



DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, NORTH ATLANTIC DIVISION
FORT HAMILTON MILITARY COMMUNITY
302 GENERAL LEE AVENUE
BROOKLYN NY 11252-6700

NOV 14 2014

CENAD-RBT

MEMORANDUM FOR Commander, New York District, (CENAN-EN / Mr. Connolly),
26 Federal Plaza, New York, NY 10278-0090

SUBJECT: Review Plan Approval for Joseph G. Minish Passaic River Waterfront Park
and Historic Area (Phase I), Newark, NJ

1. References:

a. Email, CENAN-EN (R. Sabanal), 4 August 2014, Subject: Joseph G. Minish Park
Review Plan

b. EC 1165-2-214, Water Resources Policies and Authorities – Civil Works Review,
15 December 2012

2. The enclosed Review Plan for Joseph G. Minish Passaic River Waterfront Park and
Historic Area (Phase I), Newark, NJ, was prepared in accordance with Reference 1.b.
The plan outlines the review of implementation documents (design and construction) of
all project features.

3. NAD Business Technical Division is the Review Management Organization for the
Agency Technical Review. The Review Plan does not include Type II Independent
External Peer Review (Safety Assurance Review) because the project does not include
design or construction activities that involve potential hazards which pose a significant
threat to human life.

4. The Review Plan for the remaining Phase I features of the Joseph G. Minish Passaic
River Waterfront Park and Historic Area, Newark, NJ, Project is approved. The Review
Plan is subject to change as circumstances require, consistent with study development
under the Project Management Business Process. Subsequent revisions to this Review
Plan or its execution require new written approval from this office.

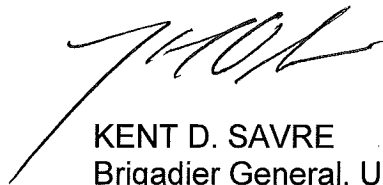
5. In accordance with Reference 1.b, Appendix B, Paragraph 6, post this approved
Review Plan on your district website for public review and comment. NAD will similarly
post on the Division website.

CENAD-RBT

SUBJECT: Review Plan Approval for Joseph G. Minish Passaic River Waterfront Park and Historic Area (Phase I), Newark, NJ

6. The point of contact is Jeffrey Wisniewski, Sandy Lead Engineer, 347-370-4783 or jeffrey.wisniewski@usace.army.mil.

Encl



KENT D. SAVRE
Brigadier General, USA
Commanding

CF: (w/ encl)
CECW-NAD-RIT (M. Voich)
CENAN-EN (R. Sabanal)



DEPARTMENT OF THE ARMY
NEW YORK DISTRICT, CORPS OF ENGINEERS
JACOB K. JAVITS FEDERAL BUILDING
NEW YORK, N.Y. 10278-0090


CENAN-EN

30 July 2014

MEMORANDUM FOR Commander, North Atlantic Division, ATTN: Sandy Coastal Management Division

SUBJECT: Review Plan for Joseph G. Minish Passaic River Waterfront Park and Historic Area, Newark, NJ

1. In accordance with EC 1165-2-214 (Civil Works Review Policy), enclosed for your review and approval is the subject document.
2. The point of contact for the Review Plan is Rito Sabanal of my staff at (917) 790-8019.



ARTHUR J. CONNOLLY, P.E.
Chief, Engineering Division

Encl
Review Plan

CF:
C, CENAN-PL
C, CENAN-PP

Review Plan

For

**Joseph G. Minish Passaic River Waterfront Park and
Historic Area, Newark, NJ
Implementation Documents – Phase I**

30 July 2014



**US Army Corps
of Engineers
New York District**

1. PURPOSE AND REQUIREMENTS

a. Purpose. This Review Plan defines the scope and level of review for implementation documents. Implementation documents include plans and specifications (P&S) and a Design Documentation Report (DDR). This review plan defines the scope and level of review for the Joseph G. Minish Passaic River Waterfront Park and Historic Area (Minish Park), Newark, NJ Project Phase I remaining construction contracts.

b. References.

(1) EC 1165-2-214, Civil Works Review, 15 Dec 2012

1. (2) ER 1110-1-12, Quality Management, 30 Sep 2006 2006 as revised through 31 March 2011

(3) Public Law (PL) 113-2, the "DISASTER RELIEF APPROPRIATIONS ACT, 2013"(4)ER 1110-2-1150, Engineering and Design for Civil Works Projects, 31 Aug 1999

(5) ER 1100-2-8162, Incorporating Sea Level Change in Civil Works Programs, 31 Dec 2013

(6) ER 415-1-11 – Biddability, Constructability, Operability, Environmental and Sustainability (BCOES) Reviews

c. Requirements. This 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/Quality Assurance (DQC) and BCOES (Biddability, Constructability, Operability, Environmental and Sustainability) review, Agency Technical Review (ATR), Independent External Peer Review (IEPR), and Policy and Legal Compliance Review

2. REVIEW MANAGEMENT ORGANIZATION (RMO) COORDINATION

The RMO is responsible for managing the overall review effort described in this Review Plan. The RMO for implementation documents is the Major Subordinate Command (MSC), (per EC 1165-2-214). Therefore, the RMO for the review effort described in this Review Plan is the North Atlantic Division.

3. PROJECT INFORMATION

a. Implementation Documents. This Review Plan has been prepared for the Design Documentation Report (DDR) and the plans and specifications (P&S) for the remaining Minish Park Project Phase I construction. The purpose of these documents is to provide a record of final design. Approval of the implementation documents is at the District Command level. The implementation documents for the remaining Phase I work will be developed for two construction contracts.

b. Project Description.

(1) The Minish Park Project, which includes the project area, was authorized in the Water Resources Development Act (WRDA) of 1990 (Public Law 101-640) as an element of the Passaic River Flood Damage Reduction Project on November 28, 1990. The project authorization was modified by the Water Resources Development Act of 1992 (Public Law 102-580), Section 102(p) which extended the project limits and increased the cost and by Section 118 (e) which designated the name of the project area. The project authorization was again modified by the Water Resources Development Act of 1996 (Public Law 104-303, Section 301 (b)(10), which further increased the project cost and allows the implementation of the streambank restoration element prior to the implementation of the remainder of the Passaic River Main Stem Project.

The waterfront along the Central Business District in Newark, New Jersey is in a degraded state and the riverbank is seriously eroded due to historical industrial use and neglect. The recommended plan presented in the approved Design Memorandum included three phases. Phase I would include new bulkhead and streambank stabilization. Phases II and III would include a waterfront walkway and park recreation. The U.S. Army Corps of Engineers, New York District, is partnered with the State of New Jersey Department of Environmental Protection and City of Newark to construct Phase I of the Minish Park Project which will reduce riverbank erosion and lay the foundation for waterfront park development and return of public access to the Passaic River in Newark, NJ.

Construction of the Phase I bulkhead and streambank stabilization of the Minish Park Project is being carried out under multiple separate contracts. Work constructed to date includes 2,900 linear feet of bulkhead in three construction reaches (two reaches north of, and one south of, Newark Penn Station). Remaining Phase I work to be constructed includes another 2,900 linear feet of bulkhead, the installation of railings and access ladders along the bulkhead including those reaches previously completed, 3,400 linear feet of streambank stabilization which includes riverbank regrading, riprap, and native plantings, and wetland mitigation.

(2) The remaining Phase I work will be carried out as two (2) separate construction contracts:

(a) Contract 3A – bulkhead to be constructed from Station 9+05 to 20+03; railings and ladders for completed bulkhead.

(b) Contract 3B/4B/Streambank Stabilization/Wetland Mitigation - bulkhead to be constructed from Station 0+00 to 9+05 and from Station 37+10 to 45+68.60; streambank stabilization from Station 57+80.10 to 92+13.59; and wetland mitigation at a site to be determined

c. Factors Affecting the Scope and Level of Review.

(1) The focus of this Review Plan is on the implementation documents (DDR, plans and specifications) for the remaining Phase I work. The implementation documents reflect post Hurricane Sandy conditions and take into account the latest regulation on Sea Level Rise.

(2) An assessment of the need for a Type II Independent External Peer Review, Safety Assurance Review, is documented in Section 6 of this Review Plan. This assessment by the New York District Chief of Engineering Division considered life safety and other factors including whether the project includes redundancy, resiliency, and robustness; and whether the project has unique construction sequencing. This assessment was conducted for the remaining Phase I work.

4. DISTRICT QUALITY CONTROL (DQC) AND BCOES REVIEW

All implementation documents 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 New York District will manage the DQC and BCOES reviews.

- a. Documentation of DQC and BCOES. DQC and BCOES reviews will be documented through the use of DrChecks and DQC/BCOES certificates.
- b. Products to Undergo DQC and BCOES. All applicable documents will undergo DQC and BCOES reviews.
- c. Required DQC and BCOES Expertise. DQC and BCOES reviews will be performed by staff in the home district that are not involved in the project design. The required disciplines for review are listed in Attachment 1. The DQC and BCOES reviews supplement the reviews provided by the project delivery team (PDT) during the course of completing the DDR and P&S.

5. AGENCY TECHNICAL REVIEW (ATR)

ATR is mandatory for all implementation documents. 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. 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.

- a. Products to Undergo ATR. All implementation documents will undergo ATR.

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 implementation 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 civil engineering).
Environmental Resources	Team member will have independently completed EA/EIS's and be well versed in the NEPA process, completed all environmental compliance and permits, will have participated in partnerships with other environmental resource agencies, will have experience with identifying and resolving environmental issues in flood risk management and will have experience with wetland mitigation and Section 106 actions and documentation.
Civil Engineering	Team member will be an expert in the field of civil engineering, especially in the review of flood risk design structures. The team member will be a licensed professional engineer with at least 10 years of civil engineering experience in site/civil design such as drainage, grading and utilities.
Coastal Engineering	Team member will be an expert in the field of coastal processes and have a thorough understanding of sediment transport, application of wave forces and water levels over the likely range of storm return periods, and determination of risk due to sea level rise. The team member will be a licensed professional engineer with at least 10 years of experience.
Structural Engineering	Team member will be an expert in the field of structural engineering, especially in review of flood risk design structures. The team member must be a licensed Professional Engineer with at least 10 years experience in design of bulkheads, floodwalls and other riverbank protection structures.
Geotechnical Engineer	Team member will be an expert in the field of geotechnical engineering, especially in review of flood risk design structures. The team member must be a licensed Professional Engineer with at least 10 years of geotechnical experience in analysis of slope stability along waterfront structures and design of erosion protection systems.
Construction Manager	Team member will be a construction manager with 10 years experience in the management of flood risk projects. Team member will have experience as an Administrative Contracting Officer in construction of bulkheads, floodwalls and other riverbank protection structures. Team member will be a licensed professional engineer.

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 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 ER 1110-1-12. Unresolved concerns can be closed in DrCheckssm with a notation that the concern has been elevated to the vertical team for resolution.

d. Review Report. 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:

- (1) Identify the document(s) reviewed and the purpose of the review;
- (2) Disclose the names of the reviewers, their organizational affiliations, and include a short paragraph on both the credentials and relevant experiences of each reviewer;
- (3) Include the charge to the reviewers;
- (4) Describe the nature of their review and their findings and conclusions;
- (5) Identify and summarize each unresolved issue (if any); and
- (6) Include a copy of each ATR comment, the PDT response, a brief summary of the pertinent points in the follow on discussion, including any vertical coordination, and the agreed upon resolution.

e. ATR Certification. ATR will 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 for all the implementation documents. A sample Statement of Technical Review is included in Attachment 2.

6. INDEPENDENT EXTERNAL PEER REVIEW (IEPR)

An IEPR may be required for implementation 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 an 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:

a. Type I IEPR. Type I IEPRs 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.

b. Type II IEPR. Type II IEPRs, or Safety Assurance Reviews (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.

c. Decision on IEPR.

(1) Type I IEPR's are conducted on project studies and reports. Since this review plan deals with implementation documents, a Type I IEPR is not applicable.

(2) Type II Independent External Peer Review, Safety Assurance Review, is required by EC 1165-2-214 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.

(3) Based on a risk informed assessment (attached memorandum dated 30 July 2014 – Attachment 4), New York District Chief, Engineering Division determined that there is not a significant threat to human life associated with the Minish Park Phase I construction project. Therefore, a Type II IEPR is not required for this contract.

d. Products to Undergo IEPR. Not applicable.

- e. Required IEPR Panel Expertise. Not applicable.
- f. Documentation of IEPR. Not applicable.

7. POLICY AND LEGAL COMPLIANCE REVIEW

All implementation documents will be reviewed for their compliance with law and policy. The DQC will facilitate the policy and legal compliance review processes by addressing compliance with pertinent published Army policies, particularly policies on analytical methods and the presentation of results in implementation documents.

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

This is not applicable since a decision document requiring Congressional authorization is not being prepared.

9. MODEL CERTIFICATION AND APPROVAL

This is not applicable since this project is in the Preconstruction, Engineering and Design phase and this relates to the use of certified or approved models for planning activities.

10. REVIEW SCHEDULES AND COSTS

- a. ATR Schedule and Cost. The schedule and cost budgeted for ATR reviews are as follows:
Contract 3A – 100% Plans and Specifications – August 2014 (\$30,000)
Contract 3B, 4B, Streambank Stabilization, Wetland Mitigation – 100% Plans and Specifications – TBD (\$30,000)
- b. IEPR Schedule and Cost. Not applicable.
- c. Model Certification/ Approval Schedule and Cost. Not applicable

11. PUBLIC PARTICIPATION

As significant changes or developments occur, the District will present this information to the NJDEP and the City of Newark. Any significant comments or concerns raised by the Project Delivery Team that will include our non-Federal sponsors and stakeholders will be brought to the attention of the ATR panels. In addition, the review plan and updated fact sheets will be posted on the New York District's web site.

12. REVIEW PLAN APPROVAL AND UPDATES

The North Atlantic 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 to the appropriate scope and level of review for the implementation documents. Like the PMP, the Review Plan is a living document and may change as the engineering and design 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 Commander's approval memorandum, will be posted on the Home District's webpage.

13. REVIEW PLAN POINTS OF CONTACT

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

- Rito P. Sabanal, CENAN, EN Technical Manager, 917-790-8019
- Jeffery Wisniewski, Lead Engineer, CENAD Sandy Coastal Management Division, 347-370-4783

ATTACHMENT 1: TEAM ROSTERS

Project Delivery Team

Name	Role	Phone Number	E-mail Address
David Gentile	Project Manager	x- 8483	David.T.Gentile@usace.army.mil
Rito Sabanal	EN Technical Manager	x- 8019	Rito.P.Sabanal@usace.army.mil
David Yang, P.E.	Coastal Engineer	x- 8352	William.R.Barth@usace.army.mil
Cynthia Zhang	Cost Engineer	x- 8006	Cynthia.Zhang@usace.army.mil
Shahid Shaikh, P.E.	Civil Engineer	x- 8066	Shahid.I.Shaikh@usace.army.mil
Jenae Pennie	Structural Engineer	x- 8284	Jenae.A.Pennie@usace.army.mil
John Cimmino, P.E.	Geotechnical Engineer	x- 8281	Gennaro.J.Cimmino@usace.army.mil
Peter Weppler	Environmental Resources	x- 8634	Peter.M.Weppler@usace.army.mil
Ken Johnson	Construction Manager	x- 8484	Ken.W.Johnson@usace.army.mil
Carlos Gonzalez	Real Estate	x- 8465	Carlos.E.Gonzalez@usace.army.mil
Ellen Simon	Counsel	x- 8158	Ellen.B.Simon@usace.army.mil

Agency Technical Review (ATR) Team

Name	Role	Review District
TBD	ATR Lead	
TBD	Environmental Resources	
TBD	Civil Engineer	
TBD	Coastal Engineer	
TBD	Structural Engineer	
TBD	Geotechnical Engineer	
TBD	Construction Manager	

Vertical Team

Name	Role	Phone Number	E-mail Address
Jeffrey Wisniewski, P.E.	NAD Lead Engineer	347-370-4783	Jeffrey.Wisniewski@usace.army.mil
Anthony Ciorra, P.E.	NAN PPMD Special Projects Coastal Restoration Chief	917-790-8208	Anthony.Ciorra@usace.army.mil
Nancy Brighton	NAN-PL, Acting Environmental Analysis Branch Chief	917-790-8702	Nancy.j.brighton@usace.army.mil
Frank Santangelo, P.E.	NAN-EN, Civil Resources Branch Chief	917-790-8266	Frank.A.Santangelo@usace.army.mil
Thomas Dannemann, P.E.	NAN-EN, Design Branch Chief	917-790-8363	Thomas.R.Dannemann@usace.army.mil
Mukesh Kumar, P.E.	NAN-EN, Cost Engineering Branch Chief	917-790-8421	Mukesh.Kumar@usace.army.mil
Lynn Bocamazo, P.E.	NAN-EN, Sandy Branch Chief	917-790-8396	Lynn.M.Bocamazo@usace.army.mil
Ralph Tinari, P.E.	NAN-CO, Assistant Chief	917-790-8031	Ralph.F.Tinari@usace.army.mil

ATTACHMENT 2: STATEMENT OF AGENCY TECHNICAL REVIEW

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 approved 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, 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.

Signature & Date

NAME

ATR Team Leader

Office Symbol

Signature & Date

NAME

Project Manager

Office Symbol

Signature & Date

NAME

Review Management Office (RMO) Representative

Office Symbol

CERTIFICATION OF AGENCY TECHNICAL REVIEW

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

Signature & Date

Arthur J. Connolly, P.E.

Chief, Engineering Division

CENAN-EN

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
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	Engineering Regulation	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
HSLRR	Hurricane Sandy Limited Reevaluation Report	RMC	Risk Management Center
Home District/MSD	The District or MSD responsible for the preparation of the decision document	RMO	Review Management Organization
HQUSACE	Headquarters, U.S. Army Corps of Engineers	RTS	Regional Technical Specialist
IEPR	Independent External Peer Review	SAR	Safety Assurance Review
ITR	Independent Technical Review	USACE	U.S. Army Corps of Engineers
LRR	Limited Reevaluation Report	WRDA	Water Resources Development Act
MSC	Major Subordinate Command		

ATTACHMENT 4: MFR ON RISK INFORMED ASSESSMENT OF SIGNIFICANT THREAT TO HUMAN LIFE BY CENAN C, ENGINEERING DIVISION

CENAN-EN-S

30 July 2014

MEMORANDUM FOR RECORD

SUBJECT: Joseph G. Minish Passaic River Waterfront Park and Historic Area Flood Risk Management Project – Remaining Phase I Contracts – Risk Informed Assessment of Significant Threat to Human Life

1. Project Authorization. The project was authorized in the Water Resources Development Act (WRDA) of 1990 (Public Law 101-640) as an element of the Passaic River Flood Damage Reduction Project on November 28, 1990. The project authorization was modified by the Water Resources Development Act of 1992 (Public Law 102-580), Section 102(p) which extended the project limits and increased the cost and by Section 118 (e) which designated the name of the project area. The project authorization was again modified by the Water Resources Development Act of 1996 (Public 104-303, Section 301 (b)(10), which further increased the project cost and allows the implementation of the streambank restoration element prior to the implementation of the remainder of the Passaic River Main Stem Project.

2. Project Description. The Minish Park Project is located along the west bank of the Passaic River between Bridge and Brill Streets in the City of Newark, New Jersey. This reach of the Passaic River is eroded, deteriorated and environmentally degraded due to past commercial and industrial use and flooding. The project will reduce erosion and provide environmental mitigation recreation, and economic development benefits.

Construction of Phase I of the Minish Park project is being carried out under multiple separate contracts. Work constructed to date includes over 2,900 linear feet of bulkhead. Remaining Phase I work to be constructed includes another 2,900 linear feet of bulkhead which include railing systems, 3,400 linear feet of streambank stabilization, wetlands and the installation of railings along sections of completed bulkhead.

3. Type II IEPR. A Type II IEPR is required for any project that would pose a significant threat to human life (public safety).

The attached risk informed assessment matrix summarizes the low threat to life safety for Phase I Contract of Minish Park Project. All of the risk factors have a "low" risk magnitude. The new bulkheads and streambank stabilization measures will provide increased protection against erosion.

Other factors that were taken into consideration:

a. A Type II IEPR is required if the project involves the use of innovative materials or techniques where the engineering is based on novel methods, presents complex challenges for interpretations, contains precedent-setting methods or models, or presents conclusions that are likely to change prevailing practices.

The project does not involve use of any new or innovative methods. The design of new bulkheads is within prevailing practice and Corps of Engineers guidance (EM 110-2-1614: Design of Coastal Revetments, Seawalls, and Bulkheads).

b. A Type II IEPR is required if the project requires redundancy, resiliency, and robustness.

Redundancy: *The project structural protection components reduce the risk of erosion to the existing condition.*

Resiliency: *The risk level is low. The recommended plan includes annual maintenance of the bulkhead and streambank stabilization measures and monitoring of all protection elements.*

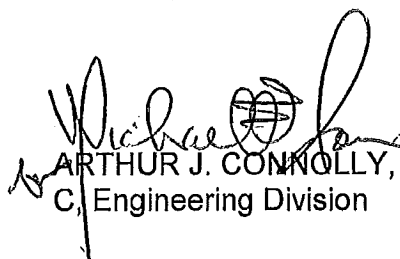
Robustness: *While natural events can occur that are greater than the optimized project design and could potentially lead to failure, the risk level is low. This is because the worst case wave and water level conditions of the bulkheads falls within the range of water levels considered during project design.*

c. A Type II IEPR is required if the project has unique construction sequencing or a reduced or overlapping design construction schedule.

The project does not have unique construction sequencing or a reduced or overlapping design construction schedule.

Since the threat assessment is low or not applicable in the aforementioned categories, a Type II IEPR is not required for the remaining Minish Park Phase I Contracts.

4. **Determination.** A Type II IEPR is not warranted for the remaining Phase I contracts of the Joseph G. Minish Passaic River Waterfront Park and Historic Area, Newark, NJ project.


ARTHUR J. CONNOLLY, P.E.
C, Engineering Division

Encl.
Risk Assessment Matrix

**Phase 1 – Bulkhead Construction
Risk Informed Assessment**

1. References.

a.) EC 1165-2-214 – Civil Works Review Policy

2. Risk Assessment Matrix. In accordance with EC 1165-2-214 (exp. 15 Dec 14) Civil Works Review, the Water Resources Development Act (WRDA) of 2007, Section 2035 requires a Safety Assurance Review (SAR) of “the design and construction activities for hurricane and storm damage reduction and flood damage reduction projects”.

A risk informed assessment (ref. Civil Works Review Policy, Appendix E, Paragraph 2) was made to determine whether there is a significant threat to human life from construction of Phase I of Minish Park Flood Risk Management Project Recommended Plan. The risk assessment is presented in Table 1 below:

Phase I will consist of:

- Construction of bulkheads and railings/ladders
- Construction of streambank stabilization measures (riverbank regrading, riprap, and native plantings)
- Wetland Mitigation (location is to be determined)

Table 1: Risk Assessment for Significant Threat to Life Safety, Minish Park Flood Risk Management Project

No.	Risk Factor (Significant Threat to Life Safety)	Phase I Magnitude (H/M/L)	Basis of Concern	Risk Assessment for Construction of Remaining Phase I
1	Land Use adjacent to the project	--	Minish Park project is located along the west bank of the Passaic River between Bridge St and Brill St in the City of Newark, NJ.	Land use adjacent to the project is primarily mixed commercial buildings. Risk Assessment details are provided in 1a-c below.
1a	Population Density	Low	Population density in the City of Newark is about 11,458 persons/sq. mi. (US Census survey 2010).	Population is dense over most of Newark, NJ; However, construction or failure of Phase I elements (new bulkheads, railings and riprap) will not alter the risk of flooding or wave attack over that of existing conditions. The new bulkheads and streambank stabilization measures will provide increased protection against erosion.

1b	Critical Facilities Affected (e.g. schools, hospitals, assisted living/nursing homes, evacuation routes)	Low	<p>There are no critical facilities affected within the project area.</p> <p>Vehicle evacuations are via McCarter Hwy in the west, Bridge St in the north and Raymond Blvd in the south. Access/egress is also available via the NJ Transit, PATH and Amtrak at the Newark Penn Station.</p>	<p>No critical facilities exist in the project area. Furthermore, construction or failure of Phase I elements (bulkheads, railings streambank stabilization, and wetland mitigation) will not alter the risk of flooding or wave attack over that of existing conditions.</p> <p>Multiple (redundant) evacuation routes are in place, and Essex County has a record of successful past evacuations. Construction or failure of Phase I elements will not affect evacuation routes.</p>
1c	Number or types of structures in floodplain	Low	<p>There are no residential structures and only 3 non-residential structures and several parking lots within the FEMA 100-yr flood plain.</p>	<p>Flood levels would be unaffected by construction or nonperformance of the project. The new bulkheads and streambank stabilization measures will provide increased protection against erosion.</p>
2	Inundation of protected side due to project failure	Low	<p>The project will be subject to increased risk in the event of failure of the river side line of protection.</p>	<p>Failure of Phase I elements will not alter the risk of flood inundation over that of existing conditions. The project features are designed to provide increased protection against erosion and will not increase the risk of inundation due to sudden catastrophic failure.</p>
3	Shoreline Storm Erosion	Low	<p>Coastal storms often result in significant shore erosion over short time periods which can undermine structures</p>	<p>The bulkhead and riprap slope protection will reduce the risk of riverbank erosion.</p>
4	Wave Attack	Low	<p>Overtopping of the bulkhead by waves during high water level events can result in damage to structures from direct wave impact.</p>	<p>Worst-case wave and water level conditions of the bulkheads and riprap fall within the range of water levels considered during design. Risk of wave attack resulting in structure failure is low.</p>
5	Use of unique or non-traditional design methods	Low	<p>Unique or non-traditional design methods may be poorly understood or inadequately designed and may be more subject to failure than proven design methods.</p>	<p>Engineering for the slope protection structures employed accepted methods in accordance with USACE design manual and guidance. No innovative or precedent setting methods or models were used.</p>

6	Use of unique or non-traditional design features	Low	Unique or non-traditional design features may be poorly understood or inadequately designed and may be more subject to failure than proven design features.	Design of the new bulkheads, railings and riprap are within prevailing practice and USACE guidance.
7	Use of unique or non-traditional construction materials or methods	Low	Unique or non-traditional construction materials or methods may be poorly understood or executed inadequately resulting in a project feature that may be more subject to failure than those built with proven materials and methods.	All construction material and techniques used for the new bulkheads, railings and riprap are in common practice.
8	Does the project have unique construction sequencing or a reduced or overlapping design/ construction schedule?	Low	Unique or accelerated construction sequencing may lead to poor quality work, leading to greater possibility of future project failure.	Sufficient time is available for completion of construction. There are no unique construction sequence requirements for this project.
9	Inherent risk with construction methods	Low	Construction may be hazardous.	All construction techniques used for the new bulkheads, railings and riprap are in common practice. Safety precautions such as temporary fencing, wearing of prescribed safety and occupational health requirements are included in the Plans & Specifications.
10	Does the project design require:			
10a	Redundancy	Low	Failure of one critical project element would result in sudden, catastrophic damage. Duplication of critical components of the protective system is required to increase the reliability of the system.	Construction of the riverbank protection components reduce the risk of erosion relative to the existing condition. Nonperformance of the project protection segments would result in erosion less than or equal to those present under existing conditions.
10b	Resiliency	Low	Erodible structures are reduced in volume over time, providing less protective capacity.	Phase I does not include any erodible features. Resiliency is included by the annual maintenance of the bulkheads and streambank stabilization and the monitoring of all riverbank protection elements.
10c	Robustness	Low	Natural events can occur that	Worst-case wave and water

			are greater than the optimized project design, and may lead to project failure.	level conditions of the bulkheads and riprap fall within the range of water levels considered during project design.
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