

IMPLEMENTATION PHASE

REVIEW PLAN

FOR

CHAMBERS GROVE PARK UPGRADE

Initial MSC Approval Date

09 JAN 2015

Last Revision Date

DDMM YYYY

**U.S. ARMY CORPS OF ENGINEERS
DETROIT DISTRICT**

NOVEMBER 2014

Table of Contents

1. PURPOSE AND REQUIREMENTS	3
a. Purpose.....	3
b. References.....	3
c. Requirements.....	3
(1) District Quality Control (DQC).....	3
(2) Agency Technical Review (ATR).....	3
(3) Independent External Peer Review (IEPR).....	4
2. REVIEW MANAGEMENT ORGANIZATION (RMO).....	4
3. PROJECT DESCRIPTION	4
a. Project Scope	4
b. General Site Location and Description.....	5
c. Project Delivery Team (PDT).....	5
4. RISK INFORMED DECISION ON APPROPRIATE REVIEWS	5
a. Project Risks.....	5
b. Appropriate Reviews	6
5. SCOPE OF REVIEWS	6
a. District Quality Control (DQC).....	6
b. Agency Technical Review (ATR)	7
6. PUBLIC INVOLVEMENT	7
7. IN-KIND CONTRIBUTION BY SPONSOR	7
8. REVIEW SCHEDULE AND COSTS.....	7
a. District Quality Control	8
b. Agency Technical Review.....	8
9. MSC APPROVAL.....	8
10. REVIEW PLAN POINTS OF CONTACT / VERTICAL TEAM CONTACTS	8
ATTACHMENT 1: SAMPLE STATEMENT OF TECHNICAL REVIEW	9
ATTACHMENT 2: REVIEW PLAN REVISIONS	10
ATTACHMENT 3: ACRONYMS AND ABBREVIATIONS	11

IMPLEMENTATION REVIEW PLAN

CHAMBERS GROVE PARK UPGRADE

1. PURPOSE AND REQUIREMENTS

a. Purpose. This plan establishes requirements for review of implementation documents for the Chambers Grove Park Upgrade project to be executed in the St. Louis River in the City of Duluth, Minnesota.

b. References

- (1) USACE Engineer Regulation (ER) 1110-1-12 (w/changes 1 and 2), Quality Management, 31 July 2006.
- (2) USACE Engineer Regulation (ER) 415-1-11, Biddability, Constructability, Operability, Environmental and Sustainability (BCOES) Reviews, 1 January 2013.
- (3) USACE Engineer Circular (EC) 1165-2-214, Civil Works Review, 15 December 2012.
- (4) QMS 08504 LRD, QC/QA Procedures for Civil Works.
- (5) QMS 08504 LRE, QC/QA Procedures for Civil Works.
- (6) Project Quality Management Plan, 26 June 2014.

c. Requirements. This review plan was developed in accordance with EC 1165-2-214 which establishes review requirements for Civil Works products. According to the document, three types of reviews may be required for products depending on the project scope and risks. The review types include District Quality Control, Agency Technical Review, and Independent External Peer Review. An outline of each review type is provided below. The extent of reviews appropriate for this project is discussed in Section 5.

(1) District Quality Control (DQC). DQC is managed and generally performed by the District responsible for the project. DQC is an internal review process of basic science and engineering work products focused on fulfilling the project quality requirements. Basic tools may include, but not be limited, to the following: seamless reviews, quality checks and reviews, supervisory reviews, and project delivery team (PDT) reviews. DQC reviews are performed by experienced District personnel who have not been involved in production.

(2) Agency Technical Review (ATR). 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. An ATR team reviews the various work products and checks 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. To assure independence, an ATR team will be organized with senior USACE experts from outside Detroit District. The ATR team leader will be from outside LRD and other team members must be from outside Detroit District. ATR team members must be certified by their community of practice to be qualified to perform agency technical reviews and as such must be listed in the Corps of Engineers Reviewer Certification and Access Program (CERCAP).

(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. Reference 1 requires consideration of two types of IEPR for Civil Works products. Type I generally applies to decision documents. Type II For clarity, IEPR is divided into two types. Type I applies to decision documents. Type II, Safety Assurance Review (SAR) applies to implementation documents, including design and construction products.

2. REVIEW MANAGEMENT ORGANIZATION (RMO)

The RMO is responsible for managing ATR and IEPR (if required). For this review plan, the RMO responsible for approval and oversight of review plan and its implementation is the Great Lakes and Ohio River Division (LRD).

3. PROJECT DESCRIPTION

a. Project Scope

The Detroit District will develop plans and specifications for the following scope of work: remove deteriorating steel sheet pile and gabion basket walls adjacent to the St. Louis River; soften slopes by using natural stabilization techniques; create in-stream habitat for spawning sturgeon; and install at least one ADA compliant fishing platform. MNDNR will be responsible for providing USACE with a conceptual design of the in-stream habitat. MNDNR will then also be utilized as a reviewer on following detailed design submissions. The Detroit District will be responsible only for the design effort which will include preparation of 100% construction ready plans and technical specifications along with a Design Documentation Report (DDR) and Engineering Considerations and Instructions to Field Personnel (ECIFP) Report. Construction will be the responsibility of the project sponsors (Minnesota Land Trust, Minnesota Pollution Control Agency, Minnesota Department of Natural Resources, City of Duluth. Due to the limitations of the project authorization, USACE will not be involved with construction oversight. The total estimated cost for the project design is \$71,000. The construction cost is estimated to range between \$1,000,000 and \$5,000,000.

This project's authorization comes from Section 401 of the Water Resources Development Act of 1990. This act allows the U.S. Army Corps of Engineers to support the development and implementation of Remedial Action Plans at U.S. Areas of Concern on the Great Lakes. Section 401 of this Act enables the Corps to provide technical support to State and local governments. Under this authority, USACE is not authorized to implement construction. Plans and

specifications will be provided to the local sponsor (Minnesota Department of Natural Resources, MNDNR) to execute construction. MNDNR is planning to execute through a design-build contract, therefore the construction contractor will assume ultimate responsibility for the design.

b. General Site Location and Description

The project site is located near the intersection of Oldenberg Parkway and West 3rd Street in the Fond Du Lac neighborhood of Duluth, Minnesota. Chambers Grove is a public park owned and maintained by the City of Duluth. The park includes large green spaces, hiking trails, gazebos, and grilling stations. There are also fishing access points to the adjacent on the St. Louis River with ADA compliant fishing platforms.

c. Project Delivery Team (PDT)

The PDT responsible for the design products includes the following members:

4. RISK INFORMED DECISION ON APPROPRIATE REVIEWS

a. Project Risks

The project scope involves removing deteriorating steel sheet pile and gabion basket walls adjacent to the St. Louis River; softening slopes by using natural stabilization techniques; creating in-stream habitat for spawning sturgeon; and installing at least one ADA compliant fishing platform. The finished project will not present any life safety risks to the public.

(1) Modification to Flood Plain Delineation. Sheet pile and gabion basket walls along the St. Louis River will be removed and natural slopes will be constructed as part of this project. Changes will also be made to the streambed including the installation of structures such as j-hooks, root wads, etc. These items may alter the hydraulics within the St. Louis River. Risk associated with these alternations will be investigated using a two-dimensional model. These risks are expected to be minimal.

(2) Erosion Control. Work will be performed within the waterway. The Contractor will be required to install erosion control measures that will prohibit siltation/sedimentation from transporting downstream. Development of an adequate Erosion Control Plan and installation of appropriate erosion control measures will help to minimize this risk.

(3) Existing Sheet Pile Wall Stability. The existing sheet pile wall shows signs of movement and care must be taken when operating construction machinery near this structure. The risk of failure will be minimized by analyzing the wall and providing a loading restriction in the contract documents.

(4) Weather. The project involves work within a river channel. During construction, periods of heavy rain and high water levels could impact the project schedule and, therefore, increase

project costs. The Technical Coordinator and Hydraulic Engineer will examine flood records prior to establishing the number of weather days included in the specifications. This will ensure the weather days are based on scientific methods and should therefore provide an accurate estimate.

b. Appropriate Reviews

In accordance with EC 1165-2-214, District Quality Control (DQC) reviews and Agency Technical Review (ATR) must be performed for the products developed to implement this project.

As for Independent External Peer Review (IEPR), with the project being in the implementation phase, only whether Type II IEPR (Safety Assurance Review) is required must be determined. EC 1165-2-214 requires Type II IEPR if the project poses a significant threat to human life (public safety) and/or is characterized by one or more of the following factors: the project involves innovative materials, novel methods, complex challenges, etc; and the design requires resiliency, redundancy or robustness.

The District Chief of Engineering has reviewed the project scope and risks (see Section 4.a) and determined the project does not pose significant threat to human life and otherwise does not meet conditions that require a Type II IEPR.

5. SCOPE OF REVIEWS

As stated above, District Quality Control and Agency Technical Review are required for the project. This section describes the general requirements for DQC and ATR. In accordance with local procedure QMS LRE 08504, the project delivery team will publish a Quality Management Plan that provides detailed instructions for conduct of the quality reviews.

a. District Quality Control (DQC)

District Quality Control (DQC) includes reviews managed and performed by District staff to ensure the quality of the design and construction products. Quality control requirements are described in Chapter 3 of ER 1110-1-12 and local work procedures in the regional Quality Management System (QMS). DQC for this project will include the following types of reviews: quality checks, BCOES, plan-in-hand, and supervisory. The following disciplines will be primarily involved with the work and reviews: geotechnical, hydraulics, structural, environmental, and cost. All review comments will be managed in the DrChecks program.

(1) Quality checks will be performed throughout the product development process by experienced individuals. These checks may include review to verify basic assumptions, design criteria, calculations and design methods. Checkers will ensure that internal checks of the design have been completed and indicated on the drawings and computation sheets, and that the completed project design is properly documented in the DDR. Individuals assigned to perform quality checks are listed below.

(2) BCOES reviews are required by ER 415-1-11 to be performed at the design criteria, 95% design completion, and final back check project stages. District policy is to also perform a BCOES review at the 50% design completion stage. Individuals assigned to the BCOES review team for this project are listed below.

(3) A plan-in-hand (PIH) review will be performed by qualified individuals after the 50% BCOES review. The PIH review will be an on-site review performed to ensure the design engineers and drafting technicians have a proper understanding of and have coordinated the project design with the existing site conditions. It will also confirm the design meets the customer's requirements. Individuals assigned to perform the PIH review are listed below.

(4) Supervisory reviews will be performed after others have been completed. Reviewers will check the Ready to Advertise (RTA) package to confirm that all reviews have been completed and back checked; all files are properly labeled by project milestone and filed in ProjectWise; all certifications are completed; and the package is ready for advertisement. The supervisory reviewers are listed below.

b. Agency Technical Review (ATR)

For implementation documents, agency technical review (ATR) is required according to EC 1165-2-214. The design documentation report (DDR) and plans and specifications for this project will undergo ATR. LRD is the Review Management Organization (RMO) for the project and will manage the ATR effort. However, LRD delegates the authority to the District to organize and administer the ATR. The ATR will be conducted in accordance with procedures in EC 1165-2-214. The ATR team will use the DrChecks program to manage review comments.

Based on the scope of the project work and the risk analysis at Section 4.a above, the following disciplines must be represented by members of the ATR team: geotechnical, structural, and hydraulic engineering and environmental science. Reviewers will be senior level experts in these discipline areas.

6. PUBLIC INVOLVEMENT

Public involvement for this will include posting the approved the MSC approved review plan on the District website, to which the public will have access.

7. IN-KIND CONTRIBUTION BY SPONSOR

There are no in-kind contributions by the sponsor for this project.

8. REVIEW SCHEDULE AND COSTS

a. District Quality Control

Schedules and costs for the DQC reviews outlined in Section 4.a are listed in the table below.

DQC REVIEWS	SCHEDULE	COST
Calculation Checks	December 2014	\$3,000
PIH Review	January 2015	\$3,200
BCOES Reviews: Pre-Design Conference 50% Design BCOES 50% Backcheck 95% Design BCOES 95% Backcheck	November 2014 January 2014 February 2014 March 2015 April 2015	\$9,200
100 % Design Supervisory Reviews	May 2015	\$1,000

b. Agency Technical Review

The ATR is scheduled to begin in January 2015 after the 50% BCOES Review and prior to the 100% Design Supervisory Review. The budgeted cost for the ATR is \$7,000.

9. MSC APPROVAL

The District will submit this review plan to the Division Commander for approval. This plan is a living document and will be revised and submitted for re-approval should the project scope and schedule change substantially.

10. REVIEW PLAN POINTS OF CONTACT / VERTICAL TEAM CONTACTS

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

ATTACHMENT 1: SAMPLE STATEMENT OF TECHNICAL REVIEW

COMPLETION OF AGENCY TECHNICAL REVIEW

The Agency Technical Review (ATR) has been completed for the implementation documents for the Chambers Grove Park Upgrade project in Duluth, Minnesota. 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 DrCheckssm.

SIGNATURE

Name

ATR Team Leader

Office Symbol/Company

Date

SIGNATURE

Name

Project Manager (home district)

Office Symbol

Date

SIGNATURE

Name

Architect Engineer Project Manager¹

Company, location

Date

SIGNATURE

Name

Review Management Office Representative

Office Symbol

Date

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

Name

Chief, Engineering Division (home district)

Office Symbol

Date

¹ Only needed if some portion of the ATR was contracted

ATTACHMENT 2: REVIEW PLAN REVISIONS

Revision Date	Description of Change	Page / Paragraph Numbe

ATTACHMENT 3: 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
CAP	Continuing Authorities Program	O&M	Operation and maintenance
CSDR	Coastal Storm Damage Reduction	OMB	Office and Management and Budget
DPR	Detailed Project Report	OMRR&R	Operation, Maintenance, Repair, Replacement and Rehabilitation
DQC	District Quality Control/Quality Assurance	OEO	Outside Eligible Organization
DX	Directory of Expertise	OSE	Other Social Effects
EA	Environmental Assessment	PCX	Planning Center of Expertise
EC	Engineer Circular	PDT	Project Delivery Team
EIS	Environmental Impact Statement	PAC	Post Authorization Change
EO	Executive Order	PMP	Project Management Plan
ER	Ecosystem Restoration	PL	Public Law
FDR	Flood Damage Reduction	QMP	Quality Management Plan
FEMA	Federal Emergency Management Agency	QA	Quality Assurance
FRM	Flood Risk Management	QC	Quality Control
FSM	Feasibility Scoping Meeting	RED	Regional Economic Development
GRR	General Reevaluation Report	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
LRR	Limited Reevaluation Report	SAR	Safety Assurance Review
MSC	Major Subordinate Command	USACE	U.S. Army Corps of Engineers
		WRDA	Water Resources Development Act