



**Great Lakes and Mississippi River Interbasin Study Report  
Moving Ahead for Progress in the 21<sup>st</sup> Century Act  
Section 1538(b)(5) of Public Law 112-141**

**Interim Report to Congress**

**October 3, 2012**

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## EXECUTIVE SUMMARY

The U.S. Army Corps of Engineers (Corps) is conducting the Great Lakes and Mississippi River Interbasin Study (GLMRIS), a study of options and technologies available to prevent the spread of aquatic nuisance species (ANS) between the Great Lakes and Mississippi River basins via aquatic connections. The Corps initiated the study in 2009. The Corps commenced scoping activities in accordance with the National Environmental Policy Act (NEPA), and has released ten (10) interim products to date as part of GLMRIS. The purpose of this report is to comply with the most recent study authority which directed the Secretary of the Army (Secretary) to provide specific information related to the expedited completion of GLMRIS. As required by Section 1538(b)(5) of Public Law 112-141, the Moving Ahead for Progress in the 21st Century Act, (MAP-21), this report sets forth study milestones and associated study costs.

Section 1538 of the MAP-21 directs the Secretary to expedite the completion of the report for the study authorized by Section 3061(d) of Water Resources Development Act (WRDA) 2007 and, if the Secretary determines a project is justified in the completed report, to proceed directly to project preconstruction engineering and design (PED). Further, Section 1538 directs the Secretary to complete the report no later than 18 months after the date of enactment of MAP-21 and to submit an interim report to the Committee on Appropriations of the House of Representatives and Senate, the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives no later than 90 days after the date of enactment. In completing this report, the Secretary focused on methods to prevent the spread of aquatic nuisance species between the Great Lakes and Mississippi River basins, such as through hydrological separation, while focusing that analysis on specifically named watersheds associated with the Chicago Area Waterway System (CAWS). In addition, Section 1538 directs the efficient use of funds to complete the study.

As noted, the legislation directs the Secretary to provide an interim report to Congress, within required resources and anticipated milestones. This report will identify milestones that will be met prior to the completion of the GLMRIS Report and the funding necessary to complete them.

On May 8, 2012, the Secretary committed to Congress to release an Array of Alternatives Plans Report in late 2013. In accordance with MAP-21, such report is now and will be referred to as the GLMRIS Report. The GLMRIS Report will provide Congress and other stakeholders with an analysis of potential alternatives, as well as additional pertinent information for decision makers. The Corps anticipates that the GLMRIS Report will identify additional requirements that must be completed after January 2014, but prior to initiating PED, including detailed design analyses, completion of the environmental compliance analysis, required internal reviews, and public and state/agency reviews. If the Secretary determines that a project is justified pursuant to Section 1538, this work will be completed as part of the effort leading into PED as contemplated by the authority. Project alternatives that do not fall within Corps mission areas will be referred to other entities for their consideration.

# CHAPTER 1 – INTRODUCTION

## 1.1 – Study Purpose and Background

The Corps is conducting the Great Lakes and Mississippi River Interbasin Study (GLMRIS), a study of options and technologies available to prevent the spread of ANS between the Great Lakes (GL) and Mississippi River (MR) basins via aquatic connections. The Corps initiated the study in 2009. The Corps commenced scoping activities in accordance with the NEPA for the study in 2010, and has released ten (10) interim products to date as part of GLMRIS. The purpose of this report is to comply with the most recent study authority which directed the Secretary to provide specific information related to the expedited completion of the GLMRIS Report. As required by Section 1538(b)(5) of Public Law 112-141, Moving Ahead for Progress in the 21st Century Act, this report sets forth study milestones for the GLMRIS Report and associated study costs to complete the report in December 2013.

## 1.2 – Study Authority

Section 3061(d) of the Water Resources Development Act (WRDA) of 2007, Public Law 110-114 authorized the GLMRIS.

*“(d) FEASIBILITY STUDY.—The Secretary, in consultation with appropriate Federal, State, local, and nongovernmental entities, shall conduct, at Federal expense, a feasibility study of the range of options and technologies available to prevent the spread of aquatic nuisance species between the Great Lakes and Mississippi River Basins through the Chicago Sanitary and Ship Canal and other aquatic pathways.”*

Congress provided additional study authorization in Section 1538.

### ***“SEC. 1538. ASIAN CARP.***

*(a) DEFINITIONS.—In this section:*

*(1) HYDROLOGICAL SEPARATION.—The term “hydrological separation” means a physical separation on the Chicago Area Waterway System that—*

*(A) would disconnect the Mississippi River watershed from the Lake Michigan watershed; and*

*(B) shall be designed to be adequate in scope to prevent the transfer of all aquatic species between each of those bodies of water.*

*(2) SECRETARY.—The term “Secretary” means the Secretary of the Army, acting through the Chief of Engineers.*

*(b) EXPEDITED STUDY AND REPORT.—*

*(1) IN GENERAL.—The Secretary shall—*

*(A) expedite completion of the report for the study authorized by section 3061(d) of the Water Resources Development Act of 2007 (Public Law 110–114; 121 Stat. 1121); and*

*(B) if the Secretary determines a project is justified in the completed report, proceed directly to project preconstruction engineering and design.*

*(2) FOCUS.—In expediting the completion of the study and report under paragraph (1), the Secretary shall focus on—*

*(A) the prevention of the spread of aquatic nuisance species between the Great Lakes and Mississippi River Basins, such as through the permanent*

*hydrological separation of the Great Lakes and Mississippi River Basins;  
and  
(B) the watersheds of the following rivers and tributaries associated with  
the Chicago Area Waterway System:  
(i) The Illinois River, at and in the vicinity of Chicago, Illinois.  
(ii) The Chicago River, Calumet River, North Shore Channel, Chicago  
Sanitary and Ship Canal, and Cal-Sag Channel in the State of Illinois.  
(iii) The Grand Calumet River and Little Calumet River in the States of  
Illinois and Indiana.*

*(3) EFFICIENT USE OF FUNDS.—The Secretary shall ensure the efficient use  
of funds to maximize the timely completion of the study and report under  
paragraph (1).*

*(4) DEADLINE.—The Secretary shall complete the report under paragraph (1)  
by not later than 18 months after the date of enactment of this Act.*

*(5) INTERIM REPORT.—Not later than 90 days after the date of enactment of  
this Act, the Secretary shall submit to the Committees on Appropriations of  
the House of representatives and Senate, the Committee on Environment and  
Public Works of the Senate, and the Committee on Transportation and  
Infrastructure of the House of Representatives a report describing—  
(A) interim milestones that will be met prior to final completion of the  
study and report under paragraph (1); and  
(B) funding necessary for completion of the study and report under  
paragraph (1), including funding necessary for completion of each interim  
milestone identified under subparagraph (A).”*

### **1.3 – Study Implementation Guidance**

The Corps developed, and the Assistant Secretary of the Army (Civil Works) approved, Implementation Guidance for the GLMRIS for both study authorities. Implementation Guidance for Section 3061 of WRDA 2007 was issued by the Corps’ Headquarters in March 2009. Implementation Guidance for Section 1538 was issued in August 2012. The MAP-21 and WRDA 2007 Implementation Guidance are posted on the project website located at <http://www.glmris.anl.gov>.

Based on the Implementation Guidance issued for Section 1538, the GLMRIS Project Development Team (PDT) has developed a study plan for the report required by Section 1538. This report documents the contents of the GLMRIS Report that will be completed in December 2013.

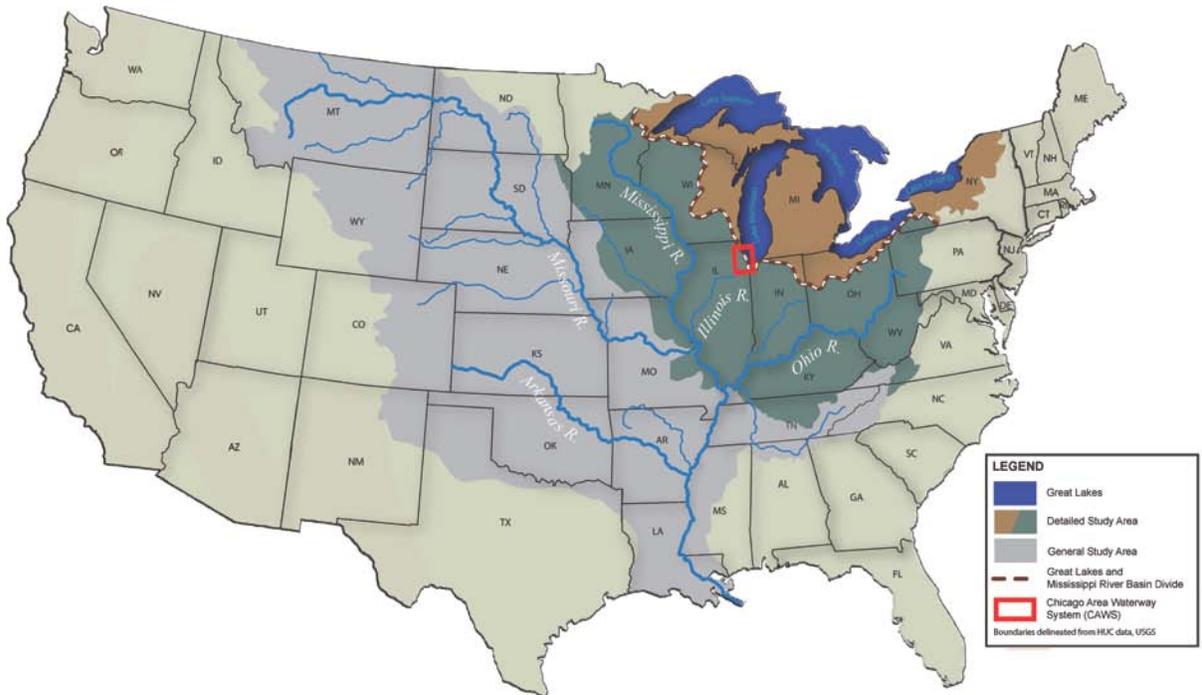
### **1.4 – Study Area**

The GLMRIS study area includes portions of the Great Lakes and Mississippi River basins that fall within the United States (Figure 1). Potential aquatic pathways between the basins exist along the shared boundary, which extends from northern Minnesota through the Great Lakes states to western New York. Indicated by the dotted line in Figure 1, this nearly 1500-mile long boundary serves as the focal point of the detailed study area.

The Corps is conducting GLMRIS along two concurrent tracks: Focus Area I, the Chicago Area Waterway System (CAWS) Study, and Focus Area II, the Other Aquatic Pathways Study, and

has staffed both tracks with dedicated project teams. Focus Area I encompasses the CAWS, which includes the Chicago Sanitary and Ship Canal (CSSC), and includes five (5) continuous aquatic pathways between the GL and MR basins. These connected waterways pose the greatest threat of potential ANS transfer between the basins (Figure 2).

Focus Area II covers the remaining portion of the study area along the basin divide between the GL and MR basins, within the United States. The GLMRIS Other Aquatic Pathways Team (Focus Area II Team) has identified potential aquatic pathways along this watershed boundary and is conducting a detailed characterization of these potential pathways.



**Figure 1: GLMRIS Study Area**



**Figure 2:** Focus Area I – CAWS and Select Tributaries

## 1.5 – GLMRIS, Corps Invasive Species Policy and Chief’s Environmental Operating Principles

The Chicago Area Waterways, situated at the doorway between the Great Lakes and the Mississippi River Basins, represents a key portion of the Illinois Waterway (IWW) Navigation Project. The Corps operates, manages and maintains the IWW for the benefit of the nation’s economy and consistent with environmental laws and policies. The Great Lakes and Mississippi Rivers represent significant aquatic ecosystems including the world’s largest inland fresh water lakes, as well as miles of shoreline and interconnected tributaries that affect a large portion of the nation’s midsection. For GLMRIS, the Corps will develop screening criteria and formulate alternatives with careful consideration of identified Problems, Opportunities, Goals and Objectives for GLMRIS, as well as Agency Goals and Objectives identified in the National Invasive Species Management Plan.

### 1.5.1 Corps Invasive Species Policy

In particular the following National Goals and Objectives from the Corps Invasive Species Policy will be integral to the GLMRIS Report:

*Leadership and Coordination Goal Objectives:* Partner with local, State and Federal agencies and NGOs to manage invasive species at the project, regional and national levels; examples

include the Cooperative Weed Management Areas; Aquatic Nuisance Species Task Force; Federal Interagency Committee on the Management of Noxious and Exotic Weeds; the Asian Carp Regional Coordinating Committee and the 100th Meridian Initiative.

*Prevention Goal Objectives:* Identify pathways by which invasive species could potentially invade Corps managed projects; take steps to interdict pathways that are recognized as significant sources for the unintentional introduction of invasive species; implement a process for identifying high priority invasive species that are likely to be introduced unintentionally; and develop a communication plan to share information about invasive species infestations on Corps projects.

*Control and Management Goal Objectives:* Develop and implement control measures for invasive species in accordance with budget appropriations; and, develop partnerships to leverage funding.

*Restoration Goal Objectives:* Pursue Continuing Authorities Program restoration projects to control invasive species.

The integration of these Invasive Species Management Goals and Objectives into the GLMRIS Report is consistent with other Corps projects to address, prevent and control aquatic invasive species. Regional invasive species management activities include: the electric fish barrier project located on the CAWS, sea lamprey barriers and traps in the Great Lakes Basin, ecosystem restoration projects, and participation in control efforts through the interagency Monitoring and Rapid Response Working Group.

### **1.5.2 Environmental Operating Procedures**

As part of the continued development of the GLMRIS Report, the PDT will continue to integrate the Chief of Engineers Environmental Operating Principles into the study process and content. The following Environmental Operating Principles are specifically integral to the study process and content:

*Proactively consider environmental consequences of all Corps activities and act accordingly:* During the development of baseline and future conditions for the GLMRIS, the PDT has proactively considered the impacts of potential solutions to interbasin transfer in order to identify analyses needed to assess potential project impacts to the environment as well as human and social resources.

*Create mutually supporting economic and environmentally sustainable solutions:* During the initial scoping of the study and the development of the Project Management Plan (PMP), the structure of the PDT was specifically established to ensure that consideration was given to address concerns that economically supportable and environmentally sustainable solutions would be considered and evaluated as part of the study process.

*Continue to meet our corporate responsibility and accountability under the law for activities undertaken by the Corps, which may impact human and natural environments:* The actions of the GLMRIS PDT are consistent with Section 3061(d) of the Water Resources Development Act of 2007, Executive Order 13112 - Invasive species, the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 as amended, and the National Invasive Species Act of 1996.

*Consider the environment in employing a risk management approach and systems approach throughout life cycles of projects and programs:* The GLMRIS PDT has pursued a risk management approach consistent with Corps practices, as well as, methods employed by the Aquatic Nuisance Species Task Force, specifically in regards to Aquatic Invasive Species.

*Leverage scientific, economic and social knowledge to understand the environmental context and effects of Corps actions in a collaborative manner:* Throughout the study, the GLMRIS team has utilized the expertise of other agencies and interested stakeholders in the collection and analysis of data, evaluation and review of interim technical products, evaluation of regulatory requirements as well as the identification of additional areas of evaluation. The use of outside agency expertise will enable the GLMRIS PDT to more fully address relevant issues in the study, as well as fully integrating regional environmental, social, and economic issues into the final detailed analysis.

*Employ an open and transparent process that respects views of individuals and groups interested in Corps activities:* As discussed in Section 1.6.2 on Public Engagement, the GLMRIS PDT has prioritized engagement of stakeholders and the public in the study process. The PDT has established and maintains an extensive outreach program including interfaces on internet and social media, as well as more traditional means including newsletters and press releases. The studied, intentional development and release of interim products during data gathering and analyses phase was another approach taken by the PDT to maintain open and transparent study processes.

## **1.6 – Relevant Studies, Stakeholder Engagement, and GLMRIS Interim Products**

### **1.6.1 Relevant Studies**

It is important to differentiate between the scope and objectives of GLMRIS in comparison to other concurrent studies relating specifically to Asian carp and the CAWS. These other studies can be broadly differentiated into two categories: *Efficacy Study* and *Studies by Other Organizations*. In addition, the GLMRIS PDT has developed and released a number of interim products that document data developed as part of the study process. These studies are being used to inform technical analyses being conducted for GLMRIS.

#### Efficacy Study

In addition to GLMRIS, section 3061(b)(1)(D) of WRDA 2007 directs the Secretary to conduct a study of a range of options or technologies to address the hazards that may reduce the efficacy of the Electrical Dispersal Barrier System located on the CSSC. The Corps has specifically focused the efficacy studies on efforts that could reduce the potential for Asian carps to enter Lake Michigan. The series of reports generated by this study are referred to collectively as the

Efficacy Study. The Efficacy Study has been developed as a series of interim reports. Completed reports include: *Interim I, Dispersal Barrier Bypass Risk Reduction Study and Integrated Environmental Assessment*; *Interim II, Electrical Barrier Optimum Operating Parameters*; *Interim III, Modified Structures and Operations, Chicago Area Waterways and Integrated Environmental Assessment*; and, *Interim IIIA, Fish Deterrent Dispersal Deterrents/Barriers, Illinois and Chicago Area Waterways and Environmental Assessment*. The completed and approved studies are posted on the Chicago District website at: <http://www.lrc.usace.army.mil/Missions/CivilWorksProjects/ANSPortal/Efficacy.aspx>

An additional Efficacy Study, the *Comprehensive Efficacy Study*, is expected to be released in early 2013. The report will document the improvements that have been made to increase the efficacy of the Electric Barriers Project. Further, the report will include a risk analysis of potential failure modes associated with the Barriers Project which will inform future improvements to the project. The report will also contain evaluations of several direct pathways to Lake Michigan. Finally, the report will also document efforts by agency members of the Asian Carp Regional Coordination Committee (ACRCC) including monitoring, telemetry, controls and population reduction. The Corps may complete additional Efficacy Studies in the future to document modifications to the project, or to document additional recommendations consistent with the study authority.

#### Studies by Other Organizations

In November 2008, the Great Lakes Fishery Commission (GLFC) released a preliminary report documenting conditions of the CAWS, including history, uses, habitat, hydrology, and water quality. The GLFC report also documented potential separation technologies and scenarios, toward the elimination of ANS transfer into the Great Lakes through the CAWS. The authors of the GLFC report cited “ecological separation” – prohibition of the movement or interbasin transfer of aquatic organisms between the Mississippi and Great Lakes basins via the CAWS – as the long-term approach to achieving protection for the Great Lakes and eliminating the risk of irreversible ecosystem damage. The text of the report can be found online at [www.greatlakes.org/asian/carp](http://www.greatlakes.org/asian/carp).

In January 2012, the Great Lakes Commission (GLC) and Great Lakes and St. Lawrence Cities Initiative (Cities Initiative or CI) released the results of a dedicated, 18-month study that focused on developing and evaluating alternatives to physically separate the Great Lakes and Mississippi River watersheds in the CAWS. Hydrologic separation was identified by the GLC/CI as the most practical method for preventing the movement of aquatic nuisance species between the basins. The technical findings of the GLC/CI study are detailed in a combination of reports and appendices – available online at [www.glc.org](http://www.glc.org) – and are summarized in a report titled *Restoring the Natural Divide – Separating the Great Lakes and the Mississippi River Basins in the Chicago Area Waterway System*.

#### **1.6.2 Stakeholder Engagement in GLMRIS**

The identification and engagement of stakeholders who are interested in GLMRIS is a vital aspect of the study effort. The GLMRIS Executive Steering Committee (ESC) was established to provide consultation on the study and to facilitate coordination among various Federal, state

and local agency interests and activities with respect to GLMRIS. The ESC is comprised of interested Federal, state, and regional governmental authorities, who are also members of the ACRCC. The ESC meetings are held quarterly in conjunction with ACRCC meetings. Additionally, GLMRIS updates are provided at bi-weekly ACRCC meetings to inform and coordinate with other governmental agencies. The formation and function of the ESC is consistent with the GLMRIS study authorization which directed the Secretary to consult with appropriate agencies in the conduct of the study. In addition to the ESC, USACE continues to actively organize and participate in stakeholder meetings in an effort to promote coordination between agency groups, as well as the public, non-governmental organizations (NGOs), and other project stakeholders.

During GLMRIS scoping activities, the PDT sent formal letters to inform Federal agencies of the initiation of the Corps study process and to establish relationships with potential cooperating agencies in compliance with NEPA. Formal cooperating agency agreements have been executed with the U.S. Environmental Protection Agency, the U.S. Coast Guard, and the U.S. Fish and Wildlife Service. In addition, public scoping meetings were held to gain broad-based community input to GLMRIS. These meetings occurred between December 2010 and March 2011, taking place in twelve (12) different cities in both the Great Lakes and Mississippi River basins. The Corps will continue to participate in regional agency and stakeholder coordination on significant ANS issues.

The GLMRIS Team will strive to continue stakeholder engagement through dissemination of information on the GLMRIS website (<http://glmr.is.anl.gov>), via social media including Facebook and Twitter, by publishing a quarterly newsletter, and participating in variety of publicly-available meetings, conferences, and stakeholder engagement forums.

### **1.6.3 GLMRIS Interim Products – Focus Area I**

Recognizing the significant stakeholder and public interest that GLMRIS has generated, the study team has produced Interim Products that document completed portions of the baseline conditions analysis and could be released to the public. Many of these reports have been generated from the information obtained during the data-gathering phase of the planning process, and have been subject to technical review prior to release. The interim products completed for GLMRIS, as well as actual or planned release dates, are contained in Table 1. To date, the Focus Area I Team has released eight (8) interim products covering a range of baseline environmental, economic, and social/cultural data, as well as the identification of ANS of Concern for the CAWS study area, and an inventory of ANS Controls that may be applicable to one or more of the 'ANS of Concern' identified for the CAWS.

### **1.6.4 GLMRIS Interim Products – Focus Area II**

As part of GLMRIS and in collaboration with local, Federal and state resource agencies, the GLMRIS Focus Area II PDT evaluated all the potential aquatic pathways that exist or are likely to form across the nearly 1,500 mile (2,414 kilometer) basin divide separating runoff that flows into the Mississippi River Basin from runoff that flows into the Great Lakes Basin. Where an aquatic pathway was found to exist an evaluation was conducted. The evaluation included a qualitative assessment of the probability that aquatic nuisance species (ANS) could reach the pathway on their own through the connecting waterways, and then use the pathway to spread

into an adjacent basin. The PDT identified a total of 36 potential aquatic pathways in 2010. Based on review of available resource information and some site specific investigations, the PDT reduced the number of potential aquatic pathways to 18 locations. The PDT completed additional analysis on the 18 remaining pathways in 2011-2012. The PDT prepared a detailed report for each of the 18 locations. These reports are currently undergoing public review. These reports, or pathway assessments, are the next step in a tiered approach to assess the risk associated with the spread of ANS between the Great Lakes and Mississippi River Basins outside of the Chicago Area Waterway System.

Of the 18 aquatic pathways evaluated in 2011-2012, seven (7) were determined to have a medium probability of serving as viable aquatic pathways for the movement one or more ANS into the adjacent basin. Eagle Marsh in Indiana was the only location rated as having a high probability. Of the eight (8) locations rated higher than low, Asian carp were only found to be a potential threat at three sites (Eagle Marsh, Ohio-Erie Canal at Long Lake, and Little Killbuck Creek).

Based on the anticipated high rating for Eagle Marsh during the 2010 Preliminary Risk Characterization Study, Indiana DNR took measures immediately in 2010 to reduce the potential for adult Asian carp getting into the Great Lakes Basin from the Wabash and Little Rivers by installation of a temporary fence at the pathway. The USACE is nearing completion of a controls report to identify additional permanent measures to prevent ANS transfer between the basins at this location. The Corps will complete the public review of each of the 18 pathway assessments and the Eagle Marsh Controls report with currently available Great Lakes Restoration Initiative (GLRI) funding. The Corps will advance the Eagle Marsh ANS Controls Report by continuing efforts to secure a non-Federal sponsor if additional GLRI funds are available. If a Non-Federal sponsor is identified, efforts would entail completion of an integrated decision document (inclusive of NEPA documentation) with a recommended alternative for Federal implementation. If the PDT cannot identify a non-Federal sponsor, the Corps will provide guidance on future study tasks.

The team will focus on those aquatic pathways identified in Focus Area II, outside of the CAWS that warrant further investigation. These pathways include Eagle Marsh, Ohio-Erie Canal at Long Lake, and Little Killbuck Creek, as well as the other medium-probability pathways. Coordination is currently on-going with states regarding the Focus Area II pathway assessments and additional pathways may be added to the priority list. In some locations, state agencies may assume responsibility for further study efforts on other pathways, reducing the need for future Corps work in those areas.

**Table 1 GLMRIS Interim Products**

<b>Product</b>	<b>Release Date</b>
<i><b>Focus Area I</b></i>	
ANS White Paper	Jul – 2011
NEPA Scoping Report	Sep – 2011
Commercial Non-Cargo Navigation Baseline	Sep – 2011
Commercial Cargo Navigation Baseline	Dec – 2011
ANS Control Technology Report	Apr – 2012
Commercial Fisheries Baseline	May – 2012
Subsistence Fishing Review	Jul – 2012
Pro-Tournament Fishing Review	Jul – 2012
Recreational Angling Baseline	Dec – 2012**
Charter Fisheries Baseline	Feb – 2013**
Baseline Risk Assessment & Screened ANS Controls	Apr – 2013**
<i><b>Focus Area II</b></i>	
Preliminary Pathway Characterization Report	Nov – 2010
Summary Report	Sep – 2012
Eagle Marsh ANS Controls Report/Eagle Marsh Detailed Report	Oct – 2012*
Detailed Pathway Reports, Minnesota (2)	Sep – 2012
Detailed Pathway Reports, Indiana (3)	Oct 2012*
Detailed Pathway Reports, Wisconsin (8)	Oct 2012*
Detailed Pathway Reports, Ohio (4)	Nov 2012*
Detailed Pathway Reports, New York/Pennsylvania (2)	Dec 2012*

\* Anticipated release dates, as of September 2012

\*\* These previously identified interim products will be incorporated into the GLMRIS Report

## **CHAPTER 2 – INTERIM REPORT TO CONGRESS**

### **2.1 - Evaluation of Congressional Requirements**

Section 1538 directs the Secretary to expedite the completion of the report for the study authorized by Section 3061(d) of Water Resources Development Act (WRDA) 2007 and, if the Secretary determines a project is justified in the completed report, to proceed directly to project preconstruction engineering and design (PED). Further, Section 1538 directs the Secretary to complete the report no later than 18 months after the date of enactment of MAP-21 (January 6, 2014) and to submit an interim report to the Committee on Appropriations of the House of Representatives and Senate, the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives no later than 90 days after the date of enactment. In completing this report, the Secretary is focused on methods to prevent the spread of aquatic nuisance species between the Great Lakes and Mississippi River basins, such as through hydrological separation, while focusing that analysis on specifically named watersheds associated with the CAWS. In addition, Section 1538 directs the efficient use of funds to complete the study.

### **2.2 – Plan of Study for the GLMRIS Report**

The Plan of Study for the GLMRIS Report was developed in accordance with the Implementation Guidance for Section 1538. On May 8, 2012, the Secretary committed to Congress to release an Array of Alternatives Plans Report in late 2013. In accordance with MAP-21, that report is now and will be referred to as the GLMRIS Report. The sections below include additional detail regarding the content of the report as well as identifying the interim milestones that will be met prior to the completion of the study and report, and the funding necessary to complete the GLMRIS Report.

The Plan of Study was developed assuming the availability of financial resources identified in the Administration's Budget request of \$3 million for fiscal year 2013, and some additional funds in fiscal year 2014 to complete legal and policy reviews. However, if additional financial resources were available for the GLMRIS Report, the PDT could increase the level of alternative analysis and design. Additional detailed studies for the GLMRIS Report would reduce the uncertainty associated with the design analyses, thereby increasing the confidence in the design and cost estimate, and thus allowing the use of smaller contingencies in the cost estimates. An increased level of detail may be needed in order for the Secretary to be able to determine that a particular course of action is conceptually justified for further consideration.

### **2.3 - Contents of the GLMRIS Report**

The GLMRIS Report will include baseline and future without project conditions assessments for Focus Area I and an update on the status of Focus Area II. The GLMRIS Report will incorporate baseline information developed for interim products (see Table 1), as well as additional baseline analyses previously identified in the Project Management Plan for GLMRIS. The Report will also include a review of the screening process and alternatives consisting of options and

technologies that could be implemented to prevent the spread of aquatic nuisance species between the Mississippi River and Great Lakes basins. These options and technologies were previously published in the interim product: ANS Control Technology Report released in April 2012. The range of alternatives will include a hydrologic separation alternative. The GLMRIS Report will include conceptual design of alternatives and identify mitigation requirements associated with each alternative, if any. Cost estimates will be prepared for each alternative and a Cost-Schedule-Risk Analysis will be developed for each estimate in order to set the level of cost contingency. Regulatory requirements will be identified. The GLMRIS Report will also include an evaluation of each alternative.

The GLMRIS Report will utilize existing and anticipated funding for the GLMRIS Study.

The GLMRIS Report would include the following:

- Summary Information and Background for Study including Scope and Processes<sup>1</sup>;
- Baseline Analysis Detailed Assessment including the results of numerical modeling and technical analyses and other reviews<sup>1</sup>;
- Future without Project (FWOP) Conditions Detailed Assessment<sup>1</sup>;
- Risk Assessment of ANS of Concern to support formulation<sup>1</sup>;
- Screening Criteria and Screened ANS Controls based on ANS of Concern, CAWS;
- Description of Range of Alternatives developed, including the No-Action Alternative;
- General Description of each Alternative including mitigation requirements;
- Location map(s) for each alternative;
- Conceptual Design for each alternative and mitigation requirements with a commensurate cost estimate;
- Cost estimate range for each alternative;
- Cost-Schedule Risks Analyses (CSRA);
- General Regulatory Requirements for Implementation as well as a listing of potential Regulatory Issues;
- Evaluation of alternatives; and
- An Environmental Assessment to help facilitate agency planning and decision-making.

<sup>1</sup> Indicates tasks completed or projected to be completed by 30 November 2012.

The GLMRIS PDT will prepare an Environmental Assessment (EA) pursuant to the NEPA to accompany the GLMRIS Report. An EA may be used to "provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement ..." and/or may be used to "facilitate preparation of [an environmental impact] statement when one is necessary." 40 C.F.R. § 1508.9(a). In addition, "[a]gencies may prepare an environmental assessment on any action at any time in order to assist agency planning and decision-making." 40 C.F.R. § 1501.3(b). In this instance, the EA will play all of these roles given the complexity of the potential alternatives to be considered. However, before an action could be formally recommended to Congress, it is likely that an EIS will need to be completed in order to consider the proposed action and alternatives. Such an EIS could be a multi-agency document depending upon potential involvement of agencies with relevant expertise.

Additional policy and technical analysis and evaluation, NEPA analysis, and more site-specific detailed designs would need to be accomplished prior to implementation, if the Secretary determines that a conceptually justified plan has been identified in the GLMRIS Report. The GLMRIS Report will document remaining requirements that must be addressed, including

completion of environmental compliance analysis and required public and state/agency reviews. The GLMRIS Report will not include the following:

- Site Specific Investigations and Analyses;
- Site Specific Designs;
- Detailed Drawings, Quantities and Cost Estimates;
- Detailed evaluations of impacts and with-project mitigation requirements;
- Optimized designs for controls and any mitigation features;
- A Recommended Plan;
- Independent External Peer Review Report\*;
- Planning Model Certification\*; and
- Completed NEPA compliance documentation

\*Will be completed at a later time as required by regulation.

The GLMRIS Report may determine that an alternative or several alternatives are justified for further study, and include a preliminary list of additional analyses that might be needed to fully support an agency decision to implement. The identification of a plan that could be considered justified by the Secretary could be contingent on a number of factors, including, but not limited to the level of design completed, the robustness of the justification for implementation of the plan, the completion of the necessary NEPA analyses, the identification of an implementable plan within Corps mission areas and the identification of a viable non-Federal Sponsor(s) for project Implementation and Operation and Maintenance, Repair, Replacement and Rehabilitation (OMRR&R). Project alternatives that do not fall within Corps mission areas will be referred to other entities for their consideration.

## **2.4 - Study Process and Schedule**

Modification of the planning process for the GLMRIS Report is consistent with the tenets of Civil Works Transformation and Planning Modernization which are currently being implemented by the Corps. Table 2 identifies resources and interim study milestones using these processes. The GLMRIS PDT has identified critical elements of this expedited study process that are integral to the development of the GLMRIS Report. These key processes are discussed in the following subparagraphs:

### Review Processes

A dedicated Agency Technical Review (ATR) Team will be integrated into the expedited study process. Ongoing integration of the ATR team will be augmented by continued integration of technical experts from stakeholder agencies to provide review services and project specific technical support. Independent External Peer Review (IEPR) and other required technical certifications would be scheduled to occur after January 2014.

### Vertical Team Integration

Proactive integration of the vertical Corps team for the GLMRIS Report will continue. Currently scheduled quarterly In-Progress Reviews will be held with the Corps' Office of Water Project Review (OWPR), Office of Chief Counsel (OC), Major Subordinate Command (MSC) and Regional Integration Team (RIT), as well as quarterly or more frequent reviews with senior agency staff.

### Environmental Compliance

As noted previously, the Corps will prepare an EA to assist in agency planning and decision making. The Corps has notified the public and interested stakeholders of its intent to complete an EIS, and has already completed a Scoping Document. However, the additional analyses and coordination with other agencies needed to complete the EIS will not be achievable within the timeframe for the GLMRIS Report. It is likely that the EA will determine that an EIS is required. A draft EIS will be compiled after January 2014 in order for any alternative to be recommended for implementation.

### Non-Federal Sponsor

Efforts will continue toward the identification and engagement of a non-Federal sponsor(s) for project implementation, operation and maintenance. In the absence of identified and willing non-Federal sponsors, the team will complete the GLMRIS Report, and include in the report a description of the actions completed to secure non-Federal sponsorship.

### Interagency Coordination and Collaboration

The significance of the Great Lakes and Mississippi River are well established based not only on their physical features but on the laws and regulations that have been promulgated to protect these resources. The GLMRIS PDT has been working closely with federal, state and local stakeholders, including resource and regulatory agencies to fully document the requirements that would be associated with alternatives that will impact the uses and users of the CAWS. Significant additional coordination will be needed to ensure that the GLMRIS PDT fully identifies relevant regulatory requirements and their impact upon any associated mitigation measures. Interagency collaboration and the integration of the actions of other agencies into the implementation of a recommended plan will require synchronization of Corps and other agency missions, designs and funding as it is likely that local, state and federal agencies will play a large role in plan implementation.

## **2.5 - Financial Resources for GLMRIS Report**

To date, the success of GLMRIS can be positively correlated to sufficient funding from a combination of funding sources. During early study efforts, substantial funding from the Great Lakes Restoration Initiative (GLRI) allowed the Corps to expedite study efforts, while traditional Corps Energy and Water (E&W) appropriations have supported study efforts in recent years. The sources of appropriations for the GLMRIS Report are assumed to be only baseline E&W funds, as identified in the fiscal year 2013 Budget request of \$3 million.

**Table 2 - Milestones and Estimated Costs for the GLMRIS Report**

<b>Quarter</b>	<b>Milestones</b>	<b>Estimated Cost (\$)</b>
<b>4<sup>th</sup> Q FY12</b> Jul-Sep 2012	<ul style="list-style-type: none"> <li>• Complete Interim Report identifying plan of study, milestones, and additional resources</li> </ul>	<i>50,000</i>
<b>1<sup>st</sup> Q FY13</b> Oct-Dec 2012	<ul style="list-style-type: none"> <li>• Conduct planning charrette to finalize screened ANS controls and identify initial alternatives</li> </ul>	130,000
	<ul style="list-style-type: none"> <li>• Integrate ATR team into study process</li> </ul>	20,000
	<ul style="list-style-type: none"> <li>• Expedite completion of baseline engineering and planning models</li> <li>• Complete baseline and future-without project conditions draft documentation</li> </ul>	210,000 200,000
<b>2<sup>nd</sup> Q FY13</b> Jan-Mar 2013	<ul style="list-style-type: none"> <li>• Conduct ATR of draft documentation with dedicated ATR Team</li> </ul>	40,000 660,000
	<ul style="list-style-type: none"> <li>• Initiate conceptual design and analysis of identified initial alternatives</li> </ul>	
<b>3<sup>rd</sup> Q FY13</b> Apr-Jun 2013	<ul style="list-style-type: none"> <li>• Continue engineering analysis of alternatives</li> </ul>	680,000
<b>4<sup>th</sup> Q FY13</b> Jul-Sep 2013	<ul style="list-style-type: none"> <li>• Complete conceptual design of alternatives, including baseline costs</li> </ul>	425,000
	<ul style="list-style-type: none"> <li>• Conduct charrette to analyze alternatives</li> </ul>	170,000
	<ul style="list-style-type: none"> <li>• Conduct ATR of draft report</li> </ul>	85,000
	<ul style="list-style-type: none"> <li>• Final documentation of conceptual engineering analyses, and costs</li> </ul>	380,000
<b>1<sup>st</sup> Q FY14</b> Oct-Dec 2013	<ul style="list-style-type: none"> <li>• Submit draft-final report for final review and approval</li> </ul>	TBD
<b>Dec 2013</b>	<ul style="list-style-type: none"> <li>• <b>Complete the GLMRIS Report</b></li> </ul>	

## **CHAPTER 3 – CONCLUSION**

Completion of the GLMRIS Report as described in Chapter 2 of this Interim Report, within the expedited 18-month timeframe, will be very challenging. The development of alternatives and evaluation of the effectiveness of the alternatives to stop ANS, in combination with the identification and quantification of impacts of the proposed alternatives to waterway uses and users, will require the use of sophisticated and complex tools, in addition to a dedicated team. The GLMRIS Report will be structured consistent with applicable policy and guidelines, and will include recommendations for further analysis needed for implementation.

The Corps will complete the GLMRIS Report in December 2013. The GLMRIS Report will provide Congress and other stakeholders with an analysis of potential alternatives, as well as additional pertinent information for decision makers. The GLMRIS Report may identify additional studies needed to finalize the analyses prior to proceeding to preconstruction engineering and design, including completion of the environmental compliance analysis and required public and state/agency reviews. Initiation of PED is contingent upon a decision by the Secretary that a particular plan is justified.