

Woodtick Peninsula Section 204 Beneficial Use of Dredged Material for Ecosystem Restoration Project, Monroe County, MI REVIEW PLAN

June 2021

1. OVERVIEW

This review plan defines the scope and level of peer review for the following study:

- **Study Name:** Woodtick Peninsula Section 204 Beneficial Use of Dredged Material for Ecosystem Restoration Project
- **P2 Number:** 487131
- **Decision Document - Type:** Section 204 Feasibility Study
- **Project Type:** Ecosystem Restoration/Beneficial Use of Dredged Material
- **Congressional Approval Required (Yes/No): No**
- **District:** Detroit District (LRE)
- **Major Subordinate Command (MSC):** Great Lakes and Rivers Division (LRD)
- **Review Management Organization (RMO):** Detroit District
- **Review Plan (RP) Contacts:**
 - a. **District:** Project Planner, Susan Henshaw, 313-600-2338 and Project Manager, Amanda Meyer, 313-226-2728

2. KEY REVIEW PLAN DATES

| Action | Date - Actual ¹ |
|-----------------------------------|----------------------------|
| District Approval of RP | June 21, 2021 |
| IEPR Exclusion Approval | N/A |
| Has RP changed since endorsement? | |
| Last RP revision ² | |
| RP posted on District Website | June 29, 2021 |

¹Date action occurred or 'pending' if not yet approved

²Enter 'none' if no updates have been made since approval

3. MILESTONE SCHEDULE

| Action | Date - Scheduled | Date - Actual | Status - Complete? |
|---|------------------|---------------|--------------------|
| Feasibility Cost Sharing Agreement Signed | N/A | N/A | N/A |
| Feasibility Scoping Meeting (FSM) | 12 May 2021 | 12 May 2021 | Yes |
| Tentatively Selected Plan (TSP) | 01 March 2022 | | |
| Release Draft Report to Public | 23 March 2022 | | |
| Final Report Transmittal | 25 Aug 2022 | | |

4. BACKGROUND

- **Date of ‘Background’ Information:** May 2021
- **RP References:**
 - Engineer Circular (EC) 1165-2-217, Review Policy for Civil Works, 20 February 18
 - EC 1105-2-412, Assuring Quality of Planning Models, 31 March 2011
 - Engineer Regulation (ER) 1105-2-100, Planning Guidance Notebook, Appendix H, Policy Compliance Review and Approval of Decision Documents, Amendment #1, 20 November 2007
 - Director’s Policy Memorandum Civil Works Programs 2018-05, Improving Efficiency and Effectiveness in USACE Civil Works Project Delivery (Planning Phase and Planning Activities), 3 May 2018
 - Director of Civil Works (DCW) Memorandum, Revised Delegation of Authority in Section 2034(a)(5)(A) of the Water Resources Development Act of 2007 (WRDA 2007), as amended (33 U.S.C. 2343), 7 June 2018
 - Woodtick Peninsula Project Management Plan, May 2021
- **Authority:** Continuing Authorities Program (CAP), Section 204 of the 1992 Water Resources Development Act (33 U.S.C. § 2326), as amended.
- **Sponsor:** Michigan Department of Natural Resources
- **SMART Planning Status:** N/A
- **Project Area:** The study area is located in Monroe County, Michigan. Woodtick Peninsula is in southeastern Michigan along the western shoreline of Lake Erie, in an area referred to as North Maumee Bay. The peninsula is located approximately 45 miles southwest of Detroit, Michigan and, at its most southern point, 5 miles north of Toledo, Ohio.
- **Problem Statement:** Long-term erosion and human modification to the littoral environment have contributed to a loss of high-quality habitat on Woodtick Peninsula and the adjacent aquatic area.
- **Study/Project Goals and Objectives:** The overall goal is to restore Woodtick Peninsula through beneficial use of dredged material. The main objective of the project is to expand and enhance the existing coastal, emergent, and submergent wetlands to enhance fish and wildlife habitat. The purpose of the project is to enhance coastal resiliency on Woodtick Peninsula through habitat creation in a manner that addresses fluctuating Lake Erie water levels, varying wave energy, and climate change. Due to historical habitat loss, there is a need to restore and enhance the existing coastal, emergent, and submergent wetlands in order to restore fish and wildlife habitat.
- **Description of Action:** Currently, four distinct features are proposed. These features include restoring the bayside channel using dredged material, rebuilding washed out areas of the peninsula (increasing the elevation) with dredged material, constructing a groin at the

southern end of the peninsula and filling between the groin and the peninsula with dredged material, and constructing a series of islands on the lake side of the peninsula. The islands would be filled with dredged material to create upland habitat. These four features are considered stand-alone alternatives and are also combined to form additional alternatives. The current ray of alternatives includes:

- Alternative 1 – No Action/FWOP. No Federal Action would occur under this alternative.
 - Alternative 2 – Restore Channel. This alternative would fill in the channel to a depth of 3 ft below OHWM with dredged material.
 - Alternative 3 – Rebuild Peninsula. This alternative would use dredged material to rebuild washed out areas of the peninsula.
 - Alternative 4 – Stone Islands filled with dredged material. The stone islands would be located on the Lake Erie side of the peninsula.
 - Alternative 5 – Southern Groin with dredged material placed between the groin and Woodtick Peninsula
 - Alternative 6 – Channel + Peninsula
 - Alternative 7 - Peninsula + Groin
 - Alternative 8 – Channel + Groin
 - Alternative 9 – Channel + Peninsula + Groin
-
- **Federal Interest:** Wetlands in Lake Erie are exceedingly rare. This project would provide high-quality habitat while beneficially using dredged material.

 - **Risk Identification:** See Table 1.

Table 1. Risk Matrix

| Functional Group | Risk/Concern | Mitigation/Contingency | Risk Level (H, M, L) ¹ |
|---------------------------------|---|--|-----------------------------------|
| Project Management/ Planning | <ul style="list-style-type: none"> • Scope Creep • Legislation & Planning Policy Changes | <ul style="list-style-type: none"> • Active management of quality, costs & schedule • Change Management Log/Decision Log • Regular communication with sponsors & vertical team (VT) • Informal in-progress reviews as needed with VT, agency technical review (ATR) Lead, and district quality control (DQC) Lead. | L |
| Economics/Planning | <ul style="list-style-type: none"> • Changing guidance especially in terms of project benefits calculations | <ul style="list-style-type: none"> • Follow current guidance and remain up to date on changing guidance. Frequent communication with the Vertical Team. | L |
| Engineering | <ul style="list-style-type: none"> • Maumee Bay material not suitable for beneficial use • Crossing state lines with dredged material | <ul style="list-style-type: none"> • Determine suitability of dredged material early in the feasibility process. Work through design process to address material characteristics. • Early and frequent coordination with regulatory agencies | L, M |
| Environmental/ Cultural | <ul style="list-style-type: none"> • Likely to have cultural resources in the area. | <ul style="list-style-type: none"> • Land and water cultural resource survey early in the feasibility process. | M |
| Real Estate | <ul style="list-style-type: none"> • Access issues via land to project site. | <ul style="list-style-type: none"> • Early coordination and requests to landowner for access. Explore options to conduct construction via water and not require land access. | M |
| | | | |

Map 1. Woodtick Peninsula, Monroe County, MI



5. FACTORS AFFECTING THE SCOPE AND LEVEL OF REVIEW

- A. Is it likely that part(s) of the study will be challenging (EC 1165-2-217, paragraph 7.a.(1))? No, the study is not likely to be challenging as the main focus of the study is wetland creation which the Detroit District has ample experience in studying. The Detroit District also has ample experience with beneficial use of dredged material.
- B. Provide a preliminary assessment of where the project risks are likely to occur and assess the magnitude of those risks (EC 1165-2-217, paragraph 7.a.(1)). The most significant risks include the potential for cultural resources within the project area, moving dredged material across state lines, and developing suitable engineering designs based on dredged material characteristics.
- C. Is there a significant threat to human life associated with aspects of the study or with failure of the project or proposed project (Type I IEPR - EC 1165-2-217, paragraph 11.d(1)(a) and SAR - paragraph 12.h.)? No, there is not a significant threat to human life associated with aspects of the study or with failure of the proposed project. Woodtick Peninsula is undeveloped land owned by the MI DNR. No structures or private property would be involved with the use of beneficial dredged material on Woodtick Peninsula.
- D. Is the estimated total cost of the project greater than \$200 million (EC 1165-2-217, paragraph 11.d(1)(b))? No, as a CAP study this project has a Federal participation limit of \$10 million.
- E. Will the study/project require an environmental impact statement (EC 1165-2-217, paragraph 11.d(1)(b))? No, the study is unlikely to require an EIS.
- F. Has the Governor of an affected state requested a peer review by independent experts (EC 1165-2-217, paragraph 11.d(1)(c))? No, the Governor has not requested nor is expected to request a peer review of the study by independent experts.
- G. Has the Chief of Engineers determined that the project study is controversial due to significant public dispute over the size, nature, or effects of the project or the economic or environmental costs or benefits of the project (EC 1165-2-217, paragraph 11.d(1)(d))? No. The study is not likely to involve significant public dispute as to its size, nature, or effects of the proposed project as ecosystem restoration efforts in this area are widely supported.
- H. Is the study/project likely to involve significant public dispute as to the project's size, nature, or effects (EC 1165-2-217, paragraph 11.d(1)(e))? No, the project is unlikely to involve significant public dispute. Meetings with local stakeholders are on-going as well as coordination with local groups focused on ecosystem restoration.
- I. Is the study/project likely to involve significant public dispute as to the economic or environmental cost or benefit of the project (EC 1165-2-217, paragraph 11.d(1)(f))? No, in general the public supports ecosystem restorations projects in this area.
- J. Is the information in the decision document or anticipated project design likely to contain influential scientific information or be a highly influential scientific assessment – i.e., be based on

novel methods, involve innovative materials or techniques, present complex challenges for interpretation, contain precedent-setting methods or models, or present conclusions that are likely to change prevailing practices (Type I IEPR - EC 1165-2-217, paragraph 11.d(1)(g); SAR paragraph 12.i(1); and paragraph 15.d)? No, standard ecosystem benefits calculations are planned as well as standard construction practices.

- K. Does/will the study/project have significant interagency interest (EC 1165-2-217, paragraph 7.f(1))? This project has positive interagency interest mainly from U.S. Fish and Wildlife Service. The NFS for implementation would likely be the MI Department of Natural Resources (MI DNR) who are very supportive of the project.
- L. Are there any other circumstances that would lead the Chief of Engineers to determine Type I IEPR is warranted (EC 1165-2-217, paragraph 11.d(1)(h))? No, there are no circumstances that would lead the Chief of Engineers to determine Type I IEPR is warranted.
- M. Is the project expected to have more than negligible adverse impacts on scarce or unique tribal, cultural, or historic resources (EC 1165-2-217, paragraph 11.d(4)(a))? There is a high likelihood of finding cultural resource sites in the project area. However, a land and water survey is planned for early in the feasibility process. If a site is found, all possible actions will be taken to avoid negative effects to the site, in coordination with the MI SHPO.
- N. Is the project expected to have substantial adverse impacts on fish and wildlife species and their habitat prior to the implementation of mitigation measures (EC 1165-2-217, paragraph 11.d(4)(a))? No, as a beneficial use of dredged material for ecosystem restoration project, the proposed action is expected to provide benefits to fish and wildlife habitats.
- O. Is the project expected to have, before mitigation measures, more than a negligible adverse impact on an endangered or threatened species or their designated critical habitat (EC 1165-2-217, paragraph 11.d(4)(a))? No, the project is not anticipated to cause an adverse impact to endangered or threatened species or their designed critical habitat. No designated critical habitat is located within the project area.
- P. Does the project study pertain to an activity for which there is ample experience within the USACE and industry to treat the activity as being routine (EC 1165-2-217, paragraph 11.d(4)(b))? The Detroit District has ample experience with beneficial use of dredged material and ecosystem restoration projects.
- Q. Does the project study have minimal life safety risk (EC 1165-2-217, paragraph 11.d(4)(b))? Yes, the project is expected to have minimal life safety risk. The project will have no effect on flooding in the area and all construction activities will adhere to standard USACE safety practices.
- R. Does the project design require redundancy, resiliency, and/or robustness (EC 1165-2-217, paragraph 12.i(2))? The project does not require redundancy, but an overarching goal of the project is to enhance climate resiliency of the project area. As the project is designed the expected future affects of climate change would be accounted for in the design.

- S. Will the project have unique construction sequencing or a reduced or overlapping design construction schedule (e.g., significant project features will be accomplished using the Design-Build or Early Contractor Involvement delivery systems) (EC 1165-2-217, paragraph 12.i(3))?
No, the project would most likely be constructed through routine construction methods.

6. REVIEW EXECUTION PLAN

This RP section provides a general description of each type of review and identifies the reviews anticipated for this study/project.

A. Types of Review

- 1) **District Quality Control (DQC).** DQC is an internal review process of basic science and engineering work products focused on fulfilling the project quality requirements of the project management plan. All decision documents (including data, analyses, environmental compliance documents, etc.) undergo DQC review.
- 2) **Agency Technical Review (ATR).** ATR is performed to assess whether study/project analyses are technically correct and comply with USACE guidance and whether documentation explains the analyses and results in a clear manner. Further, the ATR team will ensure that proper and effective DQC has been performed (as assessment of which will be documented in the ATR report) and will ensure that the product is consistent with established criteria, guidance, procedures, and policy. At a minimum, ATR of the draft decision documents and supporting analyses is required.
- 3) **Cost Engineering Review.** All decision documents will be coordinated with the Cost Engineering and ATR Mandatory Center of Expertise (MCX). The MCX will provide the cost engineering expertise needed on the ATR team and will provide certification of cost estimates. The RMO is responsible for coordinating with the MCX for cost reviews. Cost reviews may occur as part of the draft/final report ATRs but the schedule for specific reviews may also vary. Accordingly, the PDT should coordinate closely review related needs with both the MCX and RMO.
- 4) **Policy and Legal Compliance Reviews.** All decision documents will be reviewed throughout the study process for compliance with law and policy. ER 1105-2-100, Appendix H, and DPM CW/DCW memos, provide guidance on policy and legal compliance reviews. These reviews culminate in determination whether report recommendations, supporting analyses, and coordination comply with law and policy and whether the decision document warrants approval or further recommendation to higher authority by the home MSC Commander. For the purposes of delegated CAP authorities, the Policy and Legal Compliance Review will be conducted by the District Chief of Planning.
- 5) **Public Review.** The home District will post the RP on the District's public website. Internet posting of the RP provides opportunity for the public to comment on that document. It is not considered a formal comment period, and there is no set timeframe for public comment. The PDT should consider any comments received and determine if RP revisions are necessary.

During the public comment period, the public will also be provided with the opportunity to review and comment on the draft and final reports.

B. Anticipated Project Reviews and Estimated Costs

Table 1 provides the estimated schedule and cost for reviews anticipated for this study.

Table 1: Woodtick Peninsula Section 204 – Anticipated Reviews

| Product to undergo Review | Review | Start Date | End Date | Cost | Complete |
|----------------------------------|-------------------------------------|-------------------|-----------------|-------------|-----------------|
| Draft Feasibility Report and EA | District Quality Control | 2 FEB 2022 | 22 FEB 2022 | \$ 35,000 | No |
| | Agency Technical Review | 23 MAR 2022 | 06 MAY 2022 | \$ 25,000 | No |
| | Policy and Legal Review | 23 MAR 2022 | 23 MAY 2022 | \$ 3,000 | No |
| Final Feasibility Report and EA | District Quality Control | 15 JUL 2022 | 04 AUG 2022 | \$ 35,000 | No |
| | Agency Technical Review (Cost Only) | 07 JUN 2022 | 15 JUN 2022 | \$ 5,000 | No |
| | Policy and Legal Review | 15 JUL 2022 | 04 AUG 2022 | \$ 3,000 | No |

C. District Quality Control

The home district shall manage DQC and will appoint a DQC Lead to oversee that review (see EC 1165-2-217, section 8.a.1).

- 1) **Review Team Expertise.** Table 2 identifies the required DQC team expertise.

Table 2: Required DQC Expertise

| DQC Team Disciplines | Peer DQC Reviewer |
|--------------------------------|--------------------------|
| DQC Lead/Ecosystem Restoration | Josh Unghire (LRB) |
| Plan Formulation | Adam Fox (LRE) |
| Environmental Analysis | Charlie Uhlarik (LRE) |
| Geotech | Tim Smith (LRE) |
| Civil/Cost | Alex Jimenez (LRE) |
| Operations | Mike Asquith (LRB) |
| Real Estate | Andrew Shelton (LRE) |
| Hydrology and Hydraulics | Eric Tauriainen (LRE) |

- 2) **Documentation of DQC.** Quality Control should be performed continuously throughout the study. Certification of DQC completion is required at the draft and final report stages. Documentation of DQC should follow the District Quality Manual and the MSC Quality Management Plan. An example DQC Certification statement is provided in EC 1165-2-217 (Figure F). DrChecks software will be used to document DQC review comments, responses, and issue resolution.

Documentation of the completed DQC review (i.e., all comments, responses, issue resolution, and DQC certification) will be provided to the MSC, RMO, and ATR Team leader prior to initiating an ATR. The ATR team will assess the quality of the DQC performed and provide a summary of that assessment in the ATR report. Missing or inadequate DQC documentation can result in the start of subsequent reviews being delayed (see EC 1165-2-217, Section 9).

D. Agency Technical Review

ATR will be performed on the draft and final decision documents and supporting analyses (EC 1165-2-217, paragraph 9.i.(3)). The RMO will manage the ATR. ATR will be performed by a qualified team from outside the home district that is not involved in the day-to-day production of the project/product. ATR will be performed by a team whose members are certified or approved by their respective Communities of Practice (CoPs) to perform reviews. The RMO will identify an ATR lead and ATR team members. Neither the home District nor the MSC will nominate review team members. The ATR team lead will be from outside the home MSC. The ATR team lead is expected to participate in the study’s milestone meetings (PB 2018-01), the cost of which is not included in the estimates provided in Table 1.

- 1) **Review Team Expertise.** Table 3 identifies the anticipated disciplines and ATR team expertise required for study efforts.

Table 3: Required ATR Team Expertise

| ATR Team Disciplines | Expertise Required |
|-------------------------------------|---|
| ATR Lead/Plan Formulation | The ATR lead should be a senior professional preferably with experience in preparing CAP Section 204 decision documents and conducting ATR. This reviewer will be responsible for reviewing all plan formulation components of the feasibility study. 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. |
| Ecosystem Restoration | The ecosystem restoration ATR must be familiar with the creation of wetlands and coastal habitat. This reviewer must also be familiar with conducting evaluation of ecosystem restoration outputs and CE/ICA. It is preferred that this reviewer must be familiar with 204 projects. It may be possible that the ATR Lead can cover both Plan Formulation and Ecosystem Restoration roles if he/she has the appropriate expertise. NEPA experience preferred. |
| Climate Preparedness and Resiliency | At least one member of an ATR Team for inland hydrology and coastal studies, designs, and projects must be certified by the Climate Preparedness and Resilience CoP in CERCAP |
| Cost Engineering Reviewer | Cost MCX Staff or Cost MCX Pre-Certified Professional as assigned by the Walla Walla Cost Engineering Mandatory Center of Expertise with experience preparing cost estimates for Section 204 cost estimates. Must be Certification and Access Program (CERCAP) certified. |
| Coastal Engineering/Civil Design | The Coastal Design reviewer should have experience in the design of coastal structures such as breakwaters and/or seawalls. This reviewer should have an expertise in coastal engineering on the Great Lakes. |

- 2) **Documentation of ATR.** DrChecks will be used to document ATR comments, responses, and issue resolution. Comments should be limited to those needed to ensure product adequacy. All members of the ATR team should use the four part comment structure (EC 1165-2-217, Section 9(k)(1)). If a concern cannot be resolved by the ATR team and PDT, it will be elevated to the vertical team for resolution using the issue resolution process identified in EC 1165-2-217. The comment(s) can then be closed in DrChecks by noting the concern has been elevated for resolution. The ATR Lead will prepare a Statement of Technical Review Report (see EC 1165-2-217, Section 9), for both draft and final decision documents. Any unresolved issues will be documented in the ATR report prior to certification. The Statement of Technical Review (ATR completion) should always include signatures from the ATR Lead, Project Manager, and RMO,

and the Certification of ATR should always include signatures from the District Chiefs of Engineering and Planning Division.

E. Independent External Peer Review

(1) Type I Independent External Peer Review (IEPR): A Type I IEPR is not required based on the mandatory triggers outlined in the Memorandum for Major Subordinate Command (MSC) and District Commanders dated April 05, 2019; the memorandum provides interim guidance on streamlining IEPR for improved civil works product delivery. Paragraph 4 states a project study may be excluded from Type I IEPR if the project does not meet any of the three mandatory IEPR triggers.

All CAP projects are excluded from Type I IEPR except those conducted under Section 205 and Section 103, or those projects that include an EIS or meet the mandatory triggers for Type I IEPR.

This feasibility study does not meet any of the three mandatory IEPR triggers for the following reasons:

- The estimated total cost of the project, including mitigation costs, is not greater than \$200 million.
- The Governor of Michigan has not requested a peer review by independent experts.
- The study is not controversial due to significant public dispute over size, nature, or effects of the project or the economic or environmental costs or benefits of the project.

When none of the three mandatory triggers for IEPR are met, MSC Commanders have the discretion to conduct IEPR on a risk-informed assessment of the expected contribution of IEPR to the project. An IEPR would not provide additional benefit to the study for the following reasons:

- This study does not include the development or use of any novel methods.
- This project does not pose likely threats to health and public safety.
- There is no anticipated inter-agency interest.
- Detroit District has not received a request from the head of any Federal or State agency for an IEPR.
- The proposed project is not anticipated to have unique construction sequencing or a reduced or overlapping design construction schedule.

(2) Type II Independent External Peer Review (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. **Since this document does not involve life safety concerns, a Type II IEPR would not be considered.**

F. Model Certification Or 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 are any models and analytical tools used to define water resources management problems and opportunities; to formulate potential alternatives to address study area problems and take advantage of 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 a planning product. The selection and application of the model and assessment of input and output data is the responsibility of the users and is subject to DQC, ATR, and IEPR (if required). The following models may be used to develop the decision document.

Table 5: Planning Models

| Model Name and Version | Brief Model Description and How It Will Be Used in the Study | Certification / Approval |
|---|--|---|
| IWR Planning Suite Version 2.0.9 | <p>Cost Effectiveness, Incremental Cost Analysis.</p> <p>The Institute for Water Resources Planning Suite (IWR-PLAN) is a decision support software package that is designed to assist with the formulation and comparison of alternative plans. While IWR-PLAN was initially developed to assist with environmental restoration and watershed planning studies, the program can be useful in planning studies addressing a wide variety of problems. IWR-PLAN can assist with plan formulation by combining solutions to planning problems and calculating the additive effects of each combination, or "plan." IWR-PLAN can assist with plan comparison by conducting cost effectiveness and incremental cost analyses, identifying the plans which are the best financial investments and displaying the effects of each on a range of decision variables. The ecological habitat units calculated using the Habitat Evaluation Process will be used as inputs in IWR-PLAN to evaluate the benefits associated with each project alternative.</p> | Certified |
| Lake Erie Qualitative Habitat Evaluation Index (L-QHEI) Version 2.1 | <p>The Lake Erie Qualitative Habitat Evaluation Index (L-QHEI) developed by the Ohio Environmental Protection Agency is designed to provide a measure of Lake Erie shoreline habitat quality that generally corresponds to those physical and biological factors that affect fish communities and which are generally important to other aquatic life (e.g. invertebrates). The LQHEI consists of five metrics based on shoreline habitat quality: (1) substrate type/quality; (2) cover type; (3) shoreline morphology; (4) riparian zone and bank erosion; and (5) aquatic vegetation quality. Scores could theoretically range between zero and 100 (low scores represented low habitat quality/high human disturbance and high scores indicated high habitat quality/little human disturbance). This index will be</p> | Certified for Regional Use in the Great Lakes |

| | | |
|--|---|--|
| | one of the metrics used to characterize existing conditions and evaluate ecosystem restoration plans. | |
|--|---|--|

EC 1105-2-412 does not address engineering models used in planning. The responsible use of well-known and proven USACE developed and commercial engineering software will continue. The professional practice of documenting the application of the software and modeling results will be followed. The USACE Scientific and Engineering Technology Initiative has identified many engineering models as preferred or acceptable for use in studies. These models should be used when appropriate. The selection and application of the model and the input and output data is the responsibility of the user and is subject to DQC, ATR, and IEPR (if required). The following models may be used to develop the decision document.

Table 6: Engineering Models

| Model Name and Version | Brief Model Description and How It Will Be Used in the Study | Model Certification / Acceptance Status |
|---|--|--|
| Microcomputer Aided Cost Engineering System (MCACES), MII | Microcomputer Aided Cost Engineering System (MCACES) is the cost estimating software program tools used by cost engineering to develop and prepare Class 3 Civil Works cost estimates. | Civil Works Cost Engineering and Agency Technical Review MCX mandatory |

G. Policy And Legal Compliance Reviews

- 1) **Policy Review.** All decision documents will be reviewed for compliance with law and policy. Guidance for policy and legal compliance reviews is addressed in Appendix H, ER 1105-2-100.
- 2) **Legal Review.** A representative(s) from the Detroit District Office of Counsel (OC) will be assigned to participate on the policy and legal compliance review team.

| Name | Office | Position | Phone Number |
|------------|------------|------------|--------------|
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |