

REVIEW PLAN

Saginaw River Deepening Feasibility Study (GI)
Saginaw, Michigan

October 2012

Detroit District

MSC Approval Date: December 13, 2012

Last Revision Date: None



**US Army Corps
of Engineers®**

REVIEW PLAN

**Saginaw River Deepening Feasibility Study (GI)
Saginaw, Michigan**

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1. PURPOSE AND REQUIREMENTS

- a. **Purpose.** This Review Plan defines the scope and level of peer review for the Saginaw River Deepening feasibility study. The feasibility study will be conducted under Section 456 of the Water Resources Development Act of 1999 - *The Great Lakes Navigation System Review* to determine if improvements for commercial navigation are feasible in the Saginaw River, Michigan. The purpose of the study is to evaluate the deepening of the shipping channel as it pertains to the economic benefit of the Saginaw region and the nation. The Locally-Preferred Plan for the Saginaw Bay channel (to the mouth) is to deepen the entire river course of the Saginaw River to a 200 foot width and a 27 foot depth from the mouth of the river at Saginaw Bay to the 6th Street turning basin. The feasibility study will investigate which of the incremental depths (“alternatives”) between 24 and 27 feet has the great benefit, versus the No Action Alternative, which will become the Recommended Alternative.
- b. **References**
- (1) Engineering Circular (EC) 1165-2-209, Civil Works Review Policy, 31 Jan 2010
 - (2) EC 1105-2-412, Assuring Quality of Planning Models, 31 Mar 2011
 - (3) Engineering Regulation (ER) 1110-1-12, Quality Management, 30 Sep 2006
 - (4) ER 1105-2-100, Planning Guidance Notebook, Appendix H, Policy Compliance Review and Approval of Decision Documents, Amendment #1, 20 Nov 2007
 - (5) The Saginaw Deepening Project Feasibility Study – Project Management Plan
- c. **Requirements.** This review plan was developed in accordance with EC 1165-2-209, which establishes an accountable, comprehensive, life-cycle review strategy for Civil Works products by providing a seamless process for review of all Civil Works projects from initial planning through design, construction, and operation, maintenance, repair, replacement and rehabilitation (OMRR&R). The EC outlines four general levels of review: District Quality Control/Quality Assurance (DQC), Agency Technical Review (ATR), Independent External Peer Review (IEPR), and Policy and Legal Compliance Review. In addition to these levels of review, decision documents are subject to cost engineering review and certification (per EC 1165-2-209) and planning model certification/approval (per EC 1105-2-412).

2. REVIEW MANAGEMENT ORGANIZATION (RMO) COORDINATION

The RMO is responsible for managing the overall peer review effort described in this Review Plan. The RMO for decision documents is typically either a Planning Center of Expertise (PCX) or the Risk Management Center (RMC), depending on the primary purpose of the decision document. The RMO for the peer review effort described in this Review Plan is the ***Center of Expertise for Inland Navigation (PCXIN)***.

The RMO will coordinate with the Cost Engineering Directory of Expertise (DX) to ensure the appropriate expertise is included on the review teams to assess the adequacy of cost estimates, construction schedules and contingencies.

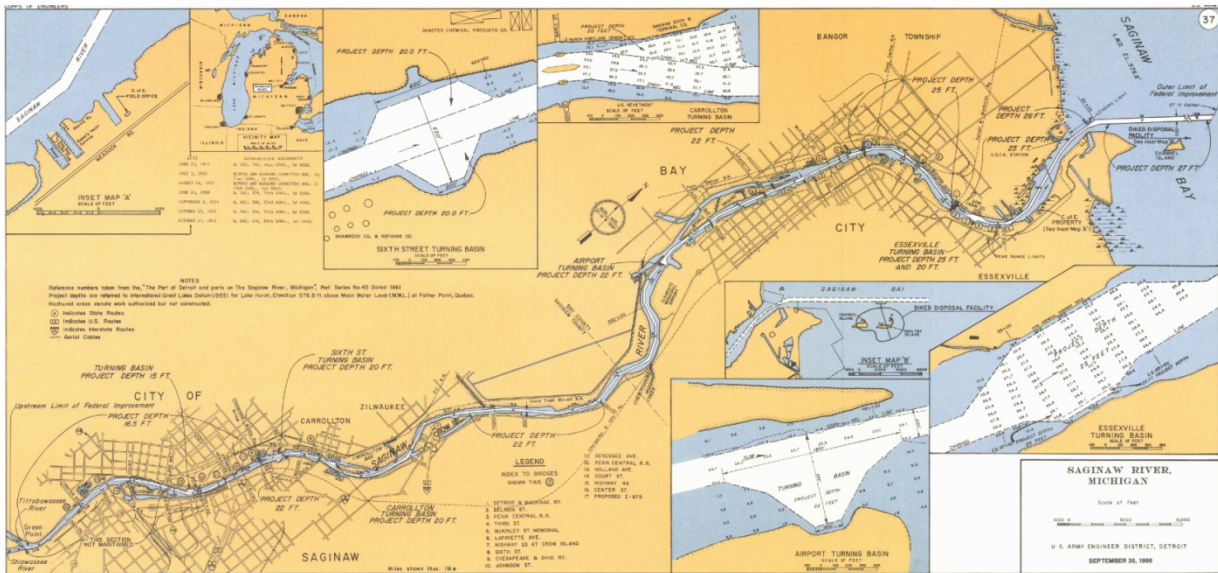
3. STUDY INFORMATION

- a. **Decision Document.** The Saginaw Deepening Project Feasibility Study (Saginaw River, Michigan), as authorized by Section 456 of the Water Resources Development Act of 1999, will evaluate the

deepening of the shipping channel as it pertains to the economic benefit of the Saginaw region and the nation. The approval of this General Investigation (GI) Feasibility Report is at the USACE-HQ level (per Table 4-1, ER 1105-2-100). It is anticipated that an Environmental Analysis (EA) will be prepared. Should implementation of any alternative beyond the No Action Alternative be the Recommended Alternative (i.e. construction of a deeper channel), additional Congressional authorization will be required to proceed into construction.

b. Study/Project Description.

The existing commercial shipping channel in the Saginaw River has three authorized depths – an approximately 15-mile, 27-foot deep approach channel to the mouth of the river from Saginaw Bay; an approximately five-mile reach of 25 foot depth in the lowest reach of the river, with the remaining 14.5 miles upstream to the turning basin being 22 feet in depth. Currently, shippers must light-load if they are to access the commercial docks further upstream of the 27 foot depth.



The local aggregate dock owners along the upper Saginaw River, up to the 6th Street turning basin, state that lake carriers charge the end-users more per ton at the River’s current depths than if the River were authorized and dredged uniformly to a minimum 27 feet. Also, in spring of 2012, some bulk carriers reported “pushing mud” while light-loading, in some locations along the River. Even though this reflects a maintenance issue, a deeper Federal channel would allow greater draft even under low-water conditions. Further, the fledgling Great Lakes cruise industry has been trying to gain a foothold, and is looking for more diversity in its port selection. Local leaders from the Saginaw region would very much like to accommodate these vessels in downtown Saginaw and need to increase the available draft to do so.

The proposed study will investigate deepening the entire river channel. It is estimated that this improvement will make the port more efficient, more cost effective, and result in higher and more diverse use. The feasibility study will develop and examine the economic benefit versus the proposed cost of deepening the channel, investigate the geotechnical aspects of doing such work (especially impacts to structural river crossings), estimate the impacts to the surrounding environment and the river’s ecosystem by constructing and using the project, determine hydraulic

changes to the river caused by constructing the project, and identify if any negative aspects exist and consider sociological and archeological impacts of the project.

The feasibility study has yet to be formally scoped, since the Project Delivery Team is still in the Project Management Plan and Feasibility Cost-Share agreement stage. Only conceptual planning has been conducted to this point. The alternatives are expected to be (maintaining the existing 200-foot channel width):

- No Action (remain at 22-foot minimum depth remains in the 14.5 mile upstream reach)
- Increase minimum depth to 25 feet upstream to the 6th Street Turning Basin;
- Increase minimum depth to 26 feet upstream to the 6th Street Turning Basin;
- Increase minimum depth to 27 feet upstream to the 6th Street Turning Basin;

The scope of the feasibility study is expected to be straight forward, with an economic analysis conducted of incremental deepening, to determine which depth provides the greatest net benefits. The feasibility study is currently estimated to cost approximately \$600,000 with the identified non-Federal sponsor (NFS) responsible for paying 50% of the cost in either all-cash, or a combination of cash and work-in-kind (WIK) services. Saginaw County, Michigan has proposed to be the NFS for this inland navigation, deep-draft feasibility effort. There is a significant portion of the study cost in geotechnical borings and analyses, especially at bridge crossings. The NFS is considering whether they would like to take on this work as part of their cost-share as WIK.

A rough estimate of the cost to dredge and place the material (\$13 per yard) was made based on a 2012 maintenance dredging contract for the Saginaw River. Increasing the depth to 25 feet would cost approximately \$22M; dredging to 27 feet would cost approximately \$35-38M. The cost-per yard assumes placement of the material in already existing CDF's; while the price per cubic yard may be reduced on a volume discount to around \$30M. A small increase was added (from the actual \$12.50 per-yard cost from this year) to cover mob and demob, along with distance upcharges.

c. Factors Affecting the Scope and Level of Review. The primary factors that could impact the scope and level of review would involve (primarily) any level of contamination of the excavated material, and the composition of the geology near and at the bridge pilings. Should this river bottom material be contaminated to the point of requiring restricted or confined placement, the scope of work and intensity of the review may be escalated. Also, if the borings indicate potential subsoil and/or bridge piling instability after channel deepening at any of the impacted river crossings, the project scope and subsequent review may have to be modified to reflect this issue.

- Approximately \$130,000 of study cost will be spent on the Geotechnical and Design portion of this work. This will likely be the most data intense portion of the study, but will be the most influential facet of the study in determining feasibility of the project;
- One of the greatest risks associated with the study is the potential for contaminants in the material to be excavated. Legacy Dioxin and other contaminants have led the Saginaw River to be listed as a U.S. Environmental Protection Agency (EPA) Area of Concern (AOC). Ongoing cleanup efforts and previous maintenance dredging have significantly reduced the potential for contaminated material to be present; however, there remains enough uncertainty in this to pose a potential significant risk to the cost of the project.

- The project otherwise is not controversial and poses no significant health, safety or environmental risks.

d. In-Kind Contributions. Products and analyses provided by non-Federal sponsors as in-kind services are subject to DQC, ATR, and IEPR. The in-kind products and analyses to be provided by the non-Federal sponsor may include geotechnical borings and analyses, and other local fieldwork.

4. DISTRICT QUALITY CONTROL (DQC)

All decision documents (including supporting data, analyses, environmental compliance documents, etc.) shall undergo DQC. DQC is an internal review process of basic science and engineering work products focused on fulfilling the project quality requirements defined in the Project Management Plan (PMP). The document undergoing DQC shall be reviewed thoroughly and in its entirety by the DQC team to assure the technical, policy and procedural integrity. The home district shall manage DQC in accordance with Section 7.1 - Quality Plans in procedure 08504 LRD - QC / QA Procedures for Civil Works in Qualtrax. Documentation of DQC activities is required and should be in accordance with the Quality Manual of the District and the home MSC.

- a. Documentation of DQC.** The DQC reviewer will sign a DQC certificate of completion. The DQC documentation will be provided to the ATR Team for review.
- b. Products to Undergo DQC.** The Saginaw Deepening Project Feasibility Study and associated EA.
- c. Required DQC Expertise.** The DQC reviewer for this project must have experience in Civil Works planning studies related to navigation and familiarity with the NEPA process. A DQC Environmental reviewer may be called upon to provide additional review should the study have unexpected environmental impacts, such as contaminated sediment. Should contaminated sediments be encountered a Hazardous, Toxic or Radioactive Waste (HTRW) expert may be called in to assist on the forward planning of the handling of such sediments.

5. AGENCY TECHNICAL REVIEW (ATR)

- a.** ATR is mandatory for all decision documents (including supporting data, analyses, environmental compliance documents, etc.). The objective of ATR is to ensure consistency with established criteria, guidance, procedures, and policy. The ATR will assess whether the analyses presented are technically correct and comply with published USACE guidance, and that the document explains the analyses and results in a reasonably clear manner for the public and decision makers. ATR is managed within USACE by the designated RMO (in this case the PCXIN) and is conducted by a qualified team from outside the home district that is not involved in the day-to-day production of the project/product. ATR teams will be comprised of senior USACE personnel and may be supplemented by outside experts as appropriate. The ATR team lead (and possibly other team members) will be from outside the home MSC.

Products to Undergo ATR. The Draft Saginaw Deepening Project Feasibility Study and associated EA. In progress reviews may also need to be conducted depending on the emerging complexity of the study as it is developed.

b. Required ATR Team Expertise.

ATR Team Members/Disciplines	Expertise Required
ATR Lead	The ATR lead should be a senior professional with extensive experience in preparing Civil Works decision documents and conducting ATR. The lead should also have the necessary skills and experience to lead a virtual team through the ATR process. The ATR lead may also serve as a reviewer for a specific discipline (such as planning, economics, environmental resources, etc).
Planning	The Planning reviewer should be a senior water resources planner with experience in Civil Works studies involving deep-draft navigation and inland waterways.
Economics	The Economist should have experience in deep-draft navigation economics.
Environmental Resources	A senior Environmental Analyst experienced in excavation/dredging and disposal of potentially contaminated dredged material.
Hazardous, Toxic or Radioactive Waste (HTRW)	The HTRW expert will have experience in classifying and directing the handling and placement of contaminated dredged material.
Hydraulic Engineering	The hydraulic engineering reviewer will be an expert in the field of hydraulics and have a thorough understanding of open channel dynamics, enclosed channel systems, and computer modeling techniques that will be used such as HEC-RAS.
Geotechnical Engineering	The geotechnical engineering reviewer will be an expert in his field, and be comfortable analyzing geotechnical data regarding the stability of bridge pilings in relation to deepening the navigation channel.
Civil Engineering	The Civil Engineer should be familiar with the construction of navigation channels and bridge stability.
Cost Engineering	The Cost Engineer should be an expert regarding the cost estimating of dredged material excavation, handling and disposal, due to the volume of excavated material that will likely be involved.
Real Estate	The Real Estate reviewer should be experienced in the development of deep-drift navigation projects.

c. Documentation of ATR. DrChecks review software will be used to document all ATR comments, responses and associated resolutions accomplished throughout the review process. Comments should be limited to those that are required to ensure adequacy of the product. The four key parts of a quality review comment will normally include:

- (1) The review concern – identify the product’s information deficiency or incorrect application of policy, guidance, or procedures;
- (2) The basis for the concern – cite the appropriate law, policy, guidance, or procedure that has not been properly followed;

- (3) The significance of the concern – indicate the importance of the concern with regard to its potential impact on the plan selection, recommended plan components, efficiency (cost), effectiveness (function/outputs), implementation responsibilities, safety, Federal interest, or public acceptability; and
- (4) The probable specific action needed to resolve the concern – identify the action(s) that the reporting officers must take to resolve the concern.

In some situations, especially addressing incomplete or unclear information, comments may seek clarification in order to then assess whether further specific concerns may exist.

The ATR documentation in DrChecks will include the text of each ATR concern, the PDT response, a brief summary of the pertinent points in any discussion, including any vertical team coordination (the vertical team includes the district, RMO, MSC, and HQUSACE), and the agreed upon resolution. If an ATR concern cannot be satisfactorily resolved between the ATR team and the PDT, it will be elevated to the vertical team for further resolution in accordance with the policy issue resolution process described in either ER 1110-1-12 or ER 1105-2-100, Appendix H, as appropriate. Unresolved concerns can be closed in DrChecks with a notation that the concern has been elevated to the vertical team for resolution.

At the conclusion of each ATR effort, the ATR team will prepare a Review Report summarizing the review. Review Reports will be considered an integral part of the ATR documentation and shall:

- Identify the document(s) reviewed and the purpose of the review;
- Disclose the names of the reviewers, their organizational affiliations, and include a short paragraph on both the credentials and relevant experiences of each reviewer;
- Include the charge to the reviewers;
- Describe the nature of their review and their findings and conclusions;
- Identify and summarize each unresolved issue (if any); and
- Include a verbatim copy of each reviewer's comments (either with or without specific attributions), or represent the views of the group as a whole, including any disparate and dissenting views.

ATR may be certified when all ATR concerns are either resolved or referred to the vertical team for resolution and the ATR documentation is complete. The ATR Lead will prepare a Statement of Technical Review certifying that the issues raised by the ATR team have been resolved (or elevated to the vertical team). A Statement of Technical Review should be completed, based on work reviewed to date, for the AFB, draft report, and final report.

6. INDEPENDENT EXTERNAL PEER REVIEW (IEPR)

IEPR may be required for decision documents under certain circumstances. IEPR is the most independent level of review, and is applied in cases that meet certain criteria where the risk and magnitude of the proposed project are such that a critical examination by a qualified team outside of USACE is warranted. A risk-informed decision, as described in EC 1165-2-209, is made as to whether IEPR is appropriate. IEPR panels will consist of independent, recognized experts from outside of the USACE in the appropriate disciplines, representing a balance of areas of expertise suitable for the review being conducted. There are two types of IEPR:

- Type I IEPR. Type I IEPR reviews are managed outside the USACE and are conducted on project studies. Type I IEPR panels assess the adequacy and acceptability of the economic and environmental assumptions and projections, project evaluation data, economic analysis, environmental analyses, engineering analyses, formulation of alternative plans, methods for integrating risk and uncertainty, models used in the evaluation of environmental impacts of proposed projects, and biological opinions of the project study. Type I IEPR will cover the entire decision document or action and will address all underlying engineering, economics, and environmental work, not just one aspect of the study. For decision documents where a Type II IEPR (Safety Assurance Review) is anticipated during project implementation, safety assurance shall also be addressed during the Type I IEPR per EC 1165-2-209.
 - Type II IEPR. Type II IEPR, or Safety Assurance Review (SAR), are managed outside the USACE and are conducted on design and construction activities for hurricane, storm, and flood risk management projects or other projects where existing and potential hazards pose a significant threat to human life. Type II IEPR panels will conduct reviews of the design and construction activities prior to initiation of physical construction and, until construction activities are completed, periodically thereafter on a regular schedule. The reviews shall consider the adequacy, appropriateness, and acceptability of the design and construction activities in assuring public health safety and welfare.
- a. **Decision on IEPR.** An IEPR may be required for decision documents under certain circumstances. IEPR is the most independent level of review, and is applied in cases that meet certain criteria where the risk and magnitude of the proposed project are such that a critical examination by a qualified team outside of USACE is warranted. Based on the assessment of risk factors and other triggering mechanisms, IEPR is not required because:
- there are no anticipated significant environmental, cultural, social or economic impacts associated with the project;
 - there is no anticipated significant inter-agency interest associated with the project;
 - there is no anticipated risk to human health or safety associated with the project;
 - there is no anticipated controversial aspects associated with the project;
 - there are no novel or non-standard procedures, methods or models being used to develop and implement the project;
 - there has been no request by any state Governor to execute IEPR associated with the project;
 - the feasibility study is not expected to contain influential scientific information of any significance;
 - the most expensive estimated total project cost currently stands at \$35M, which is less than the \$45M trigger to require an IEPR.

However, although none of the triggers above have been met to require an IEPR, there is some uncertainty in the preliminary cost estimates and the existence of potential contamination to anticipate that there could be a need to conduct a Type 1 IEPR for the Saginaw River Deepening study as more information becomes available through the development of the study. As such, the District will include information in the anticipation of a Type 1 IEPR – which may also become moot if findings warrant.

Products to Undergo Type I IEPR. The Type 1 IEPR will be conducted on the Feasibility and NEPA document (likely EA and FONSI). The decision may be made between the project Delivery Team and IEPR team members to hold milestone IEPR reviews if unanticipated complications arise regarding geotechnical conditions or if other major concerns arise regarding contaminants and/or exceedingly high dredging and placement costs.

b. Required Type I IEPR Panel Expertise.

IEPR Panel Members/Disciplines	Expertise Required
Economics	The Economics Panel Member should have experience/expertise in inland commercial navigation economics, ideally in the Great Lakes.
Environmental	The Environmental Panel Member would primarily need to be familiar with fresh-water riverine ecosystems and contaminants in dredged materials
Geotechnical Engineering	The Engineering Panel Member should have a solid background in geotechnical engineering with experience in bridge piling and slope stability issues.
Hydraulic Engineering	The Hydraulic Engineering Panel Member should understand The Coastal Hydrologic Laboratory's "ADaptive Hydraulic Model" and how it is applied.

c. Documentation of Type I IEPR. The IEPR panel will be selected and managed by an Outside Eligible Organization (OEO) per EC 1165-2-209, Appendix D. Panel comments will be compiled by the OEO and should address the adequacy and acceptability of the economic, engineering and environmental methods, models, and analyses used. IEPR comments should generally include the same four key parts as described for ATR comments in Section 4.d above. The OEO will prepare a final Review Report that will accompany the publication of the final decision document and shall:

- Disclose the names of the reviewers, their organizational affiliations, and include a short paragraph on both the credentials and relevant experiences of each reviewer;
- Include the charge to the reviewers;
- Describe the nature of their review and their findings and conclusions; and
- Include a verbatim copy of each reviewer's comments (either with or without specific attributions), or represent the views of the group as a whole, including any disparate and dissenting views.

The final Review Report will be submitted by the OEO no later than 60 days following the close of the public comment period for the draft decision document. The Detroit District shall consider all recommendations contained in the Review Report and prepare a written response for all recommendations adopted or not adopted. The final decision document will summarize the Review Report and District response. The Review Report and District response will be made available to the public, including through electronic means on the internet.

7. POLICY AND LEGAL COMPLIANCE REVIEW

All decision documents will be reviewed throughout the study process for their compliance with law and policy. Guidance for policy and legal compliance reviews is addressed in Appendix H, ER 1105-2-100. These reviews culminate in determinations that the recommendations in the reports and the supporting analyses and coordination comply with law and policy, and warrant approval or further recommendation to higher authority by the home MSC Commander. DQC and ATR augment and complement the policy review processes by addressing compliance with pertinent published Army policies, particularly policies on analytical methods and the presentation of findings in decision documents.

8. COST ENGINEERING DIRECTORY OF EXPERTISE (DX) REVIEW AND CERTIFICATION

All decision documents shall be coordinated with the Cost Engineering DX, located in the Walla Walla District. The DX will assist in determining the expertise needed on the ATR team and Type I IEPR team (if required) and in the development of the review charge(s). The DX will also provide the Cost Engineering DX certification. The RMO is responsible for coordination with the Cost Engineering DX.

9. MODEL CERTIFICATION AND APPROVAL

EC 1105-2-412 mandates the use of certified or approved models for all planning activities to ensure the models are technically and theoretically sound, compliant with USACE policy, computationally accurate, and based on reasonable assumptions. Planning models, for the purposes of the EC, are defined as any models and analytical tools that planners use to define water resources management problems and opportunities, to formulate potential alternatives to address the problems and take advantage of the opportunities, to evaluate potential effects of alternatives and to support decision making. The use of a certified/approved planning model does not constitute technical review of the planning product. The selection and application of the model and the input and output data is still the responsibility of the users and is subject to DQC, ATR, and IEPR (if required).

EC 1105-2-412 does not cover engineering models used in planning. The responsible use of well-known and proven USACE developed and commercial engineering software will continue and the professional practice of documenting the application of the software and modeling results will be followed. As part of the USACE Scientific and Engineering Technology (SET) Initiative, many engineering models have been identified as preferred or acceptable for use on Corps studies and these models should be used whenever appropriate. The selection and application of the model and the input and output data is still the responsibility of the users and is subject to DQC, ATR, and IEPR (if required).

a. Planning Models. The following planning models are anticipated to be used in the development of the decision document:

Model Name and Version	Brief Description of the Model and How It Will Be Applied in the Study	Certification / Approval Status
GL-SAND, Ver. 1	Great Lakes System Analysis of Navigation Depths (GL-SAND) model was developed to calculate the shipping costs associated with moving commodities on the Great Lakes during one commercial navigation season. The model can then be run using different channel depth assumptions, to aid in the calculations of B/C and net benefits.	In the certification process

b. Engineering Models. The following engineering models are anticipated to be used in the development of the decision document:

Model Name and Version	Brief Description of the Model and How It Will Be Applied in the Study
ADH Model	The Coastal Hydrologic Laboratory’s “ADaptive Hydraulic Model” (ADH) will allow analysis of the water flow and level response through the deepened river course at various depths of excavation, and provide input on any bridge footing or river bend locations where significant scour may occur.

10. REVIEW SCHEDULES AND COSTS

a. Quality Control Schedule and Cost.

Description	Scheduled Date	Cost
Alternative Formulation Briefing (AFB)	June 2013	\$9,000
Draft Feasibility Report & EA Complete	January 2014	---
District Quality Control	February 2014	\$6,000
ATR of Feasibility Report and EA	April 2014	\$26,000
Public Review Feasibility Report & EA/prelim. FONSI	August 2014	---
District Response to Comments/Route & sign FONSI	September 2014	---
Independent External Pier Review	December 2014	\$250,000
Submittal to LRD of Final Feas. Report and FONSI	January 2016	

b. Type I IEPR Schedule and Cost. It is estimated that the IEPR would cost approximately \$250,000 and require 12 months to complete.

c. Model Certification/Approval Schedule and Cost. For decision documents prepared under the model National Programmatic Review Plan, use of existing certified or approved planning models is encouraged. Where uncertified or unapproved model are used, approval of the model for use will be accomplished through the ATR process. The ATR team will apply the principles of EC 1105-2-412 during the ATR to ensure the model is theoretically and computationally sound, consistent with USACE policies, and adequately documented. If specific uncertified models are identified for repetitive use within a specific district or region, the appropriate PCX, MSC(s), and home District(s) will identify a unified approach to seek certification of these models.

d. PUBLIC PARTICIPATION

State and Federal resource agencies may be invited to participate in the study covered by this review plan as partner agencies or as technical members of the PDT, as appropriate. Agencies with regulatory review responsibilities will be contacted for coordination as required by applicable laws and procedures. The ATR team will be provided copies of public and agency comments.

The Draft Report and EA will be distributed for public comment. In accordance with NEPA, the EA will be made available for a 30 day public comment period. During the public comment period, if the public comments are sent to the Corps by email, then the Corps will respond by email. If the public comments are sent to the Corps by letter, then the Corps will respond by letter. Contact information may be obtained from the Review Plan Points of Contact list in section 12 below. When the comment period is complete the comments will be forwarded to the ATR team leader electronically. A public meeting may be held to address concerns with the project if they arise.

11. REVIEW PLAN APPROVAL AND UPDATES

The Division Commander is responsible for approving this Review Plan. The Commander’s approval reflects vertical team input (involving district, MSC, RMO, and HQUSACE members, as applicable) as to the appropriate scope and level of review for the decision document. Like the PMP, the Review Plan is a living document and may change as the study progresses. The Detroit District is responsible for keeping the Review Plan up to date. Minor changes to the review plan since the last MSC Commander approval are documented in Attachment 3. Significant changes to the Review Plan (such as changes to the scope and/or level of review) should be re-approved by the MSC Commander following the process used for initially approving the plan. The latest version of the Review Plan, along with the Commanders’ approval memorandum, should be posted on the Home District’s webpage. The latest Review Plan should also be provided to the RMO and home MSC.

12.

12. REVIEW PLAN POINTS OF CONTACT

Public questions and/or comments on this review plan can be directed to the following points of contact:

Title	Office Phone Number
Project Manager	313 226-6710
Planner/Economist	313 226-3443
Plan Form. Office Chief	313 226-6758
Co-technical Director, PCXIN	304 399-6938

ATTACHMENT 1: TEAM ROSTERS

Discipline	Office Symbol	Telephone Number
Project Manager	LRE-PL-P	313-226-6710
Plan Formulator	LRE-PL-P	313-226-3443
Environmental Analysis Branch	LRE-PL-E	313-226-7590
Geotechnical Engineer	LRE-EC-G	313-226-2225
Design Engineer	LRE-EC-G	313-226-2225
Hydrology and Hydraulics	LRE-HH-E	
Economic Evaluation	PM-PL	313-226-3443
Cost Engineering	LRE-EC-C	313-226-6185
Real Estate	LRE-RE	313-226-3445
Office of Counsel	LRE-OC	

ATTACHMENT 2: SAMPLE STATEMENT OF TECHNICAL REVIEW FOR DECISION DOCUMENTS

COMPLETION OF AGENCY TECHNICAL REVIEW

The Agency Technical Review (ATR) has been completed for the feasibility study for the Saginaw River Deepening Project. The ATR was conducted as defined in the project’s Review Plan to comply with the requirements of EC 1165-2-209. During the ATR, compliance with established policy principles and procedures, utilizing justified and valid assumptions, was verified. This included review of: assumptions, methods, procedures, and material used in analyses, alternatives evaluated, the appropriateness of data used and level obtained, and reasonableness of the results, including whether the product meets the customer’s needs consistent with law and existing US Army Corps of Engineers policy. The ATR also assessed the District Quality Control (DQC) documentation and made the determination that the DQC activities employed appear to be appropriate and effective. All comments resulting from the ATR have been resolved and the comments have been closed in DrCheckssm.

SIGNATURE _____ Date _____
Name
ATR Team Leader
Office Symbol/Company

SIGNATURE _____ Date _____
Name
Project Manager
Office Symbol

SIGNATURE _____ Date _____
Name
Architect Engineer Project Manager¹
Company, location

SIGNATURE _____ Date _____
Name
Review Management Office Representative
Office Symbol

CERTIFICATION OF AGENCY TECHNICAL REVIEW

Significant concerns and the explanation of the resolution are as follows: Describe the major technical concerns and their resolution.

As noted above, all concerns resulting from the ATR of the project have been fully resolved.

SIGNATURE _____ Date _____
Name
Chief, Engineering Division
Office Symbol

SIGNATURE _____ Date _____
Name
Chief, Planning Division
Office Symbol

¹ Only needed if some portion of the ATR was contracted

ATTACHMENT 3: REVIEW PLAN REVISIONS

Revision Date	Description of Change	Page / Paragraph Number

ATTACHMENT 4: ACRONYMS AND ABBREVIATIONS

<u>Term</u>	<u>Definition</u>	<u>Term</u>	<u>Definition</u>
AFB	Alternative Formulation Briefing	NED	National Economic Development
ASA(CW)	Assistant Secretary of the Army for Civil Works	NER	National Ecosystem Restoration
ATR	Agency Technical Review	NEPA	National Environmental Policy Act
CSDR	Coastal Storm Damage Reduction	O&M	Operation and maintenance
DPR	Detailed Project Report	OMB	Office and Management and Budget
DQC	District Quality Control/Quality Assurance	OMRR&R	Operation, Maintenance, Repair, Replacement and Rehabilitation
DX	Directory of Expertise	OEO	Outside Eligible Organization
EA	Environmental Assessment	OSE	Other Social Effects
EC	Engineer Circular	PCX	Planning Center of Expertise
EIS	Environmental Impact Statement	PDT	Project Delivery Team
EO	Executive Order	PAC	Post Authorization Change
ER	Ecosystem Restoration	PMP	Project Management Plan
FDR	Flood Damage Reduction	PL	Public Law
FEMA	Federal Emergency Management Agency	QMP	Quality Management Plan
FRM	Flood Risk Management	QA	Quality Assurance
FSM	Feasibility Scoping Meeting	QC	Quality Control
GRR	General Reevaluation Report	RED	Regional Economic Development
Home District/MSD	The District or MSD responsible for the preparation of the decision document	RMC	Risk Management Center
HQUSACE	Headquarters, U.S. Army Corps of Engineers	RMO	Review Management Organization
IEPR	Independent External Peer Review	RTS	Regional Technical Specialist
ITR	Independent Technical Review	SAR	Safety Assurance Review
LRR	Limited Reevaluation Report	USACE	U.S. Army Corps of Engineers
MSC	Major Subordinate Command	WRDA	Water Resources Development Act