US Army Corps of Engineers®

Chicago District

Great Lakes and Ohio River Division

Lake George Restoration

Authority: Economy Act

P2/Project Number: 482756

Review Plan

PREPARED BY:

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Review Management Organization (RMO)

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Joseph M. Savage, P.E., SES
Regional Program Director
USACE, Great Lakes and Ohio River Division

MSC APPROVAL DATE:

REVIEW PLAN
ENGINEERING AND DESIGN PRODUCTS
PROGRAMMATIC DREDGING (O&M)
CHICAGO DISTRICT

Version Date: 30 September 2019

1. PURPOSE AND REQUIREMENTS

   a. Purpose. This programmatic review plan defines levels and scopes of review required for the engineering and design (E&D) products for the Lake George Canal Restoration Project.

   b. References. This review plan is prepared per the regional business process QMS 08504 LRD (*QC/QA Procedures for Civil Works Engineering and Design Projects*) and latest versions of the guidance documents listed below.

      (1) Engineering Regulation (ER) 415-1-11, Biddability, Constructability, Operability, Environmental and Sustainability (BCOES) Reviews
      (2) ER 1110-1-12, Quality Management
      (3) Engineering Circular (EC) 1165-2-217, Civil Works Review Policy

   c. Requirements. The design and construction activities and documents for the Lake George Canal Restoration project are required to be reviewed by independent technical experts in accordance with ER 1110-1-12 and EC 1165-2-217. Review requirements may include district quality control/assurance (DQC), agency technical review (ATR) and independent external peer (IEPR) review as indicated below.

2. REVIEW MANAGEMENT ORGANIZATION (RMO)

The RMO for this project is the Great Lakes and Ohio River Division. The RMO has provided the District with an email stating concurrence with this review plan.

3. PROJECT SCOPE AND PRODUCTS

   a. Project Description and Scope of Work. The Lake George Canal Restoration project is an environmental remediation and restoration project located in East Chicago, Indiana. It is a Preconstruction Engineering and Design (PED) phase developed by the Chicago District on behalf of the U.S. Environmental Engineering under the Economy Act. The goal of the project is to remediate and restore impacted sediments of the Lake George Canal in order to delist the sites from the Grand Calumet Area of Concern. The project will consist of three primary components: (i) dredging and disposal of impacted sediment within the Lake George Canal East section, (ii) in-situ capping of impacted sediments in the Lake George Canal Middle section (iii) aquatic and upland ecosystem restoration, and (iv) installation of oil-sheen control matting along approximately 300-ft of the banks.

Table 1. Project Summary	
Project Type:	Civil Works, Economy Act
Locations:	East Chicago, IN
Purpose/Function:	Environmental Restoration of the Lake George Canal portion of the Grand Calumet Area of Concern. The project provides Plans and Specifications to the USEPA under the Economy Act for environmental dredging of potentially contaminated sediments, and in-situ containment/isolation of sediment to be left in-place.
Key Physical Components:	Sediment dredging and disposal, capping.
Estimated Construction Cost:	$20M (FS level estimate)
E&D Product Method Delivery:	In-House Design
Construction Delivery Method:	Low Cost / Technically Acceptable RFP

b. Engineering and Design Products. The engineering and design products to be prepared and reviewed include the following:

(1) Plans and Specifications (P&S)
(2) Design Documentation Report / Design Analysis
(3) Engineering Considerations and Instructions for Field Personnel

c. Required Quality Reviews.

(1) District Quality Control (DQC): DQC procedures will be performed for all E&D products following local business processes.
(2) Agency Technical Review (ATR): The District Chief of Engineering has determined based on Tables 3 and 4 of QMS 08504 LRD that ATR *is* required.
(3) Type II Independent External Peer Review (IEPR), Safety Assurance Review (SAR): The District Chief of Engineering has determined that the project *does not* pose significant life safety risks and a Type II IEPR (SAR) *is not* required.

d. Technical Risk Analysis and Review Charge: ATR *is* required and a review charge will be prepared and issued to each review team. According to paragraph 7.4 d and Table 4 of QMS 08504 LRD, the reviews will focus on the following primary project complexities and risks:

(1) *The ATR team will focus on the engineered cap and bank design to ensure technical adequacy, stability, environmental protection, and practicality.*
(2) *The ATR team will also consider the construction sequence challenges of work being accomplished by others in the project area.*

4. PROJECT DELIVERY TEAM (PDT)

The project delivery team members are listed in Attachment A.

5. REVIEW EXECUTION

District quality control (DQC) will be performed per Chapter 3 of ER 1110-1-12 and Section 8 of EC 1165-2-217. ATR shall be performed in accordance with Section 9 of EC 1165-2-217. Based on the review charge in paragraph 3.d, the technical discipline(s) and expertise required for the ATR are shown in Table 1. ATR reviewers are listed Attachment 1. Type II IEPR (SAR), if required, will be executed in accordance with procedures in Appendix E of EC 1165-2-217 and as directed by the RMO.

6. REVIEW SCHEDULE AND BUDGET

The schedule and budgets for reviews are shown in Table 2. Note that review dates are tentative, and dependent on other phases of work which are being conducted by other entities. Review dates must be updated if the work by others slips, or if the scope changes.

Table 2. Review Schedule and Budgets

Review	Start Date	Finish Date	Budget ($)
30% Design DQC / BCOES	June 1, 2020	1 week after start	$5,000/occurrence
60% BCOES / ATR / DQC	July 15, 2020	2 weeks after start	$5,000/occurrence
90% BCOES / ATR / DQC	September 15, 2020	4 weeks after start	$10,000/occurrence
100% Backcheck	October 27, 2020	1 week after start	$2,000 / occurrence

7. REVIEW PLAN POINTS OF CONTACT

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

a. District Project Leaders.
   (1) Project Manager: Natalie Mills, CELRC-PMD-JS, (312) 846-5561, Natalie.R.Mills@usace.army.mil
   (2) Chief of Design Branch: John Groboski, CELRC-TSD-DC, (312) 846-5417, John.A.Groboski@usace.army.mil
b. Review Management Organization (RMO) Representative: Frank Appelfeller, RMO, 513-684-6200, Frank.A.Appelfeller@usace.army.mil

8. DISTRICT

Technical Risk Analysis has been completed for this project and the required quality reviews have been determined.

GROBOSKI.JOHN.A.JR.1249715510

RECOMMEND FOR APPROVAL:

John A. Groboski, P.E.
Chief, Design Branch

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DISTRICT APPROVAL:

Linda M. Sorn, P.E.
Chief, Technical Services Division

Attachment A – TEAM MEMBERS

PROJECT DELIVERY TEAM		
Function/Discipline	Name (Last, First)	Office
Customer	Isom, Kristen	USEPA, GLNPO
Project Manager	Mills, Natalie	CELRC-PMD-PM
Technical Lead	O'Neil, Ben	CELRC-TSD-DH
Cost Engineer	Gadbois, Jeremiah	CELRC-TSD-DC
Value Engineer	Mishra, Rana	CELRC-TSD-DC
Geospatial Lead	Ennis , J.D.	CELRC-TSD-DC
Geotechnical Engineer	Griffeth, Justin	CELRC-TSD-DG
Environmental Engineer	Thai, Le	CELRC-TSD-DH
Civil Engineer	Kluza, Vito	CELRC-TSD-DC
Hydraulic Engineer	Kiel, David	CELRC-TSD-DH
Structural Engineer (if necessary)	Sitko, Kathy	CELRC-TSD-DT
DQC REVIEWERS		
Function/Discipline	Name (Last, First)	Office
DQC Lead / Environmental	Miller, Jennifer	CELRC-TSD-DH
Civil	Mishra, Rana	CELRC-TSD-DC
Cost	Druzbicki, David	CELRC-TSD-DC
Geotechnical	Rochford, Bill	CELRC-TSD-DG
Structural (if necessary)	Leffler, Faye	CELRC-TSD-DT
BCOES REVIEWERS		
Function/Discipline	Name (Last, First)	Office
Biddability	Blair, Regina	CELRC-PMD-CT
Constructability	Stavrides, Phil	CELRC-TSD-C
Operability	Kroll, Tim	CELRC-TSD-O
Environmental	Schmidt, Joel and Miller, Jennifer	CELRC-TSD-DH
Safety	Flanagan, Pete	CELRC-GSO
Legal	Jerbi, Kevin	CELRC-GOC
ATR REVIEWERS		
Function	Name	Office
Lead, Geotechnical / Geoenvironmental	Britton, Jeremy	NWP
Environmental / Civil	Lennox, Andrew	LRB