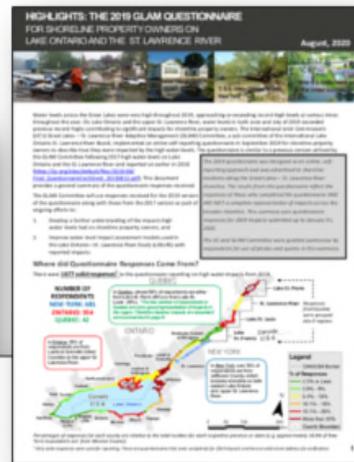
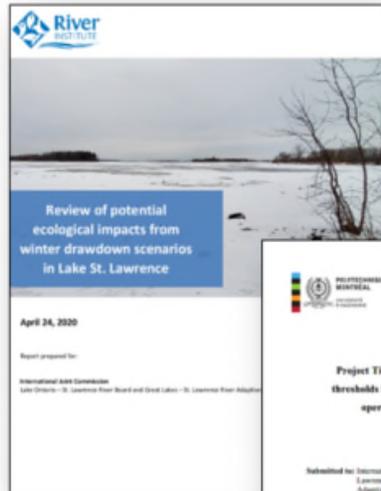


# Great Lakes-St. Lawrence River Adaptive Management Committee (GLAM)

9<sup>th</sup> Semi-Annual Progress Report to the Great Lakes Boards and the International Joint Commission  
Covering the period March 1, 2020 to August 31, 2020

October 9, 2020



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*Cover photo: Examples of products prepared during the reporting period in support of GLAM Committee activities*

## GLAM Committee Membership

Blue text identifies other International Joint Commission Board and Committee affiliations

United States	Canada
John Allis, Co-Chair U.S. Army Corps of Engineers – Detroit District <a href="#">International Lake Superior Board of Control</a> <a href="#">Alternate Regulation Representative</a>	Wendy Leger, Co-Chair Environment and Climate Change Canada
Mary Austerman New York Sea Grant	Jonathan Staples Ontario Ministry of Natural Resources and Forestry <a href="#">International Niagara Working Committee Member</a>
Scudder Mackey Office of Coastal Management, Ohio Department of Natural Resources	Patricia Clavet Ministère de l'Environnement et de la Lutte contre les changements climatiques (Québec) <a href="#">International Lake Ontario - St. Lawrence River Board Member</a>
Dena Abou-El-Seoud U.S. Army Corps of Engineers – Chicago District	Susan Doka Fisheries and Oceans Canada
Lauren Fry Great Lakes Environmental Research Laboratory – NOAA	Frank Seglenieks Environment and Climate Change Canada
Bill Werick Retired – US Army Corps of Engineers	Jean Morin Environment and Climate Change Canada
Keith Koralewski U.S. Army Corps of Engineers – Buffalo District <a href="#">International Lake Ontario - St. Lawrence River Board</a> <a href="#">Alternate Regulation Representative</a>	Rob Caldwell Environment and Climate Change Canada <a href="#">Secretary - International Lake Ontario - St. Lawrence River Board and International Lake Superior Board of Control</a>
Vacant	Jacob Bruxer Environment and Climate Change Canada <a href="#">Regulation Representative - International Lake Superior Board of Control and International Lake Superior Board of Control</a>
<i>Melissa Kropfreiter, Co-Secretary</i> U.S. Army Corps of Engineers – Detroit District	<i>Mike Shantz, Co-Secretary</i> Environment and Climate Change Canada

**NOTE:** The Great Lakes-St. Lawrence River Adaptive Management (GLAM) Committee was established by the International Joint Commission (IJC) as a sub-committee of the Boards and is comprised of an equal number of members from the United States and Canada. Members of the Committee serve at the pleasure of the IJC and are expected to be full participants in all activities of the Committee. As with all IJC Boards and Committees, the GLAM Committee members serve in their personal and professional capacity, not as a representative of their agencies or employers.

## Executive Summary

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The International Joint Commission (IJC) established the Great Lakes – St. Lawrence Adaptive Management (GLAM) Committee through an IJC directive on January 16, 2015, to provide monitoring and evaluation of regulation plans as a sub-committee in support of the three Great Lakes-St. Lawrence River Water Management Boards (Boards). This report is the ninth semi-annual report to the IJC and the Boards, covering the period of March 1, 2020 through to August 31, 2020.

Overshadowing all the GLAM Committee activities during the reporting period has been the global COVID-19 pandemic. The pandemic has impacted everything the committee and its individual members do and the ways they are delivering on the Phase 1 expedited review requirements. Despite these challenges, the committee is proud of how it has continued to move forward on its critical tasks in its attempt to keep up with its commitments to the Boards and the IJC. In many ways, much of the committee's work has continued in a modified form but largely uninterrupted, a testament to the dedication of the GLAM Committee members and associates.

Much of the GLAM Committee's attention during the reporting period has been focused on the implementation of Phase 1 of the expedited review of Plan 2014. This is a high priority for the committee as Plan 2014, the outflow regulation plan for Lake Ontario and the St. Lawrence River, continues to be a focus for the general public and elected officials along the shoreline. The IJC formally confirmed Phase 1 expedited review funding on February 3, 2020 (the previous reporting period) and the GLAM Committee has been moving forward with critical work plan items to support the expedited review. Phase 1 focuses on supporting the International Lake Ontario – St. Lawrence River Board (ILOSRLB) in their deviation decisions during this current period of high supplies from Lake Erie. Primarily, the effort seeks to generate new information and tools that can be used to further support tradeoff decisions by the Board and ensure integration into the Boards decisions processes.

The overall Phase 1 expedited review effort is guided by the short and long-term strategy document that was prepared by the committee and received initial approval by the IJC in March 2020 with final approval pending. The document outlines a series of Phase 1 priorities which the committee has been moving to implement. From a hydroclimate perspective, the committee has been focused on defining plausible extreme water supply sequences to supplement the existing historical sequences. The hydroclimate work is also helping to better define some of the key drivers needed to refine the list of plausible scenarios.

The GLAM Committee has also be making progress on a series of expedited review tasks to improve existing water level and flow simulations. This has included further development of the coordinated regulation and routing model in collaboration with the Coordinating Committee on Great Lakes Hydraulic and Hydrologic Data. As well, the GLAM Committee has been reviewing recent Board deviation decisions and further documenting how those can be integrated into

modelling tools that can simulate water level and flow conditions under different water supply conditions.

Progress has been made on a number of the impact assessment activities intended to provide information for the ILOSLRB on tradeoffs in support of their deviation decisions. This has included work related to the commercial navigation sector, coastal communities, the recreational boating and tourism industry, municipal and industrial water intakes, and ecosystem impacts. While most of this work is still in its early stages, particularly for the coastal and recreational boating sectors, some projects for other sectors were wrapped up during the reporting period. Of particular note, a project to assess the impacts of a temporary closure of commercial navigation was completed.

Near the end of the reporting period, the GLAM Committee started to put more attention into how to integrate the information gained through the expedited review into the Board's decision processes. The committee is particularly focused on March 2021 as a target where any information gained to date will be pulled together. A draft decision support strategy was initiated during the reporting period and will be further developed in consultation with the Board over the coming months as the impact assessment work progresses.

One of the most significant developments in support of the GLAM Committee during the reporting period was the establishment of the Public Advisory Group (PAG) by the IJC. The PAG has been set up to provide public input related to Phase 1 of the expedited review. Working with Consensus Based Institute (CBI), the PAG has already held a series of virtual workshops and is working on developing a more detailed work plan through to September 2021. The GLAM Committee has already gained considerable insight from the PAG members and is looking forward to continued collaboration and information exchange over the next year in support of the expedited review.

While the committee has placed most of its recent attention on the short-term expedited review for Plan 2014, water levels on the upper Great Lakes remained at or near record high levels throughout the reporting period. As such, there continues to be considerable attention on Lake Superior outflows as well and the committee is pursuing a number of tasks to support the International Lake Superior Board of Control. In particular, the committee has supported work to simulate the effects of implemented Board deviation strategies and will be looking at further assessment in the coming year. The committee has also supported further data collection in the St. Marys River to improve future modelling in that area regarding gate operations.

Across the entire Great Lakes system, the committee also continues to consider the importance of long-term data gathering efforts, particularly related to ecosystem impacts. The committee is working with staff from the Canadian Wildlife Service of Environment and Climate Change Canada to continue monitoring Lake Ontario shoreline wetlands following the recent high water levels in 2017 and 2019 and also to review the existing ecosystem performance indicators to consider how they can be monitored and evaluated going forward.

Due to the high priority placed on the expedited review, as well as constraints related to the COVID-19 pandemic, the committee did have to defer certain FY20 work plan tasks during the reporting period. Primarily, these tasks related to aspects of the longer-term plan review (e.g. performance indicator review) or tasks superseded by operational requirements of staff supporting both the GLAM Committee and the ILOSLRB.

The GLAM Committee continues to be extremely appreciative of the various agencies it has relied upon through their in-kind contributions for its day-to-day operations and implementation of many of the work plan tasks during the reporting period. These in-kind resources along with project-specific support from the IJC's International Watersheds Initiative (IWI) have been critical to maintain a number of work plan tasks. In addition, the confirmation of Phase 1 expedited review funds has allowed the committee to move forward on a number of priority expedited review tasks which would not have otherwise been possible. The committee understands that expectations are high for the delivery of Phase 1 of the expedited review and continues to work closely with the IJC and its Boards to execute the critical items as quickly as possible.

## 1.0 Introduction

A directive signed January 16, 2015 by the International Joint Commission (IJC) established the Great Lakes – St. Lawrence Adaptive Management (GLAM) Committee, as a sub-committee to the Boards, to undertake monitoring and assessment of Lake Superior, and Lake Ontario-St. Lawrence River Boards' regulation plans and Niagara River Board activities, as well as coordinate with the Water Quality and Science Advisory Boards on issues of common interest. The GLAM Committee (committee) is comprised of a Canadian and U.S. co-chair, as well as members from government agencies, the Great Lakes Water Management Boards (Boards), and technical experts. The committee is supported on an on-going basis by an appointed Canadian and U.S. secretary.

As defined in its directive from the IJC, the overall objective of the GLAM Committee is to provide information to the Boards and the IJC while advising them on the effects that the control structures approved in the IJC's Orders of Approval and directives have on levels and flows in boundary waters. GLAM also captures the benefits and impacts that the regulation plans have on the affected interests and communicates this to the Boards and the IJC. This includes the on-going review and evaluation of regulation plans related to:

- a) the effectiveness of the existing regulation plans;
- b) examining how the system may be changing over time and whether any modifications to the regulation plan(s) may be warranted; and
- c) any other questions requested by the Boards and/or IJC that may affect the Boards' water management decisions over the long-term.

The GLAM Committee was initiated to establish a structured, iterative process of robust evaluation in the face of uncertainty, with an aim to reduce uncertainty over time via system monitoring and feedback to the decision-making framework based on knowledge gained.

This ninth semi-annual report will highlight GLAM Committee progress and accomplishments for the reporting period of March 1, 2020 to August 31, 2020.

## 2.0 Work Plan Progress and Emerging Priorities

The GLAM Committee's annual work plans cover the October 1 to September 30 time period, consistent with the U.S. fiscal year. This semi-annual report discusses efforts to deliver on items in the GLAM Committee's Fiscal Year (FY) [2020 work plan](#). The FY20 work plan is divided into sections. Section A is the Plan Review and Evaluation section where the core technical work is identified while Section B covers overarching oversight and administration functions (Figure 1).

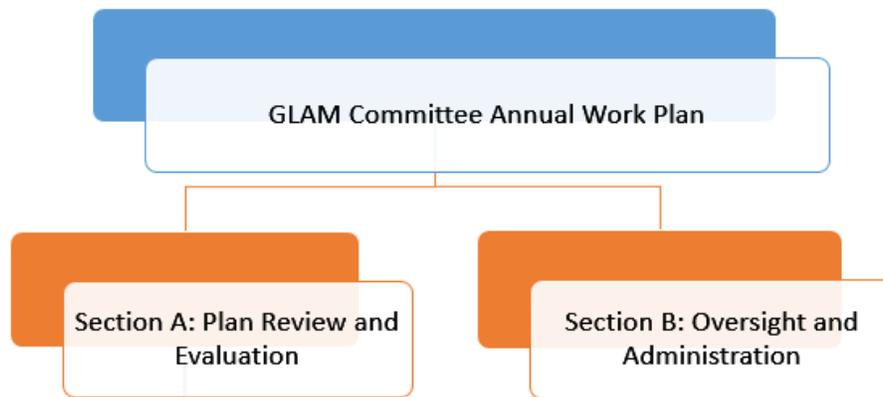


Figure 1: GLAM FY20 Work Plan structure (Expedited review activities are captured within Sections A and B)

With the confirmation of funding in February 2020 to support the Phase 1 expedited review effort, the GLAM Committee has worked to implement a series of additional expedited review tasks previously outlined as extra tasks in the FY20 work plan. These expedited review activities are captured within both the Plan Review and Evaluation as well as the Oversight and Administration aspects of the GLAM Committee work plan.

The GLAM Committee’s work plans are developed annually, and identify key priorities for the upcoming year as envisioned by the committee at that time (typically late summer or early fall of each year). In consultation with the Great Lakes Boards, the GLAM Committee has to consistently work to try to match available resources to expected needs in the coming year and to anticipate priorities. Progress made on work plan tasks, including many expedited review priorities, is discussed in 2.1 and 2.2 below. The expedited review tasks are a targeted and time bound implementation of specific GLAM Committee Plan Review and Evaluation along with Oversight and Administration requirements outlined in our annual work plan. Specific work plan tasks associated with the expedited review of Plan 2014 are highlighted in the summary and noted as **(Phase 1)** in the Appendices.

The GLAM Committee’s progress on its work plan priorities was impacted by the global COVID-19 pandemic during the reporting period. Many committee members switched where and how they work, all the while adjusting to rapidly changing situations in their communities. GLAM Committee members worked hard to push forward critical work plan activities, despite the considerable uncertainty around them. The committee is very appreciative of everyone’s efforts to move the adaptive management effort forward in spite of the significant challenges over the past number of months.

## 2.1 Section A: Plan review and evaluation

Section A tasks are led by the ad-hoc hydroclimate, impact assessment, and plan review working groups made up from members of the GLAM Committee and technical associates. Tasks in support of long-term GLAM Committee requirements are primarily undertaken using

in-kind agency contributions as resources permit, as well as project specific support through the International Watersheds Initiative (IWI). Section A tasks directly supporting Phase 1 of the expedited review are supported through the special expedited review funding confirmed in February 2020. During the reporting period, a primary focus was the implementation of the critical expedited review tasks identified in the FY20 work plan. Specific progress related to the expedited review is discussed in Section 2.1.1. In Section 2.2.1, plan review and evaluation tasks in support of the longer-term adaptive management effort are discussed. Highlights of progress on all FY20 work plan tasks including expedited review tasks are provided in *Appendix A*. Work plan tasks associated with the expedited review of Plan 2014 are noted as **(Phase 1)** in the Appendix.

### 2.1.1 Expedited review priority tasks

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#### **2.1.1.1 Hydroclimate**

There are two priority hydroclimate tasks in support of Phase 1 of the expedited review. The first task is a review of observed hydroclimate conditions in the Great Lake basin. The second task is the development of a range of plausible hydroclimate scenarios for the next year or two, including extreme scenarios that can help frame possible conditions that could be expected.

For the two tasks, the Hydroclimate working group has been developing a draft outline for a hydroclimate summary for the Great Lakes basin. While this is an expedited review priority, the work also supports an ongoing GLAM Committee requirement to track changes in the system and ensure regular reporting to the Great Lakes outflow regulation boards. The Hydroclimate group is focusing initial efforts on reviewing historical datasets, updating stochastic simulations, and considering the current state of climate change simulations. The hydroclimate group plans to start preparing the summary data once the outline is established.

Building on the dataset review, the hydroclimate group is also working with the regulation representatives to develop a set of plausible net basin supply values that can be used to test regulation decisions in the next few years during this period of high upper Great Lakes water levels and inputs to Lake Ontario. Further progress is expected on this item in the fall of 2020.

#### **2.1.1.2 Calculating water levels and flows**

A critical aspect for supporting deviation decisions is the ability to develop modelled water level and flow conditions for a range of possible future water supply conditions based on existing outflow regulation strategies and possible modifications. There is ongoing work within the regulation representative offices to maintain and improve existing modelling tools. The regulation representatives are also working with the Coordinating Committee on Great Lakes Hydrologic and Hydraulic Data to update the coordinated regulation and routing model that can be used to generate water levels and flows throughout the system. Considerable progress has

been made during the reporting period, with a beta version nearly ready for the Lake Ontario – St. Lawrence River system. This will be tested as part of the expedited review effort.

Further work has also been done to review and document the deviation decisions employed by the ILOSLRB in 2018 and 2019 and a draft report has been prepared. This is critical for updating the water level and flow simulation models and will help identify critical deviation strategies that will require further testing and simulation as the expedited review progresses in coming months.

The final expedited review tasks in support of calculating water levels and flows is review of past ice stability conditions on the St. Lawrence River related to winter dam operations. This work is being led by ice modelling experts at Clarkson University, building on past ice records and operations in the upper St. Lawrence River to consider whether further winter drawdown is advisable. A draft report has been prepared, although the researchers are still reviewing their work based on feedback from the regulation representatives to determine how much confidence can be placed in the results in terms of informing deviation decisions given the substantial risk to the system should an unstable ice cover develop during the winter months.

#### ***2.1.1.3 Impact assessment***

The impact assessment work for Phase 1 of the expedited review covers a wide range of sectors that may be impacted by deviation decisions of the ILOSLRB including coastal riparians on Lake Ontario and downstream through the St. Lawrence River, the commercial navigation industry, recreational boating and tourism, municipal and industrial water users, hydropower, and ecosystem. For the coastal riparian sector, a number of immediate activities have been implemented along with considerable planning for additional work in future months. The GLAM Committee is working with staff from the U.S. Army Corps of Engineers office in Buffalo to plan and undertake a series of meetings with municipal staff along the U.S. shoreline of Lake Ontario and the upper St. Lawrence River to gather direct information of high water impacts to those communities in 2017 and 2019. Four meetings were undertaken during the reporting period including an in-person meeting for Niagara and Orleans Counties on March 9<sup>th</sup>, 2020 and virtual meetings (due to the onset of the COVID-19 pandemic) with Oswego County on August 17, 2020 with Cayuga and Wayne Counties on August 20, 2020, and with St. Lawrence County representatives on August 31, 2020. Along with the meetings, county participants are provided with a questionnaire to report on specific data that may be available to describe high water impacts. These meetings have been successful at gaining additional information as well as making important connections with municipal staff which the GLAM Committee hopes to maintain. Similar meetings are being planned on the Canadian side of Lake Ontario and the St. Lawrence River and the GLAM Committee has worked with staff from the Canadian section of the IJC to initiate contracts to carry out that work. Contracts for both the Ontario and Quebec municipal meetings were awarded by the end of this reporting period.

The GLAM Committee has also been working to summarize key results from the shoreline property owner questionnaire that was made available during the 2019 high water period. A

fact sheet has been developed, similar to one that was prepared with questionnaire results from 2017, to highlight critical shoreline impacts being reported by shoreline property owners. The draft fact sheet has been shared with the GLAM Committee as well as the ILOSLRB and the PAG for their feedback and should be ready for posting on the GLAM Committee website early in the fall. The questionnaire responses identify important information about the type, magnitude and location of shoreline impacts that will be used by GLAM to help verify existing information and models.

In addition to the municipal meetings and questionnaire summary, the GLAM Committee continues to coordinate additional coastal impact activities to support the expedited review. GLAM Committee members are working with coastal experts from the U.S. Army Corps of Engineers and other agencies to plan critical tasks for the next number of months. There are two main priority items of focus. The first is being referred to as shoreline characterization and the second as test site modelling. Both activities build on previous work by the IJC and other agencies which now require updating. With the shoreline characterization, the focus is on gathering updated and/or newly available information to better inform the Board on the magnitude of coastal development risk along the Lake Ontario – St. Lawrence River shoreline. This includes coordinating existing and updated datasets and information and synthesizing this information for the Board. The second piece will use more detailed shoreline modelling in specific test areas to help illustrate the relative local differences between Board deviation decisions. In both cases, the information will be consolidated through the decision support process. There has been good progress on gathering updated critical datasets for the lower St. Lawrence River during the reporting period for use in updating existing damage assessment tools. On the Lake Ontario and upper St. Lawrence River, much of the work for the shoreline characterization and site modelling is expected to be undertaken in the next reporting period.

The GLAM Committee has also initiated a project to review the current recreational boating and tourism metric from the LOSLRS in the context of high water conditions in 2017 and 2019. The intent is to identify what additional metrics may be of value in supporting the Boards deviation decisions for the expedited review as well as longer term plan evaluation efforts. The GLAM Committee is working with economists from the U.S. Army Corps of Engineers in Buffalo to undertake a general review of recreational boating and tourism metrics that could be considered. Project staff will be preparing a draft report highlighting priority data collection opportunities that could be pursued over the next number of months in support of the expedited review.

In terms of the commercial navigation sector, the GLAM Committee continued to work with staff at the U.S. Army Corps of Engineers IWR during the reporting period to finalize their analysis of economic impacts to the navigation industry associated with delayed seaway opening, mid season shutdowns, and early closings. Information from the draft report was presented to the ILOSLRB in March and was finalized in May 2020. The initial results were shared with the Board and IJC during the spring of 2020 and taken into consideration during the Board's deviation decisions at that time. Given the importance of the effort, the GLAM

Committee is working with the IJC liaisons to have the report peer reviewed. That review is expected to take place in the coming months.

Impact assessment activities related to hydropower, municipal and industrial water uses, and ecosystem impacts focused mainly on the Lake St. Lawrence area with regards to low water levels during periods of high outflows. A project was completed by Ecole Polytechnique looking at the vulnerability of municipal water intakes in the Lake St. Lawrence area during winter operations of the dam. As well, the River Institute in Cornwall Ontario was contracted to undertake a very preliminary assessment of ecosystem impacts associated with low winter levels on Lake St. Lawrence. In both cases, the contractor reports were finalized during the reporting-period and will be used by the GLAM Committee as inputs to the Phase 1 expedited review decision support process. These studies have helped provide insights into potential impacts that will be of use to the GLAM Committee in their analysis. In terms of hydropower impacts, members of the GLAM Committee have reached out to the hydropower entities through the Operations Advisory Group of the ILOSLRB to seek their input on critical water level and flow thresholds that have been experienced in recent years so that information can be integrated into the expedited review decision support process.

The impact assessment team is starting to work with the plan formulation and evaluation team to consider how the new information can be integrated into the decision support process. That includes looking at the existing models and performance indicators and considering their current status and how they could be adapted to support the plan deviation decision process.

#### ***2.1.1.4 Plan formulation and evaluation***

The plan formulation and evaluation focus in Phase 1 of the expedited review is testing existing limits and strategies for modifications when the ILOSLRB is under deviation authority. This includes modification to the F limit (balancing of upstream and downstream flooding), the I limit (ice operations), the L limit (maintaining safe navigation conditions in the St. Lawrence Seaway), and looking at the H14 trigger levels, particularly in terms of when the Board might consider requesting extended deviation authority from the IJC. Much of this work is led operationally by the regulation representatives for the ILOSLRB. During the early part of the reporting period, the regulation representatives were supporting the Board with a range of simulations associated with different deviation options. This work will continue in the coming months as the Board prepares for the upcoming winter period and looks ahead to next spring. The regulation representatives have already started their initial documentation on the various deviation strategies under consideration and that summary will inform the expedited review effort.

The GLAM Committee's FY20 work plan had a few additional Plan Review working group tasks and progress was made on all of them during the reporting period. Efforts continue by the regulation representative offices to document outflow operations in 2018, 2019 and 2020 and document deviation decisions. For the Lake Ontario system, a narrative was finalized comparing Plan 2014 and Plan 1958-DD based on 2018 and 2019 conditions. The narrative supplements

the summary posted to the ILOSLRB website. Considerable progress has also been made in terms of developing the updated coordinated routing model using regulation plan rules for Plan 2014 (Ontario) and Plan 2012 (Superior). These updates are critical to support GLAM plan review simulations in the future. In addition to the development of a new routing model, the GLAM Committee (through the regulation representative offices) continues to maintain existing plan simulation tools necessary to support immediate Board operational decisions. This includes modifications to allow changes to plan rules (deviation decisions) that support Board operations. In order to run simulation models for additional regulation plans, input datasets such as lower river tributary inflows are required. The regulation representative offices have updated the input datasets needed to drive the simulation models up to 2019. This is important because plan simulations and forecasts can now include both 2017 and 2019, two extreme water supply scenarios within the historical record.

#### **2.1.1.5 Decision Support**

Work was initiated on the decision support tasks during the reporting period and represents an overarching and integrating aspect of the expedited review effort. One of the critical tasks during the reporting period was interviews with individual ILOSLRB members to discuss their critical needs and objectives in the context of deviation decisions. The interview responses will be used to help shape the decision support effort by the GLAM Committee and identify further information gaps. The GLAM Committee has already started looking at ways to integrate available information in meaningful ways to support Board deviation decisions, including the idea of risk matrices and critical thresholds. The committee has prepared an initial draft of the decision support strategy and is looking to add some additional expertise to the decision support team to help guide the process. Over the coming months, the decision support team will be working with the Board and PAG to test plausible water supply scenarios with possible deviation strategies while assessing and integrating results from the impact assessment activities to establish a decision support framework to support the Board.

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### **2.1.2 FY20 work plan activities in support of long-term adaptive management efforts**

#### **2.1.2.1 Hydroclimate**

In addition to the priority expedited review tasks, the hydroclimate team has been progressing on a few additional work plan tasks in support of the long-term adaptive management effort. One project is applying machine learning and artificial intelligence methods to identify the requisite subseasonal-to-seasonal forecast skill and lead times necessary to adjust Lake Ontario regulation Plan 2014 operating policy in a way that further reduces flood risk while maintaining or improving all other system objectives. The project is funded through NOAA-GLERL and the CIGLR program with Dr. Scott Steinschneider from Cornell University leading the effort. Work was initiated during the reporting period, with committee members providing ongoing project

input along the way. Much of the work is expected to be completed in the next reporting period. In addition to that project, the hydroclimate team is developing a list of hydroclimate research priorities to support the long-term GLAM Committee needs. The intent is to leverage research capacity throughout the basin by identifying critical hydroclimate work that would support improved outflow management from Lakes Superior and Ontario in the future. A number of research recommendations are expected based on hydroclimate work in the expedited review.

GLAM Committee members of the hydroclimate group are also connected with or tracking a number of related hydroclimate activities that will support longer-term efforts that are not directly led by the committee or identified on the FY20 work plan. Staff from Environment and Climate Change Canada (ECCC) are working on climate change simulations of Great Lakes water levels to support a wetland vulnerability study. Water levels for numerous CMIP5 scenarios were simulated during the reporting period and efforts are now underway to summarize the results and prepare the reports. The water level simulations will be of value to the GLAM Committee and there is considerable overlap in membership between the two efforts to ensure coordination. GLAM Committee members are also active participants in the Coordinating Committee on Great Lakes Basic Hydraulic and Hydrologic Data and work to identify areas of common interest regarding basic Great Lakes data. The GLAM Committee benefits considerably from binational and interagency work done through the coordinating committee which also contributes to the GLAM Committee priorities including the application of the statistical water balance model developed as part of earlier GLAM Committee work plans.

### ***2.1.2.2 Impact assessment***

The impact assessment activities within the GLAM Committee work plans focus on ensuring that the outcomes of water level and flow scenarios affecting the various interests are measurable and assessable. More specifically, they support the GLAM Committee in understanding how accurately the impacts on these interests are represented by current data and models used in evaluating the management of levels and flows and whether conditions of the system are changing over time. In the FY20 work plan, impact assessment tasks have been separated into Lake Ontario – St. Lawrence River ecosystem, Lake Ontario – St. Lawrence River socio-economic, and upper Great Lakes activities. There is also an Impact Assessment Working Group – Basin-wide section in the FY20 work plan. These tasks are in addition to those specifically initiated in support of the expedited review of Plan 2014 and discussed in the previous section.

#### **Impact Assessment Working Group – Basin-wide:**

The FY20 work plan includes a general task to review existing performance indicators and prioritize them for future review. While the GLAM Committee considers this to be an important overall task to support the longer-term plan review effort, this was not considered an immediate priority during the reporting period given the focus on Phase 1 of the expedited review. However, there is a tremendous amount of impact assessment work being done for the

expedited review that will directly feed into performance indicator reviews going forward. In addition, the GLAM Committee finalized arrangements with the Canadian Section of the IJC to pursue a project specifically looking at the existing ecosystem indicators for Lake Ontario and the upper St. Lawrence River with work expected to begin in the fall of 2020 and continue through to March 2021.

#### Lake Ontario – St. Lawrence River Ecosystem Activities:

The GLAM Committee continues to pursue ecosystem activities for the Lake Ontario – St. Lawrence River system, with particular attention on the wetlands performance indicator for Lake Ontario. As reported in the previous GLAM Committee semi-annual update, an IWI supported wetland monitoring project was completed with 2019 field sampling data provided to the committee. Similar monitoring has been ongoing for Lake Ontario coastal wetlands for the past few years at different frequencies and scales and the Canadian Wildlife Service has recently prepared a draft manuscript summarizing the results over the past number of years including after the high water conditions of 2017 and 2019. Once peer reviewed, the manuscript will provide improved documentation of the results of the ongoing monitoring effort and illustrates the importance of ongoing monitoring to support the adaptive management process. In addition to the manuscript development, data from earlier years has already been used by the committee in initial attempts to compare model results to field observations and that work is expected to continue in the future.

As with the hydroclimate working group, the ecosystem activities benefit from related work undertaken by other agencies. While the work is not directed or supported by the GLAM Committee, outcomes from these projects will be of value to GLAM Committee efforts going forward. For example, staff from Environment and Climate Change Canada continue to work on improved hydrodynamic and ecohydraulic response models for coastal wetlands of Lake Ontario. Through this work, it is expected that improved wetland response models will be developed at select sites for comparison to the previous wetland response model developed during the 2000-2005 International Lake Ontario – St. Lawrence River Study.

#### Lake Ontario – St. Lawrence River Socio-Economic Activities:

All of the Lake Ontario – St. Lawrence River socio-economic activities identified within the FY20 work plan are part of the expedited review and were discussed in previously in Section 2.1.1.

#### Upper Great Lakes Ecosystem and Socio-Economic Activities:

Data was collected in late 2019 in support of the Integrated Environmental Response Model (IERM2D). The IERM2D predicts areas where various fish species are likely to spawn and their fry are able to survive. More detailed information about the substrate in the St. Marys Rapids was collected, along with Side Scan Sonar (SSS) and aquatic plant species information in

portions of the river just downstream of the rapids. Unfortunately all the required data was not able to be collected during the first trip in 2019, but the final data collection in support of this effort will be completed in September of 2020. This modelling work will ultimately assist in the development of performance indicators for the St. Marys Rapids. Due to the data collection delays, the summary report for this data collected is expected by the end of 2020. The information will be used to improve the ecohydraulic model that was previously initiated by a collaborative effort between U.S. Army Corps of Engineers Detroit District office and Environment and Climate Change staff in Quebec City.

Given the record or near record-high water levels across the upper Great Lakes during the reporting period, GLAM Committee members and associates from the U.S. Army Corps of Engineers office in Detroit were not able to make as much progress as expected on a work plan item to develop a flooding indicator for the St. Marys Rapids or on a separate item to develop a flow change smoothness indicator for the St. Marys Rapids. Both items remain a priority to support the ILSBC and the intent is to carry these over to the FY21 GLAM Committee work plan. While progress was limited on those two projects, considerable effort was put into tracking high water impacts throughout the upper Great Lakes along the U.S. shoreline. U.S. Army Corps of Engineers staff in Detroit worked closely with a number of state and local municipal contacts to gather high water impact information and datasets and are actively working to organize the data. Emergency Management staff within the Corps Detroit District are populating a GIS with photos and other media showing high water impacts across the Upper Great Lakes. This will be very helpful for future GLAM Committee activities. Related to ongoing GLAM Committee activities, but not specifically mentioned in the annual FY20 work plan, is continuing effort of the U.S. Army Corps of Engineers (Detroit District) to undertake bathymetric surveys in the St. Clair River and assess the data for possible conveyance changes as a result of the current high outflows from Lake Huron. Detroit District staff recently received processed bathymetric data that was collected in the St. Clair River in 2019. These data will be compared with bathymetric data that was collected in 2012 to determine how much the channel geometry has changed, and if it has had a measurable impact on conveyance. The final report for this effort should be available in early 2021.

### ***2.1.2.3 Plan review***

Regulation representative staff for the Lake Superior Board have completed plan evaluation and review process for 2019, expanding on the work previously done for 2017 and 2018 conditions. Water levels and flows recorded in 2019 were again compared to simulated water levels and flows under Plan 2012 and (previous) Plan 1977-A. The results permit the Board to compare the water levels and flows experienced last year due to the implemented regulation strategy with what would have happened if the Board had followed the plan. This analysis allows the Board to verify whether or not the intended benefits of the deviation plan were actually realized.

Board and IJC staff held a call in early September 2020 to discuss the path forward for institutionalizing the deviation strategy used by the Board in the last few years to smooth flows in the rapids due to large reductions in the side channel capacity. While the deviations have proven successful, the ILSBC and IJC staff were interested in a more permanent solution of potentially changing the current deviation directive, or modifying the Plan 2012 code to account for projected reductions in side channel capacity. During this call, all parties agreed that an analysis should be completed showing the impacts of modifying the regulation plan code. This analysis would use the existing tools used to originally quantify the impacts of Plan 2012. Based on the results, the IJC will discuss if a change to the regulation code of the deviation directive would be an appropriate path forward. Board staff plan to begin this analysis in the fall of 2020.

## **2.2 Section B: Oversight and administration**

Activities within the Oversight and Administration category include the overarching functions required to keep the committee on track. This includes ongoing chair and secretariat functions along with project management, reporting, communications and engagement, peer review, and information management.

One of the most significant oversight and administration activities during the reporting period was the establishment of the Public Advisory Group (PAG) on May 21, 2020 by the IJC. The PAG and the GLAM Committee have been working closely with a consultant, Consensus Based Institute, to ensure the PAG has the guidance and support required to inform Phase 1 of the expedited review process. The PAG has already held their first round of virtual workshops and is establishing their framework for moving forward. The GLAM Committee is excited to work with the PAG to gain critical insight into water level impacts and the approaches the GLAM Committee will take to inform the Board to support their deviation decisions. The committee is grateful to the IJC for establishing the PAG and to all the PAG members who are volunteering their time to inform the expedited review process.

Beyond the input from the PAG, the GLAM Committee continues to undertake outreach and engagement activities related to specific work plan items. For example, the project looking at impacts to municipal and industrial water intakes on Lake St. Lawrence involved the project lead reaching out to individual facilities seeking input on particular water level vulnerabilities. The committee, through staff with the U.S. Army Corps of Engineers in Buffalo, has also been undertaking a series of meeting with U.S. municipal staff to seek input on high water level impacts in 2017 and 2019. In addition, the committee has an online questionnaire available for shoreline property owners throughout the Great Lakes system. Individuals can upload photos and report on specific water level impacts they have experienced. All these examples illustrate efforts by the committee to ensure input from those impacted by recent high water levels across the Great Lakes system.

From an administrative side, the GLAM Committee finalized its long-term strategy during the reporting period, with initial IJC approval in March 2020 and final approval pending. The strategy also outlines the short-term Phase 1 and Phase 2 expedited review priorities. It is important to note that the long-term strategy is a general framework for the GLAM Committee effort in the coming years. It is considered an evergreen document, to be updated as more is learned and as new priorities emerge. In the short-term, immediate priorities including those related to the expedited review of Plan 2014 are captured in the FY20 work plan and will be included in the FY21 work plan. Funding is not confirmed beyond Phase 1 of the expedited review. The short and long-term strategy is expected to be posted to the GLAM Committee website in the fall of 2020.

After some discussion with the IJC and the GLAM Committee's IJC liaisons, it was agreed that the committee would skip the preparation of the 2020 triennial report as outlined in the Directive. The IJC liaisons informed the committee that IJC Commissioners approved this decision during a June 25<sup>th</sup> call. Previously, the committee had suggested deferring the preparation of the 2020 report until later in 2020. Given the focus on Phase 1 of the expedited review, the Commission felt it was important for the committee to prioritize the expedited review effort and leave the triennial report to future years, especially since a report is expected with the expedited review in the fall of 2021.

The GLAM Committee has been working with IJC staff in developing an information management strategy for the GLAM Committee. The GLAM Committee appreciates the leadership taken by IJC staff on this effort which allows for a more coordinated effort across various IJC Boards and Committees. The GLAM is also working with the IJC on a peer review strategy which will include an independent reviewer(s).

The GLAM Committee continued to hold regular monthly conference calls to update members and discuss relevant items. The committee also held a face-to-face meeting on March 10, 2020 in Ann Arbor Michigan, just prior to the Board meetings held on March 11 and 12 at the same location. There was no spring 2020 semi-annual appearance in Washington D.C, but the committee did submit a written semi-annual report prior to the end of May as requested by the commission.

### **3.0 International Watersheds Initiative Projects**

The GLAM Committee's FY20 work plan was developed based on available agency and essential in-kind staff contributions and potential support through the IWI. In both cases, progress for each task is dependent on actual available resources when the project is initiated. The committee continues to receive IWI support for a number of projects, although the timing of actual project implementation can be delayed depending on how long it takes to move from conditional approval to final contracting arrangements. In the FY20 work plan, there are 8 individual IWI projects that are either funded (full or partial) or conditionally approved for IWI

funding. These projects are identified and detailed in Appendix A and specific progress was discussed previously in Section 2.0.

#### **4.0 Funding and Resourcing**

The GLAM Committee continues to ensure the \$1.5 million U.S. and matching Canadian funds identified for Phase 1 of the expedited review are properly allocated based on the priorities outlined in the expedited review strategy and the committee’s FY20 work plan. This has been a high priority for the committee during the recent reporting period.

In addition to the funding allocated to the support the expedited review, a number previously identified work plan tasks have been supported through the International Watersheds Initiative (IWI) of the IJC. These resources leverage considerable in-kind contributions from supporting agencies, including those represented through members of the GLAM Committee as identified on page 3 of this report, and allow the committee to pursue a wide range of initiatives to help deliver on its overall directive. The in-kind contributions from partner agencies have been critical to the progress that the GLAM Committee has made so far. The IWI support is particularly important for longer-term GLAM Committee efforts not covered within the current expedited review framework.

There have been a number of new additions to the GLAM Committee U.S. membership during the reporting period. Dr. Scudder Mackey of the Ohio Department of Natural Resources (Office of Coastal Management), Dr. Lauren Fry from the National Oceanic and Atmospheric Administration’s Great Lakes Environmental Research Laboratory, Ms. Mary Austerman of the New York Sea Grant, and Dena About-El-Seoud from the U.S. Army Corps of Engineers Chicago District have all been appointed as U.S. members of the GLAM Committee to fill vacancies left by the departures. The committee would like to thank Dr. Deborah Lee and Dr. Kevin O’Donnell for their recent support to the GLAM Committee and wish them the best going forward. There remains one vacant U.S. position and the GLAM Committee and U.S. section of the IJC are working to fill this position.

With the ongoing high water conditions throughout the Great Lakes, many GLAM Committee members are very busy providing operational support to the Great Lakes Boards. The GLAM Committee continues to adjust priorities and responsibilities to ensure the limited available resources are applied to the most critical tasks. Ensuring critical expedited review tasks are initiated and delivered in a timely manner is of the highest priority to the committee.

Respectfully Submitted,

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Mr. John Allis  
GLAM Committee U.S. co-chair

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Ms. Wendy Leger  
GLAM Committee Canadian co-chair

**Appendix A: Summary of FY20 Work Plan Progress (as of August 31, 2020)**

**\*Tasks noted as (Phase 1) are associated with the Expedited Review of Plan 2014**

<b>SECTION A: Plan Review and Evaluation</b>			
<b>Tier 1: Foundational Analyses (Annual review of conditions)</b>			
<b>Task</b>	<b>Task Title</b>	<b>Status</b>	<b>IWI</b>
Hydroclimate Working Group			
FY20-1.1	Prepare routine report material required for hydroclimate assessments	Following the completion of the 2017 summary in the previous reporting period, the Hydroclimate Working Group has initiated the development of the 2018 summary. However, progress was slowed as resources were redirected in response to record high water levels observed throughout the Great Lakes basin in the summer of 2019. Further updates for 2018 are expected as part of future GLAM Committee reporting.	No
Impact Assessment Working Group			
FY20-1.2	Prepare routine report material required for understanding baseline conditions and benefits of observed water levels and flows	Following the completion of the 2017 summary in the previous reporting period, the Impact Assessment Working Group initiated a brief summary of 2018 impacts, primarily related to Coastal Property Owners, but with some consideration of impacts to other interests. However, progress was slowed as resources were redirected in response to record high water levels observed throughout the Great Lakes basin in the summer of 2019. Further updates for 2018 are expected as part of future GLAM Committee reporting.	No
Plan Review and Evaluation Working Group			
FY20-1.3	Prepare routine report material required for ongoing evaluations of existing regulation plan performance	Following the completion of the 2017 summary in the previous reporting period, the Plan Review Working Group initiated a review of 2018 regulation plan operations for both Lake Superior and Lake Ontario outflows. However, progress was slowed as resources were redirected in response to record high water levels observed throughout the Great Lakes basin in the summer of 2019. Further updates for 2018 are expected as part of future GLAM Committee reporting.	No

<b>SECTION A: Plan Review and Evaluation</b>			
<b>Tier 2: Exploratory Investigations (Priority Projects)</b>			
<b>Task</b>	<b>Task Title</b>	<b>Status</b>	<b>IWI</b>
Hydroclimate Working Group			
FY20-2.1	Completion of NWS Multi-Precipitation Estimates (MPE)/CaPA merged baseline climatology development	This task was completed during the reporting period and the information is provided as “departures” on the binational precipitation website ( <a href="https://mrcc.illinois.edu/gismaps/naprecip.htm">https://mrcc.illinois.edu/gismaps/naprecip.htm</a> )	Yes
FY20-2.2	Application of Machine Learning (ML) and Artificial Intelligence (AI) to Lake Ontario Regulation Decisions	Work was initiated during the reporting period, with committee members providing ongoing project input along the way. Past model results and datasets from the LOSLRS were provided to support the effort. Much of the work is expected to be completed in the next reporting period.	No
FY20-2.3	Identification of research priorities linking hydroclimate and plan review requirements	The hydroclimate group has initiated the identification of key research priorities. However, the list is expected to be further refined in the fall of 2020 based on progress in identifying extreme scenarios for the expedited review and further assessment of critical priorities identified by the Plan Review group.	No
FY20-2.4	<i>Updating Future Lake Level Projections</i>	<i>Progress has been made developing climate change water level projections for the upper Great Lakes through Lake Ontario using similar methods from work undertaken during the IJC’s International Upper Great Lakes Study a few years ago but with updated CMIP5 scenarios. The results continue to be refined and a technical report has been prepared and is being reviewed.</i>	No
Impact Assessment Working Group – Basin-wide			
FY20-2.5	Performance Indicator review and prioritization assessment	This is a broad task and there has been some progress. For individual Lake Ontario performance indicators, considerable work has been initiated through the expedited review, particularly related to the coastal indicators and the recreational boating and tourism indicators. The efforts are in their early stages. In addition, the final IWI agreement has been put in place for a broader review of ecosystem indicators for the Lake Ontario and upper St. Lawrence River.	Yes (part)
Impact Assessment Working Group – Lake Ontario and St. Lawrence River (ecosystem)			
FY20-2.6	Continued Evaluation of Meadow Marsh Algorithm	This effort has been delayed due to the priorities associated with the expedited review. It will be carried over to the FY21 GLAM Committee work plan.	No
FY20-2.7	Monitoring of Lake Ontario Coastal Wetlands on the Canadian Shoreline	The final 2019 monitoring data was provided by the Canadian Wildlife Service in March 2020. In addition, the IWI agreement for 2020 monitoring of 16 wetland sites was finalized with field work scheduled for September 2020, pending COVID-19 restrictions.	Yes

<b>Task</b>	<b>Task Title</b>	<b>Status</b>	<b>IWI</b>
FY20-2.8	Wetland monitoring and ecosystem indicator development (muskrat and Northern Pike)	<i>** this project is being undertaken through partner agencies but directly contributes to long-term GLAM Committee objectives. This is a NYDEC project that also contributes to GLAM priorities. The muskrat and Northern Pike monitoring and data processing for this multi-year project continue with final reporting not expected until the end of the project.</i>	No
FY20-2.9	Wetland imagery interpretation	<i>** this project is being undertaken through partner agencies but directly contributes to long-term GLAM Committee objectives. This is an OMNRF project that also contributes to GLAM priorities. High resolution air photos are being used to delineate wetland vegetation areas.</i>	No
FY20-2.10	Wetlands modelling to assess wetlands vulnerability to climate change	<i>ECCC staff are involved with a departmental project to assess wetland vulnerability to climate change. This includes the development of ecohydraulic models at 25 wetland sites across the Great Lakes, including 5 sites on the Canadian shore of Lake Ontario. Model development and refinement has been ongoing throughout the reporting period with model testing being initiated.</i>	No
<b>Impact Assessment Working Group – Lake Ontario and St. Lawrence River (socio-economic)</b>			
FY20-2.11	Revisit shore protection that was surveyed by either NYDEC (2011) or USACE (2015) to assess response to high water conditions	The IWI project was conditionally approved as of January 11 <sup>th</sup> , 2018 and funding arrangements were made through the IJC Section of the IJC in September 2018 with the U.S. Army Corps of Engineers in Buffalo. Staff from the Buffalo district are no longer able to completed this task and the GLAM Committee is looking at moving this forward in a different way through the expedited review process.	No
FY20-2.12 <b>(Phase 1)</b>	Implementation of self-reporting damage questionnaire for Great Lakes-St. Lawrence River shoreline (2019)	The GLAM Committee has posted a 2020 version of the questionnaire (similar to 2017 and 2019 version) that allows responses from all the Great Lakes. The questionnaire was made available during the reporting period and the GLAM Committee has worked with IJC staff and partners for some initial promotion. Most responses are expected for the upper Great Lakes in 2020, given the record or near-record high water levels. The GLAM Committee also developed a fact sheet for the 2019 results from Lake Ontario and the St. Lawrence River. The document has been reviewed by the GLAM and ILOSLRB and is just awaiting translation.	No
FY20-2.13 <b>(Phase 1)</b>	Seaway Navigation Economic Analysis	The U.S. Army Corps of Engineers is leading this task, through the Institute for Water Resources (IWR). The report was finalized during the reporting period, and results shared with the ILOSLRB. The research team is awaiting peer review of the document before posting the final version.	Yes
FY20-2.14 <b>(Phase 1)</b>	Municipal meetings within NY State, Ontario, and Quebec	The U.S. meetings are being organized by staff at the U.S. Army Corps of Engineers – Buffalo. The project planning was initiated during the reporting period and the first meeting was held in Monroe County on February 11, 2020. Additional in-person meetings were held March 9 <sup>th</sup> for Orleans and Niagara counties. With COVID-19, the meetings were put on hold for a few months and restarted in a virtual format in August. Meetings have been held with all counties except Jefferson, and that one is expected to occur in September. On the Canadian side, the GLAM Committee worked with staff from the IJC Canadian Section to issue RFPs to complete a similar effort in Ontario and Quebec. The contractors were selected and work will begin in September 2020.	Yes

Task	Task Title	Status	IWI
FY20-2.15 (Phase 1)	Review of Lake St. Lawrence I Limit	The Canadian Section of the IJC has contracted this work. The contractor report was provided to the GLAM Committee at the end of March 2020.	Yes
FY20-2.16 (Phase 1)	Review of Lake St. Lawrence Ice Integrity	The U.S. Army Corps of Engineers is leading this task, through the Institute for Water Resources (IWR). They are working with an ice expert from Clarkson University on the technical analysis. Due to COVID-19, the draft report was delayed from the original March timeline. The report was reviewed by the GLAM Committee over the summer and the researchers are now making modifications with an updated final report expected in October 2020.	Yes
**FY20-2.17 <sup>1</sup>	<i>Erosion and inundation vulnerability assessment along the lower St. Lawrence River</i>	<i>** this project is being undertaken through partner agencies but directly contributes to long-term GLAM Committee objectives</i>  <i>This is a multi-year, Province of Quebec project that also contributes to GLAM priorities. When completed, the information from the project will be of benefit to the GLAM Committee in terms of improving understanding of vulnerabilities associated with river flooding and high water.</i>	No
Impact Assessment Working Group – Upper Great Lakes			
FY20-2.18	St. Mary's River IERM Rapids Data	Some of the data collection from spring 2020 could not be completed and was deferred to September 2020. The final project report is expected in the fall of 2020.	Yes
FY20-2.19	Development of initial flooding performance indicator for the St. Mary's River	Due to extreme high water conditions on the upper Great Lakes, this task was put off until the FY21 work plan so staff originally identified for this task could concentrate of supporting high water response efforts. Progress is expected within the FY21 work plan.	No
FY20-2.20	Development of flow change smoothness performance indicator for St. Marys Rapids	Due to extreme high water conditions on the upper Great Lakes, this task was put off until the FY21 work plan so staff originally identified for this task could concentrate of supporting high water response efforts. Progress is expected within the FY21 work plan.	No
Plan Review Working Group			
FY20-2.21 (Phase 1)	Review and documentation of Lake Ontario and Lake Superior outflow operations in 2018 and 2019	Efforts continued to document International Lake Ontario – St. Lawrence River Board and the International Lake Superior Board of Control outflow activities and deviations during the reporting period.	No
FY20-2.22 (Phase 1)	Development of regulation plan simulations into new regulation and routing model	This work is now being led by the Coordinating Committee of Great Lakes Hydraulic and Hydrologic Data, with close collaboration with a number of GLAM Committee members. Progress continues to be made on both the upper Great Lakes and Lake Ontario-St. Lawrence River components of the model. A beta version has been developed and will be further refined in the fall of 2020. <i>Note that a portion this effort was initially supported by IWI funding. That funding support is complete and work is now being led by the Coordinating Committee.</i>	No

<sup>1</sup> The project is being undertaken and directed through partner agencies but outcomes will contribute to long-term GLAM Committee objectives

<b>Task</b>	<b>Task Title</b>	<b>Status</b>	<b>IWI</b>
FY20-2.23 <b>(Phase 1)</b>	Maintenance and application of existing water level and flow quarter-monthly simulation tools	These activities continue in support of operational requirements of the ILOSLRB and the ILSBC by the regulation representative offices.	No
FY20-2.24 <b>(Phase 1)</b>	Updated input datasets for simulation models	The regulation representative offices have generated the necessary datasets to simulate water supplies up to the end of 2019.	No
FY20-2.25 <b>(Phase 1)</b>	Plan Review gap analysis	The regulation representatives have been working to document regulation plan performance for both the ILOSLRB and the ILSBC over the past year. For the ILOSLRB particularly, it is important to track the plan operation and critical issues with regards to performance to identify areas for improvement and refinement going forward. For the ILSBC, documenting plan performance is important to assess the winter deviation strategies that have been employed recently to see whether and how they could be integrated into the existing regulation plan.	No

<b>SECTION B: GLAM Oversight and Administration</b>			
<b>Task</b>	<b>Task Title</b>	<b>Status</b>	<b>IWI</b>
FY20-3.1	GLAM Committee Coordination, Management, and Reporting	The spring 2020 semi-annual update was provided to the IJC, though the in-person appearances were cancelled due to COVID-19	No
FY20-3.2	Monitoring of Work Plan Delivery	Monitoring of work plan delivery was undertaken to support project planning and semi-annual reporting.	No
FY20-3.3	GLAM Information Management Needs including file sharing and data/model management strategies.	The GLAM Committee has worked with IT staff from the IJC to initiate the implementation of an updated SharePoint of Office 365 environment to support the work of the GLAM Committee and the expedited review. That work will continue in the fall of 2020.	No
FY20-3.4	Maintain engagement with GLWQA activities	Through the IJC advisors, the GLAM Committee co-chairs continue to be connected to work of the IJC's GLWQA boards.	No
FY20-3.5 <b>(Phase 1)</b>	Develop and initiate an engagement plan for advisory networks	The GLAM Committee focused on the initiation of the Public Advisory Group for the expedited review. Considerable work has been undertaken with the PAG, the IJC contractor supporting the PAG, and the GLAM Committee to initiate this effort including a number of introductory presentations. All the meetings and workshops are virtual given the COVID-19 situation.	No
FY20-3.6	Update GLAM communications/engagement strategy	The GLAM Committee will look to update the strategy in FY21 with input from the PAG.	No

<b>Task</b>	<b>Task Title</b>	<b>Status</b>	<b>IWI</b>
FY20-3.7	Finalize 12-year strategy	The strategy was finalized and initially approved by the Commission in March 2020. It is being translated and will be posted in the fall of 2020.	No
FY20-3.8	Triennial report	No progress was made on this item. Given the expedited review priority for the committee, the IJC agreed to defer the 2020 triennial report.	No