storm. With the shipping season wrapping up soon, we reflect on storms of past, pray for safe passage through those to come, and leave the science to experts like Dan and other National Weather Service forecasters throughout the Great Lakes.

“If you look at the first part of the 20th Century where there really wasn’t much of anything in the way of weather forecasting on the Great Lakes, people were largely flying blind,” Miller said. “It isn’t a coincidence that the number of shipwrecks and fatalities associated with shipping on the Great Lakes started a sharp decline in the 1950s that continues up until present day. The middle part of the 20th Century was the advent of regularly available marine wind and wave forecasts, and the quality of those forecasts has been steadily improving for the last 60 to 70 years.”

We may joke about weather forecasters never being right, but, in reality, they’re pretty darn good at telling us when to keep a weather-eye out and head for shelter.

www.ndbc.noaa.gov



Relentless waves batter the shoreline at Brighton Beach in Duluth.

Look who bought a grain elevator!

Why would a dredging contractor /marine construction company want to own a grain terminal?

“It’s all about space,” said Marine Tech owner Ted Smith. “When you own three tugs, three crane barges, five material barges and a dozen pieces of heavy equipment, you eventually run out of room to dock, park and store everything.”

For years, Smith had rented dock space at Northland Pier to tie-up between dredging projects and during winter layup. But as the company took on bigger projects and added more barges and boats, space became a real issue. “Riverland Ag/Duluth Lake Port was nice enough to allow us to tie-up there periodically, thanks to Gary Pearson, operations manager,” Smith said.

The elevator itself has a four-million bushel capacity. It was originally operated by Capitol Elevator, dating back to 1905, and underwent a series of ownership changes before closing as Riverland Ag/Duluth Lake Port in 2016.

The elevator had sat empty for a year when Smith and business partner, Nick Patterson, formed TN LLC to purchase the site. The slip is dredged to Seaway depth, and the new owners intend to keep it that way. While the dock

and land-based storage area is being leased back to Marine Tech, the new owners still have the elevator up for sale. Company headquarters for Marine Tech will remain on Garfield Avenue.

A bit of history about Marine Tech ... Ted Smith acquired the company in 2001. Previously known as Marine Tech, of Duluth, it had been owned by Jim Holmgren, who had bought the assets at a Zenith Dredge Auction in 1995. Zenith Dredge had operated in the Twin Ports for 90 years by then, having launched in 1905.



Dennis O'Hara/ Northern Images Photography

The Riverland/Ag Duluth Lake Port property was purchased by TN LLC and leased back to Marine Tech for dock space and ground storage.



Ted Smith



Nick Patterson

Milestones & Memories

2017 marked a handful of historic milestones in the Port of Duluth-Superior

60 years ago—in 1957

Construction started on the Clure Public Marine Terminal in anticipation of the opening of the St. Lawrence Seaway two years later.



Photo by David Hooker

35 years ago—in 1982

The St. Lawrence Cement facility opened on the Clure Terminal. Today, it operates as part of CRH US, one of the nation’s largest manufacturers and suppliers of cement.

40 years ago—in 1977

The BNSF Railway Dock in Superior became the first facility modernized to handle thousand-footers.



DSPA



Pfeifer & Schiltz, Engineers

Tons of momentum boost fall tonnage

The 2017 shipping season isn't over yet, but the finish line is in sight, and the big winner has definitely been iron ore.

"It's the pace of pellets that continues to dominate waterborne commerce in the Port of Duluth-Superior and across the Great Lakes-Seaway system this season," said Vanta Coda, Port Authority executive director. "Outbound shipments of Minnesota iron ore have hit records not seen in a decade, with this year's throughput continuing to outpace the Port's five-year average by more than 20 percent."

Heading into October, some 13.7 million short tons of pellets had moved through the Twin Ports. Destined for domestic and foreign markets, that represents a 35 percent increase over the 2016 season. Overseas shipments have accounted for the lion's share of the rally, reflected in a surge of Canadian vessel visits—201 through September (compared to 130 the same time last season). Most of those hauled iron ore to Canadian ports along the St. Lawrence River for transloading to larger oceangoing vessels bound for countries like Japan and China.

Comparing YTD tonnage figures through September to 2016, limestone



Chris Mazzella



Dennis O'Hara

Get in line! (top) The *John D. Leitch* loads pellets in mid-October at the CN Duluth Dock while the *Joseph L. Block* waits her turn. Wind tower sections (bottom) being offloaded Sept. 8 from the *BBC Elbe* at the Clure Public Marine Terminal.

shipments are up a couple of percentage points and coal is holding steady, but grain has fallen off last year's pace by almost 40 percent.

At the Clure Public Marine Terminal, inbound shipments of project cargo have not been as robust

as initially expected. In addition to Kaolin clay and a handful of heavy equipment deliveries by ship and barge, four shipments of wind turbine components will have arrived in the Port of Duluth by the time the 2017 shipping season winds to a close.



David Hooker

The *Mesabi Miner* takes on another load of iron ore at the CN Duluth Dock. Railcars loaded with limestone bound for fluxed pellet production on the Iron Range can be seen in the background.

CN Duluth Intermodal Terminal makes its mark

Ribbon-cutting celebrates successful operations

Nearly a hundred business leaders, customers, freight forwarders and elected officials gathered Sept. 20 to officially celebrate Duluth's new intermodal container service.

"It is only fitting as we approach the six-month mark of operations, that an official ribbon-cutting ceremony be held to appropriately thank those colleagues, companies and community leaders who believed in our vision and have worked so hard to make it a success," said Keith Reardon, CN vice-president of intermodal and automotive.

The new CN Duluth Intermodal Terminal—one of 20 CN terminals across North America—is a partnership between CN and Duluth Cargo Connect. It connects this region to containerized imports and exports via a rail network that spans the continent, providing direct service to East, West and Gulf Coast ports.

Duluth's operation has already found a niche in the marketplace. On Oct. 9, the terminal received its 1,000th container—outpacing initial projections.

"Our ability to offer a whole suite of value-added services has earned high praise from customers and freight



Participants in the Sept. 20 ribbon-cutting event for the new CN Duluth Intermodal Terminal included (from left): Duluth Mayor Emily Larson; Vanta Coda, Duluth Cargo Connect/executive director, Duluth Seaway Port Authority; Keith Reardon, vice president, CN Intermodal and Automotive; U.S. Representative Rick Nolan (MN District 8); and Jonathan Lamb, Duluth Cargo Connect/Lake Superior Warehousing president.

forwarders alike," says Jonathan Lamb of Duluth Cargo Connect. "What makes us unique is that most intermodal terminals simply move containers between trucks and rail cars and don't normally touch the contents. We offer an array of services like stuffing and de-stuffing containers, warehousing inventory onsite, crating, skidding and bundling loads, plus a certified truck scale and CBP processing facility onsite. Those extras help customers save time and money with supply chain logistics."

Launching this land-based intermodal service adds depth and dimension to the Port's freight handling capabilities. "It takes truckloads and trainloads to move boatloads," said Port Authority Executive Director Vanta Coda. "Married with the lineup of marine and warehousing services on our Clure Public Terminal, this intermodal operation 'supercharges' our full multimodal platform. It makes the businesses we serve more supply chain competitive in the global marketplace."

Massive maritime mural makes North Shore stop



Two Harbors welcomed a floating work of art Aug. 28 when the *CSL St-Laurent* pulled into port to load iron ore. The vessel is adorned with an original mural, entitled "*The Sea Keeper*," commissioned by CSL as a tribute to Canada's 150th birthday, the 375th anniversary of the City of Montreal and the roles played by marine transportation and the company in building the nation and the city. The artwork was conceived by Montreal urban artist Bryan Beyung and created in collaboration with three others. The mural has been included in the official 2017 selection of the prestigious International Corporate Art Awards® in Rome.

2017 shatters loads of records

Records are meant to be broken. That certainly seemed true in 2017 with a series of record-breaking loads through the Soo Locks that shattered all expectations.

The pursuit started July 25 when the *Edgar B. Speer* navigated the locks with a record 73,875 tons of iron ore bound for Gary, Ind. Just to put this in perspective, it would take some 2,900 trucks to haul that many pellets.

Call it sibling rivalry, but, before the accomplishment could even sink in, the Great Lakes Fleet's *Edwin H. Gott* bested it Sept. 6, carrying 73,940 tons of iron ore on a single passage to wrest the title from her fleetmate.

About two weeks later, on Sept. 24, American Steamship Company's *American Integrity* shattered the record again. She now holds the all-time record for largest load through the Soo Locks with 75,095 tons of ore!



U.S. Army Corps of Engineers/Michelle Briggs

The *American Integrity* shatters load records at the Soo on Sept. 24. (2012 photo)

The U.S. Army Corps of Engineers, Detroit District, credits high water levels on the Great Lakes, which allow the carriers to load more and run at deeper drafts. Lakers typically enjoy a draft of 28 to 29 feet. The *American Integrity* was loaded to a draft of 29 feet, 7 inches on her record-setting voyage.

By early summer, all five Great Lakes were higher than they were in 2016. Lake Ontario established new

record highs in May and June, resulting in widespread shoreline erosion and forcing some of the highest discharge rates ever experienced by ships navigating the St. Lawrence River. By the end of September, Lake Superior was only a half inch lower than the record high for the month and about 2.5 inches below its all-time record high, which occurred in October 1985.

Plein Air Painters Artists on the waterfront



DSPA

DSPA

The working waterfront was captured in brush strokes by more than a dozen artists exploring the influence of industry on area landscapes. In addition to Plein Air Painters of America (PAPA), members of the Outdoor Painters of Minnesota set up easels at industrial sites around the harbor in September, including Matt Kania (left) and Billyo O'Donnell, one of the exhibiting PAPA artists.

Great Lakes Commission supports Soo Locks modernization

Officials from the Great Lakes states are pressing Congress to fund major upgrades at the Soo Locks, specifically construction of a second lock big enough to handle the largest Great Lakes vessels.

Currently there are two operational locks at the Soo, the Poe and MacArthur. Only one of them, the Poe Lock, can accommodate boats longer than 730 feet or wider than 75 feet. That translates to about 85 percent of the cargo passing through the locks, including nearly all of the iron ore needed for U.S. steel production.

It also makes the system extremely vulnerable, according to the Great Lakes Commission (GLC), which announced its support for the Soo Locks Modernization Act (S. 1308/H.R. 2806) at a Sept. 18 news conference in Duluth.

“The Soo Locks handle more than 80 million tons of cargo every year,” said John Linc Stine, vice chair of the GLC and commissioner of the Minnesota Pollution Control Agency. “The Department of Homeland Security (DHS) has projected that a six-month, unplanned closure of the Poe Lock alone would result in a nightmare scenario for our country—a severe recession with 11 million Americans unemployed and more than a \$1.1 trillion decrease in national gross domestic product.”

U.S. Rep. Rick Nolan, a cosponsor of



The *Edgar B. Speer* locking through the Poe Lock downbound at Sault Ste. Marie. (2012 photo)

U.S. Army Corps of Engineers/Michelle Briggs

the bipartisan legislation, joined GLC officials in Duluth, along with representatives of the Duluth Seaway Port Authority (DSPA), Wisconsin's Office of Great Waters, the Lake Carriers' Association (LCA) and Fednav.

“It is critical to the security of our state, regional and national economies that we build a new Poe-sized lock at the Soo Locks,” said Nolan. He reiterated the DHS position that the Soo Locks are “the Achilles heel of the North American industrial economy.”

“In 2016, our members moved 47 million tons through the Soo Locks, and 96 percent went through the only large lock, the Poe,” said Thomas Rayburn, director of environmental and regula-

tory affairs for the LCA. “Building a new large lock adds redundancy, security and resiliency to the economy: the project is shovel ready and would, over a decade, generate 1.5 million hours for construction workers.”

Congress first authorized a new Poe-sized lock in 1986, but never funded it. A bipartisan group of lawmakers introduced legislation in June to try again. There have been no comprehensive improvements to the Soo Locks facility in nearly 50 years. Vanta Coda, DSPA executive director, noted that “infrastructure serves in silence, and people don't think about it until something goes wrong. We can't wait until it breaks.”

Grounding halts vessel traffic in St. Marys River for two days

The grounding of the *Calumet* just off Mission Point, south-east of Sault Ste. Marie, halted commercial vessel traffic for two days in the St. Marys River (from the Soo Locks to Six Mile Point). The 629-foot freighter ran aground at approximately 11:40 p.m. Wed., Aug. 9, on the north side of Sugar Island along Michigan's eastern Upper Peninsula. She had no cargo on board at the time, and no injuries were reported. The *Calumet* was re-floated two nights later and sailed under its own power to anchor near Lake Nickolet in Michigan for further evaluation. The river had reopened to vessel traffic by 9:30 p.m. Aug. 11.



Calumet grounding Aug. 9 as viewed from shore

Norris Seward

Superior oil refinery sold

Calumet Specialty Products Partners, L.P., announced plans in August to sell its Superior plant to Husky Superior Refining Holding Corporation, a wholly owned unit of Canadian oil company Husky Energy. Both companies indicated at the time that daily operations would not change significantly with all 180 employees keeping their jobs. Husky also has agreed to invest in key capital projects at Superior.

“We are excited to find with Husky a great home for our employees at Superior and want to thank (the employees) for their contributions to our organization over the last few years,” Calumet CEO Tim Go said in a statement. “Their dedication and efforts have made Superior an attractive value proposition for Husky, who will retain the Superior employees and will assume the union contract and pension plan.”

“Acquiring the Superior refinery will increase Husky’s downstream crude processing capacity, keeping value-added processing in lockstep with our growing production,” said Husky CEO Rob Peabody.

The refinery has operated in Superior since 1951 and



Calumet Superior

Aerial view of the Superior refinery

has permitted capacity of 50,000 barrels per day. It processes light and heavy crude oil from the Bakken formation in North Dakota and western Canada into fuel products and asphalt.

The refinery also operates the marine fueling facility on the Clure Public Marine Terminal in Duluth.

Special delivery from Superior to San Antonio

In mid-September, Lake Assault Boats delivered 24 of 43 custom river barges purchased by the City of San Antonio. The vessels arrived in Texas on a caravan of a dozen semi-trucks and were unloaded via crane directly into the San Antonio River that flows through downtown. The custom-built barges will serve as tour boats, dining vessels and water taxis along the city’s iconic River Walk.

The remaining 19 barges still under construction in Superior were scheduled to be delivered by the end of November. The \$6.2 million project is the largest order to date for Lake Assault Boats, which has built some of the most capable police and fire emergency response watercraft for public safety agencies nationwide. The aluminum boat manufacturing company is part of Fraser Industries.



Lake Assault Boats

Moving boatloads of coal down the road



Paul Scinocca

In a bit of a modal shift in August, crews at Midwest Energy Resources Company (MERC) loaded two vessels, the *H. Lee White* (above) and the *American Mariner*, with coal in rapid succession for delivery to the Graymont Superior lime plant just “down the road.” The process of moving some 35,000 tons of coal to the facility by water not only eliminated the need for long-term ground storage at MERC, but also minimized truck traffic—keeping nearly 1,450 loads off local roads.

Explore the new Lake Superior Estuarium

A giant floor map of the St. Louis River Estuary, stunning photographic murals, hands-on interpretive exhibits and child-friendly spaces welcome visitors to the Lake Superior Estuarium on Barker's Island in Superior.

The Estuarium opened Sept. 30 and is operated by the Lake Superior National Estuarine Research Reserve. It is billed as a new destination for family fun, where people can learn about the St. Louis River Estuary and Lake Superior as they explore the region's natural and human history through interactive exhibits, short movies and games.

"The Reserve has worked for nearly two years to develop and produce exhibits that help people connect to the remarkable place where we live," said Deanna Erickson, education coordinator for the Reserve. "We want to tell a hopeful story about the St. Louis River and make a space that is accessible to everyone, including young children."

In addition to the exhibit hall, the Estuarium houses community meeting space and offices for the Friends of Lake Superior Reserve. It was funded by a grant from the National Oceanic and Atmospheric Administration with matching funds provided by University of Wisconsin-Extension and additional support from UW-Superior.

www.lakesuperiorreserve.org



Grand opening of the Lake Superior Estuarium

Photos courtesy Lake Superior Reserve



"The River Talks" at the Estuarium

If you are looking for an excuse to visit the Lake Superior Estuarium, mark your calendar for upcoming science café-type evening talks. This is the fifth year the Lake Superior Reserve and the Minnesota and Wisconsin Sea Grant programs are hosting "The River Talks" series of free, informal gatherings. All remaining talks will be held at the Estuarium (3 Marina Dr., Superior, Wis.) beginning at 7 p.m.

Jan. 10, 2018

Terns on Interstate Island

Feb. 14, 2018

Muskie Research and Tracking in the Estuary

March 13, 2018

Spiders in the Estuary

April 11, 2018

Barker's Island History

May 9, 2018

The Making of the Estuarium

Topics are subject to change. Contact Marie Zhuikov at (715) 399-4084 or mzhuikov@aqua.wisc.edu.



David Schauer

The CSL *Laurentian* at anchor Sept. 6 provided the perfect backdrop to Wednesday night sailboat races in the Twin Ports.

SS Meteor is nationally significant

The SS *Meteor* is inching closer to perhaps one day being designated a national historic landmark. The Wisconsin State Historic Preservation Review Committee has approved an amendment to the SS *Meteor's* listing in the National Register of Historic Places, changing the site from state to national significance. The move is a “baby step” toward the goal of having the whaleback museum declared a national historic landmark—a process that could take several years.

The vessel is the last remaining whaleback freighter designed by Alexander McDougall and built in Superior, Wis., from 1887 to 1898. It now serves as a museum ship on Barker's Island. Officials with Superior Public Museums are advocating for the designation change due to the vessel's significant role in the development of the iron ore trade and the evolution of shipping. If they succeed, the SS *Meteor* would be the first property in northern Wisconsin to be listed as a national historic landmark.



Glenn Blaszkiewicz



Paul Scinocca

Vista Fleet boats in great shape despite close call

Both Vista Fleet tour boats were tampered with, unmoored and set adrift in the harbor during the wee hours of Sept. 21. Fortunately, without damage and having avoided catastrophic loss during a close call with commercial ship traffic, Vista Fleet personnel with Coast Guard assistance successfully brought the boats back to the dock without incident. After close inspections, both tour boats were back in business the next day. A 47-year-old man from Greenwood, Minn. was arrested in connection with the case and is now facing charges of felony theft.

Northern Crops Institute trade group visit



DSPA

September brought a group of 20 grain buyers to the Port of Duluth-Superior from as far away as Spain, Italy, Israel, Egypt and Nigeria to Panama, China and the Philippines to better understand U.S. grain-handling, ship-loading and inspection operations. As part of a Grain Procurement Management for Importers course offered by NDSU's Northern Crops Institute in Fargo, these international visitors heard a port overview by Kate Ferguson, Port Authority director of business development (far right), then toured the CHS grain terminal in Superior before taking a harbor tour aboard the *Vista Star*. As in past years, Steve Sydow, vessel agent with Daniel's Shipping Services (fifth from right) and Carsten Brueninghaus, National Cargo Bureau senior surveyor, (far left) joined in the discussions.

Ports advocate for infrastructure funding during D.C. fly-in



Courtesy AAPA

Congress returned from its summer break in September, and members of the American Association of Port Authorities (AAPA) flew in to advocate for port infrastructure spending. Duluth Seaway Port Authority Government and Environmental Affairs Director Deb Deluca (left edge) was among dozens of leaders who traveled to Washington, D.C., to participate in the fly-in. AAPA held meetings with House and Senate leadership, key committees and the Office of Management and Budget. Topics included freight infrastructure funding, FY 2018 appropriations, Harbor Maintenance Tax reform and the 2018 Water Resources Development Act.

Jonathan Lamb is a “Titan” of business

One of the hardest working members of Duluth Cargo Connect has been named to the 2018 *Twin Cities Business* list of 100 People to Know. Jonathan Lamb, president of Lake Superior Warehousing (LSW), will be featured in the magazine’s December issue in the “Titan” category. A titan is defined as a leader in a business niche or specialty; a person of long-standing influence; competence personified. That description fits Lamb to a tee. He first joined LSW in 2006 and is responsible for retaining and generating commerce through the Port’s Clure Public Marine Terminal—via Duluth Cargo Connect and, most recently, through the new CN Duluth Intermodal Terminal that connects this region to containerized imports and exports via a rail network that provides direct service to East, West and Gulf Coast ports.



Jonathan Lamb

From Canada to Duluth



David Schauer

The *Manitoulin* makes an unusual delivery, arriving at Riverland Ag/Duluth Storage Sept. 29 with an inbound shipment of grain from Canada.



DSPA

A member of the Royal Canadian Mounted Police (RCMP) was in Duluth Oct. 19 in conjunction with the Canadian Consul General’s appearance at the annual Chamber dinner that night. RCMP Constable Matthew Quilley (second from left) is shown here accompanied by Duluth Police Officers Ethan Roe (left) and Mike Jambor (far right) on a goodwill visit to the Port Authority. They stopped to tour the new CN Duluth Intermodal Terminal with Pete Kramer, general manager of Lake Superior Warehousing/Duluth Cargo Connect.

History of Fraser Shipyards

Compiling the history of Fraser Shipyards was a compelling project for author Patrick Lapinski.

“It is a story that explores all elements of the shipyard’s dramatic history—human endeavor, survival, strife, growth, independence, innovation, and tenacity of spirit,” said Lapinski. “It also was a story that had never been told in its entirety.”

In The Yard: The History of Fraser Shipyards 1890-2017 was designed from the beginning to tell the story of the modern-day Fraser Shipyards. Part of the author’s intent was to change the Superior shipbuilding and repair narrative away from the focus on whale-backs or world war shipyards. “I wanted to bring it up to date and to honor the many workers who passed through those shipyard gates to go to work.”

His starting point was 1945, with the shipyard on the brink of extinction, and its salvation by the Knudsen brothers. The bulk of the research took about five years but, according to Lapinski, the story would not have come to life without the input of the people who were critical to the daily operations of the yard. Fortuitously, many of them were still alive: foremen, naval architects, superintendents, executives and laborers.

“It was a daunting task to interview them because many were reluctant to speak publicly,” said the author, “but the inclusion of their memories, the

unique perspectives of these workers, adds the vitality of human endeavor to the book.”

While *In The Yard* narrates the story of Fraser Shipyards, it also chronicles the evolution of the Great Lakes maritime industry, providing in essence a mirror in which to see the shipping industry over the last half of the 20th century. Fraser’s role in this history is one of innovation and leadership, placing the yard at the forefront of power conversions, vessel lengthening, the introduction of bow-thrusters and the conversion of bulk carriers to self-unloaders.

Visually, the book has over 300 photographs, images, maps and a unique roster of all vessels that have wintered in the shipyard since 1945. Many images have never been published, culled from private collections and the shipyard archives.

Photographer and historian Patrick Lapinski has been photographing and writing about the Great Lakes



Pat Lapinski

Samuel Lapinski

maritime industry for over 30 years. He is a regular contributor to publications such as *Seaway Review/ Great Laker; The Inland Seas, The Nor’Easter, Lake Superior Magazine* and *North Star Port*. The author is currently writing the biography of a prominent naval architect.

In The Yard can be purchased online at www.inlandmariners.com.



Book cover photo of Fraser Shipyards (circa 1948)

From the Carl Stolpe collection

A classic steamship, a legend on the Lakes



Bryan Howell

The 75-year old *Alpena* graces the Duluth-Superior Harbor carrying, as usual, a cargo of cement for the Lafarge dock in Superior. The veteran steamship was launched Feb. 28, 1942, as the *Leon Fraser* for the Pittsburgh Steamship Co. She sailed her maiden voyage on June 21 of that year from Detroit to Duluth to load iron ore. In 1989, Fraser Shipyards acquired the vessel, shortened it 120 feet and converted her to a self-unloading cement carrier for Inland Lakes Transportation, Inc. (Lafarge), in Alpena, Mich. The company renamed her *Alpena* (2) on June 1, 1991. She continues to sail actively under the Inland Lakes Management banner carrying cement products between Lafarge facilities.

IN FOCUS: Travis Chadwick

This is the sixth in a series of profiles about the gifted photographers whose images bring the Port's working waterfront to life.

Born and raised in Duluth, Travis Chadwick now lives in Superior with his wife of 15 years, Tina, and their two children. Travis is an avid photographer who doesn't get out to shoot as often as he'd like but makes up for it with stunning images that capture the grit and beauty of the working waterfront. He is a regular contributor to *North Star Port* magazine and a 2011 Calendar Contest winner. See more of his images at www.travischadwickphotography.com

How and/or why did you first get into photography, and, more specifically, into the "shipping scene?"

I got into photography to shoot boats when I was in my pre-teens. I had an interest in shipping because my grandfather sailed as an assistant engineer for a time with the "Poker Fleet." I kind of lost interest in it for a while but resumed after I got married.

What draws you to Great Lakes shipping and the working waterfront for images?

The boats have always fascinated me. There is just a beauty about them. They are working history and fading fast. Plus, as far as the traditional forward pilot house boats are concerned, they are unique in the world, design wise.

Do you have other specialty focus areas, as well?

I also love to shoot landscapes, and, more specifically, the Boundary Waters Canoe Area Wilderness and the North Shore of Minnesota. Lake Superior is always a great subject. I take my camera pretty much everywhere I go.



Travis Chadwick

Is there a favorite time of day or season to capture your best shots?

I really look forward to the late shipping season shots when the sea smoke and ice are out, even if it is unbearably cold!

Are most of your shots planned or spontaneous?

I usually try to pick a spot with the sun at my back, otherwise most of my shooting is unplanned. I tend to be more of an opportunist when it comes to photography.

What makes a great shipping or harbor shot?

As far as a great working waterfront shot is concerned, colors, good lighting or a dramatic sky or lake are always helpful. But I honestly think the boats speak for themselves.



Photos by Travis Chadwick



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