2018 Great Lakes Commission Annual Meeting
October 2-3 • INDIANAPOLIS, INDIANA
1-Agenda – p. 3

2-Minutes – p. 6

3-Action Items – p. 26

4-Speaker Topics – p. 42

5-Strategic Plan Update – p. 84

6-Reference – p. 137
# 2018 Great Lakes Commission Annual Meeting

**THE CONRAD HOTEL ● 50 WEST WASHINGTON STREET ● INDIANAPOLIS, IN 46204**

**FINAL AGENDA – September 27, 2018**

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### Monday, October 1

All times are EDT

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location/Leader</th>
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<tbody>
<tr>
<td>10:00 a.m.</td>
<td>Commissioner Registration</td>
<td>Conrad Hotel Outside West Foyer</td>
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<tr>
<td>12:00 p.m.</td>
<td>Introductions/Icebreaker/Meeting Overview</td>
<td>John Linc Stine, Chair Vienna East &amp; West Rooms</td>
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<tr>
<td>12:15 p.m.</td>
<td>Working Lunch</td>
<td>John Linc Stine, Chair Vienna East &amp; West Rooms</td>
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<tr>
<td>12:45 p.m.</td>
<td>Commissioner &amp; Staff Work Session</td>
<td>Darren Nichols, Executive Director</td>
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<tr>
<td>1:00 p.m.</td>
<td>Review and Discussion of GLC Mission/Vision</td>
<td>Darren Nichols, Executive Director</td>
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<tr>
<td>2:30 p.m.</td>
<td>GLC Structure and Revenue – Discussion and Recommendations</td>
<td>Darren Nichols, Executive Director</td>
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<tr>
<td>4:00 p.m.</td>
<td>Depart for Field Trip and Commissioner-Only Dinner</td>
<td>Indiana Statehouse Indiana State Library</td>
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### Tuesday, October 2

**Work Session (Commissioners & Staff Only)**

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<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location/Leader</th>
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<tbody>
<tr>
<td>7:30 a.m.</td>
<td>Breakfast</td>
<td>The Conrad Hotel West Foyer</td>
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<tr>
<td>8:15 – 9:20 a.m.</td>
<td>Program Area Committees</td>
<td>Hong Kong Room</td>
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<tr>
<td>9:25 – 10:30 a.m.</td>
<td>• Economic Development and Waterfront Community Revitalization</td>
<td>Hong Kong Room</td>
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<td>• Information Management and Blue Accounting</td>
<td>Hong Kong Room</td>
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<td>• Commercial Navigation</td>
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<td>• Water Management and Infrastructure</td>
<td>Hong Kong Room</td>
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<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Speaker(s)</th>
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<tbody>
<tr>
<td>10:30 a.m.</td>
<td>Break</td>
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<tr>
<td>10:45 a.m.</td>
<td>Call to Order</td>
<td>John Linc Stine, Chair</td>
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<td>Vienna North &amp; South Rooms</td>
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<tr>
<td>10:50 a.m.</td>
<td>Roll Call</td>
<td>Darren Nichols, Executive Director</td>
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<tr>
<td>11:00 a.m.</td>
<td>Business of the Great Lakes Commission</td>
<td>John Linc Stine, Chair</td>
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<td></td>
<td>• Approval of Agenda</td>
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<td></td>
<td>• Approval of Minutes from 2018 Semiannual Meeting</td>
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<td>• Discussion of Pending Resolutions</td>
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<td>• Report of Nominating Committee</td>
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<td>• Election of Officers</td>
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<tr>
<td>11:30 a.m.</td>
<td>Adjourn for Lunch</td>
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Annual Meeting (Open to All)

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>10:00 a.m.</td>
<td>Registration</td>
<td>Conrad Hotel</td>
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<td>Outside West Foyer</td>
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<tr>
<td>11:45 a.m.</td>
<td>Lunch and Welcome from Chair and Executive Director</td>
<td>John Linc Stine, Chair</td>
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<td>Darren Nichols, Executive Director</td>
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<td>West Foyer</td>
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<tr>
<td>1:00 p.m.</td>
<td>Reconvene and Call to Order</td>
<td>John Linc Stine, Chair</td>
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<td>Vienna North &amp; South Rooms</td>
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<tr>
<td>1:15 p.m.</td>
<td>Economic Impacts of Maritime Shipping in the Great</td>
<td>Craig Middlebrook, Saint Lawrence Seaway</td>
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<td>Lakes-St. Lawrence Region</td>
<td>Development Corporation</td>
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<td>1:40 p.m.</td>
<td>Maritime Transportation as an Economic Driver for the</td>
<td>Moderator: Matt Doss, Great Lakes Commission</td>
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<td>Great Lakes – St. Lawrence River Region</td>
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<td>• Trends in Laker Trade on the Great Lakes</td>
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<td>• Improving Infrastructure and Promoting Commerce</td>
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<td>through the St. Lawrence Seaway</td>
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<td>• Challenges and Opportunities Facing Great Lakes</td>
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<td>Ports</td>
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<td></td>
<td>• Industry Priorities for the Great Lakes-St. Lawrence</td>
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<td></td>
<td>Maritime Transportation System</td>
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<td>3:00 p.m.</td>
<td>Break</td>
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<td>3:15 p.m.</td>
<td>The Great Lakes Restoration Initiative: Its Economic</td>
<td>Moderator: Matt Doss, Great Lakes Commission</td>
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<td>Impact and Future Direction</td>
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<td>• Quantifying the Economic Impact of the Great</td>
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<td>Lakes Restoration Initiative</td>
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<td>• The Future Direction of the Great Lakes Restoration</td>
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<td>Initiative</td>
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<td>• Science-Based Collaboration to Inform Great</td>
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<td>Lakes Restoration through the GLRI</td>
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<td>• State Perspective on the GLRI</td>
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<td>4:15 p.m.</td>
<td>Observer Comments</td>
<td>Great Lakes Commission Official Observers</td>
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<td>5:15 p.m.</td>
<td>Adjourn</td>
<td>John Linc Stine, Chair</td>
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<tr>
<td>Time</td>
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<td>Location</td>
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<tr>
<td>6:00 – 7:30 p.m.</td>
<td>Reception for Commissioners and Guests</td>
<td>Tastings Bar</td>
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<td>Conrad Hotel Ground Floor</td>
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<tr>
<td>7:30 a.m.</td>
<td>Breakfast</td>
<td>The Conrad Hotel West Foyer</td>
</tr>
<tr>
<td>8:15 a.m.</td>
<td>Reconvene</td>
<td>John Linc Stine, Chair Vienna North &amp; South Rooms</td>
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<tr>
<td>8:35 a.m.</td>
<td>FEMA: Emerging Thoughts on Pre-Disaster Preparedness/Resiliency Planning in the Great Lakes Region</td>
<td>Mary Beth Caruso, FEMA Region 5 Mitigation Division Director</td>
</tr>
<tr>
<td>9:00 a.m.</td>
<td>Challenges and Opportunities for Enhancing Climate Resiliency</td>
<td>Moderator: Victoria Pebbles, Great Lakes Commission</td>
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<td></td>
<td>• Mayors – The Ground Game of Resiliency</td>
<td>John Dickert, Great Lakes and St. Lawrence Cities Initiative</td>
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<td>• Shoreline Community Resilience in the Great Lakes</td>
<td>Roy Widrig, New York Sea Grant</td>
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<td>• How to Not Coast for Our Coasts: The Next Generation of Shoreline Resilience is Now</td>
<td>Cameron Davis, GEI Consultants</td>
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<td></td>
<td>• A Federal Update on Resiliency Policy in the Great Lakes</td>
<td>Matt McKenna, Northeast-Midwest Institute</td>
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<tr>
<td>10:30 a.m.</td>
<td>Break</td>
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<tr>
<td>10:45 a.m.</td>
<td>Business of the Great Lakes Commission</td>
<td>John Linc Stine, Chair</td>
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<td></td>
<td>• Vote on Resolutions</td>
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<tr>
<td>11:45 a.m.</td>
<td>Invitation to Great Lakes Day Congressional Breakfast and 2019 Semiannual Meeting</td>
<td>John Linc Stine, Chair</td>
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<tr>
<td>11:55 a.m.</td>
<td>Closing Remarks</td>
<td>John Linc Stine, Chair Sharon Jackson, Vice Chair</td>
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<tr>
<td>12:00 p.m.</td>
<td>Adjourn Meeting</td>
<td>Darren Nichols, Executive Director</td>
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<tr>
<td>12:00 p.m. – 1:45 p.m.</td>
<td>Tri-Commission Lunch (invited guests)</td>
<td>The Conrad Hotel Singapore Room</td>
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Minutes

Attached for review and approval are minutes from the Commission’s 2018 Semiannual Meeting held in Washington, D.C. on March 6-7, 2018.

Included for your information are minutes of the Board of Directors meetings held on February 15, April 19, June 5, July 19, and August 16, 2018.
Summary of Actions


2. Approved four resolutions:
   - *An Agenda for Great Lakes Restoration and Economic Revitalization: Great Lakes Commission federal priorities for 2018*
   - *Great Lakes Priorities for 2018 Farm Bill Reauthorization*
   - *Supporting Growth of the Cruising Industry in the Great Lakes-St. Lawrence Region*
   - *U.S.-Canada Trade Integration and the Benefits of Cross-Border Trade*

3. Approved an action item accepting the report *Advancing best practices for integrated water infrastructure management*

4. Approved an action item to accept *Recommended actions for resolutions to be rescinded*

5. Announced the location for the 2018 Annual Meeting in Indianapolis, Indiana.

Summary Minutes
March 6, 2018

A Commissioner and staff work session was held on March 6 at 5:30 p.m. Eastern. Chairman John Stine, Minnesota, welcomed those in attendance. The following Commissioners, Associate Commissioners and Alternates were present:

Wayne Rosenthal, Loren Wobig Daniel Injerd, Stephanie Comer, Ben Brockschmidt - Illinois
Sharon Jackson, Bruno Piggott, Steve Fisher, Kay Nelson - Indiana
Jon Allan, Candice Miller, Emily Finnell, Peter Manning - Michigan
John Line Stine, Ann Rest, Jennifer Schultz, Paul Torkelson - Minnesota
Jim Tierney, Don Zelazny - New York
Craig Butler, Jim Zehringer, Karl Gebhardt, Jim Weakley, Tom Rayburn - Ohio
Colleen Fitzgerald-Hubble, Rosalyn Lawrence, Jim Whitestone, Bill Carr - Ontario
Tim Bruno, Brenda Sandberg - Pennsylvania
Jean-François Hould, Marc Gagnon, Frederic Lecomte - Québec
Patrick Stevens, Steve Galarneau, Dean Haen - Wisconsin

1) **Blue Accounting Update:** Steve Cole provided a brief overview of the Blue Accounting initiative, noting the partnership between GLC and TNC, and other organizations and foundations. Blue Accounting is a set of services to participants around the Great Lakes to provide common sources of data and information for establishing measurements and tracking progress toward shared goals. The GLC is presently working on five pilot issues under the initiative: aquatic invasive species and coastal wetlands (managed by TNC), and Erie Stat, source water, and maritime transportation (managed by GLC). A business plan has been established for the overall initiative, which is important to setting a path toward a sustainable, long-term management and funding model. Cole also discussed highlights from the October 2017 Great Lakes-St. Lawrence Governors and Premiers Summit in Detroit. This included the launch of a new Blue Accounting website and featured remarks about the initiative included in Michigan Governor Rick Snyder’s opening address.

Cole next introduced Nicole Zacharda to give an overview of the source water pilot. Zacharda provided a brief history of the pilot and discussed the collaborative process used to develop the goals and metrics of interest for the pilot program. Five goals and associated metrics have been established. The five goals for the pilot center around nutrient impacts; management strategies and planning; spill prevention and response; contaminants of emerging concern; and binational consistency. Zacharda also demonstrated features of the source water pilot website. The pilot is working to recruit 10 communities around the region to work with the pilot to demonstrate progress. Commissioners were asked to let staff know if there are communities in their state that should be engaging with the pilot.

2) **Water Infrastructure:** Victoria Pebbles discussed developments and activities under the GLC’s water management and infrastructure program area focusing on progress since the GLC adopted the Joint Water Action Plan at the 2017 Annual Meeting in Duluth. Pebbles described recommendations in the joint action plan, emphasizing the need to better understand water infrastructure assets in the region to more effectively manage these systems. She introduced a document to be brought before the GLC for approval the following day, *Advancing best practices for integrated water infrastructure management*. Finally, she noted that the GLC was invited to submit a letter of inquiry to the Joyce Foundation to support work related to water infrastructure.

3) The Commissioner-staff work session was adjourned for the day at 6:30 p.m.

**March 7, 2018**

1) **Call to Order:** The meeting was called to order at 8:30 a.m. EDT on March 7 by Chairman John Stine.

2) **Roll Call:** Interim Executive Director, Tom Crane called the roll. A quorum was present with all eight states and Ontario and Québec represented at the start of the meeting.

3) **Approval of agenda:** Chairman Stine briefly reviewed the agenda for the meeting. He asked to approve the agenda. The agenda for the meeting was approved unanimously.

4) **Approval of minutes of 2017 Annual Meeting:** Chairman Stine called for a motion to approve the minutes of the 2017 Annual Meeting held September 19-20 in Duluth. One minor correction was made to the draft minutes. A motion to approve the minutes was made by Minnesota, seconded by Indiana. The minutes, as corrected, were approved unanimously.

5) **Commission Business:** Chairman Stine presented the resolutions and action items to be taken up during the meeting. This included four resolutions: *An Agenda for Great Lakes Restoration and Economic Revitalization: Great Lakes Commission federal priorities for 2018*, *Great Lakes Priorities for 2018 Farm Bill Reauthorization*, *Supporting Growth of the Cruising Industry in the Great Lakes-St. Lawrence Region, U.S.-Canada Trade Integration and the Benefits of Cross-Border Trade*; and two action items: approving next steps for GLC work on infrastructure, and review of resolutions passed at the 2008 Semiannual Meeting. Chairman Stine reminded Commissioners of the GLC’s recent practice of reviewing historic resolutions for sunset on a 10-year basis.

Each of the resolutions were presented in more detail. The first was *An Agenda for Great Lakes Restoration and Economic Revitalization: Great Lakes Commission federal priorities for 2018*. Commissioner Don Zelazny (NY)
noted that this resolution is the GLC’s reason for being in D.C. for Great Lakes Day. He noted that the development of these priorities each year is important for maintaining momentum about achieving favorable policies for the region.

Chairman Stine introduced the resolution Great Lakes Priorities for 2018 Farm Bill and noted that the companion background report which provides a foundation for the resolution was accepted at the GLC’s September 2017 Annual Meeting. He asked Commissioner Karl Gebhardt (OH) to provide more information on the resolution. Commissioner Gebhardt thanked staff member Nicole Zacharda for her work on the resolution. He noted that a focus on rural development was added to the resolution. He commented on the order of the priority recommendations noting that they were not necessarily presented in priority order.

Chairman Stine introduced the resolution Supporting Growth of the Cruising Industry in the Great Lakes-St. Lawrence Region and asked Commissioner Steve Fisher (IN) to provide additional background on this resolution. Commissioner Fisher noted that data shared by the cruising industry suggested an opportunity for growth for cruising in the Great Lakes region and an increase in coastal Great Lakes cities that are improving cruise line visitor services. Commissioner Jon Allan (MI) also described a dramatic increase in the cruising industry in coastal Alaskan cities and the possibility of similar growth to occurring in the Great Lakes. Fisher explained that despite the potential for growth, current U.S. Customs and Border Patrol procedures disincentivize Great Lakes cruising operations. The resolution includes recommendations related to streamlining the process for clearing passengers. He further noted that the changing landscape of technology used in customs and border protection is constantly changing and any significant investments made with the goal of streamlining the existing regime will need to anticipate technological trends in the industry. Chairman Stine stated that adopting this resolution on cruising would send a signal to elected officials that the Great Lakes states and provinces are thinking about these issues.

Chairman Stine introduced the resolution U.S.-Canada Trade Integration and the Benefits of Cross-Border Trade and asked Commissioner Bill Carr (ON) to provide more information. Carr first highlighted the massive economic force that is the Great Lakes-St. Lawrence River region. He then noted the ongoing negotiations between the U.S., Canada, and Mexico surrounding the North American Free Trade Agreement (NAFTA). He also briefly discussed the U.S.’s intent to impose tariffs on steel and aluminum and the potential impacts of these tariffs on the region’s economy. Commissioner Allan stated that the implications of these proposed tariffs for the region are too great for the GLC to remain silent on the issue. Commissioner Jim Weakley (OH) noted that input from the steel industry would be necessary to advance a position on the tariffs and free trade. Commissioner Jean-François Houël (QC) stated that American tariffs on aluminum might prompt legal action by the Canadian government. He suggested that the tariff issue be addressed at a future GLC meeting.

Chairman Stine brought the memo and document concerning the action item Advancing best practices for integrated water infrastructure asset management up for consideration by the GLC. He noted that commissioners would be asked to support the approach outlined in the document.

Lastly, Chairman Stine introduced the following resolutions for sunsetting: Cooperative and Flexible Nonpoint Source Conservation Programs to Sustain a Healthy Great Lakes Basin Ecosystem (March 6, 2013); Measures to improve Great Lakes Water Quality including Reauthorization of the Federal Food Conservation and Energy Act (Farm Bill) of 2008 (October 8, 2010); Investing in a National Treasure: Great Lakes Commission Congressional Priorities for Fiscal Year 2009 (February 26, 2008); Nutrient Management in the Great Lakes-St. Lawrence River Basin (October 12, 2011); and Priorities for Reducing Phosphorus Loadings and Abating Harmful Algal Blooms in the Great Lakes-St. Lawrence River Basin (September 11, 2012).

6) The Commissioner and staff only work session adjourned at 9:30 a.m. Chairman Stine reconvened the meeting for the general session at 10:00 a.m.

7) Keynote Presentation #1: Chairman Stine introduced U.S. Environmental Protection Agency Region 5 Administrator Cathy Stepp. Administrator Stepp thanked Commissioners, Observers, and other audience
members for the opportunity to speak at the GLC meeting. Her remarks emphasized the importance of Great Lakes Restoration Initiative (GLRI) funding and Region 5’s commitment to working with regional stakeholders as a partner in environmental protection as opposed to serving a solely regulatory role.

8) **Report of the Interim Executive Director:** Tom Crane recognized the passing of former GLC Commissioner Bob Light. He then introduced Quebec Government intern Lou Paris and Program Specialist Ken Gibbons as staff attending their first GLC meeting. He noted the retirement of Gary Overmier from the GLC and the exit of Chief Information Officer Steve Cole. He provided updates on GLC communications and outreach activities, including Daily News, the Advisor newsletter, the Blue Accounting website, state-specific pages, and GLRI state factsheets. He also mentioned the upcoming move of the GLC offices.

9) **Progress Toward a New Farm Bill:** Ashley McKeon, senior staff of the Senate Committee on Agriculture, Nutrition, and Forestry, presented information on the development Farm Bill 2018 legislation. She noted that 39 programs, valued at $3 billion as authorized in current Farm Bill legislation, will expire if not reauthorized in a new Farm Bill. She stated that assessing the needs of these programs is difficult due to the data sharing protections afforded to producers and there is a need to balance individual privacy of producers and accountability to the program.

10) **Keynote Presentation #2:** Rear Admiral John Nadeau of the U.S. Coast Guard (USCG) was introduced by Chairman Stine. He stated that some of the primary goals of the USCG are to facilitate lawful trade and travel, modernize infrastructure, and improve capacity of maritime systems. He noted the diversity of competing interests involved in the ballast water discussion and that transparency amongst these stakeholders is key to the success of regulating ballast water systems. He expects to see better outcomes for the Great Lakes-St. Lawrence system as experience, staffing, and efficiency improve. He recognized that the Great Lakes is ground zero for ballast water issues and that the Great Lakes Water Quality Agreement (GLWQA) annex working group is a great venue for engagement.

11) **Observer Remarks:** Chairman Stine invited GLC Observers to give remarks on priorities and issues of common interest for them, the states, provinces, and the GLC. The following Observers spoke about their organization’s priorities and issues of common interest for the states, provinces and the GLC.

   - Tinka Hyde, Director, Great Lakes National Program Office, U.S. Environmental Protection Agency
   - Kristin Schrader, Great Lakes Observing System
   - Rear Admiral Nunan, U.S. Coast Guard 9th District
   - Carl A. Platz, P.E., Great Lakes Program Manager, U.S. Army Corps of Engineers
   - Joel Brammeier, President & CEO, Alliance for the Great Lakes
   - John Dickert, President and CEO, Great Lakes and St. Lawrence Cities Initiative
   - Jon Hortness, USGS Great Lakes Program Coordinator, USGS
   - Bradley Watson, Coastal States Organization
   - Lana Pollack, International Joint Commission
   - Russ Strach, U.S. Geological Survey
   - Danielle Chesky, Foreign Affairs, Trade and Development Canada

12) **Announcements and Presentations:** Radhika Fox from the U.S. Water Alliance presented their *An Equitable Water Future: Opportunities for the Great Lakes Region* report and invited Commissioners to the 2018 One Water Summit July 10-12 in the Twin Cities. Chairman Stine recognized Victoria Pebbles for her 25 years of service to the GLC, and Commissioner Allan recognized former GLC Executive Director Tim Eder for his service.

13) **Protecting the Great Lakes from Crude Oil Spills:** Commissioner Allan introduced five speakers to participate in a panel on crude oil spills: Matthew Child, International Joint Commission; Steve Lehmann, National Oceanic and Atmospheric Administration; Jerome Marty, University of Waterloo, Council of
Canadian Academies; Allan Beshore, Pipeline and Hazardous Materials Safety Administration; and Dale Bergeron, Minnesota Sea Grant.

Dale Bergeron presented a strategy for looking at adaptive-management options for oil transportation. The strategy focused on how individuals and agencies perceive and evaluate hazards and risk to social, economic, and environmental well-being. Specifically, he discussed systems thinking approaches, risk assessment processes, and the importance of multi-criteria decision analysis tools.

Allan Beshore discussed the PHMSA’s role in regulating oil transportation and spill response operations. His presentation highlighted the various types of pipeline facilities regulated by PHMSA; documented crude oil/refined petroleum/biofuel related accidents impacting people or the environment; and described applicable regulations, updated inspection protocols, revised notification requirements, and ongoing legislative developments.

Jérôme Marty presented a proposed path forward for shaping oil transportation policy in the Great Lakes region. He discussed characteristics of the oil transportation industry in the region and highlighted research/science gaps that could inform future approaches to policy development. He provided recommendations for implementing an integrated approach to oil transportation policy development including how data should be shared across the region and how this should inform shared decision making.

Steve Lehmann discussed the role of NOAA’s Office of Response and Restoration in the Great Lakes region, including the current divisional structure of the Office and the existing international agreement between the U.S. and Canada: the Canada-United States Joint Marine Pollution Contingency Plan. He also highlighted on-going and planned projects applicable to the Great Lakes and freshwater systems and future research and development priorities for the region and other freshwater systems.

Matthew Child discussed International Joint Commission (IJC) efforts to protect the Great Lakes from crude oil spills. He presented brief findings and recommendations from a 2006 report published by the IJC related to coordination, monitoring, and communication during spill events; and discussed an ongoing IJC Science Advisory Board analysis titled Assessment of Potential Impacts of Unrefined Liquid Hydrocarbons on Great Lakes Water Quality.

In discussion, the panelists noted that one of the biggest obstacles facing oil spill responders is that they receive most of their experience while working on live spills. However, there’s more spill-response data available today than ever before. It was noted that there is no forum for open discussion around spill response operations until there’s a crisis. There should be a platform for open discussion and education, as these needs become more complex to address when in a crisis. The panel also acknowledged that there needs to be improved coordination binationally, nationally, and regionally. Commissioner Brockschmidt asked the panel about the risks associated with moving to greener technologies like biofuel. Panelists responded that because the range of available biofuels is broad, they can only be classified as an emerging threat at this point. Future steps that could be taken to address such emerging threats include collecting the appropriate data on transportation, risks, and who/what will be affected by exposure. Creating tools to access this data and ensuring the right groups receive this data is critical.

14) **Business of the Great Lakes Commission:** Chairman Stine moderated a session addressing the following GLC business items:

- **Resolution  – An Agenda for Great Lakes Restoration and Economic Revitalization: Great Lakes Commission federal priorities for 2018**

  A motion was made by Illinois and seconded by Indiana to approve the resolution as presented.

  **Action:** The motion to approve the resolution passed unanimously.

- **Resolution  – Great Lakes Priorities for 2018 Farm Bill Reauthorization**
A motion was made by Ohio and seconded by New York to approve the resolution as presented.

**Action:** The motion to approve the resolution passed unanimously.

**Resolution – Supporting Growth of the Cruising Industry in the Great Lakes-St. Lawrence Region**

A motion was made by Indiana and seconded by Ontario to approve the resolution as presented.

**Action:** The motion to approve the resolution passed unanimously.

- **Resolution – U.S.-Canada Trade Integration and the Benefits of Cross-Border Trade**

A motion was made by Ontario and seconded by Québec to approve the resolution as presented.

**Action:** The motion to approve the resolution passed unanimously.

- **Action Item – Advancing best practices for integrated water infrastructure asset management**

A motion was made by Michigan and seconded by Ontario to accept the report.

**Action:** The action item was approved unanimously.

- **Action Item – Recommended action for resolutions to be rescinded.** The commission was presented with the following resolutions to rescind following the established 10-year sunset rule:
  - Cooperative and Flexible Nonpoint Source Conservation Programs to Sustain a Healthy Great Lakes Basin Ecosystem (March 6, 2013)
  - Measures to improve Great Lakes Water Quality including Reauthorization of the Federal Food Conservation and Energy Act (Farm Bill) of 2008 (October 8, 2010)
  - Investing in a National Treasure: Great Lakes Commission Congressional Priorities for Fiscal Year 2009 (February 26, 2008)
  - Nutrient Management in the Great Lakes-St. Lawrence River Basin (October 12, 2011)
  - Priorities for Reducing Phosphorus Loadings and Abating Harmful Algal Blooms in the Great Lakes-St. Lawrence River Basin (September 11, 2012)

A motion was made by Illinois and seconded by Pennsylvania to rescind the resolutions.

**Action:** The motion to approve the resolution passed unanimously.

15) **Invitation to the 2018 Annual Meeting in Indianapolis and Closing Remarks:** Vice Chair Sharon Jackson (IN) invited the commissioners to attend the 2018 GLC Annual Meeting in Indianapolis, Indiana. She thanked all the attendees for participating in the Semiannual Meeting.

16) **Adjournment:** Chairman Stine adjourned the meeting at 5:00 p.m. Eastern.

Respectfully submitted,

Thomas Crane, Deputy Director

RM/TRC
The meeting was called to order at 3 p.m. EST by John Stine, Chair. The following members were present:

Loren Wobig - Illinois
Jon Allan, Emily Finnell - Michigan
John Stine - Minnesota
Jim Tierney - New York
Karl Gephardt - Ohio
Bill Carr - Ontario
Jean Francois Hould - Quebec
Tim Bruno - Pennsylvania
Steve Galarneau, Pat Stevens (joined late) - Wisconsin

Staff present: Tom Crane, Matt Doss, Steve Cole, Beth Wanamaker, Joe Bertram

1) **Introductions and Call Objectives:** The February agenda was approved unanimously. January minutes were approved unanimously with the addition of Jean Francois Hould to attendees.

2) **Budget for 2018 office move:** Crane noted that the Board approved an office move last year. A seven-year lease has been signed for new space close to the old office. Currently the space is being built out and the move is scheduled for mid-April. The space is newer and bigger and the beginning base rent is comparable to what the GLC is currently paying. A memo on purchases necessary to furnish the new office was included in the Board package. Staff estimates that $160,000 of the $1.3 million GLC reserves will be needed for the move. Allan noted that the reserves have grown substantially with gains in the market and will basically cover the withdrawal.

Wisconsin moved to consider the proposal. New York seconded.

The proposal was unanimously approved.

3) **Update on SAM planning and review of draft resolutions:** Crane noted that the most recent agenda was included in the Board package. He noted that the Blue Accounting kiosks from the Governor’s Summit will be set up at the hotel. Wanamaker noted that briefing books will not be mailed to Commissioners this year; instead electronic copies will be emailed in advance and physical copies will be brought to the meeting. She asked the Board to let her or Reilly Manz know if they have scheduled office visits separately so that staff can coordinate visits.

Crane noted that the Resolution Review Committee had recommended five resolutions to sunset and they are outlined in a memo included in the Board package.

Federal priorities resolution: Crane noted that the document was approved last week and has gone to the printer. The resolution was revised to reflect changes made to the document since the January Board call.

Farm Bill resolution: Crane noted the language has been simplified since January’s version. This version incorporates changes from Wisconsin.

Cruise ship industry resolution: This version incorporates changes from GSGP and the Indiana delegation. Bruno noted he may have potential changes or comments on including Pennsylvania a destination for customs pre-clearance. Hould noted that the ports that were mentioned have been targeted for pre-clearance as low hanging fruit. Doss suggested adding wording that additional cities could be targeted. Doss is going to move forward with the current language knowing that it may change.
NAFTA resolution: Carr noted that in the context of the ongoing NAFTA negotiations, Ontario thought it would be appropriate for the GLC to recognize its value. The draft reflects the similar GSGP resolution and the Midwest Legislative Conference. Houüd noted Quebec’s strong support. Wobig asked if it would be appropriate to include Mexico in the resolution; Carr said a mention of Mexico would be welcome. Gephardt noted that he needs to check with the Ohio governor’s office. Crane agreed to send the GSGP resolution and the GLC resolution to Board members.

Crane noted that Stine asked staff to put an action item together on future work for the Water Management & Infrastructure Committee; it was included in the Board packet. Crane noted Pebbles will send the action item back to the program committee next week.

Doss agreed to consider putting together a briefing or memo on the President’s infrastructure proposal for Commissioners before the Semiannual Meeting.

4) Status of 2018 joint statement on federal legislative priorities: Crane noted that the GLC has released a joint priorities document with other groups for the past 10 years and it’s been an effective communications tool. Crane noted that putting the document together has been challenging this year because of invasive species language. He forwarded language suggested by Doss to the Board before the call. Tierney noted that this document is very effective and important.

Wobig asked to change the word “complete” to “continue.” Crane asked the Board for feedback on this change. Galarneau noted they would prefer complete but are willing to accept the change. Tierney, Gephardt, Allan and Bruno agreed.

5) NOAA FFO for Habitat Restoration: Allan noted that this proposal is similar to the GLC’s current NOAA Habitat work but could include work outside the AOCs. Braun noted that this may be an opportunity to do projects that were more difficult to fund. The GLC was approached by the states of Michigan and Ohio to help manage this project. Stevens noted that he appreciated that the proposal included information on the connection to the GLC’s strategic plan. Allan suggested keeping Ontario in the loop on the work.

6) Other Business: This item was skipped due to lack of time.

7) Staff Transition Update: Staff was not present to take notes for this portion of the call.

The meeting adjourned at 4:30 p.m.

Respectfully submitted,

Tom Crane, Interim Executive Director
/bw
Great Lakes Commission
Board of Directors
Conference Call Minutes
April 19, 2018

The meeting was called to order at 3 p.m. EDT by John Stine, Chair. The following members were present:

- Loren Wobig, Dan Injerd - Illinois
- Sharon Jackson - Indiana
- Emily Finnel - Michigan
- John Stine - Minnesota
- Jim Tierney, Don Zelazny - New York
- Karl Gephardt, Jim Zehringer - Ohio
- Bill Carr, Ranissah Samah - Ontario
- Jean Francois Hould - Quebec
- Tim Bruno - Pennsylvania
- Steve Galarneau - Wisconsin

Staff present: Darren Nichols, Tom Crane, Matt Doss, Victoria Pebbles, Heather Braun, Joe Bertram

1) **Introductions and Call Objectives:** The April call agenda was approved unanimously. The decision to approve February Board call minutes was deferred until the June Board call/meeting

2) **Introduction of Darren Nichols:** Chairman Stine introduced new Executive Director Darren Nichols. Nichols introduced himself, talked briefly about his previous work history and background and described his first week with the Commission. He stated that things are going very well, that he is excited about the opportunity and that his early emphasis will be to begin reaching out to Board members, commissioners and other partners. He said that he has already connected with several Board members and commissioners and has had several excellent conversations.

3) **Review of Draft FY 2019 Budget:** Tom Crane and Joe Bertram introduced the draft FY 2019 budget and gave a brief overview of the budget, discussed the major changes that are anticipated between FY 2018 and FY 2019, and highlighted those line items where the biggest changes will occur. Summary materials were provided to the Board in advance of the call. Crane noted that the Finance Committee had met via conference call on April 11 to receive a briefing and discuss the budget. Bertram noted that the main changes in the general budget are occurring in personnel costs, travel costs and meetings. He noted that the main change in the restricted budget was a significant reduction in the grants and contracts line item due to the timing of projects beginning and ending under the habitat restoration program. After brief discussion, the Board instructed the staff to continue to work with the Finance Committee on the draft budget and to plan for an all commissioner call which has been the practice of the GLC over the past many years. The Board will be asked to approve the budget at its June meeting.

4) **Plans for GLC Open House and In-person Board Meeting:** Stine and Sharon Jackson discussed the opportunity to hold an open house and an in-person Board Meeting in early June. The open house will serve a dual purpose of showing off the new GLC office and introducing people to Darren Nichols. It was proposed to hold the open house on the afternoon/evening of June 4 followed by the Board meeting on June 5. Nichols suggested that the staff will work with the Executive Committee; John Stine, Sharon Jackson and Jon Allan to plan the agenda for the meeting. The Board agreed by common consent to hold an open house and Board meeting in Ann Arbor on June 4-5.

5) **Select Project Updates:** Crane introduced two staff members, Victoria Pebbles and Heather Braun to provide brief updates on two projects: Blue Accounting and Phase II of the GLRI Economic Impact Study.
Pebbles introduced herself and informed the Board that she is serving as the Interim Blue Accounting Director serving in this role since the departure of Steve Cole in March. Pebbles briefly described the Blue Accounting mission, its structure, its accomplishments to date and the challenges that Blue Accounting has faced. She highlighted the pilots that the GLC has been tasked to lead; ErieStat, Source Water and Maritime. Pebbles then focused on the current status of Blue Accounting. She mentioned that her focus has been to address some structural and relational issues that have hindered the Blue Accounting initiative. She mentioned that a new Steering Committee has been formed and tasked with assuming greater oversight and been granted greater decision-making authority that should streamline the management structure. She mentioned a series of productive retreats; the most recent one held in March. This workshop used the RACI model (Responsible, Accountable, Consulted and Informed) to help clarify roles and create better dynamics within the Blue Accounting management and pilot teams.

Braun introduced herself and briefly described the Phase II of the GLRI Economic Impact Study which is being co-led by the GLC and the Council of Great Lakes Industries. Braun referred the Board to a summary of the project which provides detail on the history of the GLRI and the need to quantify the economic benefits of the program. Braun reminded the Board that the Phase 1 effort began in June 2017 and was completed in October 2017. A Phase 1 report was not issued due to the limited scope and timeframe associated with the analysis. The benefits of Phase 1 were primarily to see where those economic benefits exist and how, through more detailed analysis, the benefits can be better quantified and understood. Braun mentioned that the Phase II analysis will enhance Phase 1 in the following ways: lengthening the timeframe for evaluating the benefits (20-25 years out); adding quality of life impacts; adding tourism impacts; and enhancing the case study analysis through stakeholder interviews and by adding additional data sources to make the analysis more quantitative. Braun concluded by saying that the Phase II effort is due to be completed by end of September 2018.

6) Semiannual Meeting Debrief: Crane then led a discussion with the Board regarding the recently completed Semiannual Meeting held in Washington DC. The Board members offered positive comments regarding the meeting in general and mentioned specifically the following items;

- Program Committee meetings – these were viewed very favorably. The Board likes the format and appreciates the opportunity to interact with staff and discuss issues in greater depth.
- Private time with commissioners and staff – this was also viewed favorably. The Board feels that this should be continued as a way to build relationship within the organization.
- Commissioner only dinner. The Board feels it is important for the commissioners to have time to talk among themselves
- Public session. Having the observer comments earlier in the meeting (not at the end) was viewed favorably. The public session was the right length.
- Great Lakes Day Breakfast. Very important. This is a great way for the Commission to elevate its presence with Congress.

The one area that generated the most discussion was the meeting location and timing. Washington DC meetings are very expensive and the GLC continues to lose money on these meetings even as registration fees have been increased the past three years. The Board suggested that the format for holding Semiannual Meetings (the GLC’s Semiannual Meetings rotated among the jurisdictions from 1989-2007) be reevaluated and discussed at a future Board meeting.

7) Other Business: Stine mentioned the 2018 One Water Summit to be held in mid-June in Minneapolis. Stine reminded the Board that Radhika Fox from the Water Alliance invited the GLC to participate in the One Water Summit. Stine urged the GLC to put a team together to participate in the Summit.

8) Adjourn: With no further business, the meeting adjourned at 4:30 p.m.

Respectfully submitted,

Tom Crane, Deputy Director
/bw
The meeting was called to order at 8:10 a.m. EST by John Stine, Chair. The following members were present:

- Loren Wobig, Dan Injerd - Illinois
- Sharon Jackson, Vice-Chair - Indiana
- Jon Allan, Angela Ayers (joined late by phone) - Michigan
- John Stine, Chair - Minnesota
- Don Zelazny - New York
- Tom Rayburn - Ohio
- Trevor Snyder (by phone) - Ontario
- Jean Francois Hould - Quebec
- Tim Bruno - Pennsylvania
- Steve Galarneau - Wisconsin

Staff present: Darren Nichols, Tom Crane, Matt Doss, Beth Wanamaker, Erika Jensen, Joe Bertram, Laura Kaminski, Heather Braun, Victoria Pebbles.

Others: U.S. Army Corps of Engineers (USACE): Lt. Col. Dennis Sugrue, Scott Thieme, Jennifer Jury

1) **Introductions and Call Objectives:** Minutes from the February board call and the agenda were approved.

2) **Budget:** Crane explained that the finance committee is presenting the Board with an unbalanced budget; the budget imbalance is partially structural and partially related to the office move. If a change is not made, it will be necessary to continuing using reserve funds in the future. Bertram noted that the D.C. meeting and staff travel are a large piece of the imbalance. Stine suggested holding the Semiannual Meeting in D.C. every other year so that Commissioners having congressional officer visit go to Great Lakes Day in off years. Allan noted that repeated withdrawals of the reserves to support operations is unsustainable and suggested planning to increase dues in 2020 incrementally. Stine noted that he will need to have language for his legislature by September and other Board members may have similar timelines. Allan noted that Ontario and Quebec are not currently paying dues and suggested that change. Injerd noted that the GLC needs to build a case about how certain funds should not be made up of outside grants.

Allan (MI) moved to consider the budget; Wobig (IL) seconded.

Crane noted that 60-70% of the budget is GLRI funding; Zelazny noted that this may leave the GLC vulnerable to sudden cuts to GLRI. Bruno asked staff to prepare a memo on the impact of GLRI cuts. Stine requested it consider any other areas of risk as well.

The budget was passed unanimously.

Crane noted that FY17 has higher GO costs because of the office move and associated administrative costs, but other items are tracking relatively well.

3) **Annual meeting planning:** Jackson presented the proposed agenda for the 2018 Annual Meeting. She noted that the agenda follows the format of the 2018 Semiannual Meeting, including more time for staff presentations and commissioner-only discussions. Jackson noted that both the Governor and Lieutenant Governor will likely attend. Stine suggested inviting officials from the Ports of Indiana. Galarneau suggested maritime issues could work as a panel discussion. Stine noted that there is an opportunity for the GLC to be a strategic partner with ports on economic throughput on the Great Lakes. Rayburn noted that the Martin and Associates study on the economic impact of Great Lakes shipping will be updated this summer; Board members agreed that there should be a presentation on the update. Injerd noted that the
Trump administration may have a new approach to funding infrastructure projects based on the Soo Locks model and the GLC may want to discuss it. Pebbles noted that the Green Infrastructure Champions project will be producing a policy report and that may be of interest as a presentation. Zelazny suggested a presentation or panel on climate change science. Doss noted that USACE will likely move forward with their Great Lakes Coastal Resiliency study and the GLC might want to look ahead at the benefits for the states. Bruno seconded this suggestion and Galarneau suggested looking at how to deal with impacts without hardening the shoreline. Zelazny noted that in New York there is a growing desire to harden shorelines and no one is looking at the collective impact. Wobig noted the connection with FEMA’s green infrastructure methodology. Allan noted the growing groundwater risk in the Great Lakes as a possible topic. Pebbles noted the GLC worked on groundwater issues several years ago; Allan asked to be sent the report. Bruno suggested that the topic is a good fit for discussion with the Great Lakes Executive Committee (GLEC). Allan suggested hearing from the new executive director of the Great Lakes Protection Fund. Stine suggested discussing commissioner transitions at the commissioner dinner. Crane noted that certain resolutions will be proposed to be sunsetted at the ten-year mark and commissioners and staff will start identifying resolution topics soon.

4) **Strategic program and projects:** Pebbles noted that the GLC adopted a new strategic plan in 2017 that identified seven program areas and the board will hear from managers from four program areas.

- **Habitat:** Braun noted that since 2008 the GLC has been awarded more than $50 million to support habitat restoration and more than 95% has been passed through to the states and local communities. She noted that the GLC only works in areas where states have requested it. Work is strongly regional and includes more than 30 projects at six Areas of Concern. Braun noted that potential upcoming projects include work in the Cuyahoga River and Muskegon Lake AOCs; it is also likely to receive non-AOC funding for projects in St. Clair-Detroit River area. Braun agreed to send the list of potential projects out to the board. Galarneau noted that selection of the sites is sensitive and to include that info on the email Braun sends out. Braun noted that NOAA’s selection of projects is based on NOAA’s mission and they defer some projects to U.S. EPA and USACE. Braun noted that the GLC also brings the states into the Great Lakes Phragmites Collaborative.

  a. **Water Quality:** Zacharda noted that this program area has had a steady funding base and historically strong partnerships, allowing for innovative projects like market-based approaches. Opportunities include integrating the Great Lakes Sediment and Nutrient Reduction Program (GLSNRP) with other GLC work and enabling more innovation in agricultural conservation. Challenges include limited staff to focus on urban stormwater.

  b. **AIS:** Jensen noted that the AIS program is well funded and robust, thanks especially to the GLRI. She also noted that the GLC plays a strong role as a regional facilitator, convener and collaborator. Jensen noted that funding for the Great Lakes Panel on Aquatic Nuisance Species is not sufficient and is augmented with funding from the GLRI and other projects. The panel has struggled to fulfill its leadership role because of historical lack of funding. She noted that maintaining neutrality is a challenge, as is “collaborative fatigue” with so many groups.

  c. **Information Management & Blue Accounting:** Pebbles noted that over the past few months the GLC has reconfigured Blue Accounting leadership with The Nature Conservancy to streamline the work process. Pebbles noted that the early results from ErieStat will be released on June 6. Pebbles noted that the GLC has a unique opportunity for information management regionally. She noted that challenges/opportunities include the amount of data and needing staff leadership to manage it.

  d. **Water Management & Infrastructure:** Pebbles noted that when the strategic plan was adopted there was very little work in this program area. Currently the GLC has a joint action plan for clean water infrastructure and services as well as continuing work on the Great Lakes Regional Water Use Database. She noted that it is likely the GLC will get funding to pursue the asset management best practices portion of clean water action plan. Pebbles noted the joint action plan was
completely funded out of the general operations budget. Opportunities include better connecting water quality work with water infrastructure work. Challenges include communicating the value that GLC brings and the fact that primary implementation for infrastructure is at the local level.

a. **Commercial Navigation:** The GLC has a long history of working on this issue and several commissioners are subject matter experts. The GLC recently launched the Great Lakes Maritime Careers website and is expanding the Blue Accounting maritime transportation pilot to provide a more complete reflection of goals in the regional maritime strategy released by the governors and premiers in 2016. Challenges include staff capacity; Doss noted he is not an expert in the subject matter. Specific direction from commissioners about work they would like staff to do would be helpful.

b. **Economic Development:** This program area links multiple projects. A key highlight is work to review the economic impact of the GLRI. There is growing interest in the socioeconomic value of the Great Lakes and the potential to build on restoration actions under the GLRI to advance broader economic revitalization in waterfront areas. Staff capacity and expertise is a challenge. Staff would benefit from more specific guidance from commissioners.

Discussion: Nichols asked Board members to consider where they would like to see the GLC focus.

Wobig/Injerd: Commercial navigation and the potential for economic development. GLC can advocate for growth. The tie in for mitigation and green infrastructure has a lot of potential.

Galarneau: Economic development and waterfront community revitalization. Habitat and remediation; ways of tying this all together. Water management and infrastructure could also include commercial navigation. Panel funding is important; GLC could push for the Panel to take leadership role instead of ceding responsibility to other small groups.

Rayburn: Noted that Commissioner Zehringer would have input on the agriculture side if he was present. Suggested Doss ask the Commercial Navigation program area committee to consider funding for the GLC’s maritime work. The GLC’s previous modal shift study could be revisited and linked with the issue of short-sea shipping. Agreed with Galarneau about the importance of the Panel. Urban wastewater important focus considering consent decrees; does GLC have the cache to be effective?

Zelazny: New York is trying to anticipate where AIS and habitat mitigation should take place; very difficult. This funding also supports economic development. Water infrastructure is a huge need but not clear the GLC has a role. Asset management seems early; GLC could provide guidance on what is happening across the country.

Hould: Commercial navigation and water infrastructure. From the One Water Summit to the Conference work, GLC could team up with people who are already working on these issues. Should work closely with the Conference on commercial navigation.

Allan: Struggles with what the GLC will add to commercial navigation without additional funding. Doesn’t know what value the GLC adds in looking at infrastructure. Focus on value of restoration and reinvestment, including Blue Accounting. Risk and resilience in the nearshore; what is the perspective the GLC is bringing to the table?

Stine: There is consensus-building that needs to be done for commercial navigation and advocacy for the Soo Locks. There is not an effective group advocating for the locks; could be GLC. Nationally, no one has assembled the needs of the Great Lakes regarding infrastructure.

Jackson: GLC could be a leader in how to evaluate water resources and infrastructure that currently exists.

Bruno: Look at what GSGP are leading vs. what the GLC can do. GSGP can excel on economic development; piggyback on what they are doing in this area. Look to develop a coordinated regional “ask” on water infrastructure.
Allan noted that in every case, GLC would like to do work that needs to be paid for by someone else. Crane noted that maritime leadership is focused on the Conference currently; does the GLC want to enter that space? Allan noted that the Regional Maritime Entity sits in the Conference but could sit within the GLC if it had capacity. Injerd noted that this is part of a bigger dialogue about how the Conference and GLC interact. He also noted that commissioner engagement is lacking and that they could be better included in decision-making. Allan noted that he thinks the role of the Board is to manage engagement with the members of their delegation. Stine noted that appointments are made differently by each delegation. There was discussion about ensuring that commissioners in each state consider adding expertise in their delegation. Pebbles and others noted that clarity on roles for the GLC and commissioners would be beneficial. Stine suggested not doing more until more resources are available.

5) **USACE presentation on Soo Locks**: LTC Sugrue summarized the Soo Locks memo to the Board. Rayburn noted there are no plans to expand the size of Lakers. Sugrue noted that the new lock would be larger than the Welland Canal but 95% of the boats do not go through the Welland. Decreases risk, does not increase size.

Contributed funds discussion: GLC would serve as a fiscal agent. USACE cannot use contributed funds without an agreement in place. Sugrue cited a USACE agreement with the City of Chesapeake for a bridge as an example. Would not affect ownership of the locks. No expectation of increased operations cost. No obligation for states or other parties to contribute funds to the project. Typically, this type of agreement is used for a smaller project; multiple contracts will be required for this project over multiple legislatures. USACE is currently trying to compete for funds in the FY19 workplan; could potentially use FY19 and state of Michigan funds for the guidewalls. The Department of Homeland Security’s National Infrastructure Protection Plan includes the Soo Locks. Currently, every year projects must re-compete for funding; they are trying to change the process. General Toy will soon sign the Economic Validation Study Report and Post Authorization Change Report for the new Soo lock. USACE agreed to provide report or executive summary on June 29 after it has been signed. Doss noted that congressional offices are poised to put the number included in the report in WRDA.

6) **Review and Discussion of GLC Mission/Vision**: Nichols recapped conversation with partners and commissioners over the past few weeks. The GLC is well respected and staff are appreciated in the region. Partners are most interested in Nichols’ background as a consensus builder. Areas of concern include balance between environment and economy; belief that the GLC has never reached its full potential; the role of Blue Accounting and what it could be; revenue model and federal/NGO/private influence; consistency of communications between the staff and commissioners, board and commissioners, etc.; engaging states, provinces AND tribes; and GLC’s role with information management. Areas of uncertainty include what the GLC is and what it does. Strong sense that the GLC is a collaborator and convener. Do not see GLC as aligned well with industry and tribes. Many commissioners feel like they have been left out of conversations. Commissioners want to see Board minutes; not all delegations have the same level of communications with their delegation chair. GLC appointments should be more prestigious. Level of appreciation of the Great Lakes is incredibly high. Staff is capable but spread thin without capacity in certain areas that commissioner would like to work on. Mission is broad, funding model is complicated, varying levels of trust.

Nichols noted that the GLC is an interstate compact agency; closest thing in law to the Constitution itself as states can create treaties amongst themselves. Executive committee agreed to consider how to position for the transition to new commissioners and governors. The Board will consider extending the commissioner only portion of the 2018 Annual Meeting to continue this conversation. Nichols will continue conversation with the executive committee.

7) **Soo Locks discussion**: Angela Ayers (MI) joined for this portion of the call. Stine noted he is concerned about the funding model. Ayers noted that looking at the administration’s infrastructure proposal, any type of nonfederal contribution will help prioritize the project. Hould noted Quebec is very concerned about this funding model and the effect it could have on the entire maritime system. Zelazny noted that the new funding model pits states against each other and pits projects against other projects. Injerd noted that it will be difficult to assemble information on why each project is necessary. Jackson noted that the Soo Locks affect the entire country and should be entirely federally funded. Stine suggested that the governors and premiers should be the first ask, not the GLC. Rayburn agreed that a new Poe lock is a national, not...
regional asset. Stine asked Nichols to draft a letter to USACE so USACE can ask OMB questions about the contract. Executive Committee will consider next steps after governors’ call next week.

8) **WRDA amendment**: House WRDA bill is being marked up this week; amendment has been proposed to provide for 80% federal cost share for the operations and management of any project at Brandon Road. Originally was 100% nonfederal. Secretary must consult governors and get congressional authority to implement any new technology. Illinois and Michigan both support; authorities in Ohio, Pennsylvania and Wisconsin have said to other people that they have no objections. Stine noted he does not believe Minnesota would oppose. Doss agreed to revisit with Board members by tomorrow morning.

9) **Ballast water**: This portion of the meeting was delayed because of time. Stine noted that he does not want the GLC to develop the ballast water standards unless directed to by the governors and premiers. Jackson noted that the bigger question is if a new ballast water commission is needed. The Board agreed to reconvene to discuss this topic at 4 p.m. EST on June 14.

The meeting adjourned at 3:30 p.m.

Respectfully submitted,

Darren Nichols, Executive Director
/bw
The meeting was called to order at 3 p.m. EST by John Stine, Chair. The following members were present:

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<td>Loren Wobig, Dan Injerd</td>
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<td>Sharon Jackson</td>
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<td>Greta Gauthier, John Stine</td>
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Staff present: Darren Nichols, Tom Crane, Matt Doss, Beth Wanamaker, Erika Jensen, Joe Bertram, Victoria Pebbles.

1) **Introductions and Call Objectives:** Bruno asked to amend the June 5 minutes to change “governors” to “GSGP” in his quote. Minutes from the June 5 in-person meeting of the Board as well from the June 14 conference call were approved unanimously with that change. The agenda was also approved.

2) **Quarterly Financial Report:** The GLC fiscal year ended on June 30; staff is working to close out the end-of-year financials. A full update will be provided on the August board call. Bertram noted that the June board meeting included a financial update through April 2018.

3) **FEDSTACC request:** GLC has been invited to provide support to the Federal-State AOC Coordinating Committee. U.S. Environmental Protection Agency – Great Lakes National Program Office (USEPA-GLNPO) supports GLC serving in this role. GLC would ask for approximately $15,000. Galarneau suggested considering the Lake Area Management Plans (LAMPs) as a framework for FEDSTACC coordination.

4) **Ballast water legislation:** In April, the Senate took up a Coast Guard authorization bill that included ballast water provisions from the Vessel Incidental Discharge Act (VIDA). The legislation failed in the Senate because of concerns from Great Lakes senators. Compromise ballast water provisions were subsequently developed, titled the Vessel Discharge Reform Act (VDRA). The GLC submitted comments on the compromise legislation, including a new provision that would create a Great Lakes Discharge Commission. Senate offices working on the bill continue to request guidance from the GLC on an alternative approach to the discharge commission. It appears likely that the Coast Guard bill will come forward soon with some form of compromise ballast water provisions.

Questions for Board were posed that include: 1) should staff continue to engage with Senate staff on this issue; and 2) what approach does the GLC support on regional discussions on ballast water? Gephardt noted that Ohio would like to see some process move forward to continue the discussion. Tierney and Galarneau agreed. Galarneau supported getting language into the legislation for a third-party process. Jackson noted the legislation would establish a single standard set by U.S. EPA for the Great Lakes states; the new commission would not be the decision-maker, only offer consensus input. Jackson argued that creating another commission isn’t necessary as the GLC could reach consensus among its members. Bruno noted that Pennsylvania would oppose another stand-alone commission. Doss noted that legislation would give the process more stature and potential additional funding, and potentially require U.S. EPA and the U.S. Coast Guard to formally consider the recommendations. The Board directed staff to continue to engage with Senate committee staff members on opportunities for GLC input on the revised bill.
5) **USACE Soo Locks request:** The Detroit District is asking the Board to decide if it would like to send a letter of intent to USACE committing the GLC to enter into a “contributed funds agreement” for the Soo Locks upgrade. A letter of intent and/or a contributed funds agreement would not commit the GLC or member states to provide funds but would enable the GLC and its members or other non-federal entities to contribute funds to the project. Several Board members expressed concern over entering into an agreement that could allow the Corps to receive contributed funds and spend those funds without any obligation to fund or continue the project. Others noted that this may send a message that might establish a precedent for participating in a project that is supposed to be fully federally funded. Nichols noted that the Corps has expressed a certain urgency to consider the request now so that the project can be requested for inclusion in the President’s budget by February and to establish a mechanism by which Michigan (and possibly other states) can contribute funding possibly before the fall election. Nichols clarified that the GLC would serve as a nonfederal fiscal agent, not a nonfederal sponsor. Jackson asked for clarity about whether the USACE could move forward without the GLC; Nichols noted the project would remain authorized for full federal funding but, without a nonfederal contributed funds agreement, would likely not compete with other projects; the USACE has given its opinion that projects that have funding commitments from nonfederal sponsors are viewed more competitively by the Office of Management and Budget (OMB). Jackson suggested that the USACE could enter into a contributed funds agreement with Michigan and that GLC involvement could be revisited in the future. Numerous Board members expressed agreement with that suggestion.

The Board agreed to reconsider if multiple jurisdictions with interest in committing funds toward the project come forward in the future. Stine asked staff to craft a letter declining the offer and requested that the Board see the draft letter before it goes to the USACE.

6) **Annual Meeting:** Crane noted that the basic schedule of the Annual Meeting agenda has been set and staff are looking for guidance from the Board on topics for sessions. Stine suggested a presentation on the new study on the economic impact of the Great Lakes maritime sector. Tierney suggested a panel on the future of the GLRI and key “lessons learned” from the past years of the program. Gephardt agreed and noted there has been discussion about greater engagement of the states in distribution of the funds, and that with Action Plan III, the timing is ripe to consider engaging with the states or the GLC. Stine suggested there may be an opportunity to work with EPA to be more proactive and innovative in GLRI implementation, and suggested including someone from Region 5, potentially Administrator Cathy Stepp. Pebbles noted that staff is wrapping up a green infrastructure policy analysis and would like to offer a briefing at the meeting. Tierney supported a green infrastructure policy session, especially considering resiliency and weather. Wobig suggested an update on Brandon Road coordination. Injerd noted that at some point the GLC might want to get a briefing from USACE on the new funding model for the Soo Locks and other projects. Tierney suggested a Harmful Algal Bloom update as many states are working on the issue. Stine suggested having Observer comments before the end of the meeting. Crane noted that there may be a Compact Council meeting in the same hotel following the meeting and that staff will coordinate that with the GLC meeting.

7) **Executive Director update:** The executive director update was deferred due to limited time.

With no further business, the call was adjourned at 4:30 p.m.

Respectfully submitted,
Darren Nichols
Executive Director
/bw/tc
The meeting was called to order at 3 p.m. EST by John Stine, Chair. The following members were present:

- Loren Wobig - Illinois
- Sharon Jackson - Indiana
- Emily Finnell - Michigan
- John Stine - Minnesota
- Don Zelazny - New York
- Karl Gephardt, Gary Obermiller - Ohio
- Bill Carr - Ontario
- Tim Bruno - Pennsylvania
- Jean Francois Hould - Quebec
- Steve Galarneau - Wisconsin

Staff present: Darren Nichols, Tom Crane, Matt Doss, Beth Wanamaker, Erika Jensen, Joe Bertram,

1) **Introductions and Call Objectives:** The Agenda and July Board Meeting minutes were approved.

2) **End of FY Financial Report:** Bertram noted that the year-end financial statements were sent to the Board previously. The statements reflect a net operating loss of approximately $116,000 ($80,000 over budgeted loss of $36,000). GLC is under budget on salaries and benefits but over budget on the general operations due to the office move. Meeting expenses are a big loss. No state dues are outstanding currently. GLC has $1.1 million in cash reserves and a healthy gain in investment accounts. Auditors will be coming in this fall to look at FY18 financials and the audit committee will be working with them. Any Board members or commissioners interested in serving on the audit committee should reach out to Bertram.

3) **Ballast Water:** The Great Lakes delegation has put forth a proposal to create a new Great Lakes Discharge Commission to make recommendations on ballast water management. The GLC responded to the proposal with comments, welcoming the intent to recognize the unique needs of the Great Lakes, but questioning the need for a separate new commission. Senate EPW committee and certain offices asked for input on an alternative; GLC responded that it is open to serving as a convener and decision-maker. There are concerns about whether a mandate from Congress conflicts with current GLC bylaws; staff is asking for clarification. Stine noted the possibility of litigation in the case Congress compels certain actions and the states individually disagree and expressed interest in performing the function without the mandate. Doss noted that it is a priority of some members that there be a formal structure and process for discussing ballast water in the region. There is strong bipartisan support for the overarching Coast Guard legislation and a strong desire to move the legislation but no specific time frame for doing so. Senate will reconvene after Labor Day and recess again in October through November elections. Zelazny asked to keep the issue on the sidebar in case it needed to be discussed at the Annual Meeting; Stine agreed.

4) **Soo Locks:** Nichols noted that the Executive Committee and staff followed up with the Detroit District and said it was premature for the GLC to write a letter of interest in playing a fiscal role for the Soo Locks. Stine noted that the Duluth Port Authority appointed a new Executive Director and he has not heard from her yet about engagement with the issue. Wobig noted that the Locks have come up in several other meetings he has been in, and the USACE funding approach is spreading to other projects.

5) **Annual Meeting:** Jackson noted that the draft meeting agenda has been sent to the Board and the commissioner-only portions of the meeting will begin on Monday. Nichols noted that the only resolution staff is considering at this point is one committing the GLC to develop a set of targeted priorities and a look at the GLC’s revenue structure. Crane noted that staff is doing an initial review of resolutions to be sunset and will develop a recommendation for the Board. Commissioners agreed that the issue of...
maintaining shallow draft harbors should be included in either the maritime or resiliency panels. Stine noted that if the Semiannual Meeting is rotated away from the D.C. area, the GLC could take a deeper dive on the issue in the spring. Nichols also noted that Galarneau, Wobig and Zehringer have agreed to serve as the nominating committee; there was no objection to this approach or to the draft agenda.

5) **2019 Semiannual Meeting Planning:** Stine noted that the Board has received a memo outlining concerns over continuing to hold the Semiannual Meeting in D.C. He noted that if we moved the meeting to late May or early June, new commissioners may be able to join. Stine noted that he is partial to the idea of a smaller group of commissioners going to D.C. and to the idea of not going to D.C. as often to save money. However, he also noted that some commissioners may view it as a lost opportunity and that the Board should work on articulating the value of the change to the organization overall. Jackson supported the proposed plan. Zelazny noted that New York’s fiscal year ends at the end of March, so a later date would work better for N.Y. commissioners. Galarneau, Bruno, Wobig and Finnell, and Houl concurred. Carr agreed and noted that he experienced this model pre-2008 and thought it worked well. The Board agreed to the proposed approach.

6) **Executive Director update:** Nichols thanked the Board for its help introducing him to people in the states and provinces and noted that most of his initial introductory travel is complete.

7) **Other Business:** Crane noted that ROI letters are out. Nichols noted that the GLC has received several grant renewals in the past few weeks. Doss noted that legislation has been introduced in the Senate that would affect state permitting authority under Section 401 of the Clean Water Act. The legislation, titled the "Water Quality Certification Improvement Act," (S. 3303), would require state decisions on whether to certify a project under CWA Section 401 to be based only on water quality reasons from the project in question, not other sources. The measure would also task states with publishing clear requirements for water quality certification requests. Doss invited input or concerns from Board.

With no further business, the call was adjourned at 4:30 p.m.

Respectfully submitted,

Darren Nichols
Executive Director
/bw
Action Items

• Resolution – Support for Advancing Construction of a Second Poe-Sized Soo Lock: The Soo Locks provide reliable access to raw materials used in agriculture, food production, manufacturing, steel production, power generation, and other industries nationwide and are a key component of the Great Lakes-St. Lawrence maritime transportation system, with nearly 100 percent of the iron ore needed for U.S. steel production passing through the Soo Locks. This proposed resolution calls for:
  o The U.S. President to include the maximum amount of annual funding that the Army Corps of Engineers can execute each year on construction of a new large Soo lock in the FY 2020 and subsequent budget requests;
  o Congress to appropriate the requested funding; and
  o The U.S. Army Corps of Engineers to allocate funding from the FY 2019 workplan to complete the design and begin construction of the new Soo lock.

• Additional DRAFT Resolutions – two draft resolutions will be presented to the Commission for consideration and discussion at the meeting:
  o A draft resolution relating to an assessment of the responsibilities of the enacting states, and the roles and responsibilities of the Commission under the Great Lakes Basin Compact; and
  o A draft resolution relating to the Commission’s authorities under the Great Lakes Basin Compact.

• Action Item – Recommended actions for resolutions to be rescinded: The Resolutions Review Committee met via conference call on August 29, 2018 to discuss six resolutions passed at the 2008 Annual Meeting. The resolutions were discussed and five were recommended to be sunset, including:
  o Support for the extension of the Federal Production Tax Credit and Federal Energy Efficiency Policy
  o Great Lakes Commission support for the Great Lakes-St. Lawrence River Basin Water Resources Compact
  o Reducing atmospheric toxic deposition to the Great Lakes
  o Great Lakes Commission support for legislation reauthorizing the Great Lakes Legacy Act
  o Great Lakes Commission support for the City of Chicago’s bid to host the 2016 Olympic and Paralympic Games

The Resolution Review Committee recommended that the sixth resolution, Heightened urgency for Soo Lock expansion, be sunset and updated. The Committee believes that it is important for the GLC to be on record supporting this project.
RESOLUTION
DRAFT – Sept. 17, 2018

Support for Advancing Construction of a Second Poe-Sized Soo Lock

Whereas, the Soo Locks provide reliable access to raw materials used in agriculture, food production, manufacturing, steel production, power generation, and other industries nationwide and are a key component of the Great Lakes-St. Lawrence maritime transportation system, with nearly 100 percent of the iron ore needed for U.S. steel production passing through the Soo Locks; and

Whereas, in 2017, 76 million tons of cargo valued at $5.8 billion passed through the Soo locks, generating $22.6 billion in economic activity in Canada and the United States and supporting more than 123,000 jobs in the two countries;

Whereas, currently only the Poe Lock can handle the largest vessels, with 89 percent of all cargo passing through the Soo locks limited to the single Poe Lock; and

Whereas, our sole reliance on the single 50-year-old Poe Lock puts our regional and national economies at risk, with the Department of Homeland Security (DHS) describing the Soo Locks as the “the Achilles heel of the North American industrial economy;” and

Whereas, DHS has projected that a six-month, unplanned closure of the Poe Lock would result in a nearly complete shutdown of regional steel production, 11 million job losses in the United States and 5 million in Canada and Mexico, a severe recession, and a $1.1 trillion decrease in national GDP; and

Whereas, the U.S. Army Corps of Engineers recently completed a Soo Locks Economic Validation Report that documents and establishes a benefit-cost ratio of 2.42 from the construction of a new Soo lock, thereby setting the stage for an updated authorization for the project; and

Whereas, the Great Lakes Commission has supported the construction of a second, 1,200-foot-long “Poe-sized” lock since the project was first authorized in the Water Resources Development Act of 1986; and

Whereas, Congress recognized the national and international economic interest in a second full-sized lock in the Water Resources Development Act of 2007, which authorized full federal funding of the project; and

Whereas, the building of a second large lock at the Soo from two obsolete smaller locks may take as long as 10 years from the time construction is initiated, thus further placing the economies of the United States and Canada in an extended period of risk; and


Therefore, Be it Resolved, that the Great Lakes Commission urges the President to include the maximum amount of annual funding that the Army Corps of Engineers can execute each year on construction of a new large Soo lock in the FY 2020 and subsequent budget requests, and urges Congress to appropriate the requested funding.

Be it Finally Resolved, that the Great Lakes Commission urges the Army Corps of Engineers to allocate funding from the FY 2019 workplan to complete the design and begin construction of the new Soo lock.
Importance:
The Soo Locks are Nationally Critical Infrastructure. All domestically produced advanced high strength steel used to manufacture products like automobiles and appliances is made with taconite (iron ore) that transits the Poe Lock. The benefits of a New Soo Lock reflect a reduction in risk associated with the existing single point of failure for the nation’s supply chain of iron ore shipped from Lake Superior ports to the steel mills located in the lower Great Lakes. The New Soo Lock is expected to provide annual benefits of $77.4 million and a Benefit-Cost Ratio of 2.42 at the current Federal discount rate (2.75%).

Construction Next Steps (Upon Receipt of Funds):
• Resume design efforts CURRENTLY ON HOLD AWAITING FUNDING
• Award Upstream Channel Deepening contract during the first year of funding
• Award Upstream Approach Walls contract during the second year of funding

$32 million has been expended to date; funds were used for downstream channel deepening, cofferdam construction, planning and design. Total work is estimated to cost approximately $1 billion and is broken into three phases, listed below, in the order in which construction contracts are to be awarded.

Risk Reduction Opportunity:
Funding full capabilities in the Fiscal Year 2019 Work Plan reduces risk for the Nation’s iron ore supply chain by completing construction of the New Soo Lock one shipping season earlier and providing a $30 million cost savings.

Contact Information:
Mollie Mahoney (Project Manager), (313) 226-2033
Maureen.H.Mahoney@usace.army.mil

Website:
https://www.lre.usace.army.mil/About/Highlighted-Projects/New_Soo_Lock/

Updated as of: Sept. 10, 2018
Memorandum

To: Great Lakes Commissioners, Associate Commissioners and Alternates

Fr: Tom Crane, Deputy Director

Re: Report of the Resolutions Review Committee; Recommended actions for the resolutions passed at the 2008 Annual Meeting

Da: September 24, 2018

Since 2016, it has been the practice of the GLC to review existing resolutions upon their 10-year anniversary and recommend whether those resolutions should be retained (stand as originally passed), updated or sunnsetted.

A committee of commissioners has been assigned to work with the staff to review the resolutions passed 10 years previously and recommend to the Board a suggested action for each resolution prior to the corresponding Annual or Semiannual Meeting.

The Resolutions Review Committee met via conference call on August 29 to discuss the six resolutions passed at the 2008 Annual Meeting. The Commissioners participating on the call were Bill Carr (ONT), Steve Galarneau (WI), Jennifer Schultz (MN) and Loren Wobig (IL). The resolutions discussed on the call are:

- Support for the extension of the Federal Production Tax Credit and Federal Energy Efficiency Policy
- Great Lakes Commission support for the Great Lakes-St. Lawrence River Basin Water Resources Compact
- Heightened urgency for Soo Lock expansion
- Reducing atmospheric toxic deposition to the Great Lakes
- Great Lakes Commission support for legislation reauthorizing the Great Lakes Legacy Act
- Great Lakes Commission support for the City of Chicago’s bid to host the 2016 Olympic and Paralympic Games

The following describes the recommendation of the Resolutions Review Committee and the rationale for the recommendation:

Great Lakes Commission support for the City of Chicago’s bid to host the 2016 Olympic and Paralympic Games.

Recommendation: Sunset resolution
**Rationale:** This resolution was passed for a specific event which has passed. It is no longer relevant.

**Reducing atmospheric toxic deposition to the Great Lakes Species**

**Recommendation:** Sunset resolution

**Rationale:** This resolution presented a request to reinstate a program which has been discontinued. The program was discontinued; the resolution is no longer relevant.

**Great Lakes Commission Support for the reauthorization of the Great Lakes Legacy Act**

**Recommendation:** Sunset resolution

**Rationale:** The Legacy Act was reauthorized in 2008. It is now funded under the GLRI and appears to be functioning well. It doesn’t seem necessary to voice support for the Legacy Act as long as the GLRI maintains a focus on AOC cleanup and restoration.

**Great Lakes Commission support for the Great Lakes-St. Lawrence River Basin Water Resources Compact**

**Recommendation:** Sunset resolution

**Rationale:** The Water Resources Compact and Sustainable Water Resources Agreement have officially been in place for 10 years. This resolution is mostly “Mom and Apple Pie”. The last resolved clause pledges GLC support for the implementation of the Compact and Agreement. This was addressed formally when the Commission signed a Memorandum of Understanding (MOU) with the Council of Great Lakes Governors in 2009 which establishes the Commission’s role regarding the management of the Great Lakes-St. Lawrence River Regional Water Use Database.

**Support for the extension of the Federal Production Tax Credit and Federal Energy Efficiency Policy**

**Recommendation:** Sunset resolution

**Rationale:** The federal Production Tax Credit (PTC) has been successful at stimulating investment in clean renewable energy. The PTC was last authorized in the FY16 Omnibus Appropriations Bill, passed on December 18, 2015 with a five-year extension. The five-year extension included a phase-down beginning in 2017; phasing down by 20 percent each year through 2019. The FY16 five-year extension of the PTC had strong bipartisan support and provided much needed policy certainty after years boom-bust cycles because the tax credit was only authorized over one or two-year stints.

**Heightened urgency for Soo Lock expansion**

**Recommendation:** Sunset the resolution and update it

**Rationale:** With the recent developments in the discussions surrounding the Soo Locks, it seems appropriate to update this resolution. The 2008 resolution was the most current statement of support for the Soo Lock and the Resolution Review Committee believes that it is important for the GLC to be on record supporting this important project.

Please let me know if you have questions about these recommendations from the Resolution Review Committee.
Whereas, on Dec. 13, 2005, the Great Lakes governors and premiers signed the Great Lakes-St. Lawrence River Sustainable Water Resources Agreement (the “Agreement”) and the governors committed to seek passage of the Great Lakes -St. Lawrence River Basin Water Resources Compact (the “Compact”) to help protect the region’s ecosystem by ensuring the sustainable use and management of the waters of the Great Lakes-St. Lawrence River; and

Whereas, all eight Great Lakes states have demonstrated their support for the Compact by enacting legislation to approve the Compact and implement it into state law; and

Whereas, Ontario has approved the Agreement and provisions necessary to implement it into provincial law and Québec is expected to complete its approval process soon; and

Whereas, the Agreement and the Compact reaffirm the commitment to the water management principles set forth in the Great Lakes Charter of 1985 and the Charter Annex of 2001, while recognizing that future diversions, withdrawals and consumptive uses have the potential to significantly impact the environment, the economy and the welfare of the Great Lakes region; and

Whereas, the Agreement and the Compact enable the states and provinces to act together to protect, conserve, restore, improve and effectively manage the waters and water dependent resources of the region in a way that is durable, efficient and retains and respects state and provincial water management authority within the Great Lakes-St. Lawrence River region; and

Whereas, the Great Lakes Charter of 1985, Annex 2001, the Agreement and the Compact exemplify the strong regional commitment to protect, conserve, restore and improve the waters and water-dependent natural resources of the Great Lakes-St. Lawrence River Basin; and

Whereas, the Council of Great Lakes Governors facilitated the implementation of the Agreement by assisting and supporting the states and provinces, including their efforts to adopt enabling legislation to meet the requirements of the accords; and

Whereas, in July 2008, 16 Senators and 45 Representatives from the Great Lakes Congressional Delegation, led by Sens. Carl Levin and George Voinovich and Reps. James Oberstar, Vernon Ehlers, John Conyers and Steven LaTourette introduced or co-sponsored legislation in their respective chambers of Congress to grant consent to approve the Compact; and

Whereas, on Aug. 1, 2008, the U.S. Senate recognized the significance of the Compact and provided legislative consent to it by approving Senate Resolution 45; and

Resolution proposed for sunsetting
Whereas, on Sept. 23, 2008, the U.S. House of Representatives completed congressional consent for the Compact by passing Senate Resolution 45; and

Whereas, President Bush has communicated his support for the Compact and his intention to sign consent legislation passed by the U.S. Congress.

Therefore Be it Resolved, that the Great Lakes Commission applauds the Great Lakes-St. Lawrence River governors and premiers and the Council of Great Lakes Governors for their leadership and their tireless efforts in the development and signing of the Great Lakes-St. Lawrence River Basin Water Resources Compact and Agreement; and

Be it Further Resolved, that the Commission applauds the legislatures of the Great Lakes states for adopting the Great Lakes-St. Lawrence River Basin Water Resources Compact with a vote margin of 95 percent in favor; and

Be it Further Resolved, that the Great Lakes Commission applauds the U.S. Congress on its swift approval of the Great Lakes-St. Lawrence River Basin Water Resources Compact; and

Be it Further Resolved, that the Commission applauds the President for signing this critical piece of legislation into law; and

Be it Finally Resolved, that the Great Lakes Commission pledges its service, support and expertise to its member states and provinces and the Great Lakes-St. Lawrence River Basin Water Management Regional Body to assist in the implementation of the Great Lakes-St. Lawrence River Basin Water Resources Compact and the Great Lakes-St. Lawrence River Sustainable Water Management Agreement.

Adopted at the 2008 Annual Meeting of the Great Lakes Commission, Québec City, Québec, October 7, 2008
Resolution proposed for sunsetting

Adopted on Oct. 7, 2008

Resolution: Reducing atmospheric toxic deposition to the Great Lakes

Whereas, deposition of mercury and other toxic chemicals via the atmosphere contributes to serious water quality problems in the Great Lakes-St. Lawrence River region, including necessitating the issuance of warnings to limit consumption of some species of fish from the Great Lakes and inland bodies of water; and

Whereas, air regulatory agencies in the eight Great Lakes states and two provinces have worked collaboratively for nearly two decades to promote understanding of management options for reducing toxic chemical deposition to the Great Lakes, including focused work under the Great Lakes Air Deposition (GLAD) program and the regional air emissions inventory program; and

Whereas, the importance of these issues was recognized by state and provincial leadership in the Great Lakes Toxic Substances Control Agreement, signed by the Great Lakes governors in 1986 and premiers in 1988; and

Whereas, the U.S. Congress recognized the importance of these efforts in their framing of the Great Waters section of the Clean Air Act Amendments of 1990; and

Whereas, U.S. and Canadian governments have committed to working jointly to address these issues under Annexes 12 and 15 of the Great Lakes Water Quality Agreement; and

Whereas, the recommendations on toxic substances chapter of the Great Lakes Regional Collaboration Strategy highlights the importance of reducing and eliminating air toxic deposition to the Great Lakes, with particular emphasis on eliminating mercury emissions; and

Whereas, the provinces of Ontario and Québec recognize the importance of continued financial support for the GLAD program to help understand impacts of atmospheric toxic deposition to the Great Lakes and the St. Lawrence River and to identify appropriate management responses; and

Whereas, the U.S. Environmental Protection Agency (U.S. EPA) has funded the GLAD program over the last five years at a consistent level of $1.1 million per annum with these funds being directed toward targeted research and monitoring directed by the Great Lakes states; and

Whereas, the Great Lakes Commission has called upon the U.S. Congress in February 2008 to increase funding for the GLAD program to $4 million per annum as part of the region’s legislative priorities; and

Whereas, the U.S. EPA has announced its intention to permanently discontinue funding for the GLAD program starting in fiscal year 2009; and
Whereas, U.S. Sen. Carl Levin and the states of Michigan, Minnesota and New York have submitted letters to the U.S. EPA requesting reversal of this decision.

Therefore, Be It Resolved, that the Great Lakes Commission urges the U.S. EPA to restore funding for the GLAD program to continue state-led activities to achieve the goals outlined in the Clean Air Act, the Great Lakes Water Quality Agreement and the Great Lakes Regional Collaboration; and

Be It Further Resolved, that the Commission urges the U.S. Congress to elevate this program to “line item” status and increase its funding to help the Great Lakes states and provinces reduce and eliminate air toxic deposition to the Great Lakes.

Adopted at the 2008 Annual Meeting of the Great Lakes Commission, Québec City, Québec, October 7, 2008.
Resolution proposed for sunsetting

Resolution: Great Lakes Commission support for legislation reauthorizing the Great Lakes Legacy Act

Whereas, The United States-Canada Great Lakes Water Quality Agreement of 1972, as amended, provides for the designation of Areas of Concern in need of remedial actions to address documented pollution problems; and

Whereas, 31 U.S. and binational Areas of Concern have been designated, each with a Remedial Action Plan process that coordinates and focuses the efforts of multiple levels of government and other stakeholders; and

Whereas, substantial progress has been made in characterizing the sources and causes of beneficial use impairments, identifying necessary remediation activities, establishing restoration targets, and generating broad stakeholder involvement in and support for the Remedial Action Plan process; and

Whereas, substantial resources are needed to remediate contaminated sediments, which are a persistent source of toxic pollution to the Great Lakes from the Areas of Concern and contribute to 11 of the 14 beneficial use impairments identified in the Great Lakes Water Quality Agreement; and

Whereas, the Great Lakes Legacy Act has become a highly successful environmental cleanup program for the Great Lakes and the cornerstone of the Areas of Concern restoration program, having removed nearly one million cubic yards of contaminated sediments since its passage in 2002; and

Whereas, substantial need remains for remediation of contaminated sediments in the Great Lakes Areas of Concern, with cleanup costs projected to total between $1.5 and $4.5 billion; and

Whereas, reauthorization of the Legacy Act is among the Great Lakes Commission’s top legislation priorities for 2008, including numerous recommendations for improving the Act’s effectiveness and efficiency developed by a task force of contaminated sediment experts from the eight Great Lakes states; and

Whereas, Congress has passed legislation that reauthorizes the Legacy Act for two years and implements several policy changes that will make the Act more effective; and

Whereas, Congress failed to increase the authorized funding level for the Act to $150 million per year as recommended by the Commission, the Council of Great Lakes Governors, the Council of Great Lakes Industries, the Healing Our Waters-Great Lakes Coalition and the Great Lakes Regional Collaboration Strategy to Restore and Protect the Great Lakes; and

Adopted Oct. 7, 2008
Whereas, the reauthorized Legacy Act requires the U.S. EPA Administrator to provide assurance that the agency has conducted a “reasonable inquiry to identify potentially responsible parties connected with the site;” and

Whereas, the committee report for the legislation (Report 110-849) states that Congress does not expect this requirement to significantly delay cleanup projects, stating specifically that the language does not require U.S. EPA to conduct additional inquiries to identify potentially responsible parties when it has already done so, or to identify every responsible party related to a site; and

Whereas, Congress further encouraged U.S. EPA to coordinate with State authorities and utilize existing State efforts as a basis complying with the reauthorized and amended Legacy Act.

Therefore, Be it Resolved, that the Great Lakes Commission applauds the U.S. Congress - and the leaders of the House and Senate Great Lakes Task Force, in particular - for crafting and facilitating passage of legislation reauthorizing and strengthening the Great Lakes Legacy Act; and

Be it Further Resolved, that the Great Lakes Commission calls on Congress to increase the authorized funding level for the Legacy Act to $150 million a year when the Act is reauthorized in the next session of Congress, as recommended by the Great Lakes Regional Collaboration Strategy and the Great Lakes Commission, and

Be it Further Resolved, that Great Lakes Commission calls on the Administration to reverse its opposition to increased funding authorization of this important program; and

Be it Further Resolved, that the Great Lakes Commission calls on U.S. EPA’s Great Lakes National Program Office to follow the congressional intent by avoiding undue delays and minimizing the investment of resources in providing assurances that the agency has conducted reasonable inquiries to identify responsible parties for potential Legacy Act sites;

Be if Finally Resolved, that the Great Lakes Commission calls on U.S. EPA and the Great Lakes states to utilize provisions of the reauthorized Legacy Act to restore habitat at Legacy Act sites and conduct site assessments, at full federal expense, to accelerate the pace of contaminated sediment remediation efforts in the Great Lakes.

A dopted at the 2008 A nnual Meeting of the G reat L akes C ommission, Q uébec C ity, Q uébec, October 7, 2008.
Resolution proposed for sunsetting

Adopted Oct. 7, 2008

Resolution: Great Lakes Commission support for the City of Chicago’s bid to host the 2016 Olympic and Paralympic Games

Whereas, the City of Chicago has been selected by the United States Olympic Committee as the official U.S. Bid City for the 2016 Olympic and Paralympic Games, thus entering it as a finalist in the International Olympic Committee’s bid process; and

Whereas, hosting the Olympic games in Chicago and surrounding area would generate significant direct economic impact to the binational Great Lakes region by attracting an estimated six million visitors and participants from throughout the continent and the world to venues in greater Chicago and surrounding states, and by stimulating commensurate investment in facilities and infrastructure; and

Whereas, the international media exposure derived from the Olympic Games – an estimated 30 billion viewers worldwide - would provide an excellent opportunity to market the Great Lakes/St. Lawrence region as a desirable travel and recreation destination; and

Whereas, the Games would also provide the opportunity to expose to a global audience the ecological uniqueness and value of the Great Lakes/St. Lawrence water resource, along with the binational efforts being undertaken to restore and protect that resource; and

Whereas, other direct benefits to the Great Lakes/St. Lawrence states and provinces would be the lengthy and extensive physical preparations for the Olympics, which would hopefully include regionwide efforts to present the cleanest, most ecologically sound environment for the Games possible, thus making the Games a golden opportunity to promote, on the U.S. side, a federal interest in the restoration package articulated by the Regional Collaboration.

Therefore, Be it Resolved, that the Great Lakes Commission enthusiastically endorses the City of Chicago’s bid for the 2016 Olympic and Paralympic Games.
Resolution proposed for sunsetting

Adopted Oct. 7, 2008

Resolution: Support for extension of the Federal Production Tax Credit and Federal Energy Efficiency Policy

Whereas, the production tax credit (PTC) provides a tax credit for the first 10 years of a renewable energy facility's operation; and

Whereas, power plant air emissions are responsible for approximately one-third of nitrogen oxide emissions, two-thirds of sulfur dioxide emissions, and one-third of carbon dioxide emissions nationally; and

Whereas, renewable energy sources such as wind, solar, geothermal and biomass can avoid or reduce these air emissions, as well as reduce water consumption, thermal pollution, waste, noise and adverse land-use impacts; and

Whereas, the PTC, originally enacted as part of the Energy Policy Act of 1992, expired on three separate occasions between 1999 and 2004; and

Whereas, the PTC was set to expire on Dec. 31, 2007, but was extended through Dec. 31, 2008, as part of the Tax Relief and Health Care Act of 2006 (H.R. 6408); and

Whereas, the PTC has been a major driver of wind power development over the past six years; and

Whereas, wind power contributed 68 percent of all new electric power generating capacity in the Great Lakes states in 2007; up from 24 percent in 2006, 6 percent in 2005, and 1.2 percent in 2000-2004; and

Whereas, according to a technical report by the U.S. Department of Energy, an 8,000 MW increase in wind development among the Great Lakes states (1,000 MW in each state) is estimated to generate $9.7 billion in economic output and save more than 11 million gallons of water; and

Whereas, the U.S. Department of Energy report further shows that by achieving a 20 percent wind contribution to the U.S. electrical supply by 2030, the Great Lakes states would conserve more than 616 billion gallons of water – 70 times the amount of bottled water consumed in the U.S. in 2007 or about 90 percent of all Great Lakes water consumptively used in a year – and generate $79 billion in economic output; and

Whereas, the U.S. Department of Energy report further shows that by achieving a 20 percent wind contribution to the U.S. electrical supply by 2030, the Great Lakes states would reduce carbon emissions by 1.2 billion tons; and
Whereas, the inconsistency of the PTC contributes to a boom-bust cycle of development that plagues development of wind and other renewable energy sources; and

Whereas, a July 2008 letter from the National Governors Association to congressional leaders unanimously called for congressional action to extend the federal PTC and support federal incentives to increase energy efficiency across the nation; and

Whereas, the PTC is a critical federal policy incentive to produce new jobs and develop clean energy sources that will benefit the Great Lakes region.

Therefore Be it Resolved, the Great Lakes Commission applauds the U.S. Congress for passing legislation to extend the Production Tax Credit; and

Be it Finally Resolved, the Commission urges Congress to support extension of the Production Tax Credit and energy efficiency measures beyond 2009.

Adopted at the 2008 Annual Meeting of the Great Lakes Commission, Québec City, Québec, October 7, 2008.
Adopted on Oct. 7, 2008

Resolution: Heightened urgency for Soo Lock expansion

Whereas, the Great Lakes Commission has been on record in support of building a second 1,000 foot “Poe-sized” Lock at Sault Ste. Marie, Mich., since soon after the project was authorized in the Water Resources Development Act of 1986; and

Whereas, the Commission has repeatedly taken the lead in support of the project by securing a waiver on interest for the non-federal cost share, coming to agreement on a cost share allocation among the eight Great Lakes states, and acting as the non-federal sponsor for the project; and

Whereas, Congress has recently recognized the national and international economic interest in the project by authorizing, in the Water Resources Development Act of 2007, full federal funding of the project; and

Whereas, there is a national interest in reducing the risk of having a single point failure that could cripple the U.S. steel industry, power generation in the mid-continent, and other core industries, a risk that has been perceived as significantly greater in the post-9/11 era, and thus was factored into the Corps’ most recent Limited Reevaluation Report for the project; and

Whereas, some 70 percent of the U.S.-flag fleet’s carrying capacity on the Great Lakes is restricted by size to only the Poe Lock, a volume of cargo tonnage for which there is no alternative transportation mode with sufficient capacity; and

Whereas, events on Sept. 24, 2008, in which a mechanical malfunction of the 40-year old Poe Lock caused an interruption of vessel traffic, demonstrated the heightened risk of having no redundancy at a critical chokepoint in the marine transportation system of vital interest to two countries; and

Whereas, the building of a second large lock at the Soo from two obsolete smaller locks will likely take as long as 10 years from the time it is initiated, thus placing the economy of the United States and Canada in an extended period of risk.

Therefore, Be it Resolved, that the Great Lakes Commission urges Congress to act quickly to provide adequate resources to the U.S. Army Corps of Engineers’ Soo Lock Expansion Program in 2009 to enable construction and completion of the new lock as soon as possible.
Speaker Topics

Economic Impacts of Maritime Shipping in the Great Lakes – St. Lawrence Region – executive summary
Prepared by Martin Associates

Assessing the Investment: The Economic Impact of the Great Lakes Restoration Initiative – project summary report
Prepared by the Council of Great Lakes Industries, the Great Lakes Commission, Alliance for the Great Lakes, the National Wildlife Federation's Great Lakes Regional Center, the Great Lakes Metro Chambers Coalition, Michigan's Office of the Great Lakes, and the University of Michigan’s Water Center

Great Lakes Regional Green Infrastructure Policy Analysis: Addressing Barriers to Implementation – executive summary and press release
Prepared by the Great Lakes Commission and Credit Valley Conservation
ECONOMIC IMPACTS
OF MARITIME SHIPPING
in the
GREAT LAKES - ST. LAWRENCE REGION
EXECUTIVE SUMMARY
INTRODUCTION

From the earliest days of European settlement, the Great Lakes and St. Lawrence River have been utilized as a means of transportation. Great Lakes cities were founded as trading posts along a vast marine highway that facilitated commerce in an era pre-dating railroads and highways. This relationship to the water has enabled the region to thrive and today, the Great Lakes- St. Lawrence region is the industrial and agricultural heartland of both the United States and Canada – with a combined GDP of more than $6 trillion U.S. dollars. This output would represent the third-largest economy in the world — behind the U.S. and China — if it were a country.

Over the last 200 years, navigation improvements in both the United States and Canada have enhanced the waterway. The Welland Canal first connected Lake Ontario and Lake Erie in 1829, enabling vessels to bypass Niagara Falls. The Soo Locks have made the St. Marys River navigable, connecting Lake Superior to the lower four Great Lakes and the St. Lawrence Seaway. The St. Lawrence Seaway has tamed the St. Lawrence River, enabling ships to sail from Lake Ontario to the Atlantic Ocean since 1959.

The resulting deep-draft inland navigation system is the longest in the world, extending 3,700 kilometers (2,300 miles) into the North American heartland. This bi-national trade corridor complements the region’s rail and highway network and offers customers a cost-effective, safe, reliable and environmentally smart means of moving raw materials, agricultural commodities and manufactured products to and from domestic and global markets. Cargoes include iron ore, coal, steel, aluminum, machinery, stone, cement, grain, sugar, fertilizers, road salt, petroleum products and containerized goods. These cargoes become the staples of everyday life — food and other household items; buildings, factories, roads and bridges; vehicles and planes; and the energy that powers cities and towns.

Three distinct vessel-operator communities serve the waterway. These include U.S. domestic carriers ("U.S. Lakers") transporting cargo between ports on the Great Lakes, Canadian domestic carriers ("Canadian Lakers") operating between ports on the Great Lakes and the St. Lawrence River and Canadian coastal waters, and ocean-going vessel operators ("Salties"), which operate between the region’s ports and overseas destinations. These carriers serve more than 110 system ports located in each of the eight Great Lakes states and the provinces of Ontario and Quebec.
In addition to locks, ships and ports, a host of maritime service providers work to ensure the safe, reliable and efficient transport of cargo. These include stevedores, warehouse employees, freight forwarders, dockworkers, crane operators, vessel agents, dredging contractors, marine pilots, truck drivers and port rail operators, tugboat operators and shipyard workers.

PURPOSE

This report is designed to provide the navigation community, transportation planners, government policy makers and the general public with a realistic assessment of the contributions made by commercial maritime shipping in the Great Lakes and St. Lawrence region to the bi-national, national, state and provincial economies.

To accomplish this goal, a bi-national consortium of public and private sector stakeholders retained Martin Associates of Lancaster, Pennsylvania — a global leader in transportation economic analysis and strategic planning. Martin Associates has completed more than 1000 economic impact, strategic planning, financial feasibility and market studies for major ports and waterway systems throughout the United States and Canada, as well as for ports in Europe, Asia and the Caribbean.

ORGANIZATION OF STUDY RESULTS

The study provides an assessment of the economic impacts of maritime shipping from four perspectives, as described below:

Chapter II – Great Lakes-St. Lawrence Seaway System: Includes impacts of domestic and international cargo that has travelled at some point through the Great Lakes, its connecting rivers and the St. Lawrence Seaway (ending in Montreal). This chapter only includes the impacts of tonnage at lower St. Lawrence River Quebec ports if destined to or originating from the Great Lakes-St. Lawrence Seaway System. For example, the economic benefits of container movements to and from the Port of Montreal to overseas markets are not included in this chapter, as this trade does not enter or leave the Great Lakes-St. Lawrence Seaway System. However, grain export shipments leaving the Port of Duluth, Minn., destined for overseas markets that are temporarily off-loaded at the Port of Quebec for re-loading onto a larger ocean-going vessel, are included. This perspective is most relevant to American stakeholders in that it excludes Quebec commerce that moves exclusively between Canadian ports on the lower St. Lawrence River. It also excludes commerce between these Canadian lower St. Lawrence River ports and overseas ports.

Chapter III – Great Lakes-St. Lawrence River Waterway: Includes impacts of all domestic and international cargo moving on the Great Lakes, its connecting rivers, the St. Lawrence Seaway and the Lower St. Lawrence River. This analysis captures the fullest extent of the economic benefits of the entire waterway. For example, it includes the domestic movements of commodities like petroleum products between lower St. Lawrence river ports and container movements to and from Quebec ports to overseas markets. This perspective is particularly relevant to Canadian stakeholders in that all Quebec impacts along the St. Lawrence are included in this chapter.

Chapter IV – St. Lawrence Seaway: Includes impacts of domestic and international cargo that has travelled through the St. Lawrence Seaway, a system of canals and locks, which connects the Great Lakes to the lower St. Lawrence River. The St. Lawrence Seaway extends from St. Lambert Lock in Montreal to Lake Erie and is composed of a series of 15 consecutive locks (seven locks in the Montreal-Lake Ontario section and eight locks in the Welland Canal section). This data is particularly relevant to those stakeholders who move cargo through the waterway and to policy makers who manage and fund waterway infrastructure.

Chapter V – Soo Locks: Includes impacts of domestic and international cargo moving through the Soo Locks, which connect ports on Lake Superior with the lower Great Lakes, the St. Lawrence Seaway, and international markets. The Soo Locks are located on the St. Marys River in Sault Ste. Marie, Michigan. This data is particularly relevant to those stakeholders who move cargo through the locks and to policy makers who manage and fund lock infrastructure.

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1 Study sponsors include: the Saint Lawrence Seaway Development Corporation, The St. Lawrence Seaway Management Corporation, the American Great Lakes Ports Association, the Chamber of Marine Commerce, the Lake Carriers’ Association, and the Shipping Federation of Canada.
METHODOLOGY

This analysis estimates the combined U.S. and Canadian economic impacts of all marine cargo moving in the bi-national Great Lakes-St. Lawrence region, including domestic cargo moving between U.S. ports; domestic cargo moving between Canadian ports; cross-lake cargo moving between the U.S. and Canada; and international cargo moving between system ports and overseas ports.

Specifically, the study measures the impacts of 2017 cargo movements at 40 U.S. and Canadian ports. The analysis was developed from a comprehensive telephone interview program of more than 770 individual firms with 1,105 operations throughout the region. Models were then developed to expand the 40-port impacts to the state-wide and province-wide levels.

The report estimates tonnage volume (and its dollar value) moved for each of the geographic segments detailed in the Organization of Study Results. This is the recorded tonnage transported by vessels.

For the purpose of determining economic impacts, however, the report uses the tonnage “handled” at the Great Lakes-St. Lawrence region’s ports. “Handled” refers to both the shipping (exporting) of the cargo from a system port, and to the receipt (importing) of that cargo in a system port. Because economic activity is created every time cargo is handled, for the purposes of this study, cargo moved between ports within the region has been handled twice. By contrast, cargo moved between system ports and overseas ports has been handled once (in the region). For example, one ton of cargo moved to or from Europe is counted as one ton handled by a port, while one ton of cargo moved from Duluth, Minn., to Cleveland, Ohio, is counted as two tons (one ton exported in Duluth and one ton imported in Cleveland).

Impacts are presented at the regional level, country level, state/provincial level, by commodity, by carrier flag, by employment sector and by waterway segment. Throughout the study, all values are expressed in both U.S. and Canadian dollars (using a 2017 average exchange rate of US$1.00 = Cdn$1.2984). Cargo volumes are expressed in both metric tons and short tons (1 metric ton = 1.102 short tons).

### EXHIBIT I-2
Individual Ports Modelled

<table>
<thead>
<tr>
<th>US Ports (19)</th>
<th>Canadian Ports (21)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ashtabula</td>
<td>Baie Comeau</td>
</tr>
<tr>
<td>Burns Harbor</td>
<td>Becancour</td>
</tr>
<tr>
<td>Calcite</td>
<td>Goderich</td>
</tr>
<tr>
<td>Chicago</td>
<td>Hamilton</td>
</tr>
<tr>
<td>Cleveland</td>
<td>Havre-Saint-Pierre</td>
</tr>
<tr>
<td>Conneaut</td>
<td>Johnstown</td>
</tr>
<tr>
<td>Detroit</td>
<td>Meldrum Bay</td>
</tr>
<tr>
<td>Duluth</td>
<td>Montreal</td>
</tr>
<tr>
<td>Erie</td>
<td>Nanticoke</td>
</tr>
<tr>
<td>Green Bay</td>
<td>Oshawa</td>
</tr>
<tr>
<td>Lorain</td>
<td>Port Alfred</td>
</tr>
<tr>
<td>Milwaukee</td>
<td>Port-Cartier</td>
</tr>
<tr>
<td>Monroe</td>
<td>Quebec</td>
</tr>
<tr>
<td>Muskegon</td>
<td>Sarnia</td>
</tr>
<tr>
<td>Oswego</td>
<td>Sept Iles</td>
</tr>
<tr>
<td>Saginaw River</td>
<td>Sorel</td>
</tr>
<tr>
<td>Superior</td>
<td>Thunder Bay</td>
</tr>
<tr>
<td>Toledo</td>
<td>Toronto</td>
</tr>
<tr>
<td>Two Harbors</td>
<td>Trois-Rivieres</td>
</tr>
<tr>
<td></td>
<td>Valleyfield</td>
</tr>
<tr>
<td></td>
<td>Windsor</td>
</tr>
</tbody>
</table>
CATEGORIES OF IMPACTS

Economic Activity: Total economic activity consists of the direct business revenue received by the businesses supplying the cargo and vessel handling services, plus the re-spending of direct employees’ earnings on goods and services in the province/state.

Employment: Employment is measured in terms of full-time equivalent jobs, as defined by 2,080 hours per year per full-time worker. These impacts consist of three levels:

- **Direct Employment** — jobs directly generated by maritime and port activity. Direct jobs include those of dockworkers, crane operators, ships’ crew, steamship agents, freight forwarders and stevedores, as well as workers with railroad and trucking companies moving the cargo handled at system ports. These jobs also include shippers/consignees that have facilities situated close to ports or marine terminals associated with the production site. These jobs would experience dislocation (likely wouldn’t exist) if the activity at ports and marine terminals were to be discontinued.

- **Induced Employment** — jobs created when individuals spend their wages locally on goods and services such as food, housing and clothing.

- **Indirect Employment** — jobs created due to purchases of goods and services by businesses. These include jobs with office supply firms, maintenance and repair companies, parts and equipment suppliers, etc.

Personal Income: These impacts are a measure of the employee wages and salaries (excluding benefits) received by individuals directly employed due to port activity and the respending of those earnings on goods and services in the province/state.

Business Revenue: These impacts represent the revenue generated by firms providing services at each port.

Local Purchases: These impacts include the value of goods and services purchased by the firms providing services at each port. Examples are office supplies, communications, utilities, fuel, maintenance and repair, goods/parts, contracted services, insurance, etc.

Taxes: These impacts include payments to federal, state/provincial, and local governments by companies and individuals whose jobs are directly dependent on port activity.
RESULTS
Chapter II – Great Lakes-St. Lawrence Seaway System Impacts

This chapter presents the study results from the perspective of the Great Lakes-St. Lawrence Seaway System, which includes the five Great Lakes, their connecting rivers, and the St. Lawrence Seaway (ending in Montreal). This analysis only includes the impacts of cargo tonnage at lower St. Lawrence River Quebec ports if that cargo was destined to or originating from the Great Lakes-Seaway system.

In 2017, a total of 143.5 million metric tons (158.3 million short tons) of cargo valued at US$15.2 billion (Cdn$19.8 billion) moved through the Great Lakes-Seaway system. As noted, a majority of the domestic cargo moving on Canadian and U.S. flag vessels remains in the Great Lakes-Seaway system, creating economic impacts at the loading port as well as the port of discharge. With this accounted for, the actual tons handled at the ports on the Great Lakes-Seaway system is 284.8 million metric tons (314.0 million short tons). This cargo generated the following economic impacts:

**Economic Activity** — The marine cargo and vessel activity in the Great Lakes-Seaway system generated a total of US$35.0 billion (Cdn$45.4 billion) in economic activity in the United States and Canada.

**Employment** — Maritime commerce on the Great Lakes-Seaway system supported 237,868 U.S. and Canadian jobs, including 78,400 direct jobs. As a result of local and regional purchases made by those 78,400 individuals, an additional 80,343 induced jobs were supported in the regional economy. Finally, 79,126 indirect jobs were supported by US$8.0 billion (Cdn$10.4 billion) in regional purchases by businesses supplying services at the marine terminals and ports.

**Personal Income** — Maritime activity supported US$14.2 billion (Cdn$18.5 billion) in total personal wage and salary income and local consumption expenditures in the regional economies of the U.S. and Canada. The 78,400 direct job holders received US$3.8 billion (Cdn$4.9 billion) in wage income.

**Local Purchases** — Businesses involved in maritime activity in the Great Lakes-Seaway system spent US$8 billion (Cdn$10.3 billion) on purchases in their respective local economies.

**Taxes** — A total of US$6.6 billion (Cdn$8.6 billion) in federal, state/provincial and local tax revenue was generated by maritime activity in the Great Lakes-Seaway system.
### EXHIBIT II-3

**Great Lakes-St. Lawrence Seaway System Impacts – Country Level**

<table>
<thead>
<tr>
<th></th>
<th>Canada</th>
<th>United States</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Jobs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct Jobs</td>
<td>29,004</td>
<td>49,395</td>
<td>78,400</td>
</tr>
<tr>
<td>Induced</td>
<td>36,475</td>
<td>43,868</td>
<td>80,343</td>
</tr>
<tr>
<td>Indirect</td>
<td>24,925</td>
<td>54,201</td>
<td>79,126</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>90,404</td>
<td>147,464</td>
<td>237,868</td>
</tr>
<tr>
<td><strong>Economic Activity (1,000)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>US $</td>
<td>Cdn $</td>
<td>US $</td>
<td>Cdn $</td>
</tr>
<tr>
<td>$9,386,930</td>
<td>$12,187,990</td>
<td>$25,610,903</td>
<td>$33,253,196</td>
</tr>
<tr>
<td><strong>Personal Income (1,000)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>$1,154,563</td>
<td>$1,499,084</td>
<td>$2,641,743</td>
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<tr>
<td>Re-Spending/Local Consumption</td>
<td>$1,550,700</td>
<td>$2,013,429</td>
<td>$5,327,418</td>
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<tr>
<td>Indirect</td>
<td>$1,069,500</td>
<td>$1,388,639</td>
<td>$2,485,486</td>
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<td><strong>Total</strong></td>
<td>$3,774,762</td>
<td>$4,901,151</td>
<td>$10,454,648</td>
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<tr>
<td><strong>Business Revenue (1,000)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>US $</td>
<td>Cdn $</td>
<td>US $</td>
<td>Cdn $</td>
</tr>
<tr>
<td><strong>Local Purchases (1,000)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>US $</td>
<td>Cdn $</td>
<td>US $</td>
<td>Cdn $</td>
</tr>
<tr>
<td>$2,693,951</td>
<td>$3,497,827</td>
<td>$5,276,709</td>
<td>$6,851,280</td>
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<tr>
<td><strong>Taxes (1,000)</strong></td>
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<td></td>
</tr>
<tr>
<td>Federal</td>
<td>$1,156,702</td>
<td>$1,501,862</td>
<td>$3,711,918</td>
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<tr>
<td>State/Provincial and Local</td>
<td>$803,823</td>
<td>$1,043,684</td>
<td>$1,272,166</td>
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<tr>
<td><strong>Total</strong></td>
<td>$1,960,525</td>
<td>$2,545,546</td>
<td>$4,644,084</td>
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</table>

### EXHIBIT II-10

**Great Lakes-St. Lawrence Seaway System Impacts – by State**

<table>
<thead>
<tr>
<th></th>
<th>Indiana</th>
<th>Ohio</th>
<th>Michigan</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tonnage Handled (1,000):</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metric Tons (Short Tons)</td>
<td>26,986 (29,747)</td>
<td>39,599 (43,650)</td>
<td>59,014 (65,051)</td>
</tr>
<tr>
<td><strong>Jobs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct Jobs</td>
<td>19,518</td>
<td>9,398</td>
<td>11,180</td>
</tr>
<tr>
<td>Induced</td>
<td>19,432</td>
<td>8,549</td>
<td>8,294</td>
</tr>
<tr>
<td>Indirect</td>
<td>27,208</td>
<td>15,221</td>
<td>6,436</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>66,158</td>
<td>33,168</td>
<td>25,910</td>
</tr>
<tr>
<td><strong>Economic Activity (1,000)</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>US $</td>
<td>Cdn $</td>
<td>US $</td>
<td>Cdn $</td>
</tr>
<tr>
<td>$13,726,685</td>
<td>$17,822,728</td>
<td>$3,745,199</td>
<td>$4,862,766</td>
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<tr>
<td><strong>Personal Income (1,000)</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>$1,201,907</td>
<td>$1,560,556</td>
<td>$475,029</td>
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<tr>
<td>Re-Spending/Local Consumption</td>
<td>$2,441,194</td>
<td>$3,169,646</td>
<td>$1,025,207</td>
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<tr>
<td>Indirect</td>
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<td>$1,626,649</td>
<td>$710,600</td>
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<tr>
<td><strong>Total</strong></td>
<td>$4,895,912</td>
<td>$6,356,852</td>
<td>$2,210,835</td>
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<tr>
<td><strong>Business Revenue (1,000)</strong></td>
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<td></td>
</tr>
<tr>
<td>US $</td>
<td>Cdn $</td>
<td>US $</td>
<td>Cdn $</td>
</tr>
<tr>
<td>$11,285,492</td>
<td>$14,653,083</td>
<td>$2,719,992</td>
<td>$3,531,638</td>
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<tr>
<td><strong>Local Purchases (1,000)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>US $</td>
<td>Cdn $</td>
<td>US $</td>
<td>Cdn $</td>
</tr>
<tr>
<td>$2,604,640</td>
<td>$3,381,865</td>
<td>$1,411,723</td>
<td>$1,832,981</td>
</tr>
<tr>
<td><strong>Taxes (1,000)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Federal</td>
<td>$1,682,700</td>
<td>$2,184,818</td>
<td>$622,035</td>
</tr>
<tr>
<td>State and Local</td>
<td>$623,108</td>
<td>$809,044</td>
<td>$216,662</td>
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<tr>
<td><strong>Total</strong></td>
<td>$2,305,808</td>
<td>$2,993,862</td>
<td>$838,697</td>
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</table>
### EXHIBIT II-10 Continued

<table>
<thead>
<tr>
<th>Tonnage Handled (1,000): Metric Tons (Short Tons)</th>
<th>Minnesota</th>
<th>Illinois</th>
<th>Wisconsin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Jobs</td>
<td>2,176</td>
<td>2,943</td>
<td>3,198</td>
</tr>
<tr>
<td>Induced</td>
<td>1,852</td>
<td>2,654</td>
<td>2,316</td>
</tr>
<tr>
<td>Indirect</td>
<td>2,134</td>
<td>880</td>
<td>1,970</td>
</tr>
<tr>
<td>Total</td>
<td>6,161</td>
<td>6,476</td>
<td>7,484</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Economic Activity (1,000)</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Income (1,000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>$99,333</td>
<td>$128,974</td>
<td>$130,780</td>
<td>$169,805</td>
<td>$147,229</td>
<td>$191,162</td>
</tr>
<tr>
<td>Re-Spending/Local Consumption</td>
<td>$213,546</td>
<td>$277,269</td>
<td>$345,169</td>
<td>$448,167</td>
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<td>Indirect</td>
<td>$100,528</td>
<td>$130,526</td>
<td>$46,015</td>
<td>$59,745</td>
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<td>Total</td>
<td>$413,408</td>
<td>$536,769</td>
<td>$521,964</td>
<td>$677,718</td>
<td>$480,061</td>
<td>$623,312</td>
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<table>
<thead>
<tr>
<th>Business Revenue (1,000)</th>
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<tr>
<td>$1,270,220</td>
<td>$1,649,254</td>
<td>$485,739</td>
<td>$630,684</td>
<td>$1,185,721</td>
<td>$1,539,540</td>
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<table>
<thead>
<tr>
<th>Local Purchases (1,000)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>$222,048</td>
<td>$288,308</td>
<td>$89,032</td>
<td>$115,599</td>
<td>$210,833</td>
<td>$273,745</td>
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<table>
<thead>
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<th>Taxes (1,000)</th>
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</thead>
<tbody>
<tr>
<td>Federal</td>
<td>$160,488</td>
<td>$208,378</td>
<td>$137,785</td>
<td>$178,900</td>
<td>$169,585</td>
<td>$220,189</td>
</tr>
<tr>
<td>State and Local</td>
<td>$69,544</td>
<td>$90,296</td>
<td>$64,945</td>
<td>$84,325</td>
<td>$71,541</td>
<td>$92,889</td>
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<tr>
<td>Total</td>
<td>$230,033</td>
<td>$298,674</td>
<td>$202,730</td>
<td>$263,225</td>
<td>$241,126</td>
<td>$313,078</td>
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### EXHIBIT II-10 Continued

<table>
<thead>
<tr>
<th>Tonnage Handled (1,000): Metric Tons (Short Tons)</th>
<th>New York</th>
<th>Pennsylvania</th>
<th>Total US</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Jobs</td>
<td>691</td>
<td>291</td>
<td>49,395</td>
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<tr>
<td>Induced</td>
<td>542</td>
<td>229</td>
<td>43,868</td>
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<tr>
<td>Indirect</td>
<td>116</td>
<td>237</td>
<td>54,201</td>
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<tr>
<td>Total</td>
<td>1,349</td>
<td>757</td>
<td>147,464</td>
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</table>

<table>
<thead>
<tr>
<th>Economic Activity (1,000)</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Income (1,000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>$38,128</td>
<td>$49,505</td>
<td>$12,707</td>
<td>$16,498</td>
<td>$6,327,418</td>
<td>$6,917,119</td>
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<tr>
<td>Re-Spending/Local Consumption</td>
<td>$63,536</td>
<td>$82,495</td>
<td>$27,222</td>
<td>$35,345</td>
<td>$5,272,166</td>
<td>$6,851,275</td>
</tr>
<tr>
<td>Indirect</td>
<td>$5,954</td>
<td>$7,731</td>
<td>$9,638</td>
<td>$12,514</td>
<td>$2,485,486</td>
<td>$3,227,156</td>
</tr>
<tr>
<td>Total</td>
<td>$107,618</td>
<td>$139,731</td>
<td>$49,566</td>
<td>$64,357</td>
<td>$10,454,648</td>
<td>$13,574,315</td>
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</table>

<table>
<thead>
<tr>
<th>Business Revenue (1,000)</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>$78,331</td>
<td>$101,704</td>
<td>$63,643</td>
<td>$82,633</td>
<td>$20,283,485</td>
<td>$26,336,077</td>
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</table>

<table>
<thead>
<tr>
<th>Local Purchases (1,000)</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>$17,207</td>
<td>$22,342</td>
<td>$29,060</td>
<td>$37,731</td>
<td>$5,276,709</td>
<td>$6,851,280</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Taxes (1,000)</th>
<th></th>
<th></th>
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<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Federal</td>
<td>$27,143</td>
<td>$35,242</td>
<td>$14,100</td>
<td>$18,308</td>
<td>$3,371,918</td>
<td>$4,378,099</td>
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<tr>
<td>State and Local</td>
<td>$14,780</td>
<td>$19,190</td>
<td>$6,377</td>
<td>$8,280</td>
<td>$1,272,166</td>
<td>$1,651,781</td>
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<tr>
<td>Total</td>
<td>$41,923</td>
<td>$54,432</td>
<td>$20,477</td>
<td>$26,588</td>
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<td>$6,029,879</td>
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### Exhibit II-11: Great Lakes-St. Lawrence Seaway System Impacts by Province

<table>
<thead>
<tr>
<th>Tonnage Handled (1,000): Metric Tons (Short Tons)</th>
<th>Ontario</th>
<th>Quebec</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jobs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct Jobs</td>
<td>21,561</td>
<td>7,443</td>
<td>29,004</td>
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<tr>
<td>Induced</td>
<td>28,904</td>
<td>7,571</td>
<td>36,475</td>
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<tr>
<td>Indirect</td>
<td>20,182</td>
<td>4,743</td>
<td>24,925</td>
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<tr>
<td>Total</td>
<td>70,647</td>
<td>19,757</td>
<td>90,404</td>
</tr>
<tr>
<td>Economic Activity (1,000)</td>
<td>US $</td>
<td>Cdn $</td>
<td>US $</td>
</tr>
<tr>
<td></td>
<td>$7,700,224</td>
<td>$9,997,970</td>
<td>$1,686,706</td>
</tr>
<tr>
<td>Personal Income (1,000)</td>
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</tr>
<tr>
<td>Direct</td>
<td>$842,378</td>
<td>$1,093,744</td>
<td>$312,184</td>
</tr>
<tr>
<td>Re-Spending/Local Consumption</td>
<td>$1,276,372</td>
<td>$1,657,241</td>
<td>$274,328</td>
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<tr>
<td>Indirect</td>
<td>$877,836</td>
<td>$1,139,782</td>
<td>$191,664</td>
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<td>Total</td>
<td>$2,996,586</td>
<td>$3,890,768</td>
<td>$778,176</td>
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<tr>
<td>Business Revenue (1,000)</td>
<td>US $</td>
<td>Cdn $</td>
<td>US $</td>
</tr>
<tr>
<td></td>
<td>$6,423,852</td>
<td>$8,340,729</td>
<td>$1,412,378</td>
</tr>
<tr>
<td>Local Purchases (1,000)</td>
<td>US $</td>
<td>Cdn $</td>
<td>US $</td>
</tr>
<tr>
<td></td>
<td>$2,181,105</td>
<td>$2,831,947</td>
<td>$512,846</td>
</tr>
<tr>
<td>Taxes (1,000)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Federal</td>
<td>$924,744</td>
<td>$1,200,688</td>
<td>$231,958</td>
</tr>
<tr>
<td>Provincial and Local</td>
<td>$564,274</td>
<td>$732,653</td>
<td>$239,549</td>
</tr>
<tr>
<td>Total</td>
<td>$1,489,018</td>
<td>$1,933,341</td>
<td>$471,507</td>
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### Exhibit II-12: Great Lakes-St. Lawrence Seaway System Impacts by Flag of Carriage – Regional Level

<table>
<thead>
<tr>
<th>jobs</th>
<th>Canadian Flag</th>
<th>U.S. Flag</th>
<th>Foreign Flag</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>US $</td>
<td>Cdn $</td>
<td>US $</td>
<td>Cdn $</td>
</tr>
<tr>
<td>economic activity (1,000)</td>
<td>$11,052,311</td>
<td>$14,350,321</td>
<td>$20,892,882</td>
<td>$27,127,318</td>
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<tr>
<td>personal income (1,000)</td>
<td>$1,192,780</td>
<td>$1,548,706</td>
<td>$2,137,528</td>
<td>$2,775,366</td>
</tr>
<tr>
<td>direct</td>
<td>$1,843,133</td>
<td>$2,393,124</td>
<td>$4,293,015</td>
<td>$5,575,349</td>
</tr>
<tr>
<td>re-spending/local consumption</td>
<td>$1,196,511</td>
<td>$1,553,549</td>
<td>$1,960,454</td>
<td>$2,545,453</td>
</tr>
<tr>
<td>indirect</td>
<td>$4,232,424</td>
<td>$5,495,379</td>
<td>$8,391,996</td>
<td>$10,896,168</td>
</tr>
<tr>
<td>business revenue (1,000)</td>
<td>$9,209,179</td>
<td>$11,957,197</td>
<td>$16,598,867</td>
<td>$21,551,969</td>
</tr>
<tr>
<td>local purchases (1,000)</td>
<td>$2,863,736</td>
<td>$3,718,275</td>
<td>$4,184,789</td>
<td>$5,433,530</td>
</tr>
<tr>
<td>taxes (1,000)</td>
<td>$1,338,302</td>
<td>$1,737,652</td>
<td>$2,722,903</td>
<td>$3,535,417</td>
</tr>
<tr>
<td>federal</td>
<td>$776,507</td>
<td>$1,008,217</td>
<td>$1,028,410</td>
<td>$1,335,288</td>
</tr>
<tr>
<td>state/provincial and local</td>
<td>$2,114,810</td>
<td>$2,745,869</td>
<td>$3,751,313</td>
<td>$4,870,705</td>
</tr>
</tbody>
</table>

**Economic Impacts of Maritime Shipping in the Great Lakes-St. Lawrence Region**
Chapter III – Great Lakes-St. Lawrence River Waterway Impacts

This chapter measures the impacts of maritime shipping on the Great Lakes-St. Lawrence River Waterway. All domestic and international cargo moving on the waterway is included in the analysis, including Great Lakes, St. Lawrence Seaway and lower St. Lawrence River cargo.

In 2017, a total of 230.9 million metric tons (254.6 million short tons) of cargo valued at $77.4 billion U.S. (Cdn$100.5 billion) moved through the Great Lakes-St. Lawrence River waterway. As noted, a majority of the domestic cargo moving on Canadian and U.S. flag vessels remains in the waterway, creating economic impacts at the loading port as well as the port of discharge. With this accounted for, the actual tons handled at the ports on the Great Lakes-St. Lawrence River waterway is 381 million metric tons (420 million short tons). This cargo generated the following economic impacts:

**Economic Activity** — The marine cargo and vessel activity generated a total of US$45.6 billion (Cdn$59.2 billion) in economic activity in the United States and Canada.

**Employment** — Maritime commerce supported 328,543 U.S. and Canadian jobs, including 105,885 direct jobs. As a result of local and regional purchases made by those 105,885 individuals, an additional 108,712 induced jobs were supported in the regional economy. Finally, 113,946 indirect jobs were supported by US$12.3 billion (Cdn$16.0 billion) in regional purchases by businesses supplying services at the marine terminals and ports.

**Personal Income** — Maritime activity supported US$17.9 billion (Cdn$23.3 billion) in total personal wage and salary income and local consumption expenditures in the regional economies of the U.S. and Canada. The 105,885 direct job holders received US$5.0 billion (Cdn$6.5 billion) in wage income.

**Local Purchases** — Businesses involved in maritime activity spent US$12.3 billion (Cdn$16 billion) on purchases in their respective local economies.

**Taxes** — A total of US$9.0 billion (Cdn$11.7 billion) in federal, state/provincial and local tax revenue was generated by maritime activity.
### EXHIBIT III-3

**Great Lakes-St. Lawrence River Waterway Impacts – Country Level**

<table>
<thead>
<tr>
<th>Jobs</th>
<th>Canada</th>
<th>United States</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct</td>
<td>56,490</td>
<td>49,395</td>
<td>105,885</td>
</tr>
<tr>
<td>Induced</td>
<td>64,844</td>
<td>43,868</td>
<td>108,712</td>
</tr>
<tr>
<td>Indirect</td>
<td>59,745</td>
<td>54,201</td>
<td>113,946</td>
</tr>
<tr>
<td>Total</td>
<td>181,079</td>
<td>147,464</td>
<td>328,543</td>
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</table>

<table>
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<th>Economic Activity (1,000)</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jobs</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
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</tr>
<tr>
<td>Induced</td>
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<tr>
<td>Indirect</td>
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<tr>
<td>Total</td>
<td></td>
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<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Personal Income (1,000)</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
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<tbody>
<tr>
<td>Direct</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Re-Spending/Local Purchases</td>
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<td></td>
</tr>
<tr>
<td>Indirect</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
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<td></td>
<td></td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Business Revenue (1,000)</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Purchases (1,000)</td>
<td>US $</td>
<td>Cdn $</td>
<td>US $</td>
<td>Cdn $</td>
<td>US $</td>
<td>Cdn $</td>
</tr>
<tr>
<td>Taxes (1,000)</td>
<td>US $</td>
<td>Cdn $</td>
<td>US $</td>
<td>Cdn $</td>
<td>US $</td>
<td>Cdn $</td>
</tr>
<tr>
<td>Federal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>State/Provincial and Local</td>
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<tr>
<td>Total</td>
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</table>

### EXHIBIT III-10

**Great Lakes-St. Lawrence River Waterway Impacts – by State**

<table>
<thead>
<tr>
<th>Tonnage Handled (1,000): Metric Tons (Short Tons)</th>
<th>Indiana</th>
<th>Ohio</th>
<th>Michigan</th>
</tr>
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<tbody>
<tr>
<td>26,986 (29,747)</td>
<td>39,599 (43,650)</td>
<td>59,014 (65,051)</td>
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</table>

<table>
<thead>
<tr>
<th>Jobs</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct</td>
<td>19,518</td>
<td>9,398</td>
<td>11,180</td>
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<td></td>
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<tr>
<td>Induced</td>
<td>19,432</td>
<td>8,549</td>
<td>8,294</td>
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<tr>
<td>Indirect</td>
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<td>15,221</td>
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<td>33,168</td>
<td>25,910</td>
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</table>

<table>
<thead>
<tr>
<th>Economic Activity (1,000)</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jobs</td>
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</tr>
<tr>
<td>Direct</td>
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<tr>
<td>Indirect</td>
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</tr>
<tr>
<td>Total</td>
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</tr>
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</table>

<table>
<thead>
<tr>
<th>Personal Income (1,000)</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
</tr>
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<tbody>
<tr>
<td>Direct</td>
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<td></td>
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<tr>
<td>Re-Spending/Local Consumption</td>
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<tr>
<td>Indirect</td>
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<tr>
<td>Total</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Business Revenue (1,000)</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Purchases (1,000)</td>
<td>US $</td>
<td>Cdn $</td>
<td>US $</td>
<td>Cdn $</td>
<td>US $</td>
<td>Cdn $</td>
</tr>
<tr>
<td>Taxes (1,000)</td>
<td>US $</td>
<td>Cdn $</td>
<td>US $</td>
<td>Cdn $</td>
<td>US $</td>
<td>Cdn $</td>
</tr>
<tr>
<td>Federal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>State and Local</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
### EXHIBIT III-10 Continued

<table>
<thead>
<tr>
<th>Tonnage Handled (1,000): Metric Tons (Short Tons)</th>
<th>Minnesota</th>
<th>Illinois</th>
<th>Wisconsin</th>
</tr>
</thead>
<tbody>
<tr>
<td>31,231 (34,425)</td>
<td>10,289 (11,341)</td>
<td>27,086 (29,856)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Jobs</th>
<th>Minnesota</th>
<th>Illinois</th>
<th>Wisconsin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Jobs</td>
<td>2,176</td>
<td>2,943</td>
<td>3,198</td>
</tr>
<tr>
<td>Induced</td>
<td>1,852</td>
<td>2,654</td>
<td>2,316</td>
</tr>
<tr>
<td>Indirect</td>
<td>2,134</td>
<td>880</td>
<td>1,970</td>
</tr>
<tr>
<td>Total</td>
<td>6,161</td>
<td>6,476</td>
<td>7,484</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Economic Activity (1,000)</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
</tr>
</thead>
<tbody>
<tr>
<td>$1,483,766</td>
<td>$1,926,522</td>
<td>$830,908</td>
<td>$1,078,851</td>
<td>$1,430,900</td>
</tr>
</tbody>
</table>

| Personal Income (1,000)                                             |            |           |            |
| Direct                                                              | $99,333    | $128,974  | $169,805   | $191,162  |
| Re-Spending/Local Consumption                                       | $213,546   | $277,269  | $448,167   | $518,341  |
| Indirect                                                            | $100,528   | $130,526  | $59,745    | $113,809  |
| Total                                                               | $413,408   | $536,769  | $677,718   | $623,312  |

| Business Revenue (1,000)                                            |            |           |            |
| $1,270,220                                                          | $1,649,254 | $630,684  | $1,185,721 | $1,539,540 |

| Local Purchases (1,000)                                             |            |           |            |
| $222,048                                                            | $288,308   | $115,599  | $273,745   |

| Taxes (1,000)                                                       |            |           |            |
| Federal                                                            | $160,488   | $208,378  | $169,585   | $220,189  |
| State and Local                                                    | $69,544    | $90,296   | $71,541    | $92,889   |
| Total                                                              | $230,033   | $298,674  | $241,126   | $313,078  |

### EXHIBIT III-10 Continued

<table>
<thead>
<tr>
<th>Tonnage Handled (1,000): Metric Tons (Short Tons)</th>
<th>New York</th>
<th>Pennsylvania</th>
<th>Total US</th>
</tr>
</thead>
<tbody>
<tr>
<td>960 (1,058)</td>
<td>603 (665)</td>
<td>195,768 (215,795)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Jobs</th>
<th>New York</th>
<th>Pennsylvania</th>
<th>Total US</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Jobs</td>
<td>691</td>
<td>291</td>
<td>49,395</td>
</tr>
<tr>
<td>Induced</td>
<td>542</td>
<td>229</td>
<td>43,868</td>
</tr>
<tr>
<td>Indirect</td>
<td>116</td>
<td>237</td>
<td>54,201</td>
</tr>
<tr>
<td>Total</td>
<td>1,349</td>
<td>757</td>
<td>147,464</td>
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</table>

<table>
<thead>
<tr>
<th>Economic Activity (1,000)</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
</tr>
</thead>
<tbody>
<tr>
<td>$141,866</td>
<td>$184,199</td>
<td>$90,864</td>
<td>$117,978</td>
<td>$25,610,903</td>
</tr>
</tbody>
</table>

| Personal Income (1,000)                                             |          |           |          |
| Direct                                                              | $38,128  | $49,505   | $137,785 | $178,900  |
| Re-Spending/Local Consumption                                       | $63,536  | $82,495   | $27,222  | $35,345   |
| Indirect                                                            | $5,954   | $7,731    | $9,638   | $12,514   |
| Total                                                               | $107,618 | $139,731  | $49,566  | $130,731  |

| Business Revenue (1,000)                                            |          |           |          |
| $78,331                                                            | $101,704 | $63,643   | $82,633  |

| Local Purchases (1,000)                                             |          |           |          |
| $17,207                                                            | $22,342  | $29,060   | $37,731  |

| Taxes (1,000)                                                       |          |           |          |
| Federal                                                            | $27,143  | $35,242   | $14,100  | $18,308   |
| State and Local                                                    | $14,780  | $19,190   | $6,377   | $8,280    |
| Total                                                              | $41,923  | $54,432   | $20,477  | $26,588   |
### Great Lakes-St. Lawrence River Waterway Impacts – by Province

<table>
<thead>
<tr>
<th>Tonnage Handled (1,000): Metric Tons (Short Tons)</th>
<th>Ontario</th>
<th>Quebec</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>61,378 (67,657)</td>
<td>123,856 (136,527)</td>
<td>185,234 (204,184)</td>
<td></td>
</tr>
</tbody>
</table>

#### Jobs

<table>
<thead>
<tr>
<th></th>
<th>Ontario</th>
<th>Quebec</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Jobs</td>
<td>21,561</td>
<td>34,929</td>
<td>56,490</td>
</tr>
<tr>
<td>Induced</td>
<td>28,904</td>
<td>35,940</td>
<td>64,844</td>
</tr>
<tr>
<td>Indirect</td>
<td>20,182</td>
<td>39,563</td>
<td>59,745</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>70,647</td>
<td>110,433</td>
<td>181,079</td>
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</table>

#### Economic Activity (1,000)

<table>
<thead>
<tr>
<th>Economic Activity (1,000)</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tonnage Handled (1,000)</td>
<td>$7,700,224</td>
<td>$9,997,970</td>
<td>$12,303,072</td>
<td>$15,974,309</td>
<td>$20,003,296</td>
<td>$25,972,279</td>
</tr>
<tr>
<td>Personal Income (1,000)</td>
<td></td>
<td></td>
<td>$1,488,126</td>
<td>$1,932,183</td>
<td>$2,330,505</td>
<td>$3,025,927</td>
</tr>
<tr>
<td>Re-Spending/Local Consumption</td>
<td>$1,293,728</td>
<td>$1,679,777</td>
<td>$2,570,100</td>
<td>$3,337,018</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indirect</td>
<td>$1,700,873</td>
<td>$2,208,414</td>
<td>$2,578,709</td>
<td>$3,348,196</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$4,828,727</td>
<td>$5,820,373</td>
<td>$7,479,314</td>
<td>$9,711,141</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business Revenue (1,000)</td>
<td>$6,423,852</td>
<td>$8,340,729</td>
<td>$11,009,344</td>
<td>$14,294,532</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local Purchases (1,000)</td>
<td>$2,181,105</td>
<td>$2,831,947</td>
<td>$4,613,052</td>
<td>$4,613,052</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taxes (1,000)</td>
<td>$924,744</td>
<td>$1,209,748</td>
<td>$1,488,126</td>
<td>$1,932,183</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Federal</td>
<td>$1,47,512</td>
<td>$1,879,450</td>
<td>$2,330,505</td>
<td>$3,025,927</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provincial and Local</td>
<td>$564,274</td>
<td>$732,653</td>
<td>$1,474,713</td>
<td>$1,879,750</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$1,538,988</td>
<td>$2,642,093</td>
<td>$4,805,218</td>
<td>$5,892,678</td>
<td></td>
<td></td>
</tr>
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</table>

### Great Lakes-St. Lawrence River Waterway Impacts by Flag of Carriage – Regional Level

<table>
<thead>
<tr>
<th>Jobs</th>
<th>Canadian Flag</th>
<th>U.S. Flag</th>
<th>Foreign Flag</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Jobs</td>
<td>35,171</td>
<td>39,522</td>
<td>31,192</td>
<td>105,885</td>
</tr>
<tr>
<td>Induced</td>
<td>39,870</td>
<td>35,746</td>
<td>33,095</td>
<td>108,712</td>
</tr>
<tr>
<td>Indirect</td>
<td>30,951</td>
<td>42,838</td>
<td>40,157</td>
<td>113,946</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>105,993</td>
<td>118,106</td>
<td>104,445</td>
<td>328,543</td>
</tr>
</tbody>
</table>

#### Economic Activity (1,000)

<table>
<thead>
<tr>
<th>Economic Activity (1,000)</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tonnage Handled (1,000)</td>
<td>$12,842,890</td>
<td>$16,675,228</td>
<td>$11,878,427</td>
<td>$15,422,950</td>
<td>$45,614,199</td>
<td>$59,225,476</td>
</tr>
<tr>
<td>Personal Income (1,000)</td>
<td>$1,474,512</td>
<td>$1,879,450</td>
<td>$1,488,126</td>
<td>$1,932,183</td>
<td>$2,330,505</td>
<td>$3,025,927</td>
</tr>
<tr>
<td>Re-Spending/Local Consumption</td>
<td>$2,137,528</td>
<td>$2,775,366</td>
<td>$2,570,100</td>
<td>$3,337,018</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indirect</td>
<td>$1,700,873</td>
<td>$2,208,414</td>
<td>$2,578,709</td>
<td>$3,348,196</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$4,867,500</td>
<td>$6,319,962</td>
<td>$7,479,314</td>
<td>$9,711,141</td>
<td></td>
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</tr>
<tr>
<td>Business Revenue (1,000)</td>
<td>$10,767,537</td>
<td>$13,980,570</td>
<td>$11,009,344</td>
<td>$14,294,532</td>
<td>$37,716,681</td>
<td>$48,971,339</td>
</tr>
<tr>
<td>Local Purchases (1,000)</td>
<td>$3,246,603</td>
<td>$4,215,389</td>
<td>$4,613,052</td>
<td>$4,613,052</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taxes (1,000)</td>
<td>$1,540,588</td>
<td>$2,000,300</td>
<td>$1,474,512</td>
<td>$1,879,450</td>
<td></td>
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<tr>
<td>Federal</td>
<td>$2,722,903</td>
<td>$3,535,417</td>
<td>$1,461,325</td>
<td>$1,897,384</td>
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</tr>
<tr>
<td>State/Provincial and Local</td>
<td>$1,274,193</td>
<td>$1,654,413</td>
<td>$3,284,184</td>
<td>$4,264,184</td>
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</tr>
<tr>
<td><strong>Total</strong></td>
<td>$2,522,168</td>
<td>$3,274,783</td>
<td>$2,735,518</td>
<td>$3,551,797</td>
<td>$9,008,999</td>
<td>$11,697,285</td>
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</table>
Chapter IV – St. Lawrence Seaway Impacts

This chapter presents the economic impacts of cargo that specifically transits the St. Lawrence Seaway. The Seaway extends from Montreal to Lake Erie and is composed of a series of 15 consecutive locks that connect the Great Lakes to the lower St. Lawrence River and the Atlantic Ocean. The Welland Canal section consists of eight Canadian locks that enable ships to pass between Lakes Erie and Ontario, bypassing the Niagara Falls. The Montreal-Lake Ontario (MLO) section of the Seaway consists of seven locks — five located in Canada and two in the United States. These locks enable ships to pass between Lake Ontario and the lower St. Lawrence River. This chapter describes the economic impacts of all domestic and international traffic moving through the lock system.

During 2017, more than 38.1 million metric tons (41.9 million short tons) of cargo valued at US$7.7 billion (Cdn$10.0 billion) passed through the St. Lawrence Seaway’s infrastructure. A total of 64 million metric tons (70.5 million short tons) of cargo transiting the St. Lawrence Seaway was handled at the region’s ports generating the following economic impacts:

**Economic Activity** — Marine cargo and vessel activity generated a total of US$12.9 billion (Cdn$16.8 billion) economic activity in the United States and Canada.

**Employment** — Maritime commerce supported 92,661 U.S. and Canadian jobs, including 29,624 direct jobs. As a result of local and regional purchases made by those 29,624 individuals, an additional 34,539 induced jobs were supported in the regional economy. Finally, 28,498 indirect jobs were supported by US$2.9 billion (Cdn$3.7 billion) in regional purchases by businesses supplying services at the marine terminals and ports.

**Personal Income** — Maritime commerce supported US$4.9 billion (Cdn$6.3 billion) in total personal wages and local consumption expenditures. The 29,624 direct job holders received U.S.$1.4 billion (Cdn$1.8 billion) in wage income.

**Local Purchases** — Businesses involved in maritime activity on the St. Lawrence Seaway spent US$2.9 billion (Cdn$3.8 billion) on purchases in their respective local economies.

**Taxes** — St. Lawrence Seaway commercial maritime activity generated US$2.4 billion (Cdn$3.1 billion) in local, state/provincial and federal tax revenues.
### EXHIBIT IV-3

**St. Lawrence Seaway Impacts – Country Level**

<table>
<thead>
<tr>
<th></th>
<th>Canada</th>
<th>United States</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Jobs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct Jobs</td>
<td>19,451</td>
<td>10,173</td>
<td>29,624</td>
</tr>
<tr>
<td>Induced Jobs</td>
<td>24,966</td>
<td>9,572</td>
<td>34,539</td>
</tr>
<tr>
<td>Indirect Jobs</td>
<td>15,390</td>
<td>13,109</td>
<td>28,498</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>59,806</td>
<td>32,855</td>
<td>92,661</td>
</tr>
<tr>
<td><strong>Economic Activity (1,000)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>US $ 7,076,236</td>
<td>Cdn $ 9,187,784</td>
<td></td>
</tr>
<tr>
<td>Induced/Local Consumption</td>
<td>US $ 5,872,312</td>
<td>Cdn $ 7,624,610</td>
<td></td>
</tr>
<tr>
<td>Indirect</td>
<td>US $ 12,948,548</td>
<td>Cdn $ 16,812,394</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Personal Income (1,000)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>US $ 773,169</td>
<td>Cdn $ 1,003,883</td>
<td></td>
</tr>
<tr>
<td>Induced/Local Consumption</td>
<td>US $ 1,181,409</td>
<td>Cdn $ 1,533,941</td>
<td></td>
</tr>
<tr>
<td>Indirect</td>
<td>US $ 605,598</td>
<td>Cdn $ 786,309</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>US $ 2,503,966</td>
<td>Cdn $ 3,251,150</td>
<td></td>
</tr>
<tr>
<td><strong>Business Revenue (1,000)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>US $ 6,008,055</td>
<td>Cdn $ 7,800,859</td>
<td></td>
</tr>
<tr>
<td>Induced/Local Consumption</td>
<td>US $ 4,690,903</td>
<td>Cdn $ 6,090,669</td>
<td></td>
</tr>
<tr>
<td>Indirect</td>
<td>US $ 1,255,824</td>
<td>Cdn $ 1,630,563</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>US $ 10,698,959</td>
<td>Cdn $ 13,891,528</td>
<td></td>
</tr>
<tr>
<td><strong>Local Purchases (1,000)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>US $ 1,660,900</td>
<td>Cdn $ 2,156,513</td>
<td></td>
</tr>
<tr>
<td>Induced/Local Consumption</td>
<td>US $ 1,255,824</td>
<td>Cdn $ 1,630,563</td>
<td></td>
</tr>
<tr>
<td>Indirect</td>
<td>US $ 1,255,824</td>
<td>Cdn $ 1,630,563</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>US $ 4,868,667</td>
<td>Cdn $ 6,321,477</td>
<td></td>
</tr>
</tbody>
</table>

### EXHIBIT IV-10

**St. Lawrence Seaway Impacts – by State**

<table>
<thead>
<tr>
<th></th>
<th>Indiana</th>
<th>Ohio</th>
<th>Michigan</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tonnage Handled (1,000):</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metric Tons (Short Tons)</td>
<td>1,451 (1,599)</td>
<td>6,126 (6,753)</td>
<td>1,523 (1,678)</td>
</tr>
<tr>
<td><strong>Jobs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct Jobs</td>
<td>6,175</td>
<td>2,015</td>
<td>482</td>
</tr>
<tr>
<td>Induced Jobs</td>
<td>6,218</td>
<td>1,702</td>
<td>340</td>
</tr>
<tr>
<td>Indirect Jobs</td>
<td>8,608</td>
<td>3,350</td>
<td>337</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>21,002</td>
<td>7,067</td>
<td>1,159</td>
</tr>
<tr>
<td><strong>Economic Activity (1,000)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>US $ 4,610,939</td>
<td>Cdn $ 5,986,843</td>
<td></td>
</tr>
<tr>
<td>Induced/Local Consumption</td>
<td>US $ 616,554</td>
<td>Cdn $ 800,534</td>
<td></td>
</tr>
<tr>
<td>Indirect</td>
<td>US $ 81,506</td>
<td>Cdn $ 105,828</td>
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<tr>
<td><strong>Total</strong></td>
<td>US $ 5,828,499</td>
<td>Cdn $ 7,787,207</td>
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</tr>
<tr>
<td><strong>Personal Income (1,000)</strong></td>
<td></td>
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<tr>
<td>Direct</td>
<td>US $ 385,752</td>
<td>Cdn $ 500,861</td>
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</tr>
<tr>
<td>Induced/Local Consumption</td>
<td>US $ 1,181,409</td>
<td>Cdn $ 1,533,941</td>
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<tr>
<td>Indirect</td>
<td>US $ 605,598</td>
<td>Cdn $ 786,309</td>
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</tr>
<tr>
<td><strong>Total</strong></td>
<td>US $ 1,565,625</td>
<td>Cdn $ 2,032,808</td>
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<tr>
<td><strong>Business Revenue (1,000)</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Direct</td>
<td>US $ 3,827,437</td>
<td>Cdn $ 4,969,545</td>
<td></td>
</tr>
<tr>
<td>Induced/Local Consumption</td>
<td>US $ 417,393</td>
<td>Cdn $ 541,943</td>
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<tr>
<td>Indirect</td>
<td>US $ 1,069,974</td>
<td>Cdn $ 1,376,780</td>
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<tr>
<td><strong>Total</strong></td>
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<tr>
<td><strong>Local Purchases (1,000)</strong></td>
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<td></td>
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<tr>
<td>Direct</td>
<td>US $ 824,071</td>
<td>Cdn $ 1,069,974</td>
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<tr>
<td>Induced/Local Consumption</td>
<td>US $ 308,434</td>
<td>Cdn $ 400,471</td>
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</tr>
<tr>
<td>Indirect</td>
<td>US $ 308,434</td>
<td>Cdn $ 400,471</td>
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</tr>
<tr>
<td><strong>Total</strong></td>
<td>US $ 1,462,580</td>
<td>Cdn $ 1,870,429</td>
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</tr>
<tr>
<td><strong>Taxes (1,000)</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Federal</td>
<td>US $ 550,773</td>
<td>Cdn $ 715,123</td>
<td></td>
</tr>
<tr>
<td>State and Local</td>
<td>US $ 202,319</td>
<td>Cdn $ 262,690</td>
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</tr>
<tr>
<td><strong>Total</strong></td>
<td>US $ 753,091</td>
<td>Cdn $ 977,814</td>
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</table>
### Exhibit IV-10 Continued

<table>
<thead>
<tr>
<th>Tonnage Handled (1,000): Metric Tons (Short Tons)</th>
<th>Minnesota (3,356, 3,699)</th>
<th>Illinois (786, 866)</th>
<th>Wisconsin (3,415, 3,764)</th>
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<tr>
<td><strong>Jobs</strong></td>
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</tr>
<tr>
<td>Direct Jobs</td>
<td>284</td>
<td>501</td>
<td>460</td>
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<tr>
<td>Induced</td>
<td>251</td>
<td>476</td>
<td>351</td>
</tr>
<tr>
<td>Indirect</td>
<td>351</td>
<td>148</td>
<td>271</td>
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<tr>
<td>Total</td>
<td>886</td>
<td>1,125</td>
<td>1,082</td>
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<table>
<thead>
<tr>
<th>Economic Activity (1,000)</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Personal Income (1,000)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>$13,641</td>
<td>$17,711</td>
<td>$23,859</td>
<td>$30,978</td>
<td>$22,786</td>
<td>$29,586</td>
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<td>Re-Spending/Local Consumption</td>
<td>$29,325</td>
<td>$38,076</td>
<td>$62,970</td>
<td>$81,760</td>
<td>$37,946</td>
<td>$49,269</td>
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<tr>
<td>Indirect</td>
<td>$16,534</td>
<td>$21,468</td>
<td>$7,750</td>
<td>$10,062</td>
<td>$12,061</td>
<td>$15,660</td>
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<td>Total</td>
<td>$59,500</td>
<td>$77,255</td>
<td>$94,578</td>
<td>$122,801</td>
<td>$72,794</td>
<td>$94,515</td>
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<td><strong>Business Revenue (1,000)</strong></td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>$136,143</td>
<td>$176,768</td>
<td>$76,081</td>
<td>$98,763</td>
<td>$157,776</td>
<td>$204,856</td>
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<td><strong>Local Purchases (1,000)</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$36,380</td>
<td>$47,235</td>
<td>$14,970</td>
<td>$19,437</td>
<td>$37,630</td>
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<tr>
<td><strong>Taxes (1,000)</strong></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Federal</td>
<td>$20,391</td>
<td>$26,476</td>
<td>$24,274</td>
<td>$31,518</td>
<td>$24,438</td>
<td>$31,730</td>
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<tr>
<td>State and Local</td>
<td>$9,094</td>
<td>$11,808</td>
<td>$11,583</td>
<td>$15,039</td>
<td>$10,500</td>
<td>$13,633</td>
</tr>
<tr>
<td>Total</td>
<td>$29,486</td>
<td>$38,284</td>
<td>$35,857</td>
<td>$46,557</td>
<td>$34,938</td>
<td>$45,363</td>
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</table>

<table>
<thead>
<tr>
<th>Tonnage Handled (1,000): Metric Tons (Short Tons)</th>
<th>New York (230, 253)</th>
<th>Pennsylvania (0, 0)*</th>
<th>16,886 (18,614)</th>
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</thead>
<tbody>
<tr>
<td><strong>Jobs</strong></td>
<td></td>
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</tr>
<tr>
<td>Direct Jobs</td>
<td>255</td>
<td>0</td>
<td>10,173</td>
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<tr>
<td>Induced</td>
<td>234</td>
<td>0</td>
<td>9,572</td>
</tr>
<tr>
<td>Indirect</td>
<td>43</td>
<td>0</td>
<td>13,109</td>
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<tr>
<td>Total</td>
<td>533</td>
<td>0</td>
<td>32,855</td>
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</table>

<table>
<thead>
<tr>
<th>Economic Activity (1,000)</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Personal Income (1,000)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>$17,873</td>
<td>$23,206</td>
<td>$4</td>
<td>$5</td>
<td>$577,694</td>
<td>$750,078</td>
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<tr>
<td>Re-Spending/Local Consumption</td>
<td>$29,783</td>
<td>$38,671</td>
<td>$9</td>
<td>$11</td>
<td>$1,181,409</td>
<td>$1,533,941</td>
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<tr>
<td>Indirect</td>
<td>$2,210</td>
<td>$2,870</td>
<td>$3</td>
<td>$4</td>
<td>$605,598</td>
<td>$786,309</td>
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<td>$64,474</td>
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<td>$20</td>
<td>$2,364,701</td>
<td>$3,070,327</td>
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<tr>
<td><strong>Business Revenue (1,000)</strong></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>$33,259</td>
<td>$43,184</td>
<td>$20</td>
<td>$26</td>
<td>$4,690,903</td>
<td>$6,090,669</td>
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<td><strong>Local Purchases (1,000)</strong></td>
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</tr>
<tr>
<td></td>
<td>$6,387</td>
<td>$8,294</td>
<td>$9</td>
<td>$12</td>
<td>$1,255,824</td>
<td>$1,630,563</td>
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<tr>
<td><strong>Taxes (1,000)</strong></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Federal</td>
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<td>$16,101</td>
<td>$4</td>
<td>$6</td>
<td>$768,660</td>
<td>$998,028</td>
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<tr>
<td>State and Local</td>
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<td>$8,836</td>
<td>$2</td>
<td>$3</td>
<td>$291,707</td>
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<td>$7</td>
<td>$8</td>
<td>$1,060,367</td>
<td>$1,376,780</td>
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* Pennsylvania tonnage appears as 0 as it is less than 1,000 metric tons
## EXHIBIT IV-12

### St. Lawrence Seaway Impacts by Flag of Carriage – Regional Level

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<tr>
<th></th>
<th>Canadian Flag</th>
<th>U.S. Flag</th>
<th>Foreign Flag</th>
<th>Total</th>
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</thead>
<tbody>
<tr>
<td><strong>Jobs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct Jobs</td>
<td>21,936</td>
<td>3,762</td>
<td>7,376</td>
<td>19,451</td>
</tr>
<tr>
<td>Induced</td>
<td>21,219</td>
<td>3,747</td>
<td>24,966</td>
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</tr>
<tr>
<td>Indirect</td>
<td>12,747</td>
<td>2,642</td>
<td>15,390</td>
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</tr>
<tr>
<td><strong>Total</strong></td>
<td>46,905</td>
<td>10,152</td>
<td>59,806</td>
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<tr>
<td><strong>Economic Activity (1,000)</strong></td>
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<td>$7,873,999</td>
<td>$1,011,850</td>
<td>$7,076,236</td>
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<td><strong>Personal Income (1,000)</strong></td>
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<td>$1,288,281</td>
<td>$122,625</td>
<td>$793,210</td>
</tr>
<tr>
<td>Direct</td>
<td>$619,825</td>
<td>$804,781</td>
<td>$153,344</td>
<td>$773,169</td>
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<tr>
<td>Re-Spending/Local Consumption</td>
<td>$939,159</td>
<td>$1,219,404</td>
<td>$129,022</td>
<td>$1,068,180</td>
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<tr>
<td>Indirect</td>
<td>$553,255</td>
<td>$718,347</td>
<td>$109,362</td>
<td>$662,617</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$2,112,239</td>
<td>$2,742,531</td>
<td>$391,727</td>
<td>$2,503,966</td>
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<tr>
<td><strong>Business Revenue (1,000)</strong></td>
<td>$5,125,227</td>
<td>$6,654,595</td>
<td>$822,828</td>
<td>$6,008,055</td>
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<tr>
<td><strong>Local Purchases (1,000)</strong></td>
<td>$1,379,579</td>
<td>$1,791,246</td>
<td>$281,321</td>
<td>$1,660,900</td>
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<tr>
<td><strong>Taxes (1,000)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Federal</td>
<td>$670,945</td>
<td>$871,154</td>
<td>$122,625</td>
<td>$793,210</td>
</tr>
<tr>
<td>Provincial and Local</td>
<td>$411,481</td>
<td>$534,267</td>
<td>$124,643</td>
<td>$536,124</td>
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<tr>
<td><strong>Total</strong></td>
<td>$1,082,426</td>
<td>$1,405,422</td>
<td>$246,908</td>
<td>$1,329,334</td>
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</tbody>
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Chapter V – Soo Locks Impacts

This chapter describes the economic impacts of all domestic and international cargo moving through the Soo Locks, which connect ports on Lake Superior to the lower Lakes, the St. Lawrence Seaway and international markets. The Soo Locks are located on the St. Marys River in Sault Ste. Marie, Michigan.

In 2017, a total of 69.1 million metric tons of cargo (76.2 million short tons) valued at US$5.8 billion (Cdn$7.5 billion) passed through the Soo Locks. The actual tons handled at system ports that also moved through the Soo Locks is 134.8 million metric tons (148.6 million short tons), creating the following economic impacts:

Economic Activity — The marine cargo and vessel activity moving through the Soo Locks generated a total of US$22.6 billion (Cdn$29.3 billion) in total economic activity in the United States and Canada.

Employment — Maritime commerce that transited the Soo Locks supported 123,172 U.S. and Canadian jobs, including 39,765 direct jobs. As a result of local and regional purchases made by those 39,765 individuals, an additional 41,828 induced jobs were supported in the regional economy. Finally, 41,579 indirect jobs were supported by US$4.2 billion (Cdn$5.4 billion) in regional purchases by businesses supplying services at the marine terminals and ports.

Personal Income — Cargo moving via the Soo Locks supported US$7.9 billion (Cdn$10.3 billion) in total personal wages and local consumption expenditures in the regional economies of the U.S. and Canada. The 39,765 direct jobholders received US$2.1 billion (Cdn$2.7 billion) in direct wage and salary income.

Local Purchases — Businesses involved in maritime activity transiting the Soo Locks spent US$4.2 billion (Cdn$5.4 billion) on purchases in their respective local economies.

Taxes — Commercial maritime activity moving via the Soo Locks generated US$3.8 billion (Cdn$4.9 billion) in local, state/provincial and federal tax revenues.
<table>
<thead>
<tr>
<th>Jobs</th>
<th>Canada</th>
<th>United States</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Jobs</td>
<td>11,668</td>
<td>28,097</td>
<td>39,765</td>
</tr>
<tr>
<td>Induced</td>
<td>15,100</td>
<td>26,728</td>
<td>41,828</td>
</tr>
<tr>
<td>Indirect</td>
<td>9,246</td>
<td>32,332</td>
<td>41,579</td>
</tr>
<tr>
<td>Total</td>
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<td>87,158</td>
<td>123,172</td>
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<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>$5,157,870</td>
<td>$6,735,930</td>
<td>$17,407,618</td>
<td>$22,600,051</td>
<td>$22,595,488</td>
<td>$29,337,981</td>
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<tr>
<td>United States</td>
<td>$4,536,746</td>
<td>$5,890,512</td>
<td>$14,106,056</td>
<td>$18,315,303</td>
<td>$18,642,803</td>
<td>$24,205,815</td>
</tr>
<tr>
<td>Total</td>
<td>$9,694,616</td>
<td>$12,626,442</td>
<td>$31,513,671</td>
<td>$40,925,354</td>
<td>$41,238,291</td>
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</table>

<table>
<thead>
<tr>
<th>Personal Income (1,000)</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct</td>
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<td>$587,496</td>
<td>$1,655,669</td>
<td>$2,149,720</td>
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<td>Re-Spending/Local Consumption</td>
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<td>$845,419</td>
<td>$3,301,561</td>
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<td>$3,952,685</td>
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<tr>
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<td>$520,849</td>
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<td>$8,359,271</td>
<td>$7,942,879</td>
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</table>

<table>
<thead>
<tr>
<th>Business Revenue (1,000)</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>$4,536,746</td>
<td>$5,890,512</td>
<td>$14,106,056</td>
<td>$18,315,303</td>
<td>$18,642,803</td>
<td>$24,205,815</td>
</tr>
<tr>
<td>United States</td>
<td>$1,006,529</td>
<td>$1,306,877</td>
<td>$3,152,483</td>
<td>$4,093,184</td>
<td>$4,159,011</td>
<td>$5,400,060</td>
</tr>
<tr>
<td>Total</td>
<td>$5,543,275</td>
<td>$7,197,389</td>
<td>$17,258,539</td>
<td>$22,408,487</td>
<td>$22,801,814</td>
<td>$29,605,875</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Local Purchases (1,000)</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>$1,006,529</td>
<td>$1,306,877</td>
<td>$3,152,483</td>
<td>$4,093,184</td>
<td>$4,159,011</td>
<td>$5,400,060</td>
</tr>
<tr>
<td>United States</td>
<td>$4,536,746</td>
<td>$5,890,512</td>
<td>$14,106,056</td>
<td>$18,315,303</td>
<td>$18,642,803</td>
<td>$24,205,815</td>
</tr>
<tr>
<td>Total</td>
<td>$5,543,275</td>
<td>$7,197,389</td>
<td>$17,258,539</td>
<td>$22,408,487</td>
<td>$22,801,814</td>
<td>$29,605,875</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Taxes (1,000)</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal</td>
<td>$506,315</td>
<td>$657,400</td>
<td>$2,170,159</td>
<td>$2,817,734</td>
<td>$2,676,474</td>
<td>$3,475,134</td>
</tr>
<tr>
<td>State/Provincial and Local</td>
<td>$328,161</td>
<td>$426,084</td>
<td>$804,489</td>
<td>$1,044,549</td>
<td>$1,132,650</td>
<td>$1,470,633</td>
</tr>
<tr>
<td>Total</td>
<td>$834,476</td>
<td>$1,083,484</td>
<td>$2,974,648</td>
<td>$3,862,283</td>
<td>$3,809,124</td>
<td>$4,945,767</td>
</tr>
</tbody>
</table>

---

<table>
<thead>
<tr>
<th>Tonnage Handled (1,000): Metric Tons (Short Tons)</th>
<th>Indiana</th>
<th>Ohio</th>
<th>Michigan</th>
</tr>
</thead>
<tbody>
<tr>
<td>19,272 (21,244)</td>
<td></td>
<td>11,813 (13,021)</td>
<td>23,676 (26,098)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Jobs</th>
<th>Indiana</th>
<th>Ohio</th>
<th>Michigan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Jobs</td>
<td>15,046</td>
<td>3,024</td>
<td>5,677</td>
</tr>
<tr>
<td>Induced</td>
<td>15,706</td>
<td>3,163</td>
<td>4,405</td>
</tr>
<tr>
<td>Indirect</td>
<td>20,973</td>
<td>4,436</td>
<td>3,495</td>
</tr>
<tr>
<td>Total</td>
<td>51,725</td>
<td>10,623</td>
<td>13,577</td>
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<table>
<thead>
<tr>
<th>Economic Activity (1,000)</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>$10,379,603</td>
<td>$13,476,876</td>
<td>$1,931,952</td>
<td>$2,508,446</td>
<td>$2,522,900</td>
<td>$3,275,761</td>
</tr>
<tr>
<td>United States</td>
<td>$8,382,799</td>
<td>$10,884,226</td>
<td>$1,537,027</td>
<td>$1,995,676</td>
<td>$2,000,700</td>
<td>$2,597,708</td>
</tr>
<tr>
<td>Total</td>
<td>$18,762,402</td>
<td>$24,361,092</td>
<td>$3,469,080</td>
<td>$4,504,122</td>
<td>$4,523,600</td>
<td>$5,873,469</td>
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</table>

<table>
<thead>
<tr>
<th>Personal Income (1,000)</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct</td>
<td>$983,114</td>
<td>$1,276,476</td>
<td>$182,988</td>
<td>$237,592</td>
<td>$289,994</td>
<td>$376,529</td>
</tr>
<tr>
<td>Re-Spending/Local Consumption</td>
<td>$1,996,804</td>
<td>$2,592,650</td>
<td>$394,927</td>
<td>$512,770</td>
<td>$522,222</td>
<td>$678,053</td>
</tr>
<tr>
<td>Indirect</td>
<td>$965,748</td>
<td>$1,253,927</td>
<td>$209,006</td>
<td>$271,374</td>
<td>$147,610</td>
<td>$191,657</td>
</tr>
<tr>
<td>Total</td>
<td>$3,945,666</td>
<td>$5,123,053</td>
<td>$786,919</td>
<td>$1,021,736</td>
<td>$959,826</td>
<td>$1,246,238</td>
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</table>

<table>
<thead>
<tr>
<th>Business Revenue (1,000)</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>$1,314,792</td>
<td>$1,707,126</td>
<td>$254,401</td>
<td>$330,314</td>
<td>$317,604</td>
<td>$412,377</td>
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<tr>
<td>United States</td>
<td>$492,197</td>
<td>$639,069</td>
<td>$77,118</td>
<td>$100,130</td>
<td>$114,232</td>
<td>$148,319</td>
</tr>
<tr>
<td>Total</td>
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<td>$2,346,195</td>
<td>$331,519</td>
<td>$430,444</td>
<td>$431,836</td>
<td>$560,696</td>
</tr>
<tr>
<td>EXHIBIT V-10 Continued</td>
<td>Minnesota</td>
<td>Illinois</td>
<td>Wisconsin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------</td>
<td>-----------</td>
<td>----------</td>
<td>-----------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tonnage Handled (1,000): Metric Tons (Short Tons)</td>
<td>30,924 (34,088)</td>
<td>910 (1,003)</td>
<td>20,605 (22,713)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jobs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct Jobs</td>
<td>2,155</td>
<td>175</td>
<td>1,817</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Induced</td>
<td>1,834</td>
<td>158</td>
<td>1,318</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indirect</td>
<td>2,111</td>
<td>52</td>
<td>1,235</td>
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<td></td>
<td></td>
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<tr>
<td>Total</td>
<td>6,101</td>
<td>385</td>
<td>4,369</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Economic Activity (1,000)</td>
<td>US $</td>
<td>Cdn $</td>
<td>US $</td>
<td>Cdn $</td>
<td>US $</td>
<td>Cdn $</td>
</tr>
<tr>
<td>Personal Income (1,000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>$98,393</td>
<td>$127,753</td>
<td>$7,784</td>
<td>$10,107</td>
<td>$83,833</td>
<td>$108,849</td>
</tr>
<tr>
<td>Re-Spending/Local Consumption</td>
<td>$211,524</td>
<td>$274,643</td>
<td>$20,545</td>
<td>$26,676</td>
<td>$139,607</td>
<td>$181,265</td>
</tr>
<tr>
<td>Indirect</td>
<td>$99,488</td>
<td>$129,175</td>
<td>$2,712</td>
<td>$3,521</td>
<td>$54,799</td>
<td>$71,150</td>
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<tr>
<td>Total</td>
<td>$409,405</td>
<td>$531,571</td>
<td>$31,041</td>
<td>$40,304</td>
<td>$278,238</td>
<td>$361,265</td>
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<tr>
<td>Business Revenue (1,000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>US $</td>
<td>$1,258,308</td>
<td>$1,633,787</td>
<td>$35,194</td>
<td>$45,696</td>
<td>$872,691</td>
<td>$1,133,102</td>
</tr>
<tr>
<td>Local Purchases (1,000)</td>
<td>$219,776</td>
<td>$285,357</td>
<td>$5,238</td>
<td>$6,801</td>
<td>$130,086</td>
<td>$168,903</td>
</tr>
<tr>
<td>Taxes (1,000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Federal</td>
<td>$158,957</td>
<td>$206,390</td>
<td>$8,560</td>
<td>$11,144</td>
<td>$109,046</td>
<td>$141,585</td>
</tr>
<tr>
<td>State and Local</td>
<td>$68,879</td>
<td>$89,432</td>
<td>$3,960</td>
<td>$5,142</td>
<td>$44,395</td>
<td>$57,642</td>
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<tr>
<td>Total</td>
<td>$227,835</td>
<td>$295,822</td>
<td>$12,520</td>
<td>$16,256</td>
<td>$153,441</td>
<td>$199,228</td>
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</table>

<table>
<thead>
<tr>
<th>EXHIBIT V-10 Continued</th>
<th>New York</th>
<th>Pennsylvania</th>
<th>Total US</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tonnage Handled (1,000): Metric Tons (Short Tons)</td>
<td>325 (358)</td>
<td>0 (0)</td>
<td>107,525 (118,525)</td>
</tr>
<tr>
<td>Jobs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct Jobs</td>
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<td>0</td>
<td>28,097</td>
</tr>
<tr>
<td>Induced</td>
<td>144</td>
<td>0</td>
<td>26,728</td>
</tr>
<tr>
<td>Indirect</td>
<td>30</td>
<td>0</td>
<td>32,332</td>
</tr>
<tr>
<td>Total</td>
<td>377</td>
<td>0</td>
<td>87,158</td>
</tr>
<tr>
<td>Economic Activity (1,000)</td>
<td>US $</td>
<td>Cdn $</td>
<td>US $</td>
</tr>
<tr>
<td>Personal Income (1,000)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>$9,562</td>
<td>$12,416</td>
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</tr>
<tr>
<td>Re-Spending/Local Consumption</td>
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<td>$20,690</td>
<td>$0</td>
</tr>
<tr>
<td>Indirect</td>
<td>$1,539</td>
<td>$1,998</td>
<td>$0</td>
</tr>
<tr>
<td>Total</td>
<td>$27,036</td>
<td>$35,103</td>
<td>$0</td>
</tr>
<tr>
<td>Business Revenue (1,000)</td>
<td>$19,337</td>
<td>$25,108</td>
<td>$0</td>
</tr>
<tr>
<td>Local Purchases (1,000)</td>
<td>$4,447</td>
<td>$5,774</td>
<td>$0</td>
</tr>
<tr>
<td>Taxes (1,000)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Federal</td>
<td>$6,799</td>
<td>$8,828</td>
<td>$0</td>
</tr>
<tr>
<td>State and Local</td>
<td>$3,708</td>
<td>$4,815</td>
<td>$0</td>
</tr>
<tr>
<td>Total</td>
<td>$10,507</td>
<td>$13,643</td>
<td>$0</td>
</tr>
</tbody>
</table>
### EXHIBIT V-11
**Soo Locks Impacts – by Province**

<table>
<thead>
<tr>
<th>Tonnage Handled (1,000): Metric Tons (Short Tons)</th>
<th>Ontario</th>
<th>Quebec</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>19,257 (21,227)</td>
<td>7,990 (8,807)</td>
<td>27,247 (30,034)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Jobs</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Jobs</td>
<td>405,559</td>
<td>526,578</td>
<td>46,917</td>
<td>60,917</td>
<td>452,477</td>
<td>587,496</td>
</tr>
<tr>
<td>Induced</td>
<td>614,504</td>
<td>797,871</td>
<td>36,620</td>
<td>47,548</td>
<td>651,124</td>
<td>845,419</td>
</tr>
<tr>
<td>Indirect</td>
<td>370,117</td>
<td>480,560</td>
<td>31,029</td>
<td>40,289</td>
<td>401,147</td>
<td>520,849</td>
</tr>
<tr>
<td>Total</td>
<td>1,390,180</td>
<td>1,805,010</td>
<td>114,567</td>
<td>148,754</td>
<td>1,504,747</td>
<td>1,953,763</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Economic Activity (1,000)</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
</tr>
</thead>
<tbody>
<tr>
<td>$4,783,280</td>
<td>$6,210,611</td>
<td>$404,590</td>
<td>$525,319</td>
<td>$15,187,870</td>
<td>$16,735,930</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Personal Income (1,000)</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct</td>
<td>467,044</td>
<td>606,410</td>
<td>39,271</td>
<td>50,990</td>
<td>506,315</td>
<td>657,400</td>
</tr>
<tr>
<td>Re-Spending/Local Consumption</td>
<td>289,117</td>
<td>375,389</td>
<td>39,044</td>
<td>50,695</td>
<td>328,161</td>
<td>426,084</td>
</tr>
<tr>
<td>Total</td>
<td>756,161</td>
<td>981,799</td>
<td>78,315</td>
<td>101,685</td>
<td>834,476</td>
<td>1,083,484</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Business Revenue (1,000)</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
</tr>
</thead>
<tbody>
<tr>
<td>$4,168,777</td>
<td>$5,412,740</td>
<td>$367,970</td>
<td>$477,772</td>
<td>$4,536,746</td>
<td>$5,890,512</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Local Purchases (1,000)</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
</tr>
</thead>
<tbody>
<tr>
<td>$918,514</td>
<td>$1,192,599</td>
<td>$88,014</td>
<td>$114,278</td>
<td>$1,006,529</td>
<td>$1,306,877</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Taxes (1,000)</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal</td>
<td>467,044</td>
<td>606,410</td>
<td>39,271</td>
<td>50,990</td>
<td>506,315</td>
<td>657,400</td>
</tr>
<tr>
<td>Provincial and Local</td>
<td>289,117</td>
<td>375,389</td>
<td>39,044</td>
<td>50,695</td>
<td>328,161</td>
<td>426,084</td>
</tr>
<tr>
<td>Total</td>
<td>756,161</td>
<td>981,799</td>
<td>78,315</td>
<td>101,685</td>
<td>834,476</td>
<td>1,083,484</td>
</tr>
</tbody>
</table>

### EXHIBIT V-12
**Soo Locks Impacts by Flag of Carriage – Regional Level**

<table>
<thead>
<tr>
<th>Jobs</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Jobs</td>
<td>14,451</td>
<td>24,805</td>
<td>508</td>
<td>39,765</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Induced</td>
<td>17,229</td>
<td>23,969</td>
<td>15,100</td>
<td>11,668</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indirect</td>
<td>8,476</td>
<td>1,157</td>
<td>770</td>
<td>2,464</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>44,240</td>
<td>77,220</td>
<td>1,712</td>
<td>36,014</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Economic Activity (1,000)</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
</tr>
</thead>
<tbody>
<tr>
<td>$7,073,549</td>
<td>$9,184,296</td>
<td>$9,184,296</td>
<td>$15,363,551</td>
<td>$19,948,035</td>
<td>$158,387</td>
<td>$205,650</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Personal Income (1,000)</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct</td>
<td>616,639</td>
<td>800,645</td>
<td>1,467,132</td>
<td>1,904,925</td>
<td>24,374</td>
<td>31,647</td>
</tr>
<tr>
<td>Re-Spending/Local Consumption</td>
<td>289,117</td>
<td>375,389</td>
<td>39,044</td>
<td>50,695</td>
<td>328,161</td>
<td>426,084</td>
</tr>
<tr>
<td>Indirect</td>
<td>554,671</td>
<td>720,185</td>
<td>1,301,761</td>
<td>1,690,207</td>
<td>25,616</td>
<td>33,259</td>
</tr>
<tr>
<td>Total</td>
<td>2,164,835</td>
<td>2,810,822</td>
<td>2,687,694</td>
<td>3,480,373</td>
<td>90,350</td>
<td>117,310</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Business Revenue (1,000)</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
<th>US $</th>
<th>Cdn $</th>
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Executive Summary

This report summarizes findings from a study that quantified the economic impact of the Great Lakes Restoration Initiative (GLRI) using an integrated approach that includes both quantitative modeling and analysis to determine the GLRI’s region-wide impact and detailed case studies that illustrate the impacts from the perspective of specific Great Lakes communities. Researchers used rigorous economic analysis to produce a comprehensive, evidence-based estimate of the economic benefits generated by GLRI spending between 2010 and 2016 and the additional economic activity that will result through 2036. The case studies are based on interviews of local leaders and extensive research and data collection in eight Great Lakes communities that benefitted from significant GLRI spending.

The GLRI was designed to be an environmental restoration program, not an economic development program, but it nonetheless has produced substantial economic benefits for the Great Lakes region. The federal government spent $1.4 billion on GLRI projects in the Great Lakes states from 2010 through 2016, triggering $360 million in matching funds from state and local governments and industry. These investments generated additional economic activity in the region each year from 2010 to 2016, reaching a peak of over $500 million in 2015.

The economic activity generated by the GLRI will continue as restoration and development activities are completed, the Great Lakes ecosystem continues to recover, and additional benefits manifest in communities affected by the program. The economic modeling conducted in this study suggests that every dollar of federal spending on GLRI projects between 2010 and 2016 will produce $3.35 in additional economic activity in the Great Lakes region through 2036. Some communities will benefit even more; older industrial cities, such as Buffalo and Detroit, may see more than $4 in additional economic activity through 2036 for every GLRI project dollar spent between 2010 and 2016.
The GLRI also has greatly improved the tourism economy in the Great Lakes region, which is particularly important for coastal communities. Every case study community reported a resurgence in traditional recreational activities such as recreational boating, sailing, fishing, and canoeing and the emergence of a new type of tourism focused on kayaking, kitesurfing, and paddle-boarding due to the environmental improvements accomplished under the GLRI. Across the region, existing businesses have prospered and new businesses have emerged to serve growing numbers of residents and tourists visiting revitalized waterfront areas. And increased tourism will continue to grow the regional economy in the decades to come. Every dollar of GLRI spending from 2010 through 2016 will generate $1.62 in economic value in tourism industries through 2036. This is nearly half of the $3.35 total anticipated increase in economic activity generated by GLRI spending during this period.

Finally, the GLRI also has improved the quality of life of people living in the Great Lakes region. New opportunities resulting from GLRI project spending, such as new businesses, more jobs, and more water-based recreation, enable residents to enjoy local water resources in new ways. The value of homes in coastal communities increased due to GLRI investments, which means that people place a higher value on living in those communities because of GLRI projects. As measured in housing values, every dollar of GLRI spending between 2010 and 2016 produced improvements in quality of life in Great Lakes communities worth $1.08 to local residents.

Background

The Great Lakes ecosystem and the Great Lakes regional economy have been fundamentally connected for centuries. Rich, arable land and the region’s abundant timber and other natural resources supported human development, and vast mineral deposits facilitated the growth of the region’s traditional industries such as automotive and other durable goods manufacturing, steel, chemical, machine tool, electronics, and paper production. The Great Lakes and their tributaries formed natural infrastructure for transportation and commerce, and manmade canals and railroads accelerated economic growth. Factory-based industries created wealth for the region’s citizens and fueled the rise of major industrial cities – such as Buffalo, Cleveland, Detroit, Milwaukee, Chicago, and Duluth.¹

The Great Lakes supplied vast amounts of fresh water to nourish the growth of the regional economy, but the environmental health of the lakes was compromised in the process. The ecosystem has suffered serious impacts from human development, invasive species, habitat destruction, and a legacy of pollution caused by historic industrial practices and municipal and agricultural discharges. For decades, the region benefitted from the Great Lakes but did not do enough to protect the lakes or prevent environmental damage.²

The Great Lakes economy also has experienced serious challenges in recent decades. Once the

¹The Vital Connection: Reclaiming Great Lakes Economic Leadership in the Binational U.S. Canadian Region (Brookings Institution, March 2008).
²Great Lakes Regional Collaboration Strategy to Restore and Protect the Great Lakes (December 2005), available at https://www.glrc.us/.
“king of the factory economy,” the region substantially lagged the U.S. in employment growth from 1970 to 2000 and experienced a full-blown, if slow-moving, employment crisis from 2000 to 2010.³ Population growth in the Great Lakes region also lagged the rest of the U.S. during this period, with population growth in the eight Great Lakes states between 1970 and 2010 representing only a fraction of the growth experienced by the rest of the country.

For these reasons, restoring the Great Lakes and leveraging them as an environmental and economic asset has been a longstanding priority for leaders in the Great Lakes region. In 2004, President Bush recognized the Great Lakes as a “national treasure” and initiated the Great Lakes Regional Collaboration to develop a comprehensive restoration strategy for the lakes. Building on this momentum, President Obama established the Great Lakes Restoration Initiative (GLRI) in 2010 to implement the regional restoration strategy. Since that time Congress has appropriated funding annually for the GLRI program, which has been implemented by the U.S. Environmental Protection Agency in collaboration with other federal agencies, the eight Great Lakes states, tribes, and innumerable local communities, conservation groups and other partners.

The GLRI is not a traditional economic stimulus program -- it was created to protect, enhance and restore the environmental health of the Great Lakes and the rivers that feed into them.⁴ The program focuses on five key areas: cleaning up the most heavily degraded areas (known as “Areas of Concern”); preventing and controlling invasive species; reducing polluted runoff that contributes to harmful algal blooms; restoring habitat to protect native species; and promoting long-term stewardship for the lakes. The 15 federal agencies that administer the program track GLRI’s notable environmental accomplishments in annual reports to the U.S. Congress and the President.⁵

GLRI Accomplishments, 2010-2016

- Cleaned up and restored harbors and coastal areas that were contaminated by decades of legacy pollution and completed cleanup work in six of the most heavily degraded “Areas of Concern”
- Controlled invasive species on approximately 115,000 acres
- Prevented 402,000 pounds of phosphorus from entering the Great Lakes
- Protected, restored and enhanced 642 miles of shoreline and riparian corridors, 17,500 acres of coastal wetlands, and more than 180,000 acres of habitat.⁶

While the GLRI clearly has generated measurable environmental improvements in the Great Lakes, the program’s economic impact has not been clearly tracked. The findings of this study address a gap in understanding by demonstrating through rigorous and multi-faceted analyses that the GLRI has generated

³ Water Pollution and Control Act, as amended by the Water Infrastructure Improvements for the Nation Act (December 16, 2016), 33 U.S. Code § 1268(c)(7).
⁴ U.S. EPA’s annual reports to Congress and the President are available at https://www.glri.us/documents.
economic impacts similar to impacts generated by targeted economic stimulus programs even though funds were deployed solely to improve environmental health. This report shows that the GLRI had a substantial impact on the region’s economy and a significant revitalizing effect on Great Lakes communities, both of which will continue to contribute to the region’s economic prosperity well into the future.7

Methods

This project commenced in June 2017 to derive a comprehensive, evidence-based estimate of the economic benefits generated by the GLRI using actual GLRI spending and county-level economic data. In two project phases, researchers used rigorous economic analysis to quantify the GLRI’s regional economic impacts and conducted stakeholder interviews to collect information about impacts in local communities where significant amounts of GLRI funding were spent.8 This two-part methodology quantified the GLRI’s impacts in conventional economic terms and showed how the benefits have manifested “on the ground” in local Great Lakes communities.

From June to October 2017, the research team collected data about GLRI project spending and analyzed it using a customized dynamic economic input/output model developed by Regional Economic Models, Inc. (REMI) to provide a “rough cut” estimate of the GLRI’s economic impacts. Project spending data came from U.S. EPA’s Environmental Accomplishments in the Great Lakes (EAGL) database, which contained detailed information on 3,652 projects that were awarded $1.8 billion nominal (i.e., not inflation-adjusted) under the GLRI.9 After adjusting for inflation, confirming that projects were located in the Great Lakes region, and eliminating projects with incomplete data, the research team focused its analysis on $1.4 billion of GLRI project spending that occurred during the study period (2010 through 2016) (Figure 1).10

Using this project-level spending data and the customized REMI model, the research team produced preliminary information about the types of economic metrics that reflected the effect of the GLRI program on the region’s economy and the areas of potential economic

7 This study differs in important ways from the report titled Healthy Waters, Strong Economy: The Benefits of Restoring the Great Lakes Ecosystem (Washington: Brookings Institution, 2007), and its companion report, America’s North Coast: A Benefit-Cost Analysis of a Program to Protect and Restore the Great Lakes (September 2007). These two reports laid out the economic case for $26 billion in Great Lakes restoration activity before GLRI was initiated, calculating a benefit-to-cost ratio for an entire program of Great Lakes restoration activity before any investments were made. This study, by contrast, evaluated the impact of known GLRI spending between 2010 and 2016 on the economy and projected the future impact of the spending through 2036. Regional economic output is related to the type of benefits projected by Healthy Waters, Strong Economy, but the two measures are conceptually distinct and not numerically comparable.

8 For detailed information about the analytical methods used in this study, see Socioeconomic Impacts of the Great Lakes Restoration Initiative (University of Michigan Research Seminar in Quantitative Economics, 2018), available at bit.ly/GLRIEconomicImpact.

9 Almost $500 million of the GLRI funding appropriated by Congress is not included in the EAGL database that the research team received in mid-2017. This is because the funds were spent on projects undertaken by agencies not required to report data to the EAGL database or were used for other program-related expenditures (e.g., to support U.S. EPA’s Great Lakes National Program Office). Congress appropriated a total of $2.26 billion under the GLRI in fiscal years 2010 through 2016.

10 Unless otherwise indicated, dollar values reported in this document have been adjusted for inflation and are reported as 2009 dollars. This is a standard approach and helps keep all reported figures in the same units, avoiding appearances of rising or declining effects over time that are due solely to inflation.
impact that could be explored through additional analysis. Researchers also conducted semi-structured qualitative stakeholder interviews in four communities where GLRI investments were significant to determine how communities in the region experienced and characterized the GLRI’s economic impacts. The stakeholder interviews informed the assumptions underlying the economic modeling and provided information about the GLRI’s “on the ground” economic impacts.

The preliminary analysis undertaken in this study shows that the GLRI had positive economic impacts across the region during the study period. The economic analysis showed that GLRI project spending:

- created or supported thousands of short-term jobs--approximately the same number that would be created by conventional federal stimulus programs that, unlike the GLRI, are primarily intended to create jobs
- increased personal income for Great Lakes residents
- attracted or retained residents in the eight Great Lakes states, including millennials and young families who were drawn by the region’s improved quality of life

The initial interviews conducted in this study illustrate that the GLRI has had positive economic impacts in local communities. Stakeholders reported that the program:

- has been a “catalyst” for new real estate and commercial development, especially in waterfront communities challenged by decades of decline
• improved community awareness of, and access to, Great Lakes water resources
• deepened perceptions of “community” and optimism for the future in “rust belt” areas
• helped communities tackle problems they previously believed were insurmountable obstacles to development
• generated growth in the tourism sector and changed stakeholder perceptions of the value of their communities for water-based tourism

From November 2017 to September 2018, the research team used these early results to refine the economic modelling and identify additional analyses that would generate a more comprehensive estimate of the GLRI’s economic impact. The refined analytical scope included developing a regional economic multiplier to estimate the overall impact the GLRI will have on the Great Lakes economy through 2036; an estimate of the amount of increased tourism that resulted from GLRI project spending; and a mechanism for quantifying quality of life improvements that resulted from GLRI project spending.

To complement the additional economic analysis, the project includes quantitative case studies that highlight the economic impact of the GLRI in eight Great Lakes communities where significant funds were invested: Duluth, MN/Superior, WI; Sheboygan, WI; Waukegan, IL; Muskegon, MI; Detroit, MI; Ashtabula, OH; Erie, PA; and Buffalo, NY (Figure 2). At each case study location, researchers conducted interviews with community leaders to identify the local economic impacts resulting from GLRI project spending. The researchers obtained quantitative data from a variety of sources to supplement the interviews and developed narratives that “tell the story” of the GLRI’s economic impacts in each community. The case study findings are summarized in a series of factsheets that accompany the study report.
Findings and Results

Overall Growth in the Great Lakes Regional Economy

Although the GLRI was originally conceived as an environmental restoration program and not an economic development program, it has nonetheless produced substantial economic benefits for the Great Lakes region. The federal government spent a total of $1.4 billion on GLRI projects in the Great Lakes states from 2010 through 2016, triggering $360 million in matching funds from state and local governments and industry. These investments generated additional economic activity in the region each year from 2010 to 2016, reaching a peak of over $500 million in 2015.

Findings and Results

The GLRI has provided substantial benefits to the economy of the Great Lakes region.

- Every dollar spent on GLRI projects from 2010–2016 will produce $3.35 in additional economic output in the Great Lakes region through 2036.

- In certain case study communities, the longer-term impact will be even greater: every dollar of federal GLRI spending from 2010-2016 will produce more than $4 of additional economic activity through 2036.

- Additional tourism activity generated by the GLRI will increase regional economic output by $1.62 from 2010–2036 for every dollar spent on GLRI projects from 2010 to 2016. This is nearly half of the total increase in economic output documented by the study.

- Every dollar of GLRI spending from 2010–2016 increased local house values by $1.08, suggesting that GLRI projects provided amenities that were valuable to local residents and improved the region’s quality of life.

The case studies illustrate the regional economic impact of the GLRI from the perspective of local communities. These impacts include:

- millions of dollars of new real estate and commercial development, particularly in waterfront areas;

- a resurgence of traditional recreational activities and the emergence of new opportunities such as kayaking, kitesurfing, and paddle-boarding;

- increased tourist visits and growth in revenues earned by tourism-related businesses;

- improved quality of life as shown by new residential housing, growing numbers of young people choosing to stay in or relocate to Great Lakes communities, and the marketing of water-related amenities as a recruiting tool for employers.
The additional economic activity triggered by the GLRI is reflected in the new real estate and commercial development that has occurred in the case study communities. Stakeholders in every community described millions of dollars of new development that they connect to the environmental improvements created by the GLRI. Case study communities also report that manufacturers and other employers are attracted to the water quality improvements and increased amenities generated by the GLRI.

The economic activity generated by the GLRI will continue as additional restoration and development activities are completed, the Great Lakes ecosystem continues to recover, and water-related development expands to take advantage of new opportunities and public interest. According to this study’s economic modeling, every dollar of federal spending on projects funded under the GLRI during the period 2010 through 2016 will produce an additional $3.35 of additional economic activity in the Great Lakes region through 2036. In certain case study communities, the longer-term impact will be even greater: every dollar of federal GLRI spending in older industrial cities such as Buffalo and Detroit from 2010 through 2016 will produce more than $4 of additional economic activity in those locations through 2036.

City and county planning departments are actively planning for continued economic improvement in waterfront areas. Strategic planning documents that prioritize Buffalo’s waterfront include a multi-stakeholder plan entitled One Region Forward (2015) and Buffalo-Niagara’s Strategic Plan for Prosperity (2017). Erie County, PA produced Destination Erie (2015), which identifies the long-term goal of seeking national and international designations for Erie’s natural assets, such as inclusion on the UNESCO World Heritage list. The city of Erie produced a strategic plan in 2016 that includes “transforming the bayfront into a ‘mixed-use urban experience that leverages a world-class asset’.” In Ashtabula, OH both Ohio State University and a local community association have prepared business development and revitalization plans for the harbor district.

New Real Estate and Commercial Development

Erie – Harbor Place, a $150 million development with hotels, shops, condos, and an outdoor ice rink; and a new $20 million Hampton Inn and Suites to serve tourists and other visitors.

Duluth – Pier B Resort, a $32 million hotel complex constructed on a former shipping pier, two other new hotels, and five breweries on or near the city’s waterfront.

Muskegon – $47 million in new waterfront development projects and a new corporate headquarters for KL Outdoors, the world’s largest kayak manufacturer, that is investing $9 million and creating 150 new jobs.

Buffalo – A multi-million-dollar entertainment complex built on an old industrial site, offering a restaurant, ziplining, climbing wall, kayak and paddleboard rentals, hockey rink, and roller derby facilities; and a 105-acre commercial park on a former ship canal.

Waukegan – Bay Marine Chicago Yachting Center, a $5 million development that serves pleasure boaters, opened in 2018.

Sheboygan – $2 million facility that opened in Sheboygan in 2018 and houses SEAS, an association that teaches sailing.

Ashtabula – 27 new businesses have opened in the Harbor Business District since 2010.
Economic Benefits from Increased Tourism

The GLRI has improved the tourism economy in the Great Lakes region. Every case study community reported a resurgence in traditional recreational activities such as boating, sailing, fishing, and canoeing and the emergence of a new type of tourism focused on kayaking, kitesurfing, and paddle-boarding due to the environmental improvements generated by the GLRI. Across the region, existing businesses have prospered and new businesses have opened to serve growing numbers of waterfront visitors.

One new exciting economic opportunity for coastal communities is hosting cruise ships. In 2015, the Pearl Mist cruise ship docked in Muskegon by mistake due to a scheduling conflict at its originally planned stop in Holland, MI. But when the vessel docked and the passengers disembarked, the impression left by the city’s waterfront was so positive that Muskegon is now included as a regularly scheduled stop. The ship made nine stops in Muskegon in 2016, ten stops in 2017, and will make 10 stops in 2018. Passengers spent $50,000 in during their visit to Muskegon’s waterfront area in 2016 alone.

All in all, GLRI spending from 2010 through 2016 generated or supported over 1,700 jobs in tourism-related industries in the Great Lakes region, which is almost a third of the GLRI’s total impact on regional employment during that period. These new tourism jobs had a particularly significant impact in smaller Great Lakes communities. In Ashtabula, OH, for example, the GLRI accounted for nearly 10% of all observed job growth from 2010 through 2016. The GLRI also accounted for a substantial proportion of new jobs in Duluth/Superior and Sheboygan, WI from 2010 through 2016.

Increases in the tourism industry due to the GLRI will continue to grow the regional economy in the decades to come. This study shows that every dollar of GLRI spending from 2010 through 2016 will generate $1.62 of economic value in tourism industries through 2036. This is nearly half of the total increase in economic activity that will be generated by the GLRI during this period.
Economic Benefits from Improved Quality of Life

The GLRI has had a significant impact on the amenity value and quality of life of people living in Great Lakes coastal communities. The concept of quality of life in the context of a region or community encompasses such things as an area’s physical appearance and condition; the availability and characteristics of parks, open spaces, and recreational opportunities; and access to shopping, dining, and entertainment. This study quantified the impact of GLRI spending on intangible community characteristics like these by examining how GLRI spending affected local housing prices. This analysis is based on the theory that increasing the amenities that a community offers increases the amount of money people are willing to pay to live there and enjoy those amenities.

The results of this study show that GLRI project spending from 2010 through 2016 improved the amenities in coastal communities in the Great Lakes region, and that those improvements increased the value that residents place on living here. This study demonstrates this change in perception as reflected in local house prices. Every dollar of GLRI spending from 2010 through 2016 produced quality of life improvements in Great Lakes coastal communities worth $1.08 to residents. These results mean that people place a higher value on living in those communities because of GLRI projects.

The case studies illustrate the impact of improvements in the region’s quality of life and the increased value people place on living in Great Lakes communities. New apartments, condos and other housing options have gone up in each of the case study communities since GLRI investments began in 2010.

Residents report increased enjoyment of their communities due to the environmental improvements and increased shoreline amenities generated by the GLRI. Stakeholders in Buffalo report a definite connection between the improved perception of Buffalo’s waterways and the “entire self-esteem of the city.” Before the GLRI-funded cleanup in Sheboygan, WI, residents viewed the waterfront as “a black eye on the community.” Now residents are celebrating the waterfront as one of the community’s most valuable features. And the growing number of new restaurants in the harbor district in Ashtabula, OH have earned the area a reputation among residents as a “foodies destination.”

New Waterfront Housing

Duluth – A new $38 million residential and mixed-use development opened on Duluth’s waterfront in 2017.

Buffalo – A former shipping facility was redeveloped into an $18 million apartment building.

Detroit – More than $100 million has been invested in new or renovated waterfront residential buildings.

Sheboygan – More than 400 new housing units are under development along the waterfront, reflecting nearly $70 million in investment.

Employers in the case study communities are using the region’s improved quality of life as a means of attracting and maintaining talent. Employers in Erie, PA use improved waterways and access to beaches as a tool for recruiting younger residents. In turn, millennials in Erie, PA report a new sense of optimism for the community and a growing interest in contributing to its continued revitalization. And the city of Sheboygan, WI is using access to the waterfront and the availability of attractive waterfront housing to recruit new residents to fill open jobs, specifically targeting young people interested in livable, recreation-oriented places.

These efforts appear to have been successful in the case study communities, which report that young people find improvements in the region’s quality of life particularly valuable and important. Listening sessions in the city of Superior, WI were heavily attended by millennials who reported that they are interested in living in Duluth/Superior because they identify with and feel a connection to Lake Superior. Case study interviewees reported that millennials in Waukegan, IL, who previously tended to relocate to the north shore communities of Chicago, are staying in Waukegan to enjoy the waterfront and because they feel a connection to its environmental significance. Millennials in Detroit, who now constitute 22% of the city’s population (a higher percentage than in Michigan overall), report an appreciation for the city’s natural assets and are expected to drive continued environmental restoration as the city’s future leaders.

**Conclusion**

This study analyzed project spending under the GLRI from 2010 through 2016 and documented “on the ground” impacts of GLRI investments through case study interviews with community leaders. The study determined that every dollar of GLRI spending during this period will generate an additional $3.35 in economic activity for the region through 2036. The study results further support the conclusion that the GLRI program generated positive economic benefits for the Great Lakes region in terms of improved quality of life and growth in tourism.

The results illustrate a markedly positive trend in environmental, economic and social health in the Great Lakes region – and in the eight case study communities in particular – that contrasts with the economic decline that has characterized the region in recent decades. While other factors certainly are at play, the GLRI clearly contributed to this positive trend. The GLRI’s impacts highlight the importance of programs that stabilize Great Lakes communities by supporting jobs, creating new amenities to improve the quality of life, and providing opportunities and a “sense of place” that help to retain and attract residents.
Project Team and Acknowledgments

The project team was led by the Council of Great Lakes Industries and the Great Lakes Commission, and included the Alliance for the Great Lakes, the National Wildlife Federation, the Great Lakes Metro Chambers Coalition, the University of Michigan Water Center, and the Michigan Office of the Great Lakes.

Researchers included Dr. Gabriel Ehrlich, Dr. Michael McWilliams, and Don Grimes of the Research Seminar in Quantitative Economics at the University of Michigan. Dr. Marcello Graziano, Dr. Matt Liesch, and Leila Irajifar of Central Michigan University; Dr. Michael Moore of the University of Michigan, and Dr. Robyn Meeks of Duke University contributed to the research that underlies the study.

Nina Ignaczak and Patrick Dunn of Issue Media Group, Inc. conducted research and interviews in the eight case study locations and prepared quantitative case study narratives.

The project team acknowledges the contribution of a panel of economists that reviewed and provided an impartial critique of the research and ensured methodological rigor. The panel included nationally recognized experts from outside the Great Lakes region with experience and knowledge about the research methods employed in the study.

- Patrick Barkey, Director, Bureau of Business and Economic Research, University of Montana
- Craig Bond, Senior Economist, Rand Corporation
- Nicholas Burger, Senior Economist, Rand Corporation
- Colby Lancelin, Principal Planning Coordinator, Atlanta Regional Commission, Research Analysis Division
- Robert Litan, Visiting Senior Policy Scholar, McDonough School of Business, Georgetown University
- Bryce Ward, Associate Director at the Bureau of Business and Economic Research, University of Montana

The project team also benefitted from an advisory panel that provided strategic and communications guidance. The advisory panel included:

- John Austin, Director, Michigan Economic Center
- Jade Davis, Vice President, External Affairs, Port of Cleveland
- John Dickert, President and CEO, Great Lakes and St. Lawrence Cities Initiative
- Steve Fisher, Executive Director, American Great Lakes Ports Association
- Kim Foreman, Executive Director, Environmental Health Watch
- George Heartwell, former Mayor of Grand Rapids, Michigan
- Michael “Mic” Isham, Executive Administrator, Great Lakes Indian Fish and Wildlife Commission
- Kim Marotta, Director of Sustainability, MillerCoors
- Cara Matteliano, Vice President, Community Impact, Community Foundation of Greater Buffalo
- Matt McKenna, Director of the Great Lakes Washington Program, Northeast-Midwest Institute
- Stefan Schaffer, Office of Mayor Rahm Emanuel, City of Chicago
- Bill Steers, General Manager, Communications & Corporate Responsibility, ArcelorMittal

The project was funded by generous grants from the Charles Stewart Mott Foundation, the Joyce Foundation, the Fred A. and Barbara M. Erb Family Foundation, the Wege Foundation, the Fund for Lake Michigan, the Michigan Office of the Great Lakes, and the Pennsylvania Office of the Great Lakes.
A team led by the Great Lakes Commission and the Council of Great Lakes Industries coordinated this study. The team included the Alliance for the Great Lakes, the National Wildlife Federation’s Great Lakes Regional Center, the Great Lakes Metro Chambers Coalition, Michigan’s Office of the Great Lakes, and the University of Michigan’s Water Center. Research was led by the University of Michigan’s Research Seminar in Quantitative Economics and overseen by a panel of economists and other experts from outside the Great Lakes region. The case studies were developed by the Issue Media Group and a panel of Great Lakes stakeholders provided guidance on the scope of the project and helped articulate the outcomes. Funding for the study was provided by the Charles Stewart Mott Foundation, the Fred A. and Barbara M. Erb Family Foundation, the Joyce Foundation, and the Wege Foundation, the Fund for Lake Michigan, Michigan Department of Natural Resources’ Office of the Great Lakes, and the Pennsylvania Department of Environmental Protection’s Office of the Great Lakes.
EXECUTIVE SUMMARY
GREAT LAKES REGIONAL GREEN INFRASTRUCTURE POLICY ANALYSIS:
ADDRESSING BARRIERS TO IMPLEMENTATION

SEPTEMBER 2018
Great Lakes Commission
Credit Valley Conservation
**EXECUTIVE SUMMARY**

Throughout the Great Lakes basin, communities are faced with growing stormwater management challenges. Green infrastructure (GI) can serve as a key aspect of local stormwater solutions by decreasing the volume of water running into sewers and streams and improving water quality by trapping sediment and nutrients. GI includes a broad variety of stormwater management tactics like natural features and rain gardens, green roofs, and porous pavement, that mimic nature and increase infiltration of stormwater.

Local communities are generally at the forefront of stormwater management, challenges, and innovation, but municipalities’ capacity to develop GI is heavily influenced by federal, state, and provincial policy. Many policies and funding programs can foster GI implementation, while others either do little to incentivize GI or amplify unnecessary barriers. This report is targeted to federal, state, and provincial policymakers that can help create enabling conditions for local GI progress. The key policy recommendations identified below are designed to reduce barriers and provide a stronger foundation for communities to advance GI.

**United States Federal Policy**

**Recommendation:** Fully fund the Clean Water State Revolving Fund (CWSRF) and incentivize GI projects through prioritization, interest rate reductions, and extension of funding eligibility for qualified projects to operations and maintenance (O&M).

**Rationale:** In the United States, the Clean Water State Revolving Fund (CWSRF) is the most promising source of funding for GI, but dedicated sustainability funding is underutilized for GI. Maintaining this funding is critical and a focus should be placed on increasing the prevalence of GI developments. Because uncertainty surrounding the O&M of new technologies is a barrier to implementation, allowing funding to be used for O&M will further foster GI projects.

**Recommendation:** Establish minimum performance-based standards to address runoff volume and water quality. Regulatory programs should support local watershed conditions through science-based approaches that address local challenges while also working toward water quality standards.

**Rationale:** Currently, the extent of enforceable federal authority on stormwater management is limited to consent decrees issued to permit holders in violation of the permit terms. This approach has a narrow scope and is reactionary. Defined performance standards will foster innovation in green infrastructure to meet permit requirements before they are violated. Many states have developed performance requirements, but a federally-defined minimum requirement should be established. Requirements should be oriented toward watershed
outcomes and allow for flexibility in achieving goals to accommodate local conditions and resource objectives.

**Recommendation:** Promote and coordinate the integration of GI into permitting, planning, research, technical assistance, and funding programs.

**Rationale:** The Environmental Protection Agency (EPA) and other federal agencies, such as the Departments of Transportation and Housing and Urban Development, administer a variety of planning, permitting, and other programs that directly or indirectly affect stormwater or its management. EPA’s existing interagency coordination efforts should be expanded to various federal planning and permitting programs, technical assistance, and funding opportunities. Promoting green infrastructure across multiple federal agencies will develop a culture that facilitates local GI implementation. Advancing research and technical assistance can demonstrate and thereby increase confidence in performance, enabling more widespread adoption.

**United States State Policy**

**Recommendation:** Require consideration or, preferably, incorporation, of GI to meet best management practices (BMP) and public education requirements in state administration of National Pollutant Discharge Elimination System (NPDES) program. Similar to the federal recommendation, states should develop performance-based runoff control standards that align with watershed goals.

**Rationale:** Many communities lack familiarity of GI, so if it is not explicitly stated as an option it may not be considered. To go further, states can define a preference for GI, require that communities consider GI in their planning, or require some incorporation of GI in BMPs. Currently, the extent of enforceable regulations on stormwater management is limited to consent decrees issued to permit holders in violation of the permit terms. Though consent decrees often prompt innovation, this approach is not desired, as it reacts to water quality issues rather than preventing them.

**Recommendation:** Dedicate funding to GI planning, implementation, O&M, and research. Where it is a barrier, amend state legislation to explicitly allow municipalities to establish stormwater utilities and/or levy fees.

**Rationale:** Funding is a pre-requisite to GI progress. The clear authority for municipalities to establish stormwater utilities will reduce uncertainty and allow for increased funding streams and incentives for green infrastructure.
**Canadian Federal Policy**

**Recommendation:** Prioritize GI projects under Infrastructure Canada’s Funding Programs. In addition to GI implementation, funds can be allocated toward research on long-term performance, lifecycle costs and benefits gained by protecting natural GI assets.

**Rationale:** Infrastructure Canada’s Funding Programs, such as the Federal Gas Tax Fund and Municipal Asset Management Program, could be key sources of investment in GI, as they are already an important source of funding for implementing municipal infrastructure projects.

**Canadian Provincial Policy**

**Recommendation:** Include GI in municipal asset management plans, policies, and strategies.

**Rationale:** In Québec, GI has started to become a mandatory component of municipal asset management. By including GI in the definition of ‘core infrastructure assets’ in Ontario under the Asset Management – Infrastructure for Jobs and Prosperity Act, the applicability of policies (including municipal asset management) would be expanded and additional funding opportunities would become available.

**Recommendation:** Create new funding mechanisms to support capital and operating costs for GI.

**Rationale:** A significant challenge in the Canadian portion of the Great Lakes Basin is a lack of funding. Utilizing municipal stormwater fees, development charges in Ontario, incentive programs, and/or public-private partnerships can provide critical funding for GI advancement.

On both sides of the border, GI implementation is limited by funding, lack of familiarity with GI practices, and uncertainty around performance. Because there are no requirements that actively compel GI investment under current policy, local advances in GI depend on motivated leadership. The recommendations outlined above and discussed in more detail in the report provide federal, state, and provincial actions to reduce barriers and increase the use of GI in local communities.

Great Lakes Commission releases green infrastructure policy recommendations in advance of Congressional briefing

Ann Arbor, Mich. – Ahead of a Congressional briefing today in D.C., the Great Lakes Commission (GLC) released a report outlining steps to increase the adoption of green infrastructure in communities across the Great Lakes. The Great Lakes Regional Green Infrastructure Policy Analysis provides recommendations to federal, state and provincial and local policymakers in the U.S. and Canada to decrease the amount of stormwater running off into area waterways and eventually into the Great Lakes.

Runoff of stormwater—rain that runs off roads and rooftops and collects pollutants along the way—is a growing cause of water pollution across the Great Lakes basin. Excessive runoff is a growing cause of flooding, and associated loss of property and economic activity. Green infrastructure (GI) reduces runoff and improves water quality by trapping pollutants before they get into the streams and rivers that drain into the Great Lakes. GI includes features like rain gardens, bioswales, green roofs, and street trees that filter and hold or slowly release stormwater.

“With a changing climate and the increasing frequency of extreme weather, local communities are struggling to deal with excess stormwater and associated flood events,” said John Linc Stine, chair of the Great Lakes Commission and commissioner of the Minnesota Pollution Control Agency. “At the same time, costs for communities to maintain traditional water infrastructure are skyrocketing as aging pipes, pumps, and treatment systems outlive their intended lifespan. The ability to deploy green infrastructure is highly impacted by federal and state or provincial policies. This report allows us better understand federal, state and provincial barriers to green infrastructure and what actions policymakers can take to eliminate them.”

The analysis will be highlighted today at a congressional briefing organized by GLC and the Northeast-Midwest Institute that will feature speakers from GLC, American Rivers, the Great Lakes and St. Lawrence Cities Initiative and Environmental Consulting and Technology Inc., and remarks from U.S. Reps. Debbie Dingell (D-Mich.) and Dave Joyce (R-Ohio).

The Great Lakes Regional Green Infrastructure Policy Analysis was undertaken as part of the GLC’s Green Infrastructure Champions Pilot Program, which aims to catalyze the adoption of green infrastructure practices and policies across the basin by bringing together leaders and helping them share their knowledge. The policy analysis and recommendations were developed with input from a regional advisory team. The Champions Pilot Program is funded by the Fred A. and Barbara M. Erb Family Foundation.
The Great Lakes Commission, led by chair John Linc Stine, commissioner of the Minnesota Pollution Control Agency, is an interstate compact agency established under state and U.S. federal law and dedicated to promoting a strong economy, healthy environment and high quality of life for the Great Lakes-St. Lawrence region and its residents. The Commission consists of governors’ appointees, state legislators, and agency officials from its eight member states. Associate membership for Ontario and Québec was established through the signing of a “Declaration of Partnership.” The Commission maintains a formal Observer program involving U.S. and Canadian federal agencies, tribal authorities, binational agencies and other regional interests. The Commission is located in Ann Arbor, Michigan. Learn more at www.glc.org.
Memorandum
To: Great Lakes Commission
Fr: Darren Nichols, Executive Director
Dt: September 26, 2018
Re: Overview of Great Lakes Commission staff work for 2018-2019

Purpose
The attached Strategic Plan Progress Report summarizes the Commission’s staff work within each of the program areas outlined in the GLC Strategic Plan. This memo also briefly summarizes staff work in areas that may not directly align with the formal Strategic Plan but are important to fulfill the agency’s mission under the Great Lakes Basin Compact. The Report and the memo provide an overall sense for the work of the Commission’s staff within the past year and in the coming 12 to 18 months.

Decision
GLC staff invites questions, welcomes feedback, and respectfully requests that the Commission provide its general endorsement for staff to continue working on existing projects and Strategic Plan program areas through the remainder of 2018-2019.

Overview
Attached please find the GLC semi-annual Strategic Plan Progress Report outlining the Commission’s staff work over the past twelve months as well as general progress within the Commission’s seven Strategic Plan program areas. In addition to work in the formal program areas, Great Lakes Commission staff are also engaged in several important areas related to states’ interstate compact commitments and to the Commission’s mission in the Great Lakes Basin. Following is a high-level outline of those GLC staff efforts that fall outside formal Strategic Plan program areas:

Advisory Groups/Committees
Commission staff serve on a range of advisory groups and committees across the Basin. Following is a representative list of boards, committees and other advisory groups currently and periodically attended by Commission staff.

- Great Lakes Executive Committee (GLEC) and tri-Commission partnership
- Great Lakes Water Quality Agreement
  - Annex 4 subcommittee
  - Annex 9 and 10 extended subcommittees
- Blue Ribbon Advisory Panel for the Great Lakes One Water Partnership
- Tri-Commission executive directors quarterly coordination meetings (Great Lakes Fishery Commission, International Joint Commission)
- Great Lakes Dredging Team – GLC staff currently facilitates the GLDT
- Areas of Concern (AOC) restoration meetings and annual conference
- Cooperative Institute for Great Lakes Research (CIGLR)
• Great Lakes Observing System (GLOS)
• Advisory Committee to Heidelberg University – National Center for Water Quality Research
• Great Lakes Sea Grant Network – hosting an annual fellowship candidate
• Michigan Sea Grant Advisory Board member
• Great Lakes St. Lawrence Water Resources Compact Council and Regional Body Resource Group
• Asian Carp Regional Coordinating Committee (ACRCC)
• Great Lakes Aquatic Nuisance Species (ANS) Panel
• Chicago Area Waterway System (CAWS) Aquatic Invasive Species Stakeholder Group – ex officio
• Western Lake Erie Basin Partnership
• Great Lakes Ballast Water Collaborative (with UW-Madison)
• The Great Waters Research Collaborative
• Executive Steering Committee for the Great Lakes and Mississippi River Inter-basin Study
• Others as needed

Briefings, interviews and presentations
The Commission and its staff are frequently asked to speak at events ranging from community gatherings to national and occasionally international conferences. Staff frequently present policy and position briefings at:
- State and provincial executive and legislative offices as part of the Commission’s informal state/provincial relations efforts;
- Washington, D.C. and Capitol Hill in-person meetings and relations with staff, partner agencies and organizations, and with commission members;
- Relationship-building outreach to and meetings with tribes and First Nations; and
- Local governments, primarily through on-the-ground projects and as needed to secure the perspectives of local communities in GLC-led policy making efforts.

Staff also provide briefings, presentations, interviews and materials for:
- Continuous communications with the Commission, Great Lakes states and provinces (governors/premiers/legislatures/agencies), public forums, project partners, national/global outreach, Washington D.C.-area offices, funders and more.

Events and Conferences
GLC staff routinely attend and occasionally present at the annual events and conferences of a wide range of other Great Lakes organizations. Those events and organizations typically include:
- Great Lakes Executive Committee bi-annual meetings
- Great Lakes Fishery Commission Annual meeting
- Great Lakes Aquatic Nuisance Species (ANS) Panel bi-annual meetings
- Conference of Great Lakes and St. Lawrence Governors and Premiers annual summit
- Great Lakes and St. Lawrence Cities Initiative annual meeting
- US Army Corps of Engineers’ General’s Inspection Tour
- American Great Lakes Ports Association
- Great Lakes Advisory Committee for the Green Marine Program
- Great Lakes Waterways Conference
- Highway H2O Conference – focused on St. Lawrence Seaway
• NOAA/NSF research and planning workshop Coastlines and People
• And others as appropriate

GLC are asked to prepared briefings and give presentations to a variety of different groups and audiences. These presentations are often part of formal conferences and symposia but sometimes are specific one-time only requests. Examples include:
• International Association of Great Lakes Research (IAGLR) Annual Conference
• Healing Our Waters (HOW) Annual Conference
• Annual Meeting of the Great Lakes Water Resources Compact and Regional Body
• Annual Great Lakes Inspection Tour organized by the USACE-Great Lakes and Ohio River Division
• University of Toledo – Great Lakes Law Conference

Commission administration
GLC staff convenes, facilitates and records regularly scheduled meetings of the Commission (biannual), the Board (monthly), Program Committees (periodically as needed) and the Executive Committee (weekly). GLC staff recognizes that Commission support and communication is an area of need for the organization; staff proposes to continue the Commission’s regular meeting schedule and will seek new opportunities to communicate with the Commission as needs arise and as staff capacity permits.

Agency Administration and Management
GLC staff meets regularly at three primary levels: Senior Management Team, All Staff, and individual project teams. Staff proposes to continue with its current staff coordination structure.

Additional Areas of Need and Opportunity
GLC staff have identified the following areas of general need or opportunity within the agency. These needs could be met through a variety of arrangements including direct staffing, strategic partnering, temporary project-related staffing or potential job share/professional development.
• Communications
• Data architecture and information management – capacity and expertise
• Land Use Planning – policy and practice
• Economic Development – policy and practice
• Transportation policy (general)
  • Maritime transportation policy (specific)
• Development and outreach strategy
• Great Lakes Basin-wide policy strategy
• Training, leadership, staff and commission development
• Ethics training
• Public records policy
• Human Resource policy
• Budgeting, fiscal management and state reporting
• Legal assessment/advice/counsel on compact provisions, revenue, contracts
• Strategic Planning: Goals/objectives, strategic actions, monitoring/feedback, adaptation
Introduction

The Great Lakes Commission is a public agency established by the Great Lakes Basin Compact in 1955 to help its Member states speak with a unified voice and collectively fulfill their vision for a healthy, vibrant Great Lakes-St. Lawrence River region. The Canadian provinces of Ontario and Quebec joined the Commission as associate members via a Declaration of Partnership in 1999. The Compact created the Commission to implement its terms and requirements, as noted in Article I:

1. To promote the orderly, integrated, and comprehensive development, use, and conservation of the water resources of the Great Lakes Basin.

2. To plan for the welfare and development of the water resources of the Basin as a whole as well as for those portions of the Basin which may have problems of special concern.

3. To make it possible for the states of the Basin and their people to derive the maximum benefit from utilization of public works, in the form of navigational aids or otherwise, which may exist or which may be constructed from time to time.

4. To advise in securing and maintaining a proper balance among industrial, commercial, agricultural, water supply, residential, recreational, and other legitimate uses of the water resources of the Basin.

Collectively, these terms and the rest of the Compact consistently speak to the intertwining of economic uses of water resources, conservation and the creation of an organization to lead a path that strikes a balance among multiple uses.

Vision

The Great Lakes Commission is a binational leader and a trusted voice ensuring the Great Lakes and St. Lawrence River support a healthy environment, vibrant economy and high quality of life for current and future generations.

Mission

The Great Lakes Commission represents, advises and assists its member states and provinces by fostering dialogue, developing consensus, facilitating collaboration and speaking with a unified voice to advance collective interests and responsibilities to promote economic prosperity and environmental protection and to achieve the balanced and sustainable use of Great Lakes-St. Lawrence River basin water resources.
Values

The following core values guide the work of the Great Lakes Commission and set the standards that we aspire to achieve in serving our member states and provinces.

- **Member led:** We are guided by and serve the common interests of our member states and provinces.
- **Regional perspective:** We bring a regional perspective to federal, state and provincial programs, policies, projects and priorities.
- **Leadership:** We are ambassadors for the Great Lakes-St. Lawrence River region and serve as liaisons within and beyond the region.
- **Collaboration:** We advance our objectives in close coordination with the Conference of Great Lakes and St. Lawrence Governors and Premiers, the International Joint Commission, the Great Lakes Fishery Commission, and constant dialogue with other regional institutions and relevant entities.
- **Partnerships:** We respect the roles of other regional institutions and agencies and collaborate to achieve common goals and interests.
- **Transparency:** We are open and transparent in carrying out our work.
- **Integrity:** We strive for the highest levels of honesty, credibility and accuracy in the information, recommendations and perspectives that we convey.
- **Objective:** We are nonpartisan, balanced and science-based in our work, while promoting a vision of a healthy environment and vibrant economy, pursued by each of our member states and provinces.
- **Open-minded:** We are inclusive and welcome diverse views.
- **Sustainability:** We incorporate principles of sustainable development and adaptive management in our work.

Core Competencies

The Great Lakes Commission is uniquely equipped to serve its member states and provinces with the following core services, which constitute the skills, knowledge base, professional competencies and leadership attributes that are applied across all of its program areas. The core competencies are how the Commission conducts its work to achieve its goals, fulfill its mission and advance its vision.

**Communications and Outreach:** The Commission raises awareness; communicates with federal, state/provincial, and local agencies and stakeholders; and provides information technologies and outreach services to support effective decision-making and stewardship.

**Information Management and Delivery:** The Commission collects, integrates and makes accessible high quality and unbiased data and information to enable its member jurisdictions and other parties to develop sound policies, manage and adapt programs, and make informed decisions affecting the water resources of the Great Lakes-St. Lawrence River region.

**Facilitation and Consensus Building:** The Commission facilitates, convenes and participates in forums that address issues of interest to its members. By serving as a neutral broker of information and research and facilitating dialogue among diverse perspectives, it helps build consensus on solutions to challenges and opportunities facing Great Lakes and St. Lawrence River water resources.

**Policy Coordination and Advocacy:** The Commission helps its member states and provinces speak with a common voice by coordinating, analyzing, advising, communicating and advocating shared policy priorities. The Commission also collaborates with other regional, national and international organizations to advance common interests.
Regional Project Management: The Commission secures resources and coordinates activities that address common interests of its member jurisdictions and provides the capacity to manage projects and administer funding to member states, provinces and other partners to advance shared goals.

Program Areas

The Great Lakes Commission designs the work of its programs to support its goals and vision. The Goals articulate general outcomes we hope to achieve through our collective work across all Program Areas. Each of the Program Areas includes one Objective and, under each, a series of Strategic Actions that indicate what the Commission seeks to accomplish, while recognizing that the Commission’s work alone will not completely fulfill these Objectives. The strategic actions reflect what the Commission does and the projects and activities the Commission will undertake to address its goals, objectives and fulfill its mission over the next five years.

Goals

The Great Lakes Commission’s goals articulate the outcomes it seeks to advance over the five-year timeframe of its strategic plan by building on its mission and vision and working in partnership with its member states and provinces and other entities.

- Businesses, communities and agriculture leverage water resources as assets to support strong economies and a high quality of life for residents.

- Great Lakes and St. Lawrence River water resources are protected from pollution and impacts from climate change; are accessible to people; provide high quality drinking water; and are managed in a balanced and sustainable manner for the benefit of current and future generations.

- Aquatic habitats support diverse and healthy fish and wildlife populations, are protected from the negative impacts of aquatic invasive species, and provide cultural and economic benefits to local communities.

- Harbors and waterways support recreational uses and a Great Lakes-St. Lawrence River maritime transportation system that efficiently moves goods and enhances the competitiveness of the region’s economy and international trade.

1. Water Quality

Challenges and Opportunities:

The Great Lakes basin’s abundant supply of clean, fresh water is vital to the regional economy and the health of its communities. Recognizing this, federal, state and provincial laws have been designed to ensure that water quality is sufficient to allow for a safe and sustainable public water supply, water-dependent economic activities, agriculture, healthy fish and wildlife populations, and water-related tourism and recreation. Additionally, water quality is increasingly linked to water quantity, in particular as governments address the threat of climate change. With expert knowledge of water issues and strong relationships with water quality practitioners across many sectors, the Commission is well-positioned to identify and share innovative solutions to water quality challenges, and to advance regional approaches to water quality protection and improvement. The Commission will utilize its expertise and capacity to maximize its members’ collective impact to improve and protect water quality in urban and urbanizing areas; in rural and agricultural areas; and other diverse stakeholders within sub-watersheds across the basin.

Objective: Identify, promote, and share innovative solutions to water quality challenges in both urban and rural settings, and advance approaches that encourage collective action to protect and improve water quality across diverse landscapes within watersheds.
Strategic Actions:

- **Protect and improve water quality by: leading and partnering on projects; facilitating dialogue and building consensus; and delivering information that improves the region’s ability to measure progress on water quality protection and improvement.** Lead the ErieStat project to track progress toward the shared goal of reducing phosphorus into western Lake Erie by 40% by 2025 and begin a drinking water supply pilot as part of the Blue Accounting initiative.

- **Protect and improve water quality in urban and urbanizing areas by leading and partnering on green infrastructure projects and related activities, such as the Green Infrastructure Technology Transfer Collaborative, that can create enabling conditions to restore the fractured water cycle.**

- **Protect and improve water quality in rural and agricultural areas by leading and partnering on projects and activities that reduce sediment and nutrient loads into Great Lakes basin waters through ongoing partnerships with NRCS, conservation districts, authorities and agricultural interests.** Work will range from administering funds to reduce sediment and nutrient runoff to leading or supporting projects that advance traditional and innovative approaches to manage sediment and nutrient loading in Great Lakes Restoration Initiative (GLRI) priority watersheds and watershed-based solutions across the basin.

- **Explore opportunities to support the states and provinces in tackling complex aspects of water quality, including water quality trading and other market-based approaches, leveraging the region’s abundant clean fresh water assets to advance more sustainable methods of agricultural production, and linking urban/urbanizing landscapes with rural/agricultural landscapes to improve water quality across entire watersheds.**

- **Support the states and provinces in planning and adapting to water quality implications of climate change.**

- **Address critical water quality challenges, such as harmful algal blooms, by facilitating regional forums, including collaboratives, such as the Harmful Algal Blooms (HABs) Collaboratory, and participating in others, such as the Great Lakes Water Quality Agreement’s annexes, to build consensus around shared water quality goals and associated solutions to achieve those goals.**

- **Advocate for refinements to U.S. federal policy and legislation to protect and improve water quality, including the U.S. Clean Water Act, the U.S. Safe Drinking Water Act, the U.S. Water Resources Development Act, and the U.S. Farm Bill.**

2. **Water Management and Infrastructure**

**Challenges and Opportunities:**

Strengthening the effective management of the Great Lakes and St. Lawrence River basin water resources to meet the needs of the region’s citizens continues to be a top priority of Great Lakes governors and premiers. Due to its history, mandate and expertise the Great Lakes Commission is uniquely qualified to lead and support efforts in this area, and has already assisted the Conference of Great Lakes and St. Lawrence Governors and Premiers in implementing the regional water resources agreements. At the local level, aging and degraded water infrastructure (drinking, storm and wastewater) is increasingly threatening communities’ access to this valuable freshwater resource. Water and wastewater infrastructure challenges are exacerbated by climate change impacts, such as increased runoff caused by more severe and frequent storm events, that often lead to increased flooding, sanitary and storm sewer overflows, and risks to public health and the health of the Great Lakes. The Commission has supported innovative projects focused on maximizing investments in water conservation and green infrastructure to support water management, and is working to establish new partnerships, identify new solutions to water infrastructure challenges, develop tools to support decision-making, and better manage data and information in these areas. Additionally, the Commission’s advocacy program continues to promote federal programs, policies and funding to help states, provinces and local communities.
manage water infrastructure. As water quantity and quality issues are inextricably linked, the Commission’s work in this area complements efforts under the water quality program area.

Objective: Ensure that the waters of the Great Lakes and St. Lawrence River basin continue to support the needs of communities, businesses, industries and ecology; are protected from development impacts, pollution, climate change and other stressors; and are managed in a balanced and sustainable manner for the use, benefit and enjoyment of people today and future generations.

Strategic Actions:

- In partnership with the Conference of Great Lakes and St. Lawrence Governors and Premiers, support decision-making and measure progress under the Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement and Water Resources Compact by compiling, interpreting and disseminating consistent water withdrawal, diversion and consumptive use information; supporting the cumulative impact assessment called for under the Compact and the Agreement; and providing information on regional trends and state and provincial programs, practices and policies related to water use and conservation.

- Lead and engage in the development and dissemination of data and information necessary for implementing drinking, storm and wastewater management programs that identify critical needs and advance solutions to the benefit of public health and safety, water infrastructure and delivery, ecosystem health and water quality.

- Identify and advance solutions to water management and infrastructure challenges by facilitating forums, initiatives and partnerships including the Commission’s working group on water infrastructure.

- Raise awareness of the fundamental value of water and the need for infrastructure improvements by advocating for federal legislation and funding to support and accelerate drinking, storm and wastewater infrastructure improvements through the Clean Water and Drinking Water State Revolving Fund programs and other water management programs and by promoting the benefits of integrating water delivery and wastewater management services to the states, provinces and municipalities in the region.

3. Commercial Navigation

Challenges and Opportunities:

The Great Lakes and St. Lawrence River maritime transportation system is vital to the economies of the United States and Canada. The system facilitates domestic and international trade through the movement of goods and commodities, while creating jobs in port communities and supporting industries such as manufacturing, steel production, agribusiness and power generation. Ensuring the continued viability of commercial navigation requires maintaining and investing in harbors, ports, shipping channels, locks and related infrastructure throughout the Great Lakes-St. Lawrence River system, including regular dredging. These activities require close regional and binational coordination, given the interdependent nature of the system and the critical role played by key infrastructure like the Soo Locks and the St. Lawrence Seaway. The Conference of Great Lakes and St. Lawrence Governors and Premiers recently completed a comprehensive strategy for the navigation system that aims to double maritime trade, improve environmental performance and support the region’s industrial core. The strategy recommends actions to maintain and expand the maritime transportation system and establishes a Regional Maritime Entity to coordinate state and provincial actions. With its dual mandate for both economic development and environmental protection, and its longstanding role as an advocate for Great Lakes-St. Lawrence River maritime transportation, the Great Lakes Commission is uniquely qualified to support the objectives of the governors’ and premiers’ new maritime strategy.

Objective: Improve the efficiency, competitiveness, security and sustainability of the Great Lakes-St. Lawrence River maritime transportation system to support the regional and national economies of the United States and Canada.
Strategic Actions:

- Collaborate with the Regional Maritime Entity and other stakeholders to support implementation of the governors’ and premiers’ *Strategy for the Great Lakes-St. Lawrence River Maritime Transportation System*, with a focus on establishing a maritime careers portal, maintaining the maritime asset inventory, managing data and information to track progress in implementing the strategy and aligning data collection and reporting with the Blue Accounting initiative.

- In collaboration with the Regional Maritime Entity and other stakeholders, identify and advocate for priorities to maintain and strengthen the Great Lakes-St. Lawrence River maritime transportation system, including allocating funds from the Harbor Maintenance Trust Fund; constructing a new large lock at the Soo Locks; dredging to maintain authorized depths of channels and harbors and additional depth needed in critical areas; repairing and investing in aging navigation infrastructure; ensuring adequate icebreaking capacity; developing sustainable strategies for managing dredged material; and supporting the development of technologies to improve the system’s environmental performance.

- Convene or participate in regional partnerships, forums and initiatives related to the Great Lakes-St. Lawrence River maritime transportation system, including the Regional Maritime Entity, Great Lakes Dredging Team, Great Ships Initiative, and the Great Lakes Small Harbors Coalition.

4. Economic Development and Waterfront Community Revitalization

Challenges and Opportunities:

The unique freshwater resources of the Great Lakes fueled the region’s early development, with waterfront areas historically serving as centers of economic activity. Currently, many Great Lakes coastal communities are working to restore and reclaim degraded or under-utilized waterfronts and leverage them to support economic development, recreation and other purposes. The GLRI is accelerating this process, particularly in the Areas of Concern. Recreational boating and other water-based activities drive a vibrant tourism and outdoor recreation sector centered on the Great Lakes and their tributaries. Regional leaders have recognized the potential of fresh water and the “Blue Economy” to promote economic growth, attract and retain talent, support water-dependent industries, and sustain a high quality of life in the Great Lakes region. The Great Lakes Commission is well suited to develop tools and support strategies to advance waterfront community revitalization through research, policy development, information exchange and technology transfer, and stakeholder collaboration. The Commission is also uniquely positioned to advocate for federal, state and provincial policies, programs and funding to support efforts to restore and revitalize waterfront areas, ensure resiliency to impacts from climate change, and balance environmental and economic benefits from water resources. Finally, the Commission can collaborate with regional leaders to strengthen the economy and promote the Great Lakes region as a global center for research and development of technologies to utilize and manage freshwater resources.

Objective: Support the efforts of the states and provinces – in collaboration with federal agencies, local communities, and nongovernmental stakeholders – to restore and revitalize waterfront areas and advance policies, programs and funding to leverage water resources to support a strong regional economy and high quality of life.

Strategic Actions:

- Support research, disseminate information, and collaborate with regional leaders to quantify the economic value of Great Lakes water resources, the return on investments in environmental restoration and water-related infrastructure, and the ecosystem benefits and services generated by the Great Lakes, and facilitate a cooperative, regional approach to advancing the “Blue Economy.”

- Support the work of the Conference of Great Lakes and St. Lawrence Governors and Premiers’ regional economic task force, and collaborate with other partners such as the Council of Great Lakes Industries and the Great Lakes Metro Chambers Coalition, to strengthen water-related infrastructure, industries and
commerce and facilitate a cooperative approach to improve regional economic performance and competitiveness.

- Support implementation of the GLRI and other regional programs to clean up and restore waterfront areas, and advance policies, funding and information exchange to assist the states, provinces and local communities in strategically leveraging water resources to strengthen local economies and provide benefits for residents and visitors.

- Advocate with Congress and federal agencies for programs, policies and funding that support state and local efforts to clean up and revitalize waterfront areas, including the GLRI, Coastal Zone Management Act, National Sea Grant College Program, and brownfields redevelopment programs, and assist in effectively implementing these programs and linking them with state and provincial priorities.

- Collaborate with other water-related commissions in the U.S., Canada, and abroad to share information, exchange strategies, and advance common goals directed at solving problems affecting water resources and leveraging them as vital regional assets.

5. Coastal Conservation and Habitat Restoration

Challenges and Opportunities:

The Great Lakes and St. Lawrence River basin includes more than 10,000 miles of coastline, with the majority of the region’s population and economic activities located in coastal areas. These areas support both rich and diverse ecosystems and valuable industrial, recreational and tourism economies. However, in some areas extensive human activity has led to the loss of habitat for fish and wildlife and impacts to key ecosystem functions and values. The Commission is well positioned to assist the states, provinces and local partners in balancing the use and conservation of natural resources by restoring and protecting habitat for fish and wildlife; supporting the remediation of degraded areas; and ensuring resiliency to changing lake levels and impacts from climate change. The Commission is also developing and managing several collaborative partnerships to coordinate regional engagement, improve management, advance research, and facilitate communication and outreach to address coastal conservation challenges.

Objective: Conserve coastal ecosystem functions and values that contribute to the diversity, resilience and economy of the Great Lakes-St. Lawrence River basin by protecting natural communities that sustain populations of desirable fish and wildlife species; restoring degraded areas; and managing coastal resources to improve ecosystem services while supporting sustainable economic development.

Strategic Actions:

- Lead and support regional programs that restore, protect and manage valuable habitat and water resources through implementation of the NOAA-GLC Regional Partnership in Areas of Concern, and in coordination with U.S. EPA, NOAA, states and provinces, and local organizations.

- Elevate awareness of coastal conservation issues among decision-makers, managers, researchers and the public by convening meetings, coordinating action and developing communication products such as websites, webinars, and publications.

- Explore and develop data and information-sharing opportunities to support ongoing coastal wetland restoration prioritization, contribute to decision-making and measure progress on coastal conservation and habitat restoration across the region.

- Communicate with partners including U.S. EPA, NOAA, USGS, NRCS, Great Lakes Fishery Commission, Great Lakes Landscape Conservation Cooperative and the Great Lakes Water Quality Agreement Annex 7 Subcommittee, to ensure effective coordination and collaboration with state and provincial agencies,
agriculture producers, conservation groups and local partners in support of sound land management practices and strategically targeted fish and wildlife restoration and conservation actions.

- Advocate for legislation and funding for federal programs, policies and laws, such as the GLRI, the Great Lakes Fish and Wildlife Restoration Act and the Farm Bill, and support their effective implementation and alignment with state and provincial priorities.

6. Aquatic Invasive Species Prevention and Control

Challenges and Opportunities:

Aquatic invasive species (AIS) are recognized as one of the most significant threats to the environmental and economic health of the Great Lakes and St. Lawrence River region. Progress is being made to reduce threats of new invasions and the damage from those species already introduced. Yet, the region remains vulnerable to AIS introduction and spread from various pathways and AIS threats are likely to evolve under a changing climate. AIS do not respect political boundaries and states and provinces vary in their approaches and capacity for prevention and management. Preventing new AIS introductions and controlling those already present is a priority for regional leaders. The Commission is well-positioned to coordinate multijurisdictional approaches to AIS prevention and control. Commission staff is equipped with an in-depth knowledge of AIS issues and strong relationships with AIS practitioners from both the public and private sector. The Commission’s AIS expertise is founded in its historic relationship with the Great Lakes Panel on Aquatic Nuisance Species. The Commission will utilize its expertise and capacity to advance effective, regional solutions for AIS prevention and control.

Objective: Prevent the introduction and spread, and when necessary, advance the management and control of aquatic invasive species, that are or have the potential to negatively impact water resources or the economy of the Great Lakes-St. Lawrence River basin.

Strategic Actions:

- Develop and promote communication products and services, including websites, webinars, and publications (e.g., Great Lakes Aquatic Invasions) that provide AIS information and advance progress on AIS prevention and control.

- Develop and promote the use of adaptive management frameworks and data and information integration platforms in order to support decision making (including evaluating costs and benefits) and measure progress on AIS prevention and control across the region.

- Facilitate regional forums and collaboratives working to advance effective and coordinated approaches to AIS prevention and control, including the Great Lakes Panel on Aquatic Nuisance Species, the Chicago Area Waterway System Advisory Committee, and the Great Lakes Phragmites and Invasive Mussel collaboratives, among others.

- Collaborate with other partner groups engaged in AIS prevention and control to support and advance common AIS priorities, including the GLWQA Annex 6 Subcommittee, the Conference of Great Lakes and St. Lawrence Governors and Premiers AIS Task Force, the Great Lakes Fishery Commission, the International Joint Commission, the federal Aquatic Nuisance Species Task Force, and other regional ANS panels, among others.

- Advocate for legislation and funding to support effective implementation of federal programs, policies and laws, such as the National Invasive Species Act, Lacey Act, GLRI, and Asian Carp Action Plan.

- Lead regional projects that advance policies and solutions to reduce the risk of AIS introduction and spread through priority pathways including internet sales of organisms in trade, canals and waterways and ballast water.
7. Information Management and Blue Accounting

Challenges and Opportunities:

The Great Lakes Basin Compact charged the Commission to “collect, correlate, interpret, and report on data relating to the water resources and the use thereof in the Basin or any portion thereof.” Since its inception, the Commission has been a trusted source of information through many programs including the Great Lakes Information Network. Through this program area, the Commission develop the foundation for supporting all other program areas outlined in the Compact, and continue to assemble, curate, manage and deliver information to support the conservation and balanced use of the Great Lakes. A core component of this program area is the Blue Accounting initiative (http://BlueAccounting.org), a partnership between the Commission and The Nature Conservancy. Blue Accounting will provide Great Lakes leaders with information services that measure the progress being made across the region toward shared desired outcomes for the Great Lakes.

Objective: The Commission’s member states and provinces have access to high-quality, curated information about Great Lakes issues from a neutral and authoritative source.

Strategic Actions:

- Deliver consistent, continuous and unbiased information to the Commission’s member states and provinces on issues and outcomes of mutual interest and concern including the support of other Commission Program Areas described in this Strategic Plan.

- Establish Blue Accounting as a leading information service to track the region’s progress towards shared goals and outcomes using consistent data, metrics and methods, working with The Nature Conservancy and other partners in both countries. Specifically, provide support to the Source Water Initiative and ErieStat, described in the Water Quality Program Area, as a Blue Accounting pilot projects.

- Develop and maintain mutually-beneficial relationships with agencies and entities across the region, in both nations, at federal, state, provincial, tribal/First Nations, local and municipal scales to coordinate information management and provide information to the Commission for use by its members.

- Support and enhance the efforts of Annex 10 of the GLWQA, the IJC’s Science Priority Committee and the Great Lakes Advisory Board’s Science and Information Subcommittee to improve information coordination and flow between entities and agencies in the Great Lakes region.

- Coordinate and provide information to support spill prevention and response programs, working with U.S. EPA across the Great Lakes basin and continuing current work with the Region 5 Regional Response Team to build intergovernmental relationships that improve planning and make response efforts more efficient.

- Provide facilitation and information management services to support development of strategies and policies to assure protection of the region’s water resources in the context of increases in North American oil production and associated oil transportation to and through the Great Lakes and St. Lawrence River region.

Conclusion

The Commission is committed to constantly improving its organizational processes and using the best metrics available to evaluate projects and services to its member jurisdictions. More specific plans to implement these actions and metrics to measure progress and allocate financial resources will be developed following completion of the plan. We will provide reports on progress to GLC Commissioners twice a year. We will assess progress and address emerging issues annually.
Water Quality

Objective: Identify, promote, and share innovative solutions to water quality challenges in both urban and rural settings, and advance approaches that encourage collective action to protect and improve water quality across diverse landscapes within watersheds.

More information can be found at www.glc.org/work/water-quality.

Strategic Actions:

- Protect and improve water quality by: leading and partnering on projects; facilitating dialogue and building consensus; and delivering information that improves the region’s ability to measure progress on water quality protection and improvement. Lead the ErieStat project to track progress toward the shared goal of reducing phosphorus into western Lake Erie by 40% by 2025 and begin a drinking water supply pilot as part of the Blue Accounting initiative.

- Protect and improve water quality in urban and urbanizing areas by leading and partnering on green infrastructure projects and related activities, such as the Green Infrastructure Technology Transfer Collaborative, that can create enabling conditions to restore the fractured water cycle.

- Protect and improve water quality in rural and agricultural areas by leading and partnering on projects and activities that reduce sediment and nutrient loads into Great Lakes basin waters through ongoing partnerships with NRCS, conservation districts, authorities and agricultural interests. Work will range from administering funds to reduce sediment and nutrient runoff to leading or supporting projects that advance traditional and innovative approaches to manage sediment and nutrient loading in Great Lakes Restoration Initiative (GLRI) priority watersheds and watershed-based solutions across the basin.

- Explore opportunities to support the states and provinces in tackling complex aspects of water quality, including water quality trading and other market-based approaches, leveraging the region’s abundant clean fresh water assets to advance more sustainable methods of agricultural production, and linking urban/urbanizing landscapes with rural/agricultural landscapes to improve water quality across entire watersheds.

- Support the states and provinces in planning and adapting to water quality implications of climate change.

- Address critical water quality challenges, such harmful algal blooms, by facilitating regional forums, including collaboratives, such as the Harmful Algal Blooms (HABs) Collaboratory, and participating in others, such as the Great Lakes Water Quality Agreement’s annexes, to build consensus around shared water quality goals and associated solutions to achieve those goals.

- Advocate for refinements to U.S. federal policy and legislation to protect and improve water quality, including the U.S. Clean Water Act, the U.S. Safe Drinking Water Act, the U.S. Water Resources Development Act, and the U.S. Farm Bill.

Projects

Note: Project descriptions with additional details on the projects summarized below are available on the commissioners’ password-protected website at https://www.glc.org/commissioners/.

Michigan Clean Water Corps (MiCorps)

Overview: MiCorps is a network of volunteer water quality monitoring programs in Michigan. It was created through an executive order to assist the Department of Environmental Quality (DEQ) in collecting and sharing
water quality data for use in water resources management and protection programs. The program seeks to support and expand the number of volunteer water quality monitoring organizations statewide for the purpose of collecting, sharing, and using reliable data for surface water bodies (inland lakes and streams); educating and informing the public about water quality issues; and fostering water resources stewardship to facilitate the preservation and protection of Michigan’s water resources. The GLC has served as the administrative lead for MiCorps since its creation in 2004, and is responsible for program and grants administration, program promotion, planning and facilitating the program’s annual volunteer monitoring conference, and information technology and delivery, including the online MiCorps Data Exchange platform for sharing volunteer water quality monitoring data for Michigan’s inland lakes and streams.

**Funder(s):** State of Michigan – Department of Environmental Quality.

**Partners:** Michigan DEQ, Huron River Watershed Council, Michigan Lake Stewardship Associations (formerly Michigan Lake and Stream Associations, Inc.), and Michigan State University.

**Schedule:** October 2014 through September 2019.

**Recent and Upcoming Activities:**
- Supported volunteer water quality sampling at 312 inland lakes during the 2018 spring and summer monitoring season under the Cooperative Lakes Monitoring Program.
- Awarded 11 small grants totaling more than $21,000 to local units of government for river and stream cleanup events.
- Will be collaborating with the Michigan Inland Lakes Partnership in October to convene the 2018 *Michigan Inland Lakes Convention: Working Together for Healthy Lakes*, which will feature presentations on monitoring and citizen science initiatives.

**Lead Staff:** Laura Kaminski, lkaminski@glc.org.

### Researching the Effectiveness of Agricultural Programs (REAP)

**Overview:** Agricultural producers in the Great Lakes basin have received over $100 million in incentives from the Great Lakes Restoration Initiative (GLRI) since it began in 2010. To date, these targeted investments have not been comprehensively evaluated to assess their effectiveness and inform future investments in water quality. The REAP project examines the socio-economic impact of investments from GLRI-funded programs and projects aimed at increased adoption of conservation practices that improve water quality in the GLRI Priority Watersheds: Lower Fox River, WI; Saginaw River, MI; Maumee River, OH/IN/MI; and Genesee River, NY.

**Funder(s):** U.S. EPA-Great Lakes Restoration Initiative.

**Partners:** U.S. EPA, USDA Natural Resources Conservation Service, Ohio State University, Michigan State University Institute of Water Resources; county conservation offices, NGOs, and stakeholders in GLRI priority watersheds.

**Schedule:** August 2017-August 2019.

**Recent and Upcoming Activities:**
- Completed review and data-mining of all available documents (work plans, progress reports, final summary reports, etc.) for GLRI Focus Area 3 projects in priority watersheds from 2010-2016.
- Completed 15 interviews with managers of GLRI-funded projects related to agricultural incentives across the four priority watersheds.
- Convened two focus groups of farmers who have enrolled in qualifying GLRI-funded programs in the Saginaw watershed.
- Conducting up to six additional focus groups and 15 additional interviews with producers and project managers, respectively, in priority watersheds.
• Creating and releasing an RFP to complete an analysis of the impact of GLRI investments in priority watersheds using GLRI project document data, data acquired from interviews and focus groups, and other publicly available demographic and land use/characterization data.

Lead Staff: Victoria Pebbles, vpebbles@glc.org.

Blue Accounting’s ErieStat

Overview: ErieStat is a project within the Blue Accounting initiative that will provide Lake Erie jurisdictions (Indiana, Michigan, Ohio, Ontario, Pennsylvania, and New York, plus both federal governments) with information services to track progress toward phosphorus reduction goals for the lake. Through an initial work group of state and federal agency representatives and leading academic institutions, the project identified initial metrics and data for tracking progress toward the 40% reduction goals for Lake Erie’s western and central basins. ErieStat is also supporting the efforts of the Annex 4 Subcommittee, which was established under the 2012 Great Lakes Water Quality Agreement to coordinate binational actions to manage phosphorus concentrations and loadings. Data supporting the selected water quality metrics has been aggregated and presented through an easy-to-understand website: www.eriestat.org. Work continues to develop protocols to track progress made by individual strategies deployed by the jurisdictions through required Domestic Action Plans.

Funder(s): Erb Family Foundation and Joyce Foundation.

Partners: Lake Erie state/provincial and federal governments.


Recent and Upcoming Activities:
• June 2018 release of tributary “Results” for select watersheds on www.eriestat.org.
• Creation of a new, nongovernmental Content Advisory Group to advise the project’s governmental Steering Committee, November 2018.
• More robust Strategies, Investments, and Results data and information is planned for June 2019.

Lead Staff: Nicole Zacharda, nzacharda@glc.org.

Blue Accounting’s Source Water Initiative

Overview: The GLC continues to make progress with Blue Accounting’s Great Lakes Source Water Initiative (SWI), which aims to use the tools and services of Blue Accounting to help leaders set priorities and measure progress to protect drinking water at its source. “Source water” is defined as surface or groundwater prior to collection and treatment as drinking water. SWI’s work group of nearly 40 water professionals from the private, public, and non-profit sectors, representing nine out of ten Great Lakes states and provinces, identified five regional source water protection goals and three metrics to track progress toward each goal. As with other Blue Accounting pilot projects, the information is being organized around: strategies, investments, and results. The project is networking water professionals around the Great Lakes and St. Lawrence River basin to showcase local innovation and craft a “common language” for tracking efforts to protect shared sources of drinking water.

Funder(s): Erb Family Foundation and Joyce Foundation.

Partners: Local, state/provincial, and federal governments, along with research institutions, nonprofits, and the private sector.

Recent and Upcoming Activities:

- August 2018 in-person meeting of the work group resulted in goal-specific subteams to focus on detailed work to aggregate and visualize data.
- Initial “Showcase Community” Strategies and Investments, plus select Results will be published on [www.blueaccounting.org](http://www.blueaccounting.org) in early November 2018.
- Continued work into 2019 will result in an additional release of more-robust content in May 2019.

Lead Staff: Nicole Zacharda, nzacharda@glc.org.

Great Lakes Sediment & Nutrient Reduction Program

Overview: The GLC administers the Great Lakes Sediment and Nutrient Reduction Program (GLSNRP), which provides grants to state and local governments and nonprofit organizations to implement conservation practices to reduce sediment and phosphorus runoff into the Great Lakes. In the most recent round of funding in 2018, 7 grants are being executed, focused on long-term nutrient management and conservation practice installation intended to reduce sediment and phosphorus runoff to the Great Lakes. Under the guidance of a Task Force of representatives from each Great Lakes states and our federal partner agencies, the GLC team is currently overseeing 51 active grants. GLC staff management of the program changed early in 2018, presenting an opportunity to refresh this long-standing GLC program, including planned updates to the program website (https://keepingitontheland.net/).

Funder(s): USDA’s Natural Resource Conservation Service, with Great Lakes Restoration Initiative funds.

Partners: Great Lakes states and NRCS.

Schedule: Ongoing, through annual awards.

Recent and Upcoming Activities:

- The seven new grants for 2018 may start work on October 1, 2018.
- The GLSNRP Task Force will meet on October 10, 2018 to discuss opportunities for program improvement and focus areas for “Agreement 9” (under negotiation with NRCS).
- A Request for Proposals for the 2019 award (under Agreement 9) will be released early in 2019 with a webinar planned for interested applicants.
- Also, in time for the RFP announcement, website updates will be complete, including a new, interactive map of active grants.

Lead Staff: Nicole Zacharda, nzacharda@glc.org.

Targeting Outcome-Based Sediment Reduction in the Lower Fox Watershed

Overview: The GLC is a subcontractor to the Fox-Wolf Watershed Alliance (FWWA) to assist with certain elements of this five-year project. The goal of the project is to reduce agricultural sediment and nutrient loading to the Lower Fox River and Green Bay by installing conservation practices in key sections of Plum and Kankapot creeks. The project is testing innovative practices and monitoring the effects of those practices to guide implementation throughout the region. The GLC has assisted the FWWA by organizing annual workshops to coordinate among GLRI grantees in Green Bay, Saginaw Bay, and Maumee River/Bay to share progress and methods for measuring ecological outcomes. Additional GLC work to support this project is being re-assessed with FWWA to meet project needs and is likely to include development of an interactive “Story Map” to share project outcomes across the region.

Funder(s): FWWA, through US-EPA’s Great Lakes Restoration Initiative.

Partners: FWWA.

Recent and Upcoming Activities:

- GLC staff collaborated with FWWA to revise the Scope of Work, adapting to current project needs. The revision remains under review by U.S.-EPA.
- GLC will convene a networking webinar for grantees in Green Bay, Saginaw Bay, and the Maumee River watershed in late October to share outcomes and plan for a potential in-person convening in the spring or summer of 2019.

Lead Staff: Nicole Zacharda, nzacharda@glc.org.

Erie P Market

Overview: The Erie P Market seeks to provide another valuable tool in the suite of activities that the U.S. and Canada are pursuing to achieve a 40% reduction in phosphorus loads to the WLEB. During its second year, the project team developed a multi-jurisdictional framework for water quality trading (WQT) for the WLEB, which was acknowledged by the environment and agriculture agencies representing the three WLEB states of Indiana, Michigan and Ohio. An analysis completed by the GLC’s technical subcontractor in late 2016 reaffirmed a lesson learned from similar efforts in the region: there is not currently a strong compliance driver for WQT in the WLEB. The project team shifted its attention toward “stewardship crediting” (i.e. a buyer’s retirement of credits rather than use). During the spring and summer of 2018, the team entered three contracts with agricultural producers in Michigan and Ohio. This resulted in the generation of 1200 phosphorus “credits” that the GLC team will now market to a diverse universe of buyers interested in helping Lake Erie by supporting agricultural conservation.

Funder(s): USDA’s Natural Resource Conservation Service, Conservation Innovation Grant.

Partners: NRCS, WLEB states, and Ontario (as an observer).


Recent and Upcoming Activities:

- All credit-generating practices will be installed and verified by November 2018.
- A September news release and new website will enable interested credit buyers to connect with the GLC as a broker of phosphorus credits.
- An end-of-project webinar in November will update partners on our progress.

Lead Staff: Nicole Zacharda, nzacharda@glc.org.

HABs Collaboratory

Overview: In partnership with the U.S. Geological Survey’s (USGS) Great Lakes Science Center, the GLC leads the Great Lakes HABs Collaboratory, which provides a forum for communication and coordination among scientists and between scientists and managers working on HABs in the Great Lakes. A Steering Committee and a Charter provide the structure and guide the operations of the group. An annual workplan is developed under this structure to guide priorities. https://www.glc.org/work/habs-collaboratory.

Funder(s): USGS Great Lakes Science Center.

Partners: USGS Great Lakes Science Center; more than 250 scientists and practitioners from across the Great Lakes basin participate in the HABs Collaboratory.

Recent and Upcoming Activities:

- Produced a video, online at https://youtu.be/wsDCav9ytdk.
- Organized scientific sessions at the 2018 Association for the Sciences of Limnology and Oceanography (June) and 2018 IAGLR conference (also June).
- Will sponsor the 3rd annual State of the Science: Understanding HABs hosted by Ohio Sea Grant on September 13, 2018.
- Scheduling a fall/winter (2018-19) webinar series; topics include latest field research results; enhancing data sharing.
- Winter/spring 2018 in person meeting will consider the potential for developing a Common Agenda for HABs management across the Great Lakes region.

Lead Staff: Victoria Pebbles, vpebbles@glc.org.

Great Lakes Regional Sediment Management Team

Overview: The Great Lakes Regional Sediment Management Team began in 1997 as the Great Lakes Tributary Modeling program authorized under Section 516(e) of the Water Resources Development Act of 1996, as amended. The purpose of this program is to provide technical assistance to local and state agencies to reduce soil erosion and sediment and pollutant loadings to Great Lakes navigation channels and Areas of Concern. In 2018, this program was rebranded as the Great Lakes Regional Sediment Management Team. Under this program, the Great Lakes Commission (GLC) provides technical and administrative support to the U.S. Army Corps of Engineers’ Buffalo, Chicago and Detroit Districts to advance Great Lakes regional sediment management priorities. The GLC staff is responsible for program research, coordinating state involvement in the program, facilitating special projects and planning and convening an annual Great Lakes sedimentation workshop.

Funder(s): U.S. Army Corps of Engineers (USACE) – Buffalo District (LRB) (through LimnoTech, Inc., LRB’s IDIQ Contractor).

Partners: USACE Buffalo, Detroit and Chicago Districts, the Great Lakes States, U.S. EPA, USDA-NRCS, USGS, and numerous academic and private sector entities.


Recent and Upcoming Activities:

- In May, staff completed a draft research paper documenting the challenges and barriers associated with construction and maintenance of wetlands designed to trap, treat, and/or remove phosphorus. This paper is currently being reviewed by USACE.
- On June 29, GLC staff attended a planning meeting focused on the Great Lakes Restoration Initiative (GLRI) Action Plan III Focus Area 4: Species and Habitat Restoration. The meeting, featured identified opportunities to address coastal sedimentation, coastal resiliency and engineering with nature priorities under Action Plan III. These topics may be covered in detail at the 2019 Sedimentation Workshop.

Lead Staff: Tom Crane, tcrane@glc.org.
**Water Management and Infrastructure**

**Objective:** Ensure that the waters of the Great Lakes and St. Lawrence River basin continue to support the needs of communities, businesses, industries and ecology; are protected from development impacts, pollution, climate change and other stressors; and are managed in a balanced and sustainable manner for the use, benefit and enjoyment of people today and future generations.

More information about the GLC’s water management and infrastructure work can be found at [www.glc.org/work/water-management](http://www.glc.org/work/water-management).

**Strategic Actions:**

- In partnership with the Conference of Great Lakes and St. Lawrence Governors and Premiers, support decision-making and measure progress under the Sustainable Water Resources Agreement and Water Resources Compact by compiling, interpreting and disseminating consistent water withdrawal, diversion and consumptive use information; supporting the cumulative impact assessment called for under the Compact and the Agreement; and providing information on regional trends and state and provincial programs, practices and policies related to water use and conservation.

- Lead and engage in the development and dissemination of data and information necessary for implementing drinking, storm and wastewater management programs that identify critical needs and advance solutions to the benefit of public health and safety, water infrastructure and delivery, ecosystem health and water quality.

- Identify and advance solutions to water management and infrastructure challenges by facilitating forums, initiatives and partnerships, including the GLC’s working group on water infrastructure.

- Raise awareness of the fundamental value of water and the need for infrastructure improvements by advocating for federal legislation and funding to support and accelerate drinking, storm and wastewater infrastructure improvements through the Clean Water and Drinking Water State Revolving Fund programs and other water management programs and by promoting the benefits of integrating water delivery and wastewater management services to the states, provinces and municipalities in the region.

**Projects**

Note: Project descriptions with additional details on the projects summarized below are available on the commissioners’ password-protected website at [https://www.glc.org/commissioners/](https://www.glc.org/commissioners/).

**Integrated Water Asset Management**

**Overview:** The GLC’s 2017 *Joint Action Plan for Clean Water Infrastructure and Services in the Great Lakes Region* recommends 17 actions, one of which calls for “policies and guidelines supporting water infrastructure asset inventories and asset management plans….and a regional effort to track and report on clean water infrastructure and services investments and outcomes.” The GLC will undertake the first part of a two-phased effort to identify, test, and promote common tools that build capacity within Great Lakes states and provinces to implement Integrated Water Asset Management (IWAM – asset management that includes drinking water, wastewater and stormwater) and to track progress on IWAM across the region.

**Funder(s):** The Joyce Foundation; GLC General Operations.

**Partners:** TBD. Commissioners from PA and MI have expressed interest.

**Schedule:** fall 2018-spring 2020 (~18 months).
Recent and Upcoming Activities:

- Launch project in fall 2018.
- Scope and conduct two or three half-day focus groups or workshops to take place in spring 2019.
- Supplementary literature review and consultations.
- Prepare summary assessment of IWAM tools, barriers and needs.
- Establish Regional Advisory Group to scope pilot communities and draft regional IWAM goals.

**Lead Staff:** Victoria Pebbles, vpebbles@glc.org.

**Water Infrastructure Advocacy**

**Overview:** The GLC continues to convey to Congress the critical need to support level or enhanced funding for the Clean Water and Drinking Water State Revolving Fund programs. These programs are featured in the GLC’s 2018 federal priorities statement. Additionally, a letter conveying support for selected provisions in Senate WRDA legislation (S.2800) was sent to the Senate Environment and Public Works Committee in May 2018. That bill has since been amended in the form of a substitute (H.R. 8) and staff are tracking it.

**Funder(s):** General Operations.

**Partners:** N/A.

**Schedule:** Ongoing as needed.

**Recent and Upcoming Activities:** N/A.

**Lead Staff:** Matt Doss, mdoss@glc.org.

**Green Infrastructure Champions**

**Overview:** The GLC launched a green infrastructure (GI) champions pilot program in October 2016 to build green infrastructure capacity within small and mid-sized communities across the Great Lakes basin. Two workshops, a small grants program, a peer-to peer mentoring network, and a policy analysis are part of the strategy to achieve that goal. [https://www.glc.org/work/champions/network](https://www.glc.org/work/champions/network).

**Funder(s):** Erb Family Foundation.

**Partners:** Credit Valley Conservation; a Regional Champions Advisory Team.

**Schedule:** Project runs September 2016 to September 2018.

**Recent and Upcoming Activities**

- The policy analysis was released on September 4.
- GLC co-sponsored a Congressional briefing with the Northeast-Midwest Institute on September 5 where staff presented as part of a panel to Members of Congress.
- Staff will also present the policy analysis and recommendations at the Great Lakes Legislative Caucus Annual Meeting in September in Erie, PA.
- GLC Commissioners will hear about the policy analysis and recommendations at the 2018 Annual Meeting.

**Lead Staff:** Victoria Pebbles, vpebbles@glc.org.
Great Lakes-St. Lawrence River Regional Water Use Database

Overview: Through a Memorandum of Understanding (MOU) with the Great Lakes and St. Lawrence Governors and Premiers, the GLC manages the Great Lakes-St. Lawrence River Regional Water Use Database under the Great Lakes and St. Lawrence River Water Resources Compact and Sustainable Water Resources Agreement. In this capacity, the GLC works with its member states and provinces to collect annual water use data and issue annual water use reports and interim cumulative impact assessments. The GLC, working with the state and provincial water managers, has a goal to continuously improve the quality and usefulness of the database.

Funder(s): The Great Lakes and St. Lawrence Governors and Premiers.

Partners: Great Lakes and St. Lawrence Governors and Premiers; the Great Lakes and St. Lawrence states and provinces.


Recent and Upcoming Activities:
- A conference call meeting of the region’s water use managers was convened in August 2018 to plan for the submittal of 2017 water use data and review the 2018 workplan.
- The GLC staff is compiling state and provincial water use data and associated metadata for the 2017 water use report.
- The report will be completed by mid-November 2018 and presented to the Regional Body and Compact Council in early December.
- Water use reports and data for previous years are available on the GLC website at http://glc.org/work/water-use

Lead Staff: Tom Crane, tcrane@glc.org.

Source Water Initiative

The Source Water Initiative, under the umbrella of Blue Accounting, launched in May 2017 to establish goals and metrics for the desired outcome of “a safe and sustainable domestic water supply.” See the Water Quality Program update for more details.

Additional Program Activities

- GLC Delegation at One Water Summit: For the second year in a row, the GLC sent an official delegation to the One Water Summit organized by the U.S. Water Alliance and held in Minneapolis, MN in July. GLC delegates represented Minnesota, Illinois, and Québec, and Chairman Stine led the delegation and made formal remarks about the GLC’s commitment to work with regional stakeholders to develop a framework for best practices for integrated water infrastructure asset management, including drinking water, wastewater, and storm water, for use by states and provinces in the Great Lakes region.
Commercial Navigation

Objective: Improve the efficiency, competitiveness, security, and sustainability of the Great Lakes-St. Lawrence River maritime transportation system to support the regional and national economies of the United States and Canada.

More information about the GLC’s commercial navigation work can be found at www.glc.org/work/commercial-navigation.

Strategic Actions:

- Collaborate with the Regional Maritime Entity and other stakeholders to support implementation of the governors’ and premiers’ Strategy for the Great Lakes-St. Lawrence River Maritime Transportation System with a focus on establishing a maritime careers portal; maintaining the maritime asset inventory; managing data and information to track progress in implementing the strategy; and aligning data collection and reporting with the Blue Accounting initiative.

- In collaboration with the Regional Maritime Entity and other stakeholders, identify and advocate for priorities to maintain and strengthen the Great Lakes-St. Lawrence River maritime transportation system, including allocating funds from the Harbor Maintenance Trust Fund; constructing a new large lock at the Soo Locks; dredging to maintain authorized depths of channels and harbors and additional depth needed in critical areas; repairing and investing in aging navigation infrastructure; ensuring adequate icebreaking capacity; developing sustainable strategies for managing dredged material; and supporting the development of technologies to improve the system’s environmental performance.

- Convene or participate in regional partnerships, forums, and initiatives related to the Great Lakes-St. Lawrence River maritime transportation system, including the Regional Maritime Entity, Great Lakes Dredging Team, Great Ships Initiative, and the Great Lakes Small Harbors Coalition.

Projects

Note: Project descriptions with additional details on the projects summarized below are available on the commissioners’ password-protected website at https://www.glc.org/commissioners/.

Blue Accounting Maritime Transportation Project

Overview: This project will use the Blue Accounting framework and web platform to collect and present data and information to track progress in achieving the goals laid out in the governors’ and premiers’ 2016 Strategy for the Great Lakes-St. Lawrence River Maritime Transportation System. In 2017 Blue Accounting updated cargo volume data and a maritime asset inventory and presented this information on the Blue Accounting Maritime Transportation platform (https://www.blueaccounting.org/issue/maritime-transportation). Moving forward, the GLC’s Blue Accounting team will work with leaders from the maritime industry to identify and track additional economic and environmental metrics that show progress toward goals established in the regional maritime strategy.

Funder(s): Herrick Foundation.

Partners: Great Lakes and St. Lawrence Governors and Premiers and multiple U.S and Canadian maritime stakeholders serving on the Maritime Transportation Work Group.

Schedule: The next phase of the project will be completed by June 2019 and formally presented at the leadership summit of the Great Lakes and St. Lawrence Governors and Premiers to be held that month.
Recent and Upcoming Activities:

- Convened a Maritime Transportation Work Group with representatives from U.S. and Canadian maritime agencies and organizations.
- Established preliminary goals and metrics.
- Contract to be developed with the consulting firm CPCS to assist with data collection and visualization.
- Additional work group meetings to be held in fall and winter.
- Coordination with the Green Marine program on environmental metrics.
- GLC to present to the Regional Maritime Entity.

Lead Staff: Matt Doss, mdoss@glc.org.

Great Lakes Dredging Team (GLDT)

Overview: The GLDT serves as a forum for both governmental and non-governmental Great Lakes dredging interests to discuss the region’s dredging needs. In collaboration with its partners, the GLDT supports timely, cost-effective and environmentally sustainable dredging practices at U.S. harbors and channels throughout the Great Lakes, connecting channels and tributaries. The GLC staff, serving as secretariat to the GLDT, coordinates, plans, facilitates and organizes all aspects of the work of the GLDT including staffing of three standing committees, promoting the work of the GLDT through education and outreach and convening two full meetings of the GLDT each year.

Funder(s): U.S. Army Corps of Engineers (USACE) – Buffalo District (LRB) (through LimnoTech, Inc., LRB’s IDIQ Contractor).


Recent and Upcoming Activities:

- Convened the 2018 GLDT Annual Meeting on May 22-23 in Toledo, Ohio.
- Developed, reviewed and finalized 2018 workplans for the GLDT Outreach and Technical Committees and distributed Volume 4 Issue 1 of the GLDT Newsletter the Great Lakes Dredging Dispatch.
- Participated in a one-day workshop on May 30 in Duluth, Minnesota, hosted by the Minnesota and Wisconsin Sea Grant programs, to develop a science-based approach for managing environmental windows for dredging in Duluth-Superior Harbor.

Lead Staff: Tom Crane, tcrane@glc.org

Additional Program Activities

- GLC Executive Director Darren Nichols presented at the summer meeting of the American Great Lakes Ports Association.
- GLC Policy Director Matt Doss presented to the Great Lakes Advisory Committee for the Green Marine program.
Economic Development and Waterfront Community Revitalization

Objective: Support the efforts of the states and provinces in collaboration with federal agencies, local communities, and nongovernmental stakeholders to restore and revitalize waterfront areas and advance policies, programs and funding to leverage water resources to support a strong regional economy and high quality of life.

More information can be found at [www.glc.org/work/economic-development](http://www.glc.org/work/economic-development).

Strategic Actions:

- Support research, disseminate information, and collaborate with regional leaders to quantify the economic value of Great Lakes water resources, the return on investments in environmental restoration and water-related infrastructure, and the ecosystem benefits and services generated by the Great Lakes, and facilitate a cooperative, regional approach to advancing the “Blue Economy.”

- Support the work of the Conference of Great Lakes and St. Lawrence Governors and Premiers’ regional economic task force, and collaborate with other partners such as the Council of Great Lakes Industries and the Great Lakes Metro Chambers Coalition, to strengthen water-related infrastructure, industries and commerce and facilitate a cooperative approach to improve regional economic performance and competitiveness.

- Support implementation of the GLRI and other regional programs to clean up and restore waterfront areas, and advance policies, funding and information exchange to assist the states, provinces and local communities in strategically leveraging water resources to strengthen local economies and provide benefits for residents and visitors.

- Advocate with Congress and federal agencies for programs, policies and funding that support state and local efforts to clean up and revitalize waterfront areas, including the GLRI, Coastal Zone Management Act, National Sea Grant College Program, and brownfields redevelopment programs, and assist in effectively implementing these programs and linking them with state and provincial priorities.

- Collaborate with other water-related commissions in the U.S., Canada, and abroad to share information, exchange strategies, and advance common goals directed at solving problems affecting water resources and leveraging them as vital regional assets.

Projects

Note: Project descriptions with additional details on the projects summarized below are available on the commissioners’ password-protected website at [https://www.glc.org/commissioners/](https://www.glc.org/commissioners/).

Determining the Economic Impact of Great Lakes Restoration

Overview: The GLC and the Council of Great Lakes Industries are leading a project to develop a comprehensive estimate of the economic impact of the Great Lakes Restoration Initiative (GLRI) using metrics such as regionwide economic activity triggered by GLRI project spending, growth in regional tourism, and improved quality of life as demonstrated by residential house value impacts. The project includes case study narratives to illustrate economic impacts in specific communities, including Waukegan, IL, Muskegon, MI, Detroit, MI, Duluth MN/Superior, WI, Sheboygan, WI, Ashtabula, OH, Erie, PA, and Buffalo, NY.

Funder(s): C.S. Mott, Wege, Joyce and Erb Family foundations, Fund for Lake Michigan, and Commonwealth of Pennsylvania.

Schedule: June 2017 through October 2018.

Recent and Upcoming Activities:
- Convened independent Advisory Panel and Expert Panel to advise on project methodology, communications, etc.
- Completed economic modeling and related analyses.
- Completed case studies.
- Finalized and released project summary report, including media outreach and communications with the Great Lakes Congressional delegation.

Lead Staff: Matt Doss, mdoss@glc.org.

Study of Socio-Economic Benefits from Cleanup Efforts in the Muskegon Lake AOC

Overview: As part of the 2016 Regional Partnership with NOAA (described below in the Coastal Conservation and Habitat Restoration Program update), the GLC is coordinating a study of socio-economic benefits from restoration efforts in the Muskegon Lake AOC in Michigan. The study is being conducted by faculty with Grand Valley State University (GVSU) and will complement and update a similar study completed in 2011 by GVSU that projected a 6-to-1 return on investment from the $10 million NOAA-Recovery Act funded habitat restoration project for Muskegon Lake coordinated by the GLC.

Funder(s): The 2016 NOAA-GLC Regional Partnership, which is funded through the GLRI.

Partners: NOAA, GVSU.

Schedule: All field data has been collected, a final report by GVSU is anticipated in fall 2018. Final publication of the results will be initiated at that time.

Recent and Upcoming Activities:
- The 2011 GVSU Muskegon Lake AOC study was published in in the Journal of Great Lakes Research.
- The GVSU team conducted additional field sampling during summer 2018 to bolster the statistical strength of their survey results. Sampling is now complete.
- A final report will be released in the fall of 2018.

Lead Staff: Eric Ellis, eellis@glc.org.

Support for the Statewide Public Advisory Council for Michigan’s AOC Program

Overview: GLC staff assist the State of Michigan in supporting the Statewide Public Advisory Council (SPAC) for Michigan’s AOC Program. The SPAC includes representatives from the state’s 14 AOCs and provides advice and assistance to the state in implementing the AOC program.

Funder(s): Michigan Office of the Great Lakes.


Schedule: Ongoing.

Recent and Upcoming Activities:
- GLC staff attended the spring meeting of the SPAC, held June 27-28 in Frankenmuth, MI.
Lead Staff: Matt Doss, mdoss@glc.org.

Support for the 2018 Annual Conference for the U.S. Great Lakes Areas of Concern Program

Overview: GLC staff assisted in planning and convening the 2018 Annual Conference for the U.S. Great Lakes AOC program sponsored by U.S. EPA and Wisconsin DNR and held May 16-17 in Sheboygan, Wisconsin. Among other tasks, the GLC managed registration and administered funding to support participation in the conference by local AOC leaders.

Funder(s): Wisconsin DNR.


Schedule: The conference was held in May and this project is completed.

Recent and Upcoming Activities:
• GLC staff attended and assisted with the regional AOC conference, held May 16-17 in Sheboygan, WI.
• The GLC administered funding to support approximately 40 local AOC leaders to attend the conference.
• The GLC is working with Ohio EPA and U.S. EPA-GLNPO to support the 2019 AOC conference, expected to be held in Cleveland, Ohio in September, 2019.

Lead Staff: Matt Doss, mdoss@glc.org.

Additional Program Activities
• Matt Doss, GLC policy director, lectured to a master class at the University of Michigan focused on the Great Lakes AOC program and is advising a masters student project that is assessing effective processes and strategies that Michigan's AOC program could implement to promote ongoing social, economic, and ecological revitalization up to and beyond AOC delisting.
• Matt Doss participated in a Value of Community Engagement Summit convened by the Michigan Office of the Great Lakes.
Coastal Conservation and Habitat Restoration

Objective: Conserve coastal ecosystem functions and values that contribute to the diversity, resilience, and economy of the Great Lakes-St. Lawrence River basin by protecting natural communities that sustain populations of desirable fish and wildlife species; restoring degraded areas; and managing coastal resources to improve ecosystem services while supporting sustainable economic development.

More information about the GLC’s coastal conservation and habitat restoration work can be found at www.glc.org/work/habitat.

Strategic Actions:

- Lead and support regional programs that restore, protect and manage valuable habitat and water resources through implementation of the NOAA-GLC Regional Partnership in Areas of Concern, and in coordination with U.S. EPA, NOAA, the states and provinces, and local organizations.

- Elevate awareness of coastal conservation issues among decision-makers, managers, researchers, and the public by convening meetings, coordinating action, and developing communication products such as websites, webinars, and publications.

- Explore and develop data and information-sharing opportunities to support ongoing coastal wetland restoration prioritization; contribute to decision-making; and measure progress on coastal conservation and habitat restoration across the region.

- Communicate with partners, including U.S. EPA, NOAA, USGS, NRCS, Great Lakes Fishery Commission, Great Lakes Landscape Conservation Cooperative, and the Great Lakes Water Quality Agreement Annex 7 Subcommittee to ensure effective coordination and collaboration with state and provincial agencies, agriculture producers, conservation groups, and local partners in support of sound land management practices and strategically-targeted fish and wildlife restoration and conservation actions.

- Advocate for legislation and funding for federal programs, policies, and laws, such as the GLRI, Great Lakes Fish and Wildlife Restoration Act, and Farm Bill, and support their effective implementation and alignment with state and provincial priorities.

Projects

Note: Project descriptions with additional details on the projects summarized below are available on the commissioners’ password-protected website at https://www.glc.org/commissioners/.

NOAA Regional Partnership to Support Habitat Restoration in Areas of Concern

Overview: The GLC is leading two NOAA Regional Partnerships under the GLRI to support habitat restoration in Great Lakes AOCs. The 2013 partnership has provided more than $29 million for 13 habitat restoration projects in the St. Marys River and Muskegon Lake AOCs in Michigan and the Buffalo River AOC in New York. The 2016 partnership has provided $9.9 million to support habitat restoration in the Muskegon Lake and Clinton River AOCs in Michigan, the Maumee and Cuyahoga river AOCs in Ohio; a socio-economic study on the impacts of restoration at Muskegon Lake; and communications videos about NOAA’s work in Great Lakes AOCs. Additional projects to be supported by the partnership were recently identified by NOAA in consultation with U.S. EPA, the states of Michigan and Ohio, and local AOC leaders.

Funder(s): National Oceanic and Atmospheric Administration with funding from the GLRI.
Partners: NOAA, U.S. EPA, Michigan DEQ, Huron-Clinton Metropolitan Authority, West Michigan Shoreline Regional Development Commission, Buffalo Niagara Waterkeeper, Lake Superior State University, Chippewa County Road Commission, Ohio EPA, Summit Metroparks, City of Toledo, Eastern Upper Peninsula Regional Planning & Development Commission.

Schedule: The 2013 Regional Partnership ends Sept. 30, 2018. The 2016 Regional Partnership is ongoing until July 2019 with the possibility of two, one-year extensions.

Recent and Upcoming Activities:
- In July, a final celebration event was held for the Buffalo River Restoration project. Speakers at the event included representatives from GLC, NOAA, U.S. EPA, New York DEC, and Congressman Brian Higgins.
- Received approval to begin engineering and design work for a project at the Cascade Valley Metropark on the Cuyahoga River in Ohio. The project will restore 50 acres of floodplain and 3,500 linear feet of the Cuyahoga River. Summit Metroparks is the local project partner.
- Five new projects were approved for funding under the 2016 Regional Partnership at the Muskegon Lake AOC, including work on planning for long-term, post-restoration management and engineering and design for restoration at two new locations.
- The GLC and the City of Toledo are finalizing an agreement to move forward with the engineering and design for the Penn 7 project in the Maumee River AOC, which will ultimately result in restoration of fish habitat, restoration of open water and emergent wetland, and increased fish nursery habitat on a 59-acre parcel along the river.

Lead Staff: Eric Ellis, eellis@glc.org.

Great Lakes Landscape Conservation Cooperative/Great Lakes Coastal Assembly

Overview: The GLC was on the steering committee of the Upper Midwest and Great Lakes Landscape Conservation Cooperative (LCC) and participated in the Coastal Conservation Working Group. Funding for the LCC was eliminated in 2018 and the program has been dissolved. A group of partners, including multiple states and the U.S. Fish and Wildlife Service, explored various opportunities to retain the benefits of the program and continue with many of the program goals, which led to the creation of the Great Lakes Coastal Assembly.

Funder(s): Currently very limited funding from non-GLC sources for meetings and logistics.


Schedule: The steering committee has periodic conference calls, otherwise activities are planned on an individual basis.

Recent and Upcoming Activities:
- The Assembly created a charter with a stated purpose to 1) promote collaborations aimed at management, restoration, and conservation of coastal areas; 2) assist organizations in assessing where investments should be made and aligning investments with regional, state, and local goals; and 3) identify needs for science and decision support and enable actions that help coastal managers make effective decisions.
- GLC is actively taking part in this group and will continue to cooperate with partners on priority coastal issues and regularly scheduled meetings. Current proposed activities include a coastal wetlands documentary, a Great Lakes Summit, and a coastal wetlands webinar in cooperation with the IJC.

Lead Staff: Eric Ellis, eellis@glc.org.
NOAA Great Lakes Habitat Restoration Grant to Support the St. Clair-Detroit River System Coastal Restoration Initiative

Overview: The goal of this new NOAA grant program is to provide financial and technical assistance to habitat restoration projects that meet both NOAA’s mission to restore coastal habitats and support the GLRI goal to protect and restore habitats in order to sustain healthy populations of native fish species in the eight U.S. Great Lakes states. The GLC worked with a variety of partners to submit the St. Clair-Detroit River System Coastal Restoration Initiative proposal in March of 2018.

Funder(s): NOAA, with funding from GLRI.

Partners: NOAA, Chesterfield Township (Macomb County, MI), Huron-Clinton Metropolitan Authority, Michigan Office of the Great Lakes, Southeast Michigan Council of Governments.

Schedule: The grant was awarded in August, 2018 and has a three-year duration, with the opportunity to add additional projects in years two and three.

Recent and Upcoming Activities:

- $1.624 million in funding was awarded for two projects: Lake Erie Metropark Restoration Project with the Huron-Clinton Metropolitan Authority in Wayne County, MI; and the Brandenburg Park Shoreline Restoration Engineering and Design project with Chesterfield Township in Macomb County, Michigan. Both projects are in the initiation stage and will begin during fall 2018.

Lead Staff: Eric Ellis, ellis@glc.org.

Additional Program Activities

- GLC staff will participate in a Coastlines and People planning workshop in Chicago, which is part of a University Cooperation for Atmospheric Research initiative funded by the National Science Foundation. The aim is to better understand research needs related to impacts of coastal environmental variability and natural hazards on populated coastal regions. More information is online at https://coastlinesandpeople.org/.
Aquatic Invasive Species Prevention and Control

Objective: Prevent the introduction and spread, and when necessary, advance the management and control of aquatic invasive species, that are or have the potential to negatively impact water resources or the economy of the Great Lakes-St. Lawrence River basin.

More information can be found at https://www.glc.org/work/invasive-species.

Strategic Actions:

- Develop and promote communication products and services, including websites, webinars, and publications (e.g., Great Lakes Aquatic Invasions) that provide AIS information and advance progress on AIS prevention and control.

- Develop and promote the use of adaptive management frameworks and data and information integration platforms in order to support decision making (including evaluating costs and benefits) and measure progress on AIS prevention and control across the region.

- Facilitate regional forums and collaboratives working to advance effective and coordinated approaches to AIS prevention and control, including the Great Lakes Panel on Aquatic Nuisance Species, the Chicago Area Waterway System Advisory Committee, and the Great Lakes Phragmites and Invasive Mussel collaboratives, among others.

- Collaborate with other partner groups engaged in AIS prevention and control to support and advance common AIS priorities, including the GLWQA Annex 6 Subcommittee, the Conference of Great Lakes Governors and Premiers AIS Task Force, the Great Lakes Fishery Commission, the International Joint Commission, the federal Aquatic Nuisance Species Task Force, and other regional ANS panels, among others.

- Advocate for legislation and funding to support effective implementation of federal programs, policies and laws, such as the National Invasive Species Act, Lacey Act, GLRI, and Asian Carp Action Plan.

- Lead regional projects that advance policies and solutions to reduce the risk of AIS introduction and spread through priority pathways including internet sales of organisms in trade, canals and waterways and ballast water.

Projects

Note: Project descriptions with additional details on the projects summarized below are available on the commissioners’ password-protected website at https://www.glc.org/commissioners/.

Great Lakes Panel on Aquatic Nuisance Species

Overview: The federal Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 called on the GLC to convene a panel of Great Lakes agencies and private, environmental, tribal and commercial interests to identify priorities for the Great Lakes region (including the eight Great Lakes states) with respect to nonindigenous aquatic invasive species (AIS); make recommendations to the national Aquatic Nuisance Species Task Force (ANSTF) regarding its own program initiatives; assist the ANSTF in coordinating federal aquatic nuisance species program activities in the Great Lakes; coordinate non-federal programs within the region; provide advice to public and private individuals and entities concerning methods of controlling AIS; and report to the ANSTF on activities within the Great Lakes related to AIS prevention, research and control.

Funder(s): U.S. Fish and Wildlife Service.
Partners: Great Lakes Panel (GLP) members: [https://www.glc.org/work/glpans/members](https://www.glc.org/work/glpans/members)

Schedule: Ongoing.

Recent and Upcoming Activities:

- Convened a GLP meeting in June 2018 in Chicago.
- Planning the next GLP meeting for November 7-8, 2018 in Ann Arbor.
- Supporting two ad-hoc committees focused on coordinating and advancing regional risk assessment and grass carp activities.
- Providing input to NOAA GLERL on the updates to the Great Lakes Aquatic Nonindigenous Species Information System, including development of a AIS risk assessment clearinghouse.
- Working with the GLP Research Coordination Committee to conduct an analysis of regional AIS funding, with a focus on GLRI investments.
- Held conference calls with the GLWQA Annex 6 Subcommittee Co-Chairs and EPA GLRI Focus Area 2 leads to discuss how GLP activities can support implementation of the GLWQA and GLRI.
- Participated in the June 2018 ANSTF meeting and provided input to the ANSTF on development of the next ANSTF Strategic Plan.

Lead Staff: Erika Jensen, ejensen@glc.org.

Analysis of Great Lakes Aquatic Invasive Species Funding

Overview: The GLC is conducting an analysis of invasive species funding since the implementation of the GLRI to summarize progress, identify trends and gaps, and develop a strategy to target remaining priority needs and help direct invasive species work over the next decade. This effort will complement and enhance current GLRI reporting systems through the collection of additional project information and by providing a more detailed analysis of how funding from the GLRI and other sources has invested in invasive species prevention and control. The result will be a repository of information that includes detailed project data and metrics.

Funder(s): U.S. Army Corps of Engineers through Ecology & Environment.

Partners: Great Lakes Panel on Aquatic Nuisance Species (GLP).

Schedule: May 2016-September 2018.

Recent and Upcoming Activities:

- Completed development of the database and populated it with funding information from the GLRI for FY2010-FY2015.
- Completed initial findings with a focus on species information and pathways information as well as a general overview of trends.
- Presented initial findings at the International Conference on Aquatic Invasive Species and the June 2018 meeting of the GLP.
- Developing a series of factsheets to communicate findings to GLP membership.

Lead Staff: Erika Jensen, ejensen@glc.org.

Invasive Mussel Collaborative

Overview: The Invasive Mussel Collaborative (IMC) is working to advance scientifically sound technology for invasive mussel control to produce measurable ecological and economic benefits. The IMC provides a framework for communication and coordination and is identifying the needs and objectives of resource managers; prioritizing the supporting science; implementing communication strategies; and aligning science and management goals into a common agenda for invasive mussel control.


Schedule: Ongoing (Five-year agreement with USGS through 2023; current funding through 05/31/2019).

Recent and Upcoming Activities:

- Convened a meeting in March 2018 to work on developing a *Strategy to Advance Management of Invasive Zebra and Quagga Mussels* (the Strategy) and discuss ongoing and future IMC activities.
- Finalizing the Strategy for release in fall 2018.
- Developing a control method demonstration and evaluation project in Sleeping Bear Dunes National Lakeshore to begin implementation of the Strategy.
- Developing a summary document of available control methods and associated literature, case studies and permitting information.
- Hosted three webinars in 2018 to showcase and discuss management strategies.
- Developing communications video highlighting the work of the IMC and the Strategy in late 2018.
- Completing an overhaul of the IMC website (www.invasivemusselcollaborative.net) to improve usability, functionality, and appearance.
- Regularly convening the IMC Core Team, Steering Committee, and Science Team to provide guidance and input on IMC activities.

Lead Staff: Erika Jensen, ejensen@glc.org.

Great Lakes Phragmites Collaborative

Overview: The GLC and USGS are jointly leading a regional partnership – the Great Lakes Phragmites Collaborative (GLPC) – to improve communication and collaboration leading to more coordinated, efficient and strategic approaches to non-native *Phragmites* across the Great Lakes basin. The GLPC provides educational resources tailored to diverse interest groups, connects invasive species managers with the latest research and technology, encourages the use of adaptive management, and facilitates alignment of partner efforts across jurisdictional barriers.


Schedule: Ongoing (Five-year agreement with USGS through 2023; current funding through 05/31/2019).

Recent and Upcoming Activities:

- Developed a Common Agenda to guide the work of the GLCP based on the principles of collective impact.
- Drafted a measurement system to evaluate the progress of the GLPC on the Common Agenda.
- Sharing the work of the GLPC as a novel application of collective impact to the natural resources field at prominent events including the Wildlife Society, the North American Invasive Species Association, and Upper Midwest Invasive Species conferences.
- Regularly convening Advisory and Steering Committees to guide the work of the GLPC and foster inter-jurisdictional partnerships.
- Hosting an ongoing webinar series where guest speakers shared successful models for *Phragmites* management, public outreach, and collaborative governance.
- Re-structured the GLPC website (www.greatlakesphragmites.net) to better direct visitors to resources specific to their needs.
• Developing audience-specific outreach materials across various multi-media formats.

Lead Staff: Erika Jensen, ejensen@glc.org.

**Phragmites Adaptive Management Framework (PAMF)**

**Overview:** The GLC and USGS are working to promote effective *Phragmites* management across the Great Lakes basin and track the effectiveness and resource efficiency of those management activities through the PAMF model. PAMF requires working with a variety of *Phragmites* managers across the basin, from state and federal employees to private citizens, in a strategic attempt to engage, learn from, and assist all levels of *Phragmites* managers.

**Funder(s):** U.S. Geological Survey via the Great Lakes Restoration Initiative.

**Partners:** U.S. Geological Survey and University of Georgia.

**Schedule:** Ongoing (Five-year agreement with USGS through 2023; current funding through 05/31/2019.

**Recent and Upcoming Activities:**
- Conducted training sessions across the Great Lakes basin to educate *Phragmites* managers about PAMF and encourage their participation.
- Traveled to new management units and worked with managers to enroll their units into PAMF and assist with the initial monitoring.
- Provided management guidance for over 90 enrolled management units.
- Working daily with partners to effectively coordinate efforts.
- Presenting and hosting an exhibitor booth at the Upper Midwest Invasive Species Conference.
- Drafting a formal plan for outreach activities for the 2019/20 PAMF cycle and executing that plan.

Lead Staff: Erika Jensen, ejensen@glc.org.

**Interstate Aquatic Invasive Species Prevention, Early Detection, and Response**

**Overview:** The GLC is supporting the eight Great Lakes states in their efforts to plan and coordinate interstate aquatic invasive species (AIS) prevention, early detection, and response activities. The GLC is conducting a pathway risk assessment focused on high priority aquatic invasive plants. Aquatic plants are introduced into the Great Lakes Basin via a number of pathways and the results of this effort will help the states and regional partners understand pathway activity for invasive aquatic plants; determine which pathways are associated with high-risk plant species; and identify gaps in management, compliance and law enforcement, and education for each pathway.

**Funder(s):** U.S. Fish and Wildlife Service through Michigan DEQ under the GLRI.

**Partners:** Michigan DEQ, The Nature Conservancy, and other state, provincial and federal agencies.

**Schedule:** May 2016 through December 2018.

**Recent and Upcoming Activities:**
- Developed pathway descriptions for eight priority pathways for aquatic plant introduction and spread in the Great Lakes region.
- Finalized and distributed an aquatic plant pathway risk analysis questionnaire to nearly 200 experts.
- Analyzed quantitative and qualitative responses to the questionnaire to identify risk points, gaps in management, and opportunities to reduce risk.
- Convened two meetings to plan distribution and guide analysis of the questionnaire.
• Developing a comprehensive risk assessment report with in-depth findings for eight priority pathways.

Lead Staff: Erika Jensen, ejensen@glc.org.

Great Lakes Detector of Invasive Aquatics in Trade

Overview: The GLC developed the web-based software tool Great Lakes Detector of Invasive Aquatics in Trade (GLDIATR), which collects, analyzes and allows users to access information about how many and what types of Great Lakes AIS are available for sale on the Internet. This information is being used by invasive species managers to inform and help target a variety of activities, including outreach and education, risk assessment, monitoring and surveillance, and enforcement.

Funder(s): U.S. EPA under the GLRI, Michigan DNR, Wisconsin DNR.

Partners: State, provincial and federal AIS managers.

Schedule: May 2016 through April 2019.

Recent and Upcoming Activities:
• Working with a multi-stakeholder advisory board to oversee implementation of GLDIATR.
• Working with a contractor to complete upgrades to the GLDIATR system, including a case management system to facilitate coordination and cooperation in enforcement between state agencies.
• Providing information and user accounts to managers and other interested parties.
• Between October 2018 and April 2019, the GLC will be working with the advisory board and other partners to implement regionally coordinated outreach to Internet-based retailers.
• Presented to the Great Lakes Fishery Commission’s Great Lakes Law Enforcement Committee in March 2018.
• Participating in the Great Lakes BIOTIC Symposium as part of the Upper Midwest Invasive Species Conference in October 2018.

Lead Staff: Erika Jensen, ejensen@glc.org.

Blue Accounting Aquatic Invasive Species Pilot

Overview: The GLC is working with The Nature Conservancy to develop and implement an AIS pilot project under the Blue Accounting program. The AIS pilot is focused on surveillance and rapid response to new species introductions; the organisms in trade pathway of spread; and control and management of invasive species. The GLC and TNC are working with a group of regional AIS experts and managers to provide input and guide implementation of the AIS pilot.

Funder(s): The Nature Conservancy (with funding from the Mott Foundation and other private foundations).

Partners: The Nature Conservancy.

Schedule: Ongoing.

Recent and Upcoming Activities:
• Developing content for the AIS pilot webpage (https://www.blueaccounting.org/issue/aquatic-invasive-species).
• Convened a workshop for the AIS pilot working group in May 2018 to agree to a terms of reference document and develop a plan of work.
• Participating in quarterly Issue Lead meetings to share information and lessons learned across the different pilots.
• Planning a fall webinar and meeting of the AIS pilot working group to continue web content development and pilot implementation.

Lead Staff: Erika Jensen, ejensen@glc.org.

Invasive Species and the Chicago Area Waterway System

Overview: The GLC continues to convene a 30-member Chicago Area Waterway System Aquatic Invasive Species Stakeholder Group (formerly referred to as the advisory committee) that is the primary regional stakeholder forum seeking solutions to the threat of Asian carp and other AIS passing through the Chicago Area Waterways System (CAWS) while maintaining current uses of the system.

Funder(s): U.S. Fish and Wildlife Service and the Joyce Foundation

Partners: A broad array of Chicago/Northwest Indiana and regional organizations serve on the CAWS AIS Stakeholder Group, with the associated resource group including federal and state agencies.

Schedule: The GLC is transitioning out of its role supporting the group and will complete this process over the next six months.

Recent and Upcoming Activities:
• Convened the group’s Steering Committee to guide its operations.
• Developed and approved new operating procedures for the group.
• Convened the group in July to discuss new operating procedures, the draft Brandon Road plan, and other matters.
• Coordinated with the Steering Committee to identify a new administrative support organization and transition the GLC out of this role.
• Planned a fall meeting.

Lead Staff: Matt Doss, mdoss@glc.org.

Additional Program Activities

• Participating as a member of the Great Water Research Collaborative (GWRC) Advisory Committee. The committee provides input on GWRC program direction and activities. The University of Wisconsin-Superior holds management and fiduciary responsibility for the GWRC. The committee most recently met in July 2018 in Erie, PA. Lead staff: Erika Jensen
• Produced an updated paper summarizing the status of ballast water discharge regulations in the Great Lakes region. The paper summarizes requirements and conditions in ballast water rules and permits, including limits on the concentration of residual biocides (e.g., chlorine), as well as discharge monitoring requirements. Lead staff: Erika Jensen.
• Participated on the Asian Carp Regional Coordinating Committee and the Executive Steering Committee for the Great Lakes and Mississippi River Interbasin Study. Lead staff: Matt Doss.
Information Management and Blue Accounting

Objective: The GLC’s member states and provinces have access to high-quality, curated information about Great Lakes issues from a neutral and authoritative source.

More information on the GLC’s information management and Blue Accounting work is available at www.glc.org/work/info-management.

Strategic Actions:

- Deliver consistent, continuous, and unbiased information to the GLC’s member states and provinces on issues and outcomes of mutual interest and concern, including the support of other GLC Program Areas described in the Strategic Plan.

- Establish Blue Accounting as the leading information service to track the region’s progress toward shared goals and outcomes using consistent data, metrics, and methods working with The Nature Conservancy and other partners in both countries. Specifically, provide support to the Source Water Initiative and ErieStat, described in the Water Quality Program Area, as Blue Accounting pilot projects.

- Develop and maintain mutually-beneficial relationships with agencies and entities across the region in both nations at federal, state, provincial, tribal/First Nations, local, and municipal scales to coordinate information management and provide information to the GLC for use by its members.

- Support and enhance the efforts of Annex 10 of the GLWQA, the IJC’s Science Priority Committee and the Great Lakes Advisory Board’s Science and Information Subcommittee to improve information coordination and flow between entities and agencies in the Great Lakes region.

- Coordinate and provide information to support spill prevention and response programs working with U.S. EPA across the Great Lakes basin and continuing current work with the Region 5 Regional Response Team to build intergovernmental relationships that improve planning and make response efforts more efficient.

- Provide facilitation and information management services to support development of strategies and policies to ensure protection of the region’s water resources in the context of increases in North American oil production and associated oil transportation to and through the Great Lakes and St. Lawrence River region.

Projects

Note: Project descriptions with additional details on the projects summarized below are available on the commissioners’ password-protected website at https://www.glc.org/commissioners/.

Blue Accounting Initiative

Overview: A 2013 request from the Great Lakes governors and premiers called for a common approach to monitoring Great Lakes water resources and looked to the GLC for solutions. In 2014 a group of regional thought leaders, convened by GLC, responded to the governors’ and premiers’ resolution by proposing a framework for convening collaboratives around desired outcomes for the Great Lakes, and creating shared regional goals and measures of progress toward these goals. That framework is Blue Accounting. Launched in 2015, Blue Accounting uses a regional online platform—or web site—to showcase the goals, strategies, metrics, investments and results developed under the Blue Accounting framework.
Blue Accounting is currently piloting five “issues” to demonstrate the value and ability of convening regional collaboratives to set shared goals, select metrics for measuring progress toward those shared goals, and share the results (via well-vetted data and information) on a publicly accessible web site. Two pilots—focused coastal wetlands and invasive species—are being led by The Nature Conservancy (TNC). Three pilots—focused on phosphorus control, source water protection and maritime transportation—are being led by the GLC. (See other program area updates for details about the individual pilot projects.)

**Funder(s):** The Nature Conservancy, The Herrick Foundation; The Fred A. and Barbara M. Erb Family Foundation; The Joyce Foundation.

**Partners:** Since its launch, Blue Accounting has been implemented as a partnership that is jointly managed by the GLC and TNC through a memorandum of agreement. Since its inception, the initiative has benefited from support from David McLean, Business IT Director for Dow Chemical, who has provided business development and technical advice. In addition, an advisory committee supports the initiative with representation from state, federal and local governments, business, academia, and NGOs from the Great Lakes basin.

**Schedule:** Ongoing. Most grant funding extends through 2020.

**Recent and Upcoming Activities:**
- Steve Cole, who was hired in 2015 in large part to lead Blue Accounting for the GLC, left the GLC in March 2018.
- Multiple Blue Accounting retreats in early 2018 with a core team of staff from TNC, GLC and Dow coupled with new GLC leadership have resulted in clarified roles and expectations for the partnership with more effective teams.
- A new summary document clarifying Blue Accounting principles, framework and services has become a rallying point to drive all Blue Accounting work. All Blue Accounting teams are developing workplans tied to this summary document.
- Blue Accounting outreach and communications (formerly two separate teams) have been reorganized under a single “external affairs” team led by the Blue Accounting Director of Strategic Engagement (Tawny Mata) who is jointly employed by TNC and GLC.
- A revised charter for the advisory committee will help ensure it is engaged as champions for Blue Accounting. The next Blue Accounting Advisory Committee meeting will be December 13, 2018.

**Lead Staff:** Victoria Pebbles, vpebbles@glc.org.

**Inland Sensitivity Atlas (Area Contingency Planning)**

**Overview:** GLC staff maintain the Inland Sensitivity Atlas (ISA) for Michigan, Ohio and Indiana under a cooperative agreement with U.S. EPA Region 5. The ISA is a set of GIS maps providing contingency planners and emergency responders with accurate and relevant sensitive information for spill preparedness and response. GLC staff work on contingency planning with U.S. EPA On-Scene Coordinators and local agencies to develop plans in three Indiana subareas: the Patoka River Planning Area supporting the Patoka River National Wildlife Refuge and Management Area; the White River sub-area planning area, which consists of five counties, including and upstream of Indianapolis; and the Northwest Indiana Planning Area, which includes the watersheds touching Lake Michigan in three Indiana Counties. A goal of this activity is to develop best practices for sub-area plans throughout the Great Lakes states. The GLC works closely with Region 5’s Regional Response Team to support their website (RRT5.org), technical tools, “story maps,” mapping products, documents for emergency response plans, and field data collection.

**Funder(s):** U.S. EPA Region 5.

**Partners:** Upper Mississippi River Basin Association (UMRBA) in Minnesota, and TetraTech.

Recent and Upcoming Activities:

- Completed the draft of “EPA Region 5 Geographic Response Plan (R5 GRP) Response Strategy Survey User Guide.”
- Completed update of the Great Lakes GIS coastal layer for the RRT5 Jurisdictional Viewer. Working on a hybrid wetland GIS layer.
- Attended and worked on contingency planning for the White River sub-area. Delivered a network analysis to the White River On-Scene Coordinator.
- Currently updating the Ohio ISAs with a priority of incorporating a new hazardous materials dataset into the Ohio ISA.

Lead Staff: Tom Crane tcrane@glc.org.

Policy Coordination and Advocacy

Progress on the GLC’s 2018 Federal Priorities

The centerpieces of the GLC’s policy coordination and advocacy program are its annual legislative priorities statement and Great Lakes Day in Washington. The 2018 statement, *An Agenda for Great Lakes Restoration and Economic Revitalization*, was released in March 2018 at the GLC Semiannual Meeting in Washington, D.C. and is guiding the GLC’s advocacy activities. The top priorities for 2018 were:

- Invest in water infrastructure to safeguard drinking water, rebuild failing wastewater systems, support business and industry, and help revitalize communities.
- Strengthen the Great Lakes navigation system by upgrading locks, ports and related infrastructure and ensuring dredging to keep waterways open to commerce.
- Fully fund the Great Lakes Restoration Initiative to maintain progress in cleaning up and restoring North America’s greatest freshwater resource.
- Safeguard the Great Lakes from aquatic invasive species.
- Strengthen agricultural conservation programs to protect water quality, enhance wildlife habitat and bolster the farm economy.
- Provide effective leadership to guide Great Lakes investments and ensure accountability and efficiency.

Below is a summary of actions taken on these federal priorities since the 2018 GLC Semiannual Meeting, as well as reports on other policy and advocacy issues affecting the Great Lakes that have come up since then.

FY 2018 Appropriations for Major Great Lakes Programs and Status of FY 2019 Appropriations

The following table presents final FY 2018 appropriations (in millions of dollars) for selected Great Lakes programs, the President’s budget request for FY 2019, and Congressional action to date on FY 2019 appropriations. The only legislation completed to date affecting the programs below is the Energy and Water Appropriations bill, which funds the Army Corps of Engineers. A continuing resolution was passed through Dec. 7 for the other federal agencies, including U.S. EPA, Dept. of the Interior, and the Commerce Department.

<table>
<thead>
<tr>
<th>Program</th>
<th>FY 2018 Final Appropriations</th>
<th>FY 2019 Budget Request</th>
<th>Congressional Actions to Date on FY 2019 Appropriations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Great Lakes Environmental Research Laboratory</td>
<td>No detail provided</td>
<td>No detail provided</td>
<td>No detail provided</td>
</tr>
<tr>
<td>Chicago Sanitary and Ship Canal Dispersal Barrier</td>
<td><strong>$16.7</strong></td>
<td><strong>$18.92</strong></td>
<td><strong>$18.92</strong></td>
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<tr>
<td>Program</td>
<td>FY 2018 Final Appropriations</td>
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</tr>
<tr>
<td>Harbor Maintenance Trust Fund</td>
<td>$1,400</td>
<td>$965</td>
<td>$1,500 (estimate)</td>
</tr>
<tr>
<td>Great Lakes and Mississippi River Interbasin Study</td>
<td>$1.85</td>
<td>$0.20</td>
<td>House: $0.20, Senate: $0.20</td>
</tr>
<tr>
<td>Clean Water State Revolving Fund</td>
<td>$1,693</td>
<td>$1,393.89¹</td>
<td>House: $1,544, Senate: $1,694</td>
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<tr>
<td>Drinking Water State Revolving Fund</td>
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<td>$863.23¹</td>
<td>House: $1,013, Senate: $1,164</td>
</tr>
<tr>
<td>Great Lakes Restoration Initiative</td>
<td>$300</td>
<td>$30</td>
<td>House: $300, Senate: $300</td>
</tr>
<tr>
<td>BEACH Grants</td>
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<td>$0</td>
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</tr>
<tr>
<td>Great Lakes Science Center</td>
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<td>No detail provided</td>
<td>No detail provided</td>
</tr>
<tr>
<td>Section 106 Water Pollution Control</td>
<td>$230.8</td>
<td>$153.7</td>
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</tr>
<tr>
<td>Great Lakes Fishery Commission</td>
<td>$33.29</td>
<td>$24.8</td>
<td>House: $21, Senate: No detail provided</td>
</tr>
<tr>
<td>Great Lakes Fishery and Ecosystem Restoration</td>
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<td>No detail provided</td>
<td>No detail provided</td>
</tr>
<tr>
<td>National Sea Grant College Program</td>
<td>$65</td>
<td>No detail provided</td>
<td>House: No detail provided, Senate: $83.35</td>
</tr>
<tr>
<td>Coastal Zone Management Act (grants only)</td>
<td>$75</td>
<td>No detail provided</td>
<td>House: $75, Senate: No detail provided</td>
</tr>
</tbody>
</table>

¹ Following release of the president’s FY 2019 budget, the Administration recommended that an additional $397 million be provided for the two State Revolving Fund programs. They did not indicate how the additional funding would be allocated between the two programs.

Table updated as of September 27, 2018

Invest in water infrastructure to safeguard drinking water, rebuild failing wastewater systems, support business and industry, and help revitalize communities.

In May the GLC wrote to the Senate Committee on Environment and Public Works (copied to the Senate Great Lakes delegation) in support of Great Lakes provisions in the chamber’s water resources bill (titled the America’s Water Infrastructure Act of 2018). The letter also conveyed support for other provisions that reauthorized or strengthened existing programs, studied new approaches, and promoted reforms and best practices to support states and local communities in repairing, maintaining and upgrading wastewater, drinking water and stormwater infrastructure. The letter is provided below.

A compromise water resources bill was recently passed by the House and is expected to be acted on soon in the Senate, after which it will be sent to the President. Some key provisions include:

- Reauthorizing numerous programs under the Safe Drinking Water Act, the Clean Water Act, and the WIFIA program and authorizing actions on a number of issues in this area;
- Requiring the Army Corps of Engineers to undertake research on the management and eradication of aquatic invasive species, including Asian carp and zebra mussels;
- Directing the Army Corps of Engineers to implement a five-year harmful algal bloom technology development demonstration program under the Aquatic Nuisance Research Program;
- Authorizing the Army Corps of Engineers’ Great Lakes Coastal Resiliency Study;
- Authorizing construction of a new Soo Lock based on the Corps of Engineers’ revised cost estimate; and
- Authorizing the operations and maintenance cost-share for the Brandon Road feasibility study to 80 percent federal, 20 percent local.

The legislation does not increase the authorization for the Great Lakes Restoration Initiative or the Great Lakes Fish and Wildlife Restoration Act and does not include previous provisions related to integrated planning, encouraging green infrastructure, and revising affordability criteria requirements.
Strengthen the Great Lakes navigation system by upgrading locks, ports and related infrastructure and ensuring dredging to keep waterways open to commerce.

In late June the Army Corps of Engineers released its New Soo Lock Economic Validation Study, which documented updated economics and established a new Benefit Cost Ratio (BCR) of 2.42 for construction of a second Poe-sized lock at the Soo Locks complex at Sault Ste. Marie, Michigan. The new BCR is sufficient to justify including funding for the new lock in the president’s budget. The Corps’ Post-Authorization Change Report includes an updated cost estimate for the project of $922 million. This is a very important development that sets the stage for progress in advancing the start of construction on a new lock, which is a longstanding GLC priority.

The water resources legislation currently being finalized in Congress (discussed above) formally authorizes construction of a new Soo lock consistent with the new cost estimate from the Corps of Engineers. The project continues to be authorized to be fully federally funded. The GLC will consider a resolution at the annual meeting recognizing this development and urging the President to request and Congress to appropriate necessary funding for a new Soo lock. Funding and construction of a new lock likely will continue to be a priority for the GLC.

Fully fund the Great Lakes Restoration Initiative to maintain progress in cleaning up and restoring North America's greatest freshwater resource.

The GLC has continued to advocate for level funding of the GLRI at $300 million. In May the GLC wrote to the House and Senate appropriations committees (copied to the Great Lakes Congressional Delegation) urging continued funding for the program; that letter is provided below. Currently, both the House and Senate appropriations bills for U.S. EPA provide level funding of $300 million for the GLRI, making it almost certain that this will be the final FY 2019 funding level for the program. This reflects the continued high level of bipartisan support for the GLRI in Congress. The recently released report on the economic impact of the program (see summary report included in the Speaker Topics section of the briefing book) is expected to further bolster the case for the program.

Safeguard the Great Lakes from aquatic invasive species.

Asian Carp: The GLC continues to monitor efforts to prevent the movement of aquatic invasive species through the Chicago Area Waterway System, including the Army Corps of Engineers’ plan for deploying control technologies at the Brandon Road lock and dam in Joliet, IL. In December 2017 the GLC submitted comments on the Tentatively Selected Plan for Brandon Road. The states continue to discuss this issue. The GLC has monitored the issue but has not been formally involved in the states’ discussions.

Vessel Discharge: In April 2018 the Senate failed to advance Coast Guard Authorization legislation largely due to concerns from members of the Senate Great Lakes delegation over the Vessel Incidental Discharge Act (VIDA), which was included in the Coast Guard authorization bill. Senators were concerned that VIDA would decrease protections against the introduction and spread of aquatic invasive species in the Great Lakes and undermine the ability of Great Lakes states to address unique regional needs. In response to the concerns, compromise legislation—the Vessel Discharge Reform Act (VDRA)—was developed that, among other changes, proposed to establish a Great Lakes Discharge Commission as a formal mechanism for Great Lakes states to recommend basin-wide performance standards and compliance requirements for vessel discharges that are equal to or more stringent than the federal standard codified in the bill.

The GLC submitted formal comments on the VDRA in late June (provided below) that expressed concern about the proposed Great Lakes Discharge Commission, among other provisions. Specifically, the GLC expressed concern that the Discharge Commission, as proposed, failed to utilize existing regional governance structures created by the states and Congress expressly to engage in Great Lakes policy discussions such as this, and that a new entity might duplicate or compete with existing agencies and structures, including the GLC. Instead, the GLC recommended that the legislation authorize the Great Lakes states to convene a body, on an as-needed basis, to provide a regional forum for discussing and making recommendations to federal agencies on ballast water issues.
In response, Senate staff invited the GLC to recommend an alternative approach. In follow-up discussions, Senate staff suggested that the GLC could be identified as the lead agency to coordinate regional discussions related to ballast water issues specific to the Great Lakes. In effect, the GLC would fill the role envisioned for the proposed Great Lakes Discharge Commission. After consulting with the GLC Board, staff responded that it was open to serving as a convener and decision-maker on this issue. However, subsequent discussions with Senate staffers have raised concerns that Congress may consider mandating certain structural and voting procedures or other requirements that conflict with authorities in the Great Lakes Basin Compact and GLC bylaws. Staff have asked for clarification and are waiting for revised legislative language.

This is an important and complex issue with significant implications for the states, the region, and the GLC. It will require careful consideration by the GLC—both for preserving states’ rights and the agency’s authorities under the Great Lakes Basin Compact, as well as how the region addresses issues related to water resources, including vessel discharges (including ballast water) and the introduction and spread of aquatic invasive species. There appears to be a strong desire among Great Lakes Senators to craft a Great Lakes provision that addresses the region’s unique needs and balances other provisions that likely will restrict state authority to regulate ballast water discharges. Additional information will be brought before the Board and Commission as it is available.

**Strengthen agricultural conservation programs to protect water quality, enhance wildlife habitat and bolster the farm economy.**

In August the GLC sent detailed comments to the House and Senate Agriculture Committees on the House and Senate Farm bills that were to be reconciled in conference committee. The letter below was copied to the members of the Farm Bill conference committee and to the Great Lakes Congressional delegation. The comments reflected the GLC’s recommendations adopted at the semiannual meeting in March 2018 for strengthening agricultural conservation activities in the Great Lakes region while supporting a strong farm economy. The Senate Farm Bill aligned with nearly all of the GLC’s recommendations and provided a strong starting point for ensuring continued support for producers and rural communities. The House bill also included strong ideas that align with the GLC’s recommendations. Both bills committed to protect source water and report outcome-based conservation benefits.

The conference committee continues to negotiate a compromise Farm Bill; a revised bill has not yet been released. A key sticking point involves proposed changes to the Supplemental Nutrition Assistance Program included in the House bill. Another major difference is that the House bill would eliminate the Conservation Stewardship Program and wrap much of its funding into the Environmental Quality Incentives Program.

**Provide effective leadership to guide Great Lakes investments and ensure accountability and efficiency.**

The GLC continues to manage the Blue Accounting program to track investments and assess progress toward desired outcomes for the region. See the update above for the Information Management and Blue Accounting program for additional details.

At the federal level, the U.S. EPA continues to maintain the Great Lakes Interagency Task Force to coordinate federal agency actions in support of the Great Lakes Restoration Initiative (GLRI). A new GLRI Action Plan is under development to guide the program from FY 2020 through 2024, and will be the focus of a presentation at the upcoming annual meeting. The charter for the Great Lakes Advisory Board expired in June. U.S. EPA’s Great Lakes National Program Office has indicated its intent to reconvene the GLAB and is in the process of developing a new charger and associated steps. U.S. EPA has issued a directive stating that members of the agency’s advisory committees cannot currently be in receipt of grants from the agency. The intent is to ensure that individuals serving on U.S. EPA Federal Advisory Committee “are independent and free from any real, apparent, or potential interference with their ability to objectively serve as a committee member.” The directive does not apply to state, tribal or local government agency recipients of U.S. EPA grants.
May 8, 2018

Honorable Richard Shelby  
Chair, Appropriations Committee  
United States Senate  
Washington, D.C. 20510

Honorable Patrick Leahy  
Ranking Member, Appropriations Committee  
United States Senate  
Washington, D.C. 20510

Honorable Lisa Murkowski  
Chair, Appropriations Subcommittee on  
Interior, Environment & Related Agencies  
United States Senate  
Washington, D.C. 20510

Honorable Tom Udall  
Ranking Member, Appropriations Subcommittee on  
Interior, Environment and Related Agencies  
United States Senate  
Washington, D.C. 20510

Dear Chairman and Chairwoman Shelby and Murkowski, and Ranking Members Leahy and Udall:

The Great Lakes Commission urges you to provide funding in FY 2019 to sustain progress in restoring and protecting the Great Lakes. The Great Lakes are a natural treasure and a vital economic asset for our eight-state region. They provide drinking water for more than 48 million people, generate more than 1.5 million jobs, and support a $5 trillion regional economy. Strong collaboration among our states and the federal government, local communities, and industry is solving the most serious problems facing the lakes while revitalizing economies in waterfront communities.

We urge you to sustain this progress by maintaining level funding of $300 million for the Great Lakes Restoration Initiative (GLRI) in FY 2019. The GLRI is a highly successful program that enjoys strong, bipartisan support in Congress, among our region’s governors, business and industry, conservation organizations, tribes and local communities. Congress has formally authorized the program at $300 million annually – a significant endorsement of its value.

The President’s FY 2019 budget proposes $30 million for the GLRI, only ten percent of the current funding level. This drastic reduction would severely hamper our ongoing regional efforts, slow the progress we are making and undermine past investments. For example, U.S. EPA needs more than $80 million in FY 2019 to implement 16 toxic sediment cleanup projects in six states. These projects will leverage more than $60 million in cost-share from nonfederal partners. The President’s budget request would fund only a fraction of this important work and forfeit millions in nonfederal contributions. This is only a portion of the costs for the remaining cleanup work needed in the most degraded areas. In addition, the President’s budget would impede efforts to prevent harmful algal blooms that threaten drinking water and protect the lakes from Asian carp and other harmful invasive species.

The GLRI has an important economic dimension and fully implementing our Great Lakes restoration strategy is projected to generate $50 billion in long-term economic benefits. We are already seeing these results where cleanup work under the GLRI is helping communities revitalize degraded or underutilized waterfront areas and develop new opportunities for recreation, business growth and other uses. Funding the GLRI will ensure continuation of our collaborative efforts to strengthen the economic vitality of waterfront areas.
Congress has been a critical partner in advancing our efforts to maximize the Great Lakes as an environmental and economic asset for our region and the entire country. Indeed, with nearly one-third of U.S. and Canadian economic activity centered in the Great Lakes region and 95 percent of our nation’s fresh surface water, bolstering this invaluable resource is a wise strategy that benefits our entire nation. We urge you to provide the funding needed to maintain our successful restoration program and help us sustain our regional strategy to create jobs, stimulate economic development, and strengthen waterfront communities. If you have questions, please contact the Commission’s Executive Director, Darren Nichols (734-971-9135, dnichols@gle.org).

Sincerely,

John Linc Stine
Chair

cc:   Members of the Senate Great Lakes delegation
May 18, 2018

Honorable John Barrasso  
Chair, Environment and Public Works  
United States Senate  
Washington, D.C. 20510

Honorable Thomas R. Carper  
Ranking Member, Environment and Public Works Committee  
United States Senate  
Washington, D.C. 20510

Dear Chairman Barrasso and Ranking Member Carper:

I am writing on behalf of the Great Lakes Commission (GLC) to convey support for provisions in America’s Water Infrastructure Act of 2018 that support priorities for the Great Lakes and our eight member states. We appreciate your leadership in advancing this legislation, which strengthens a number of important Great Lakes programs and addresses critical challenges to upgrade and maintain water infrastructure in our region.

The GLC strongly supports the following Great Lakes-specific provisions that respond to long-standing priorities for our member states:

- **Great Lakes Fish and Wildlife Restoration Act of 1990 (Sec. 3604):** This section increases the authorized appropriations for the Great Lakes Fish and Wildlife Act, a highly successful program through which the federal government, the Great Lakes states, and other stakeholders implement cooperative conservation, restoration and management actions for valuable fish and wildlife resources in the Great Lakes Basin.

- **Great Lakes Restoration Initiative (Sec. 3605):** This section increases the authorized appropriations for the GLRI, which enjoys strong, bipartisan support in Congress, among our region’s governors, business and industry, conservation organizations, tribes and local communities. This will ensure adequate funding authorization to support continued progress in implementing our regional restoration strategy for the Great Lakes.

- **Great Lakes Coastal Resiliency study (Sec. 3606):** This section authorizes the Great Lakes Coastal Resiliency study proposed by the Army Corps of Engineers, which will coordinate a strategy and recommend actions to manage and protect the Great Lakes from threats such as lake level fluctuations, erosion, flooding, and nutrient runoff.

- **Completion of Army Corps of Engineers report for the Soo Locks (Sec. 4001):** This section calls for the expeditious completion of key decision documents, including the post-authorization change report for construction of a new Soo Lock. This is a vital priority to ensure the security and resiliency of the Great Lake maritime transportation system, which is critical for our regional and national economies.

The GLC also generally supports the water infrastructure provisions in Title V of the legislation that reauthorize and strengthen existing programs, study new approaches, and promote reforms and best practices to support states and local communities in repairing, maintaining and upgrading wastewater, drinking water and stormwater infrastructure. Nearly $10 billion is needed annually over the next two decades for water infrastructure in the eight Great Lakes states. These provisions will support state and local efforts, increase federal investments and improve access to critical federal programs. They are consistent with the GLC’s 2017 Joint Action Plan for Clean Water Infrastructure and Services, which recommends actions to advance a more sustainable water infrastructure system for the Great Lakes region.
The Great Lakes are a natural treasure and a vital economic asset for our eight-state region. They provide drinking water for more than 48 million people, generate more than 1.5 million jobs, and support a $5 trillion regional economy. Strong collaboration among our states and the federal government, local communities, and industry is solving the most serious problems facing the lakes while revitalizing economies in waterfront communities.

The provisions discussed above advance our collective efforts to address our region’s most pressing water-related challenges while maximizing the Great Lakes as an environmental and economic asset. If you have questions, please contact the Commission’s Executive Director, Darren Nichols (734-971-9135, dnichols@glc.org).

Sincerely,

John Linc Stine
Chair

cc: Members of the Senate Great Lakes delegation
June 25, 2018

Honorable John Barrasso
Chair, Committee on Environment and Public Works
United States Senate
Washington, D.C. 20510

Honorable Thomas Carper
Ranking Member, Committee on Environment and Public Works
United States Senate
Washington, D.C. 20510

Honorable John Thune
Chair, Committee on Commerce, Science and Transportation
United States Senate
Washington, D.C. 20510

Honorable Bill Nelson
Ranking Member, Committee on Commerce, Science and Transportation
United States Senate
Washington, D.C. 20510

Dear Chairmen Barrasso and Thune and Ranking Members Carper and Nelson:

I am writing on behalf of the Great Lakes Commission (GLC) to provide our initial comments on the Vessel Discharge Reform Act (VDRA), which has been presented as a discussion draft as an alternative to the Vessel Incidental Discharge Act. The draft legislation attempts to resolve several issues important to the Great Lakes and St. Lawrence region that are integral to effective ballast water management and regulation, and are unique to our binational region. We appreciate your efforts to resolve this difficult issue and are hopeful that this legislation can provide a feasible path forward. We are not taking a formal position on the legislation at this time, and also recognize that our member states may provide input individually, which we ask you to consider carefully as the legislation evolves.

The GLC supports strong federal ballast water regulations that protect the unique economic and ecological interests of the Great Lakes and St. Lawrence region. The GLC passed a resolution in 2017 outlining its position on ballast water management (attached), which provides the basis for comments on the draft legislation.

The GLC recognizes the need for a consistent federal discharge standard that provides clear guidance for vessel operators on the long-term investments needed for ballast treatment systems and that sufficiently protects the environmental health of the Great Lakes and St. Lawrence River. Thus, there is conditional support among GLC members for the approach provided in VDRA that would authorize U.S. EPA to establish a single standard, based on the current Vessel General Permit (VGP), under Section 312 of the Clean Water Act (CWA). The GLC recognizes this as a significant change that would eliminate the ability of states to impose specific requirements pursuant to CWA Section 401. This is in addition to other provisions that further preempt state authority to adopt state standards for ballast water and other vessel discharges that will directly impact GLC member states. The legislation must provide for meaningful state authority for monitoring and enforcement that is balanced with the need to maintain the economic viability of the commercial navigation system. The Great Lakes states continue to evaluate the implications of this change and expect that their outstanding questions and concerns will be addressed as the legislation evolves.
The GLC supports the VDRA provisions that require performance standards to be reviewed every five years and allow the states to petition the federal government for review. Any regulatory framework that moves forward should include monitoring and data collection and reporting mechanisms that will improve our understanding of the effectiveness of the current requirements and inform future efforts. Toward this end, VDRA should include mechanisms to financially support the development and implementation of ballast treatment technologies for lakers as well as financial support for the Great Lakes states to participate in regional discussions and decision-making on the unique needs facing the Great Lakes and St. Lawrence region.

The GLC appreciates and supports VDRA’s intent to retain the ability of states already assessing permit fees to continue doing so to cover the costs of administration, inspection and enforcement activities by the state to achieve compliance with requirements under the legislation. However, some states have ballast water programs tied to the CWA NPDES program, which would no longer apply under VDRA. Thus, we are concerned that an unintended consequence may result that constrains the ability of the states to collect the fees needed to maintain their ballast water programs. We ask that this concern be addressed as the legislation moves forward to ensure the states have a feasible mechanism to secure the revenue needed to maintain current ballast water programs within their jurisdiction.

VDRA balances the need for uniform regulation of interstate and international transportation with the states’ authority as the primary regulator of water quality. The applicability exclusion at (2)(B)(viii) [page 4, lines 28-30], which allows a state to act if a ballast discharge contributes to a violation of a water quality standard or poses an unacceptable risk to human health or the environment, is critical to maintain this balance. States must maintain clear authority to protect human health and the environment even if federal agencies set regulatory standards.

By establishing the current VGP requirements as the minimum requirements for future ballast water discharge regulations, VDRA effectively retains the requirement for ballast water exchange or saltwater flushing for vessels entering the Great Lakes-St. Lawrence system. These practices have been required for more than a decade and have been vital to our success in reducing the rate of species introductions to the region. They should be retained in any new regulatory framework moving forward, along with requirements for installation and operation of ballast water management systems.

The proposed legislation does not include a process or recommendations for engaging with Canada to ensure binational compatibility of regulations, monitoring, enforcement or best management practices. This coordination is critical to ensuring a streamlined regulatory framework for the region that will facilitate compliance. The GLC urges that provisions for consultation with Canada be added to VDRA.

It is important that VDRA references to the Great Lakes include associated harbors and rivers transited by vessels. Thus, the legislation should use the term “Great Lakes System” rather than “Great Lakes” throughout the Act to avoid any confusion. This approach is consistent with other Great Lakes laws and regulations. See 33 U.S.C. § 1268(a)(3)(C); 40 C.F.R. § 132.2.

Finally, as to the provision for a Great Lakes Discharge Commission, the GLC appreciates that the proposed legislation would authorize a forum and process for proposing regional performance standards to the federal government. We are concerned, however, that a new formal standing body may duplicate or compete with existing interstate and binational agencies, or create unnecessary demands on all parties involved. As you know, the region already works collaboratively within a complex governance structure that reflects the interstate and binational nature of the Great Lakes. We support the intent of this provision to enable the Great Lakes states to collaboratively address the unique needs in the freshwater ecosystem of the Great Lakes and St. Lawrence region. To that end, the GLC recommends that VDRA authorize the Great Lakes states to convene a body, on an as-needed basis as requested by one or more of the states, to provide a regional forum for discussing and making recommendations to U.S. EPA and the Coast Guard regarding ballast water regulations, monitoring, enforcement, technology development and related matters. It is important that adequate technical and administrative support be provided for this body and process.

The introduction and spread of aquatic invasive species in the freshwaters of the Great Lakes and St. Lawrence River is an important concern for the ecological integrity and economic vitality of the region. The Great Lakes states recognize this concern and are taking action to address all potential pathways through which aquatic invasive species can enter the Great Lakes. The states remain committed to working with the federal government to develop compatible ballast water regulations and establish regulatory consistency within our region, while maintaining the economic viability of our region’s
commercial navigation system. We recognize VDRA as an important step toward this end and a significant effort to compromise on a difficult issue. We look forward to further discussion and consultation as this legislation moves forward and are hopeful that a solution can be crafted this year that is mutually beneficial for all parties involved.

Please contact our executive director, Darren Nichols (734-971-9135, dnichols@glc.org), should you have any questions or would like more information about our comments.

Sincerely,

John Linc Stine
Chair

cc: Members of the Senate Great Lakes delegation
RESOLUTION
Adopted March 15, 2017

Ballast Water Management in the Great Lakes-St. Lawrence River System

Whereas, the Great Lakes-St. Lawrence River maritime transportation system has been and continues to be vital to the national economy of the United States and Canada by facilitating domestic and international trade through the movement of goods and commodities and supporting industries such as manufacturing, steel production, agribusiness and power generation; and

Whereas, ballast water discharge from vessels as a pathway for the introduction and movement of aquatic invasive species (AIS) in the freshwaters of the Great Lakes and St. Lawrence River remains an important concern for the ecological integrity of the Great Lakes and the St. Lawrence River; and

Whereas, implementation of policies and best management practices by the private sector and governments in the United States and Canada, including the successful implementation of ballast water exchange and salt water flushing practices for vessels entering the Great Lakes-St. Lawrence Seaway, have significantly reduced species introduction and spread through ballast water discharge with no newly established non-native species resulting from ballast water discharges identified since 2006; and

Whereas, the eight states and two provinces along the Great Lakes and St. Lawrence River recognize that binational compatibility of federal ballast water treatment standards is needed to effectively manage a multijurisdictional shipping channel and encourage long-term private investment into the maritime transportation system; and

Whereas, AIS in the Great Lakes impact such critical sectors of the regional economy as electric power generation, public water supply, manufacturing, commercial and sport fishing, recreational boating and tourism; and

Whereas, the federal government of Canada is a signatory to and is developing regulations to implement the International Maritime Organization (IMO) International Convention for the Control and Management of Ships' Ballast Water and Sediments that is scheduled to enter into force on September 8, 2017; and

Whereas, the U.S. Coast Guard rule finalized in 2012 uses the IMO ballast water discharge standard as the basis of its regulatory regime and requires ocean-going ships to meet the discharge standard with an approved ballast water management system (BWMS); and

Whereas, the U.S. Coast Guard rule eliminates the requirement for ocean-going vessels to continue the current practice of conducting ballast water exchange or saltwater flushing prior to entering the Great Lakes-St. Lawrence system once an approved BWMS is being used; and

Whereas, vendors of treatment technology for ocean-going ships are working to develop commercially available products that comply with the IMO, U.S. Coast Guard, and EPA rules and standards and the U.S. Coast Guard provided its first type approval to a treatment system in December 2016; and

Whereas, vessel operators, including those that traverse the Great Lakes-St. Lawrence system, are required by the U.S. Coast Guard to implement best management practices, and are moving ahead of the type approval process and installing ballast water treatment systems at significant expense; and
Whereas, there are inherent differences between ocean-going vessels and lake freighters ("lakers") operating on the Great Lakes in terms of their roles in the introduction and dispersal, respectively, of AIS, as well as in terms of ballast tank configurations and ballasting operations; and

Whereas, the relatively small size of the laker fleet, and unique ballasting configurations, vessel designs, and operations of the fleet hinder commercial development of cost-effective ballast management technology development for lakers; and

Whereas, the U.S. Environmental Protection Agency 2013 Vessel General Permit (VGP) requires ocean-going vessels and lakers built after December 1, 2009 to meet a discharge standard equivalent to the U.S. Coast Guard rule; maintains the requirement for ballast water exchange or saltwater flushing for ships entering the Great Lakes-St. Lawrence River system; and provides for Section 401 Water Quality Certifications from individual states; and

Whereas, Great Lakes states have responsibility and authority, pursuant to state law and the Clean Water Act, to protect their waters and water dependent resources through programs to manage ballast water to ensure compliance with state water quality standards; and

Whereas, the St. Lawrence Seaway Development Corporation and St. Lawrence Seaway Management Corporation’s ballast water control and management regulations require all vessels entering waters under Canadian or United States jurisdiction to manage ballast water for the prevention of AIS and requires vessels declaring “no ballast on board” to conduct saltwater flushing.

Therefore, Be It Resolved, that the Great Lake Commission urges the Governments of Canada and the United States to pursue compatible federal ballast water treatment standards and enforcement mechanisms; and

Be It Further Resolved, that the Great Lakes Commission supports strong federal ballast water regulations that sufficiently protect the unique economic and ecological interests of the Great Lakes and St. Lawrence states and provinces; and

Be It Further Resolved, that the Great Lakes Commission urges the U.S. Congress and federal agencies to work closely and consult with the Great Lakes states, and offers its assistance to advance ballast water policies and standards that protect the Great Lakes-St. Lawrence basin from further introduction and spread of AIS while minimizing financial impacts to vessel operators; and

Be It Further Resolved, that the Great Lakes Commission supports maintaining requirements for ballast water exchange and saltwater flushing in addition to using treatment technology for ships entering the Great Lakes-St. Lawrence system as additional protection against invasive species transfer from ballast water; and

Be It Further Resolved, that the Great Lakes Commission encourages governments and the private sector to continue development of effective and feasible ballast water technology solutions for ocean-going ships and lakers to protect the ecological integrity of the unique freshwater conditions of the Great Lakes and St. Lawrence; and

Be It Further Resolved, that the Great Lakes Commission encourages governments and the private sector to financially support cost-effective ballast management technology development for lakers; and

Be It Further Resolved, that the Great Lakes Commission supports review of federal discharge standards, requirements and available technology at least every five years to ensure technology and standards are reflective of advances in scientific understanding and technology development; and

(8) Be It Finally Resolved, that the Great Lakes Commission supports scientifically-based efforts to better understand and monitor the effectiveness of treatment technology and regulatory policies designed to reduce the risk of AIS transfer from ballast water.
August 20, 2018

Honorable Pat Roberts
Chair, Senate Agriculture Committee
328A Russell Senate Office Building
Washington, D.C. 20510

Honorable Debbie Stabenow
Ranking Member, Senate Agriculture Committee
328A Russell Senate Office Building
Washington, D.C. 20510

Honorable Steve Daines
Chair, Subcommittee on Conservation, Forestry and Natural Resources
Senate Agriculture Committee
328A Russell Senate Office Building
Washington, D.C. 20510

Honorable Michael Bennet
Ranking Member, Subcommittee on Conservation, Forestry and Natural Resources
Senate Agriculture Committee
328A Russell Senate Office Building
Washington, D.C. 20510

Dear Chairmen Roberts and Daines, and Ranking Members Stabenow and Bennet:

I am writing on behalf of the Great Lakes Commission (GLC) to provide comments on the House and Senate Farm Bills that will soon be reconciled in conference committee. The Farm Bill authorizes conservation and rural development programs that are vital to the efforts of Great Lakes states, cities, agricultural producers, water utilities and conservation partners to safeguard drinking water, restore and protect habitat for valuable fish and wildlife resources, protect soil, and promote a strong farm economy for our rural communities. We appreciate your leadership on this important legislation for our eight-state region.

Our comments below follow recommendations (in italic) adopted by the GLC in March 2018 to strengthen agricultural conservation activities in the Great Lakes region while supporting a strong farm economy. A key priority is to safeguard water quality and public health from nutrient pollution that contributes to harmful algal blooms. The Senate Farm Bill aligns with nearly all of the GLC’s recommendations and provides a strong starting point for ensuring continued support for producers and rural communities. The House bill also includes strong ideas that align with our recommendations. Both chambers commit to protect source water and report outcome-based conservation benefits.

**Recommendation:** Dedicate funding to or through state agencies for edge-of-field monitoring that aligns with ambient water quality monitoring priorities and helps protect public health and safety.

The GLC appreciates the Senate’s inclusion of nutrient management with the Research Title’s High-Priority Research and Extension Initiatives and asks that state agriculture agencies be considered eligible for such grants in partnership with local research institutions.

**Recommendation:** Improve coordination of USDA conservation investments with other federal and state priorities, including the Great Lakes Restoration Initiative.

Both Chambers and the GLC recognize the important role of State Technical Committees in guiding conservation efforts; the House also supports adding land-grant university extension programs to the committees. The GLC supports the Senate’s required review of cost-share rates and practice standards, and proposes that those coordination efforts should occur through robust and diverse State Technical Committees.
**Recommendation:** Enhance the Regional Conservation Partnership Program (RCPP) by increasing flexibility for partners so all contributions are considered, while allowing greater use of federal dollars to maximize conservation outcomes with producers. Further, provide opportunities for award recipients within Critical Conservation Areas to convene and discuss best practices and lessons learned.

Provisions that improve flexibility under the RCPP appear in both the Senate and House bills, with the attention to detail in the Senate version providing a strong starting point for conference committee action. Program improvements set the stage for sustainable change across the conservation landscape by creating opportunities for innovative partnerships.

**Recommendation:** Provide increased funding and flexibility for working lands programs and require NRCS to invite state agencies to participate in annual discussions of Environmental Quality Incentives Program (EQIP) and Conservation Stewardship Program priorities to assure efficient and effective coordination between federal and state investments in agricultural conservation efforts.

The GLC appreciates support for practices that protect water quality, with a particular emphasis on source water protection, and urges the conference committee to use those points of agreement to build consensus on funding for working lands programs critical to balancing our region’s vibrant agricultural sector with the health of the Great Lakes. We urge the committee to ensure no net loss in conservation funding and, therefore, fully support the Senate’s approach. Further, we see the value of the Conservation Stewardship Program in supporting long-term change in farming operations.

**Recommendation:** Allow for innovation in supplying technical assistance to producers.

The GLC’s member states and partners have repeatedly emphasized that the “pinch point” in implementing conservation projects is the shortage of qualified technical assistance providers. We are pleased that both bills recognize the need for third-party providers of conservation services.

**Recommendation:** Promote multi-year contracts for EQIP “annual” practices like cover crops to assure a sustainable funding source for growers willing to try a shorter-term practice, but unwilling to risk a loss of funding in subsequent years.

Both bills support improvements in soil health and nutrient management. The GLC asks that the conference committee ensure that soil health and nutrient management initiatives are supported by clear direction to the Secretary that contracts for practices in these areas be for time periods appropriate for producers to see benefits and to make long-term changes in their operations.

**Recommendation:** Increase the impact of land restoration programs by:

- Raising the cap on enrolled Conservation Reserve Program (CRP) acreage;
- Incentivizing the enrollment of less productive land that increases habitat for wildlife and improves water quality while promoting retention of productive land for agriculture; and
- Utilizing land held under easement or other long-term agreements for the management of rural stormwater.

The GLC appreciates that both bills address the difficult issue of improving the CRP, including raising the cap on enrolled acreage and considering non-agriculture uses of certain enrolled lands to manage stormwater. The Senate bill better addresses our recommendations on this topic. In particular, the Senate bill’s commitment to considering sediment and nutrient issues closely aligns with the needs identified by our member states.

**Recommendation:** Amend the Forestry Title to include provisions controlling the introduction and spread of terrestrial invasive species. In addition, Conservation Title programs should support financial assistance for control efforts.

The Senate and House bills both recognize the need for landscape-scale restoration through amendments to the Cooperative Forestry Assistance Act of 1978. We are particularly encouraged by the Senate’s inclusion of private lands in the Conservation Title’s Healthy Forests Reserve Program and the establishment of a Water Source Protection Program in the Forestry Title. The House bill’s inclusion of a pilot project in the Conservation Title for eradication and control of feral swine is an appropriate approach and we ask that the Great Lakes region be included in that project.
Recommendation: Sustain or increase funding within the Rural Development Title and simplify processes for rural communities to work together toward regional problems, including infrastructure needs.

The GLC’s September 2017 Joint Action Plan for Clean Water Infrastructure and Services in the Great Lakes Region showcased the need for significant investments in water infrastructure in the eight-state Great Lakes region. Rural development funds are critical for this purpose, particularly for economically challenged rural communities. The GLC appreciates the funding provided in the Senate bill for rural communities and supports prioritizing funding for communities affected by emerging contaminants. The GLC has spoken separately on the threat of contaminants of emerging concern and urges Congress to ensure the final Farm Bill provides adequate support for communities to address this challenge.

Recommendation: Enable information sharing to better connect and coordinate federal and state investments in conservation by:

- Clarifying Section 1619 of the Food, Conservation, and Energy Act of 2008 to encourage data-sharing agreements between NRCS and the states, provided that individual farm information is protected; and
- Authorizing NRCS to provide producers receiving federal assistance with an option to voluntarily allow select conservation practice information to be publicly accessible.

We recognize producers’ privacy concerns related to sharing information on agricultural practices. However, the GLC urges the conference committee to support measures that balance information sharing with producer privacy to enable agencies, producers and the public to better understand agricultural sector efforts to protect water quality and the efficacy of those efforts.

Recommendation: Consider block grants for states endeavoring to create conservation certification programs or otherwise maximize existing authorities to assist producers in attaining certification. For existing certification programs, continue to work with states to dedicate EQIP funding for farms to overcome barriers to certification.

While neither bill includes this concept, the GLC appreciates the Senate’s interest in ensuring that EQIP is well connected to local resource concerns and urges the conference committee to ensure the final bill supports Great Lakes states’ efforts to connect EQIP resources with local needs.

The Great Lakes Commission urges the conference committee to implement these recommendations and draw from provisions in the Senate and House bills that best advance our collective efforts to protect the Great Lakes and bolster the Great Lakes basin’s regional farm economy. Farm Bill conservation programs are critical for protecting our region’s wildlife, soil, and drinking water for 48 million people. We appreciate your leadership in crafting legislation that best responds to these urgent priorities for our eight-state region. If you have questions or wish to discuss these priorities, please contact the GLC’s Executive Director, Darren Nichols, at 734-971-9135 or dnichols@glc.org.

Sincerely,

John Linc Stine
Chair

cc: Members of the Senate Farm Bill Conference Committee
Members of the Great Lakes Senate Delegation
Reference

This section includes:

- Great Lakes Basin Compact
- Great Lakes Commission Bylaws
- Approved Fiscal Year 2019 Budget
- Membership lists
  - Commissioners, Associate Commissioners and Alternates
  - Observers
  - Staff
GREAT LAKES BASIN COMPACT

The party states solemnly agree:

ARTICLE I

The purposes of this compact are, through means of joint or cooperative action:

1. To promote the orderly, integrated, and comprehensive development, use, and conservation of the water resources of the Great Lakes Basin (hereinafter called the Basin).

2. To plan for the welfare and development of the water resources of the Basin as a whole as well as for those portions of the Basin which may have problems of special concern.

3. To make it possible for the states of the Basin and their people to derive the maximum benefit from utilization of public works, in the form of navigational aids or otherwise, which may exist or which may be constructed from time to time.

4. To advise in securing and maintaining a proper balance among industrial, commercial, agricultural, water supply, residential, recreational, and other legitimate uses of the water resources of the Basin.

5. To establish and maintain an intergovernmental agency the end that the purposes of this compact may be accomplished more effectively.

ARTICLE II

A. This compact shall enter into force and become effective and binding when it has been enacted by the legislature of any four of the States of Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania, and Wisconsin and thereafter shall enter into force and become effective and binding as to any other of said states when enacted by the legislature thereof.

B. The Province of Ontario and the Province of Quebec, or either of them, may become states party to this compact by taking such action as their laws and the laws of the Government of Canada may prescribe for adherence thereto. For the purposes of this compact the word 'state' shall be construed to include a Province of Canada.

ARTICLE III

The Great Lakes Commission created by Article IV of this compact shall exercise its powers and perform its functions in respect to the Basin which, for the purposes of this compact shall consist of so much of the following as may be within the party states:

1. Lakes Erie, Huron, Michigan, Ontario, St. Clair, Superior, and the St. Lawrence River, together with any and all natural or manmade water interconnections between or among them.

2. All rivers, ponds, lakes, streams, and other watercourses which, in their natural state or in their prevailing conditions, are tributary to Lakes Erie, Huron, Michigan, Ontario, St. Clair, and Superior or any of them or which comprise part of any watershed draining into any of said lakes.
ARTICLE IV

A. There is hereby created an agency of the party states to be known as The Great Lakes Commission (hereinafter called the Commission). In that name the Commission may sue and be sued, acquire, hold and convey real and personal property and any interest therein. The Commission shall have a seal with the words, 'The Great Lakes Commission' and such other design as it may prescribe engraved thereon by which it shall authenticate its proceedings. Transactions involving real or personal property shall conform to the laws of the state in which the property is located, and the Commission may by by-laws provide for the execution and acknowledgment of all instruments in its behalf.

B. The Commission shall be composed of not less than three commissioners nor more than five commissioners from each party state designated or appointed according to the law of the state which they represent and serving and subject to removal in accordance with such law.

C. Each state delegation shall be entitled to three votes in the Commission. The presence of commissioners from a majority of the party states shall constitute a quorum for the transaction of business at any meeting of the Commission. Actions of the Commission shall be by a majority of the votes cast except that any recommendations made pursuant to Article VI of this compact shall require an affirmative vote of not less than a majority of the votes cast from each of a majority of the states present and voting.

D. The commissioners of any two or more party states may meet separately to consider problems of particular interest to their states but no action taken at any such meeting shall be deemed an action of the Commission unless and until the Commission shall specifically approve the same.

E. In the absence of any commissioner, his vote may be cast by another representative or commissioner of his state provided that said commissioner or other representative casting said vote shall have a written proxy in proper form as may be required by the Commission.

F. The Commission shall elect annually from among its members a chairman and vice-chairman. The Commission shall appoint an Executive Director who shall also act as secretary-treasurer, and who shall be bonded in such amount as the Commission may require. The Executive Director shall serve at the pleasure of the Commission and at such compensation and under such terms and conditions as may be fixed by it. The Executive Director shall be custodian of the records of the Commission with authority to affix the Commission's official seal and to attest to and certify such records or copies thereof.

G. The Executive Director, subject to the approval of the Commission in such cases as its by-laws may provide, shall appoint and remove or discharge such personnel as may be necessary for the performance of the Commission’s function. Subject to the aforesaid approval, the Executive Director may fix their compensation, define their duties, and require bonds of such of them as the Commission may designate.

H. The Executive Director, on behalf of, as trustee for, and with the approval of the Commission, may borrow, accept, or contract for the services of personnel from any state or government or any subdivision or agency thereof, from any inter-governmental agency, or from any institution, person, firm or corporation; and may accept for any of the Commission’s purposes and functions under this compact any and all donations, gifts, and grants of money, equipment, supplies, materials, and services from any government of any subdivision or agency thereof or inter-governmental agency or from any institution, person, firm or corporation and may receive and utilize the same.

I. The Commission may establish and maintain one or more offices for the transacting of its business and for such purposes the Executive Director, on behalf of, as trustee for, and with the approval of the Commission, may acquire, hold and dispose of real and personal property necessary to the performance of its functions.
J. No tax levied or imposed by any party state or any political subdivision thereof shall be deemed to apply to property, transactions, or income of the Commission.

K. The Commission may adopt, amend and rescind by-laws, rules and regulations for the conduct of its business.

L. The organization meeting of the Commission shall be held within six months from the effective date of the compact.

M. The Commission and its Executive Director shall make available to the party states any information within its possession and shall always provide free access to its records by duly authorized representatives of such party states.

N. The Commission shall keep a written record of its meetings and proceedings and shall annually make a report thereof to be submitted to the duly designated official of each party state.

O. The Commission shall make and transmit annually to the legislature and Governor of each party state a report covering the activities of the Commission for the preceding year and embodying such recommendations as may have been adopted by the Commission. The Commission may issue such additional reports as it may deem desirable.

ARTICLE V

A. The members of the Commission shall serve without compensation, but the expenses of each commission shall be met by the state which he represents in accordance with the law of that state. All other expenses incurred by the Commission in the course of exercising the powers conferred upon it by this compact, unless met in some other manner specifically provided by this compact, shall be paid by the Commission out of its own funds.

B. The Commission shall submit to the executive head or designated officer of each party state a budget of its estimated expenditures for such period as may be required by the laws of that state for presentation to the legislature thereof.

C. Each of the Commission's budgets of estimated expenditures shall contain specific recommendations of the amount or amounts to be appropriated by each of the party states. Detailed commission budgets shall be recommended by a majority of the votes cast, and the costs shall be allocated equitably among the party states in accordance with their respective interests.

D. The Commission shall not pledge the credit of any party state. The Commission may meet any of its obligations in whole or in part with funds available to it under Article IV(H) of this compact, provided that the Commission takes specific action setting aside such funds prior to the incurring of any obligations to be met in whole or in part in this manner. Except where the Commission makes use of funds available to it under Article IV(H) hereof, the Commission shall not incur any obligations prior to the allotment of funds by the party states adequate to meet the same.

E. The Commission shall keep accurate accounts of all receipts and disbursements. The receipts and disbursements of the Commission shall be subject to the audit and accounting procedures established under the by-laws. However, all receipts and disbursements of funds handled by the Commission shall be audited yearly by a qualified public accountant and the report of the audit shall be included in and become a part of the annual report of the Commission.
F. The accounts of the Commission shall be open at any reasonable time for inspection by such agency, representative of the party states as may be duly constituted for that purpose and by others who may be authorized by the Commission.

ARTICLE VI

The Commission shall have power to:

A. Collect, correlate, interpret, and report on data relating to the water resources and the use thereof in the Basin or any portion thereof.

B. Recommend methods for the orderly, efficient, and balanced development, use and conservation of the water resources of the Basin or any portion thereof to the party state and to any other governments or agencies having interests in or jurisdiction over the Basin or any portion thereof.

C. Consider the need for and desirability of public works and improvements relating to the water resources in the Basin or any portion thereof.

D. Consider means of improving navigation and port facilities in the Basin or any other portion thereof.

E. Consider means of improving and maintaining the fisheries of the Basin or any portion thereof.

F. Recommend policies relating to water resources including the institution and alteration of flood plain and other zoning laws, ordinances and regulations.

G. Recommend uniform or other laws, ordinances, or regulations relating to the development, use and conservation of the Basin's water resources to the party states or any of them and to other governments, political subdivisions, agencies of inter-governmental bodies having interests or in jurisdiction sufficient to affect conditions in the Basin or any portion thereof.

H. Consider and recommend amendments or agreements supplementary to this compact to the party states or any of them, and assist in the formulation and drafting of such amendments or supplementary agreements.

I. Prepare and publish reports, bulletins, and publications appropriate to this work and fix reasonable sales prices therefore.

J. With respect to the water resources of the Basin or any portion thereof, recommend agreements between the governments of the United States and Canada.

K. Recommend mutual arrangements expressed by concurrent or reciprocal legislation on the part of Congress and the Parliament of Canada including but not limited to such agreements and mutual arrangements as are provided for by Article XIII of the Treaty of 1909 Relating to Boundary Waters and Questions Arising Between the United States and Canada. (Treaty Series, No 548).

L. Cooperate with the governments of the United States and of Canada, the party states and any public or private agencies or bodies having interests in or jurisdiction sufficient to affect the Basin or any portion thereof.

M. At the request of the United States, or in the event that a Province shall be a party state, at the request of the Government of Canada, assist in the negotiation and formulation of any treaty or other mutual agreement between the United States and Canada with reference to the Basin or any portion thereof.
N. Make any recommendation and do all things necessary and proper to carry out the powers conferred
upon the Commission by this compact, provided that no action of the Commission shall have the force
of law in, or be binding upon, any party state.

**ARTICLE VII**

Each party state agrees to consider the action the Commission recommends in respect to:

A. Stabilization of lake levels.

B. Measures for combating pollution, beach erosion, floods and shore inundation.

C. Uniformity in navigation regulations within the constitutional powers of the states.

D. Proposed navigation aids and improvements.

E. Uniformity or effective coordinating action in fishing laws and regulations and cooperative action to
eradicate destructive and parasitical forces endangering the fisheries, wildlife and other water resources.

F. Suitable hydroelectric power developments.

G. Cooperative programs for control of soil and bank erosion for the general improvement of the Basin.

H. Diversion of waters from and into the Basin.

I. Other measures the Commission may recommend to the states pursuant to Article VI of this compact.

**ARTICLE VIII**

This compact shall continue in force and remain upon each party state until renounced by the act of the
legislature of such state, in such form and manner as it may choose and as may be valid and effective to repeal
a statute of said state, provided that such renunciation shall not become effective until six months after notice
of such action shall have been officially communicated in writing to the executive head of the other party
states.

**ARTICLE IX**

It is intended that the provisions of this compact shall be reasonably and liberally construed to effectuate the
purposes thereof. The provisions of this compact shall be severable and if any phrase, clause, sentence or
provision of this compact is declared to be contrary to the constitution of any party state or of the United
States, or in the case of a Province, to the British North America Act of 1867 as amended, or the applicability
thereof to any state, agency, person or circumstances is held invalid, the constitutionality of the remainder of
this compact and the applicability thereof to any state, agency, person or circumstance shall not be affected
thereby, provided further that if this compact shall be held contrary to the constitution of the United States,
or in the case of a Province, to the British North America Act of 1867 as amended, or of any party state, the
compact shall remain in full force and effect as to the remaining states and in full force and effect as to the
state affected as to all severable matters.
STATE LEGISLATIVE HISTORY:

Illinois: (69th GA House Bill, No. 983, 1955)
Indiana: (Chapter 220 (H. 216, Approved March 10, 1955)
Minnesota: (Laws of Minnesota 1955, Chapter 691; S.F. No. 1982)
New York: (Chapter 643, Laws of 1960)
Ohio: (Amended House Bill 415, Effective October 9, 1963, 105 General Assembly)
Wisconsin: (No. 294 A, Chapter 275, Laws of 1955)

The Commission was officially organized and established December 12, 1955 subsequent to ratification of the compact by five states (Illinois, Indiana, Michigan, Minnesota and Wisconsin). The Commission office was established on the Campus of the University of Michigan in early 1956.

CONGRESSIONAL CONSENT - LEGISLATION

All interstate compacts require Congressional consent (Article I, Sec. 10, Clause 3, Constitution of the United States) in order to achieve full force and effect. Numerous bills were considered beginning in 1956. In 1968, Congress enacted S. 660 (PL 90-419) giving limited consent to the compact as follows:

"Public Law 90-419
90th Congress, S 660
July 24, 1968

"AN ACT

"Granting the consent of Congress to a Great Lakes Basin Compact, and for other purposes.

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the consent of Congress is hereby given, to the extent and subject to the conditions hereinafter set forth, to the Great Lakes Basin Compact which has been entered into by the States of Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania and Wisconsin in the form as follows:
"GREAT LAKES BASIN COMPACT"

(The full text of the State adopted Compact text is included in PL 90-419 at this point.)

"SEC. 2. The consent herein granted does not extend to paragraph B of article II or to paragraphs J, K, and M or article VI of the compact, or to other provisions of article VI of the compact which purpose to authorize recommendations to, or cooperation with, any foreign or international governments, political subdivisions, agencies or bodies. In carrying out its functions under this Act the Commission shall be solely a consultative and recommendatory agency which will cooperate with the agencies of the United States. It shall furnish to the Congress and to the President, or to any official designated by the President, copies of its reports submitted to the party states pursuant to paragraph O of article IV of the compact.

"SEC. 3. Nothing contained in this Act or in the compact consented to hereby shall be construed to affect the jurisdiction on, powers, or prerogatives of any department, agency, or officer of the United States Government or of the Great Lakes Basin Committee established under title II of the Water Resources Planning Act, or of any international commission or agency over or in the Great Lakes Basin or any portion thereof, nor shall anything contained herein be construed to establish an international agency or to limit or affect in any way the exercises of the treaty-making power or any other power or right of the United States.

"SEC 4. The right to alter, amend, or repeal this Act is expressly reserved. "Approved July 24, 1968."

FEDERAL LEGISLATIVE HISTORY:

PL 90-419 (90th Congress, S 660)
HOUSE REPORT No 1640 (Comm. on Foreign Affairs)
SENATE REPORT No. 1178 (Comm. on the Judiciary)
CONGRESSIONAL RECORD, Vol. 114 (1968):
   June 12: Considered and passed Senate.
   July 15: Considered and passed House.
   July 24: Signed by the President.
BYLAWS

Pursuant to the powers and authority vested in the Great Lakes Commission by paragraph K of Article IV of the Great Lakes Basin Compact, the following Bylaws are adopted and shall remain in force until amended.

ARTICLE I
COMPONENT STATES

The states of Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania and Wisconsin having ratified the Great Lakes Basin Compact by act of their legislatures are recognized as the component states of this Compact which has become operative in view of the provisions of Article II, section A of this Compact. The provinces of Ontario and Québec, by actions of their governments through a Declaration of Partnership, are recognized as associate (non-voting) members of the Compact.

ARTICLE II
MEMBERSHIP

SECTION 1 - The members appointed by and certified to the Commission by the component states shall constitute the members of the Commission.

SECTION 2 - Pursuant to the provisions of the Compact, each state shall have a total of three votes on any matters coming before the Commission to be cast in accordance with the applicable laws of such state. Should any Commission or any committee, special committee, or task force member be absent from any Commission or committee, special committee or task force meeting, their vote may be cast by a duly appointed proxy in accordance with Article IV, Section E of the Compact, whose authority shall be in writing and filed with the Chair of the Commission or committee, as the case may be, at the time of or before said meeting.

SECTION 3 - Each state or the Commission itself shall be permitted to make use of advisors and consultants of its own choice at any meeting of the Commission or of any committee, special committee or task force. Such advisors and consultants may be permitted to participate in discussions and deliberations without the power to vote.

SECTION 4 - The Commission shall be permitted to designate observers representing the United States and Canadian federal governments, regional organizations, or any others it may so designate to advance the goals and objectives of the Great Lakes Basin Compact. Observers may be permitted to participate in discussions, deliberations and other activities as approved by the Commission, but shall have no vote.
ARTICLE III
BOARD OF DIRECTORS

SECTION 1 - There is established a Board of Directors (hereafter referred to as “the Board”) to be composed of a Commissioner from each component state. The governors of each state, where not inconsistent with state law, shall designate the person who shall serve on the Board. The Chairs of the Ontario and Québec delegations to the Commission shall serve in an associate (non-voting) capacity on the Board. The Chair and Vice Chair of the Commission shall be elected by the Commission from among the state delegation members and, upon election shall also be members of the Board. The Chair of the Commission shall also hold the title of Chairman of the Board.

SECTION 2 - The Board shall evaluate the work, activities, programs and policies of the Commission and shall recommend to the Commission the taking of any action by the Commission relative to such areas. It shall also serve in an advisory capacity to the Chair and Vice Chair of the Commission and shall perform such other duties and functions as the Commission shall delegate to it or otherwise authorize it to perform from time to time on behalf of the Commission. It shall meet on the call of the Chair.

SECTION 3 - The Board shall adopt budget(s) following review by the full Commission in accordance with Article VII. Pursuant to Section 8, Article VII, the Board shall authorize, by majority vote of members present, the adoption of changes to the general operating budget of the Commission. The Board may authorize increases or decreases of the budget by majority vote of members present. Alterations within previously approved amounts of spending categories, not changing the general operating budget amount, may be adopted by majority approval of the Board members present.

SECTION 4 - The Board shall, from time to time, review the personnel policies of the Commission and receive recommendations from Commissioners and the President/Chief Executive Officer on these personnel policies. The Board may authorize changes to the Commission’s "Personnel Policies and Procedures" and authorize changes in compensation for the President/CEO and staff personnel within available budget amounts. Compensation includes salary and fringe benefits available to staff.

SECTION 5 - The Board shall review proposed policies that are prepared for consideration by the Commission and shall report to the full Commission on the findings of the review and provide recommendations on adoption or suggested changes.

SECTION 6 - The Board shall report on all Board meetings at the next regularly scheduled or special Commission meeting. Draft minutes of Board meetings will be furnished to all Commissioners as soon as possible.

SECTION 7 - Board meetings will be held as needed, including by conference call or in conjunction with full Commission meetings to conserve travel costs to the extent practical for member states. Board meetings shall be open to all Commissioners as observers. All meetings will be announced to the entire membership. Board decisions will be made on the basis of a majority vote of those present.

SECTION 8 - The Board will act on Commission policy and budget matters in accordance with the following guidelines:
a) The Commission at a special or regularly scheduled meeting, refers the issues to the Board for action. All Commissioners may participate in discussions, but only Board members will be entitled to vote on the issue.

b) The Commission is unable to adequately resolve an issue (e.g., additional research, discussion or coordination is required, in a timely manner not available to the full Commission.) The Board may receive a referral from the Commission, or the Chair, and after discussion with the Vice Chair and President/CEO, may notify all Commissioners that an issue has been referred to the Board for action and resolution. Any objections shall be considered by the Chair. Other Commissioners desiring to participate may do so through the Board member representing their state or province.

c) For issues in which circumstances require an immediate decision or action, the Chair, after discussion with the Vice Chair and President/CEO, may refer the issue to the Board when a full Commission meeting is not an option for resolution. The Chair will report on all action taken by the Board to the full Commission by regular mail or equivalent as soon as practicable.

SECTION 9 - There is established the position of Immediate Past Chair to be held by the departing Chair for the period of his/her successor’s tenure as Chair. The Immediate Past Chair may be designated, by the Chair in consultation with the Board, to undertake special activities as deemed appropriate.

SECTION 10 - The Chair may designate members of the Board to undertake other special responsibilities as deemed appropriate.

ARTICLE IV
OFFICERS

SECTION 1 - Nominations for Chair and Vice Chair of the Commission shall be made by a nominating committee appointed by the current Chair, and election shall be held at the annual meeting of the Commission. Election to each office shall be by majority vote and each state shall be entitled to three votes. The Chair and Vice-chair shall hold office for one year or until their successors are elected and qualified. In the event the office of Chair becomes vacant, nomination and election to fill the vacancy shall be effected at any meeting of the Commission after due notice to all Commissioners.

SECTION 2 - Chair: The Chair shall take office immediately following adjournment of the meeting at which elected. The Chair shall preside at all meetings of the Commission and of the Board from such time until a successor shall take office. The Chair shall appoint, or establish the process of appointing, the members of committees, special committees, and task forces. The Chair shall serve as a voting member of the Board.

SECTION 3 - Vice Chair: The Vice Chair shall act for the Chair in the event of the latter’s absence or disability. The Vice Chair shall serve as a voting member of the Board.

SECTION 4 - President/CEO: Subject to the general supervision of the Commission, the President/CEO shall be the full time executive officer of the Commission. The President/CEO shall be employed by the Commission and shall hold office at the pleasure of the Commission; and shall:
(a) Carry out its policies;
(b) Serve as editor of any Commission publication;
(c) Coordinate the activities of all committees, special committees and task forces;
(d) Arrange details and facilities, including secretarial and other services for all Commission and Committee meetings;
(e) Serve as ex-officio member without vote for all committees, special committees and task forces;
(f) Cause to be made a record of the proceedings of the Commission and Board and preserve the same in the headquarters office;
(g) Give notice of all meetings;
(h) Make recommendations on programs, policies, and activities of the Commission;
(i) Exercise general supervision under the direction of the Commission of all the Commission programs and activities;
(j) Have immediate charge of the headquarters office and personnel.

SECTION 5 - Executive Staff: The executive staff of the Commission shall consist of President/CEO and such other staff members as may be designated by a majority vote of the Board from time to time.

ARTICLE V
COMMITTEES

SECTION 1 - The Commission may, from time to time and as deemed necessary, delineate committees, special committees, and task forces to carry out its initiatives. Each committee, special committee, or task force shall consist of persons from each interested state and province, nominated by the Chair of the delegation and appointed by the Chair. Each state shall be entitled to one vote on each committee, special committee and task force. In addition, the Chair of each committee, special committee or task force may arrange for associates or advisors, without payment of compensation or expenses to the same unless authorized by the Commission, to assist the committee, special committee or task force and participate in its deliberations and discussions without power to vote on recommendations.

SECTION 2 - The committees, special committees, and task forces shall conduct studies and research, prepare memoranda and reports in their assigned fields and on that basis make recommendations to the full Commission for specific action to be taken in a particular field. Any and all action on legislative recommendations of a committee, special committee or task force other than discussion, study and voting will be made only with the approval of the Commission.

SECTION 3 - Each committee, special committee or task force shall meet as needed to conduct assigned duties. Through its Chair, or the Chair’s designee, each committee, special committee or task force shall periodically submit a written report to the Commission at regular annual meetings of the Commission or at other times as deemed appropriate. Recommendations by the committees, special committees and task forces calling for action by the Commission shall be received in writing by the Chair of the Commission and the President/CEO at least one month prior to the date of the meeting of the Commission at which such action is to be sought, unless special permission is granted by the Commission Chair for a late report.

ARTICLE VI
MEETINGS

SECTION 1 - Annual and semiannual meetings: The Commission shall meet at least twice annually. The annual meeting normally shall be held during the month of October; the semi-annual meeting normally shall be held during the second half of the fiscal year (January – June). The Chair shall consider recommendations and invitations of Commissioners in selecting meeting locations, and views on conditions which tend to over-ride the normally established meeting dates.

SECTION 2 - Notice: The President/CEO shall mail notice in writing of the time and place of each regular meeting of the Commission to each member not later than 60 days prior to the date of the meeting.
SECTION 3 - Special meetings: Special meetings of the full Commission may be called by the Chair to be held at times and places identified in an official call for such meetings.

SECTION 4 - Order of business and rules: The order of business which may be developed by Bylaws, tradition or ruling of the presiding officer of the Commission or Board may be changed at any meeting of the body proposing a change in its order of business by vote of a majority of members present, except as otherwise provided by the Compact or the Bylaws. The usual applicable parliamentary rules and precedents will govern all proceedings.

ARTICLE VII
BUDGET AND FINANCE

SECTION 1 - All component states shall share equally in the expenses of the Commission. Each individual state shall bear the expenses of its Commissioners at Commission annual, semiannual and Board meetings, and such expenses shall not be paid out of funds in the Commission treasury.

SECTION 2 - In the case of committee, special committee or task force programs the Commission may authorize the payment of expenses of committee, special committee or task force members from Commission funds.

SECTION 3 - Financial remittances to the Commission by each member state shall be requested for each fiscal year. The amount of each remittance shall be determined by the Commission in accordance with Sections 1, 6, 7 and 8, this Article and Article V of the Compact.

SECTION 4 - The President/CEO shall, on a quarterly basis, prepare and submit to the Board a statement presenting the Commission’s financial condition.

SECTION 5 - With the approval of the Board, the President/CEO may make transfers of funds within the approved budget of the Commission.

SECTION 6 - The budget of estimated expenditures referred to in Article V of the Compact shall be adopted by the Board prior to the relevant fiscal year, and presented at the next meeting of the Commission.

SECTION 7 - The budget of the Commission shall consist of two parts:

a) The "general operating budget" shall include, but not be limited to funds remitted by each member state, Commission reserve funds and interest earned. Expenditures will normally include routine operating costs for the Commission.

b) The "restricted fund budget" shall include income from projects, grants and other sources not considered as a routine revenue. Expenditures will normally be made to fund costs of the projects or grants incurred by the Commission. Transfers to pay Commission operating expenses may be made in accordance with grant or project authorization.
SECTION 8
a) The President/CEO shall prepare a proposed annual budget for review and evaluation by the Board at least 45 days prior to the new fiscal year. The proposal shall include estimated income and expenditures for each part of the budget.
b) The Board will make necessary changes to the proposal, will distribute a draft budget to the full Commission for review, and following consultation with the full Commission will adopt a final budget document. The general operating budget component shall be used to determine the financial remittance required by each member state. Only a majority vote by the full Commission shall authorize a change in a member state’s required financial remittances.

SECTION 9 - Certain changes and alterations are expected to occur within the approved budget. These will be handled as follows:

a) Changes in the general operating budget, not requiring a change in required member state remittances, may be made by majority vote of the Board or by a majority vote of the full Commission.
b) Changes in the restricted fund budget, not amending the general operating budget, may be adopted by a majority vote of the full Board or by a majority vote of the full Commission.
c) Changes in the budget, requiring alterations in the required member state remittance will only be authorized by majority vote of the full Commission.
d) Changes in the budget requiring immediate action, where a Board or full Commission meeting is not possible, may be made by the President/CEO in consultation with the Chair or Vice Chair, as available. A subsequent report to, and ratification by, the Board or Commission, as appropriate, will be sought.

ARTICLE VIII
AMENDMENT OF BYLAWS

These Bylaws may be altered and amended at any regular meeting upon the affirmative majority vote of the Commission. However, no amendment may be considered at any such meeting unless the proposed amendment shall have been received by the Chair and President/CEO at least one month prior to the first day of the month of which said regular meeting shall be held. Immediately upon receipt of such proposed amendment the President/CEO shall refer it to the Board and shall send a copy thereof to each member of the Commission within fifteen days after the receipt thereof, together with notice of the date on which the proposed amendment will be acted upon by the Commission.

GREAT LAKES COMMISSION
FY2019 BUDGET - 7/1/18-6/30/19 - FINAL

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<thead>
<tr>
<th>Category</th>
<th>General Operating</th>
<th>Restricted</th>
<th>Total</th>
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<tr>
<td><strong>1. Personnel</strong></td>
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</tr>
<tr>
<td>a. Salaries</td>
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<td>$ 1,708,000</td>
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<td>b. Benefits</td>
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<td>$ 477,000</td>
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<td><strong>2. Internal Operations</strong></td>
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<td>a. Office Supplies</td>
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<td>b. Equipment</td>
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<tr>
<td>c. Equipment Maintenance</td>
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<td>d. Insurance</td>
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<td>e. Accounting, Audit &amp; Legal</td>
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<td>f. Facilities Rent and Maintenance</td>
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<td>g. Depreciation</td>
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<td><strong>3. Communications</strong></td>
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<td>a. Telephone</td>
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<td>c. Printing/Reproduction</td>
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<td>d. Books/Dues/Subscriptions</td>
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<td>e. Media/Annual Report</td>
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<td><strong>4. Travel</strong></td>
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<td>a. Staff</td>
<td>$ 44,000</td>
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<td>b. Committee</td>
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<td><strong>5. Meetings</strong></td>
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<tr>
<td></td>
<td>$ 80,000</td>
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<td><strong>6. Contract Services and Grants</strong></td>
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<td>$ 4,620,000</td>
<td>$ 4,638,000</td>
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<td><strong>7. Misc./Special Projects</strong></td>
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<td><strong>8. Training</strong></td>
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<td>$ 8,000</td>
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<td><strong>9. Grant Match</strong></td>
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<td><strong>TOTAL</strong></td>
<td>$ 1,414,000</td>
<td>$ 7,024,000</td>
<td>$ 8,438,000</td>
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GREAT LAKES COMMISSION
REVENUE PROJECTION - FY2019

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<th>Category</th>
<th>Amount</th>
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<tr>
<td>2. Interest Earnings</td>
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<tr>
<td>3. Meetings/Publications</td>
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<tr>
<td>4. Indirect Cost Recovery</td>
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<tr>
<td>5. Grants and Contracts</td>
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<tr>
<td>6. Investments and Earnings</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td>$ 8,438,000</td>
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</tbody>
</table>

State Dues are assessed at $60,000 per state.
Board of Directors
John Linc Stine, Chair, Minnesota
Sharon Jackson, Vice Chair, Indiana
John W. Allan, Immediate Past Chair, Michigan

Wayne A. Rosenthal, Illinois
Sharon Jackson, Indiana
Jon W. Allan, Michigan
John Linc Stine, Minnesota
Basil Seggos, New York

James Zehringer, Ohio
Bill Carr, Ontario
Timothy J. Bruno, Pennsylvania
Jean-François Hould, Québec
Stephen G. Galarneau, Wisconsin

September 26, 2018

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