IMPLEMENTATION PHASE
REVIEW PLAN

Nippersink Creek Restoration Section 206
McHenry County, Illinois

Chicago District, US Army Corps of Engineers

MSC Approval Date: *May 20, 2011*
Last Revision Date: *December 2, 2013*

US Army Corps
of Engineers ®

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1. PURPOSE AND REQUIREMENTS

a. Purpose. This Implementation Review Plan defines the scope and level of peer review for the design, construction, operation, and maintenance procedures of the Nippersink Creek Restoration Section 206, McHenry County, Illinois.

Section 206 of the Water Resources Development Act of 1996, Public Law 104-305, authorizes the Secretary of the Army to carry out a program of aquatic ecosystem restoration with the objective of restoring degraded ecosystem structure, function, and dynamic processes to a less degraded, more natural condition considering the ecosystem's natural integrity, productivity, stability and biological diversity. This authority is primarily used for manipulation of the hydrology in and along bodies of water, including wetlands and riparian areas. This authority also allows for dam removal. It is a Continuing Authorities Program (CAP) which focuses on water resource related projects of relatively smaller scope, cost and complexity. Traditional USACE civil works projects are of wider scope and complexity and are specifically authorized by Congress. The Continuing Authorities Program is a delegated authority to plan, design, and construct certain types of water resource and environmental restoration projects without specific Congressional authorization.

Additional Information on this program can be found in Engineering Regulation 1105-2-100, Planning Guidance Notebook, Appendix F.

b. Applicability. This review plan is based on the LRD Regional Model Review Plan for Section 14, 107, 111, 204, 206, 208 and 1135 project decision documents, which is applicable to projects that do not require Independent External Peer Review (IEPR), as defined in ER 1165-2-214 Civil Works Review. A Section 14, 107, 111, 204, 206, 208 and 1135 project does not require IEPR if ALL of the following specific criteria are met:

- The project does not involve a significant threat to human life/safety assurance;
- The total project cost is less than $45 million;
- There is no request by the Governor of an affected state for a peer review by independent experts;
- The project does not require an Environmental Impact Statement (EIS),
- The project/study is not likely to involve significant public dispute as to the size, nature, or effects of the project;
- The project/study is not likely to involve significant public dispute as to the economic or environmental cost or benefit of the project;
- The information in the decision document or anticipated project design is not likely to be based on novel methods, involve the use of 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;
- The project design is not anticipated to require redundancy, resiliency, and/or robustness, unique construction sequencing, or a reduced or overlapping design construction schedule; and
- There are no other circumstances where the Chief of Engineers or Director of Civil Works determines Type I IEPR is warranted.

If any of the above criteria are not met, the LRD Regional Model Review Plan is not applicable and a implementation specific review plan must be prepared by the home district, coordinated with the appropriate Risk Management Center (RMC) and approved by the home Major Subordinate Command (MSC) in accordance with EC 1165-2-214.

Applicability of the LRD Regional Model Review Plan for a specific project is determined by the home MSC. If the MSC determines that the model plan is applicable for a specific study, the MSC Commander may approve the plan (including exclusion from IEPR) without additional coordination with a PCX or Headquarters, USACE. The initial decision as to the applicability of the model plan should be made no later than the Federal Interest Determination (FID) milestone (as defined in Appendix F of ER 1105-2-100, F-10.e.1) during the feasibility phase of the project.

This LRD Regional Model review plan may be used to cover implementation products. Following the format of the model LRD Regional Model review plan, the project review plan may be modified to incorporate information for the review of the design and implementation phases of the project.

c. References

(1) EC 1165-2-214, Civil Works Review, 15 December 2012
(2) EC 1105-2-412, Assuring Quality of Planning Models, 31 Mar 2011
(3) ER 1105-2-100, Planning Guidance Notebook, Appendix H, Policy Compliance Review and Approval of Decision Documents, Amendment #1, 20 Nov 2007
(4) ER 1110-1-12, Quality Management, 30 Sep 2006
(5) Nippersink Creek Restoration Section 206 Project Management Plan, 12 September 2011
(6) Nippersink Creek Restoration Section 206 Project Quality Control Plan, 20 September 2013

d. Requirements. This Implementation Review Plan was developed in accordance with EC 1165-2-214, 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 (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 1165-2-214) and planning model certification/approval (per EC 1105-2-412).

(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 defined in the Project Management Plan (PMP). Basic quality control tools include a Quality Control Plan (QCP) and Quality Assurance Plan (QAP) providing for seamless review, quality checks and reviews, supervisory reviews, Project Delivery Team (PDT) reviews, etc. It is managed in the home district. Quality checks may be performed by staff responsible for the work, such as supervisors, work leaders, team leaders, designated individuals from the senior staff, or other qualified personnel. However, they should not be performed by the same people who performed the original work, including managing/reviewing the work in the case of contracted efforts. Additionally, the PDT is responsible for a complete reading of any reports and accompanying appendices prepared by or for the PDT to assure the overall coherence and integrity of the report, technical appendices, and the recommendations

before approval by the District Commander. The regional quality management system describes procedures for the DQC.

(2) Agency Technical Review (ATR). EC 1165-2-214 requires that USACE Risk Management Center (RMC) shall serve as the RMO for Dam Safety Modification projects and Levee Safety Modification projects. For all other projects, the MSC shall serve as the RMO. ATR is an in-depth review, managed within USACE, and conducted by a qualified team outside of the home district that is not involved in the day-to-day production of the project/product. The purpose of this review is to ensure the proper application of clearly established criteria, regulations, laws, codes, principles and professional practices. The ATR team reviews the various work products and assures that all the parts fit together in a coherent whole. ATR teams will be comprised of senior USACE personnel, preferably recognized subject matter experts with the appropriate technical expertise, such as regional technical specialists (RTS), and may be supplemented by outside experts as appropriate. To assure independence, the leader of the ATR team shall be from outside the home MSC.

(3) Independent External Peer Review (IEPR). 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. For clarity, IEPR is divided into two types, Type 1 is generally for decision documents and Type II is generally for implementation documents.

A Type II IEPR Safety Assurance Review (SAR) shall be conducted on design and construction activities for hurricane and storm risk management and flood risk management projects, as well as other projects where potential hazards pose a significant threat to human life. This applies to new projects and to the major repair, rehabilitation, replacement, or modification of existing facilities. External panels will review the design and construction activities prior to initiation of physical construction and periodically thereafter until construction activities are completed. The review shall be on a regular schedule sufficient to inform the Chief of Engineers on the adequacy, appropriateness, and acceptability of the design and construction activities for the purpose of assuring that good science, sound engineering, and public health, safety, and welfare are the most important factors that determine a project's fate.

2. REVIEW MANAGEMENT ORGANIZATION (RMO) COORDINATION

The RMO is responsible for managing the overall peer review effort described in this Implementation Review Plan. The RMO for Agency Technical Review (ATR) for this project is the MSC.

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

3. PROJECT INFORMATION

a. Decision Document. The Nippersink Creek Restoration Section 206 Project – McHenry, Illinois Detailed Project Report (DPR) and Environmental Assessment (EA) was prepared in accordance with

ER 1105-2-100, Appendix F. The approval level of the DPR and EA (if policy compliant) is the home MSC. The DPR was approved on 15 March 2011.

b. Product Description.

The product is plans and specifications. The project area lies entirely within the Glacial Park (Sec. 29, 28, 33,34,27; T46N; R8E), which is owned by the McHenry County Conservation District (MCCD is the local sponsor). The goal of this project is to restore the natural features of Nippersink Creek and its adjacent natural area. The objectives of this project include 1) restoring stream hydrology, hydraulics and natural habitat, 2) restoring native emergent wetland communities, 3) restoring native wet/mesic prairie communities.

The project will restore the stream channel of Nippersink Creek and surrounding area to a more natural state. Project activities include constructing cobble riffles, stripping and grading the stream banks, creating approximately 3 acres of swale habitat through excavating material to fill an existing ditch, planting of appropriate native vegetation throughout the site, and eradication of invasive and non-native vegetation via herbicide application and hand removal.

c. Factors Affecting the Scope and Level of Review.

- There are no foreseeable technical, institutional or social challenges.
- There is no reason to believe there will be any significant economic, environmental or social effects to the Nation
- The project/study will not be highly controversial for the reason stated above.
- The project does not involve a significant threat to human life/safety assurance. The main task for the project is to restore ecosystem.

d. In-Kind Contributions. Products and analyses provided by non-Federal sponsors as in-kind services are subject to DQC and ATR, similar to any products developed by USACE. In-kind product expected by the non-Federal sponsor is to provide a temporary construction office for the contractor.

4. DISTRICT QUALITY CONTROL (DQC)

a. All design documents shall undergo DQC. The home district shall manage DQC. Documentation of DQC activities is required and should be in accordance with the regional quality management system. All products shall undergo appropriate Chiefs review. Chiefs review will involve the Chiefs of all sections with a PDT member reviewing the completed document and submitting edits. All design calculations are checked and signed-off by an independent peer reviewer. Edits will be incorporated into the document and rerouted for final approval requiring sign-off from the reviewers and Branch Chief. This review, in conjunction with the PDT review is completed to ensure consistency of the document prior to ATR. Review comments are coordinated by the lead engineer and project manager.

All designs will be checked and initialed by the reviewer. Comments and responses from reviewers and Chiefs for the design products shall be documented and maintained in shared electronic folders. The design product PDT member checklist will be completed and signed by the Chiefs. Upon completion of DQC and BCOES reviews, DQC and BCOES certification shall be completed by the

District's functional Chiefs. A copy of the DQC and BCOES certification template is provided in Attachment 2.

b. Documentation of DQC. Comments and responses from peer and Chief's reviews for the design products shall be documented and maintained in shared electronic folders. The product PDT member checklist will be completed and signed by the Section Chiefs.

c. Products to Undergo DQC. Monitoring reports and design package developed will undergo District DQC.

5. AGENCY TECHNICAL REVIEW (ATR)

ATR is mandatory for all design products and will be in accordance with EC 1165-2-214. 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 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 will be from outside the home MSC. The ATR is intended to be ongoing throughout product development, using a team concept, not a cumulative process performed at the end.

The project does not include any technical design or structural features. The project is a typical ecosystem restoration with majority of seeding and planting. One component of the project is stream/swale construction about 800 feet in length. DQC, including BCOES reviews, will be conducted during the product development. There will be added benefits to perform ATR on this project by a Civil Engineer to check earthwork design for the stream/swale construction.

a. Products to Undergo ATR. ATR will be performed throughout the study in accordance with the regional quality management system. Certification of the ATR will be provided. Products to undergo ATR include Plans and Construction Specifications and Design Documentation Report.

b. Required ATR Team Expertise.

ATR Team Members/Disciplines	Expertise Required
Civil Engineer	Review Earthwork Task and overall planting plans.
Hydraulic Engineer	Review H&H Modeling and overall design.

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 sample Statement of Technical Review is included in Attachment 2.

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 1165-2-214, 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 1165-2-214.

  For Section 14, 107, 111, 204, 206, 208 and 1135 decision documents prepared under the LRD Regional Model Review Plan, Type I IEPR is not required.

- 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.

  For Section 14, 107, 111, 204, 206, 208 and 1135 decision documents prepared under the LRD Regional Model Review Plan, Type II IEPR is not required in the design and implementation phase.

a. Decision on Type I IEPR. Based on the information and analysis provided in the preceding paragraphs of this review plan, the project covered under this plan is excluded from IEPR because it does not meet the mandatory IEPR triggers and does not warrant IEPR based on a risk-informed analysis. If any of the criteria outlined in paragraph 1(b) are not met, this LRD Regional Model Review Plan is not applicable and a specific review plan must be prepared by the home district, coordinated with the appropriate PCX and approved by the home MSC in accordance with EC 1165-2-214.

b. Products to Undergo Type I IEPR. Not Applicable

c. Documentation of Type I IEPR. Not Applicable

d. Decision on Type II IEPR. The project does not involve a significant threat to human life. The main task for the project is to restore ecosystem by planting and seeding. Therefore a Type II IEPR will not be applicable.

e. Products to Undergo Type II IEPR. Not Applicable

f. Documentation of Type II IEPR. Not Applicable

7. REVIEW SCHEDULES AND COSTS

a. ATR Schedule and Cost.
Oct 30, 2013 – 50% Review
Jan 2, 2014 – 100% Review
ATR Cerification – Jan 21, 2014

Total ATR cost - $12,000

b. Type I IEPR Schedule and Cost. Not Applicable

c. Type II IEPR Schedule and Cost. Not Applicable

8. PUBLIC PARTICIPATION

Agencies with regulatory review responsibilities will be contacted for coordination as required by applicable laws and procedures. Project does not require public meetings to be conducted. Close coordination with the McHenry Glacier Park, and local municipalities regarding the project construction schedule is ongoing.

9. REVIEW PLAN APPROVAL AND UPDATES

The LRD Commander is responsible for approving this Review Plan. The Commander's approval reflects vertical team input (involving district, MSC, RMO, and HQUSACE members) 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 home district is responsible for keeping the Review Plan up to date. 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.

10. REVIEW PLAN POINTS OF CONTACT

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

US Army Corps of Engineers
Civil Engineer
231 S. LaSalle St, Suite 1500
Chicago, IL 60604

In addition:

- Chief, Design Branch, Chicago District
- Project Manager, Chicago District
- Senior Regional Engineer, Great lakes and Ohio River Division

ATTACHMENT 1: TEAM ROSTERS

Project delivery team members include the following:

Discipline
Project Manager
Lead/Restoration Ecologist
Restoration Ecologist/Botanist
Cultural & Arch. Resources
Real Estate
AutoCAD
Cost Engineer
Civil Engineer (Technical Lead)
Surveyor
Hydraulic Engineer
Environmental Engineer

ATR Team Members

Discipline
Civil Engineer
Hydraulic Engineer

Vertical Team

The Vertical Team consists of members of the HQUSACE and Great Lakes & Ohio River Division Offices. The Vertical Team plays a key role in facilitating execution of the project in accordance with the PMP. The Vertical Team is responsible for providing the PDT with Issue Resolution support and guidance as required. The Vertical Team will remain engaged seamlessly throughout the project via monthly telecoms as required and will attend In Progress Reviews and other key decision briefings as required. The District Liaison is the District PM's primary Point of Contact on the Vertical Team.

Attachment 2: Statement of Technical Review

ATR CERTIFICATION for Chicago District

COMPLETION OF AGENCY TECHNICAL REVIEW

The Agency Technical Review (ATR) has been completed for the *<type of product>* for *<project name and location>*. The ATR was conducted as defined in the project's Review Plan to comply with the requirements of EC 1165-2-214. 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 DrChecks[sm].

Name
ATR Team Leader
Office Symbol/Company

Date

Name
Project Lead/Quality Manager
Office Symbol

Date

Name
*Review Management Office Representative
Office Symbol

Date

CERTIFICATION OF AGENCY TECHNICAL REVIEW AND DESIGN COMPLETE

Significant concerns and the explanation of the resolution are as follows:

(Describe the major technical concerns, possible impact, and resolution)

As noted above, all concerns resulting from the agency technical review of the *<project name and location>* have been fully resolved.

Date

Chief, Design Branch
Chicago District

RMO signature required for IEPR review

ATTACHMENT 3: DQC AND BCOES CERTIFICATION

BCOES CERTIFICATION for Chicago District
NIPPERSINK CREEK RESTORATION SECTION 206 PROJECT
PLANS AND SPECIFICATIONS

(Page 1 of 2)

I. CHIEFS' DQC AUTHENTICATION

We, as the functional chiefs with responsibility for respective portions of the subject document, authenticate by our signature below that: (1) quality control procedures have been followed, (2) the ATR and BCOES is complete, and (3) there are no outstanding issues. Further, we concur in the recommendation that the subject set of Plans and Specifications (P&S) are ready to be advertised.

_____ _____
Date

Chief, Civil Design, Cost Engineering, and Specification

_____ _____
Date

Chief, Geotechnical and Survey Section

_____ _____
Date

Chief, Technical Section

_____ _____
Date

Chief, Environmental and Hydraulics Section

II. STATEMENT OF ESTIMATED CONSTRUCTION COSTS AND DURATION

The estimated construction cost for the subject contract (including contingencies) is $_____

The estimated construction duration for the subject contract is _____days

_____ _____
Date

Chief, Civil Design, Cost Engineering, and Specification

BCOES CERTIFICATION for Chicago District
NIPPERSINK CREEK RESTORATION SECTION 206 PROJECT
PLANS AND SPECIFICATIONS

III. BCOES CERTIFICATION

I, (*the PM*), certify that the Value Engineering process as required by ER 11-1-321, Army Programs Value Engineering has been completed for this procurement action. I certify compliance with Public Law 99-662 (33 USC 2288) and OMB Circular A-131. A VE study was (completed/waived) on (*date*) by the appropriate authority. All VE proposals indicating potential savings of over $1,000,000 have been resolved with approval of the MSC Commander.

[NAME] _____ *[NAME]* _____
Project Manager Date Value Engineering Office Date

The Bid or RFP Package has been reviewed for Biddability, Constructability, Operability, Environmental, and Sustainability (BCOES) requirements in accord with ER 415-1-11. The undersigned certify that all appropriate BCOES review comments have either been incorporated into the Bid or RFP Package or otherwise satisfactorily resolved. Comments, evaluations, and back checks are documented in DrChecks.

_____ _____
District Safety Officer Date

_____ _____
Chief, Design Branch Date

_____ _____
Chief, Construction-Operations Branch Date

IV. TECHNICAL SERVICES CERTIFICATION

I certify that the Agency Technical Review and the BCOES Compliance Review for the subject set of P&S are complete and that there are no outstanding issues. I concur that the subject set of P&S is ready to be advertised.

_____ _____
Chief, Technical Services Division Date

ATTACHMENT 4: REVIEW PLAN REVISIONS

Revision Date	Description of Change	Page / Paragraph Number
03-Oct-2013	Transition from Feasibility to P&S Phase	Throughout doc
03-Oct-2013	ATR Schedule and Team Members updated	7.a on pg 8, Attachment 1 on pg 10
03-Oct-2013	PDT Members updated	Attachment 1 on pg 10
12-Nov-2013	Updates made per LRD comments	Throughout doc