US ARMY CORPS
OF ENGINEERS
NEW YORK DISTRICT

NEW JERSEY
DEPARTMENT OF
ENVIRONMENTAL
PROTECTION

JOSEPH G. MINISH

PASSAIC RIVER WATERFRONT PARK AND HISTORIC AREA

PHASE I

DRAFT HURRICANE SANDY LIMITED REEVALUATION REPORT AND ENVIRONMENTAL ASSESSMENT

MAIN REPORT

August 2015

Executive Summary

In response to extensive storm damages resulting from Hurricane Sandy and an increased vulnerability to future events, Congress passed the Disaster Relief Appropriations Act of 2013, Public Law (P.L.) 113-2. The Joseph G. Minish Waterfront Park and Historic Area (Minish) was identified as an authorized but partially constructed project in the US Army Corps of Engineers (USACE) Second Interim report to Congress, Disaster Relief Appropriations Act of 2013. Although the project has three phases, the existing Project Cooperation Agreement (PCA) was executed in 1999 for Phase I only; therefore, the focus of this report is for the completion of Phase I. Phase I includes bulkhead, stream bank stabilization features, and grading/vegetating along the Passaic River in Newark, New Jersey, as well as offsite wetland mitigation. The project is located in Essex County.

This Hurricane Sandy Limited Reevaluation Report (HSLRR) updates the Design Memorandum (DM), dated May 1996, revised May 1997 and December 1997, approved by the Chief of Engineers on October 1, 1997 and the Addendum to the Design Memorandum, dated June 1998; which was the Decision Document that the 1999 PCA is based on. The HSLRR provides the following:

- updated project costs and benefits, and cost-sharing requirements under P.L. 113-2, which would serve as the basis for the Project Partnership Agreement (PPA) with the non-Federal sponsor;
- an updated environmental analysis of a 1996 US Army Corps of Engineers Design Memo to meet National Environmental Policy Act (NEPA) requirements;
- an engineering update, to include engineering design changes, changes in site conditions, and construction status;
- an updated economic analysis, which established a new benefit to cost ratio (BCR);
- updated real estate appraisal and status of lands, easements and rights-of-way required to complete project construction;
- documents and addresses the requirements of P.L. 113-2, including resiliency, sustainability, risks and consistency with the North Atlantic Coast Comprehensive Study.

Completion of Phase I of the Minish project would reduce the risk of land loss by stabilizing the stream bank along the Passaic River in the city of Newark, NJ.

The fully funded project cost for remaining Phase I work is $56,196,000, to include contingencies, design, land and damages, and supervision and administration; this cost does not include a sunk cost of $28,955,000. If this HSLRR is approved, the construction will be 100% Federally funded; the non-Federal sponsor for the project is the New Jersey Department of Environmental Protection (NJDEP).

The economic justification of the Minish project is linked to the Passaic River Main Stem project (Section 301(b)(10) of the Water Resources Development Act (WRDA) of 1996). The most recent BCRs for the alternatives developed in the ongoing Passaic River Main Stem General Reevaluation Report (GRR) were calculated in 2013 to be between 1.1 and 1.3 for three

alternatives, including the authorized plan, confirming findings in the 1995 General Design Memorandum and 1987 Feasibility Report that an overall project for the Passaic Main Stem remains economically justified.

An updated Environmental Assessment concluded no significant impacts to environmental or cultural resources; however, due to unavoidable impacts to mudflats and open water, there is a requirement for wetland mitigation. Best management practices are also recommended to reduce temporary impacts to water quality during construction.

This Hurricane Sandy Limited Reevaluation Report (HSLRR) and integrated Environmental Assessment (EA) serves as a decision document to support a Project Partnership Agreement (or a modification to the existing PCA) for the construction of the unconstructed portion of Phase I of the Minish project; and to meet National Environmental Policy Act (NEPA) requirements.

PERTINENT DATA DESCRIPTION

The recommendation resulting from this report would be to complete remaining construction associated with Phase I of the Joseph G. Minish Passaic River Waterfront Park and Historic Area (Minish) project, which would reduce erosion, and provide for shoreline stabilization benefits, and meet mitigation requirements for impacts to open water and mudflats. 1996 documentation presented is from the U.S. Army Corps of Engineers (USACE), New York District (District), Design Memorandum (1996 DM). Updated data is associated with Phase I of the Minish project only. Phase I includes the construction of bulkhead, restored stream bank, and wetland mitigation.

I. LOCATION

Newark, New Jersey; along the lower valley of the Passaic River

II. PROJECT DESIGN

Feature Type	Dimension	1996 Design Memo Plan*	2015 HSLRR Plan**
Bulkhead	Length	6,000 ft	5,780 linear ft
Stream bank Restoration	Length	3,200 ft	2,658 linear ft

**The 1996 plan represents preliminary rounded estimates.*
***The HSLRR plan includes construction to date. A total of 2,922 linear feet (lf) of bulkhead has been constructed, with 2,858 lf remaining. A portion of the stream bank stabilization was eliminated due to a walkway constructed by others; 2,658 lf remain for construction.*

III. REAL ESTATE REQUIREMENTS

Description	1996 Design Memo Plan	2015 HSLRR Plan
Lands, Easements and Rights-of-Way		
Total Acreage	14.9 acres	18.56 acres

IV. ENVIRONMENTAL CONSIDERATIONS

Description	2004 Wetland Design Report[1]	2015 HSLRR Plan
Wetland* Mitigation	1.68 acres	1.68 acres

**Wetland impacts include 0.56 acres of open water/mudflat; Mitigation ratio = 3:1.*

[1] *The need for wetland mitigation was determined through the permitting process with the New Jersey Department of Environmental Protection, which occurred after the 1996 Design Memorandum was finalized. The Design Memo planned for environmental restoration, to include wetland creation; however, this component was removed from the project due to the designation of a dioxin Superfund site.*

V. ECONOMICS (October 2014 Price Level)

Description	HSLRR Plan (October 2014 Price Level)
Total Project First Cost*	$90,431,100
Interest During Construction**	$17,532,800
Total Investment Cost	$107,963,900
Equivalent Annual Cost***	$4,499,600
Annual Operation & Maintenance Cost****	$452,200
Total Annual Cost	$4,951,800
*Project first cost includes expended construction cost updated to October 2014 price level	
** Interest during construction (IDC) includes IDC for constructed elements of the project	
***Equivalent annual cost at 3.375% interest rate for a 50-year period of analysis	
****Annual Operation & Maintenance cost calculated as 0.5% of project first cost	

Benefit Categories	1996 DM	% of NED Benefit	2015 LRR Update Source	Update Factor
National Economic Benefits				
Erosion/Shore Protection	$1,816,021	86.8%	Recalculate Erosion damages using current discount rate	NA
Building and Infrastructure	$28,857	1.4%	ENR Construction Cost Index	1.787
Debris Removal	$5,700	0.3%	ENR Construction Cost Index	1.787
Flood Protection	$0	0.0%	NA	NA
Recreation	$95,000	4.5%	Consumer Price Index	1.592
Remediation	$127,200	6.1%	ENR Construction Cost Index	1.787
Historic Preservation	$18,700	0.9%	ENR Construction Cost Index	1.787
Total National Economic Benefits	$2,091,500	NA	NA	NA
Regional Economic Benefits	$3,700,000	NA	RECONS model	NA
Environmental Restoration	output = 7.6	NA	NA	NA
Total Annual Benefits	$5,762,621	NA	NA	NA

The 1996 Design Memorandum (1996 DM) concluded that: "Each phase is economically justified with benefit to cost ratios of approximately 2:1 when all the benefits are considered" (e.g., regional benefits). Phase I was authorized in Water Resources Development Act (WRDA) 1996 and has been partially constructed. The economic analysis has been updated for comparison purposes to the Design Memorandum, which includes analyzing the regional benefits. The economics justification has been authorized by Section 301(b)(10) of the Water Resources Development Act (WRDA) of 1996, as part of the Passaic River Main Stem Project. Additionally, the approved 1999 PCA states that the Minish Project is "…*technically sound, environmentally acceptable, and economically justified.*"

VI. COST ALLOCATION

Description	Design Memo Plan (1996 DM, October 1995 price level)	HSLRR Plan (October 2014)
Estimated Federal Cost	$26,775,000	$56,196,000*
Estimated Non-Federal Cost	$8,925,000	$0
Sunk Cost	$0	$28,955,600**
TOTAL	$35,700,000	$85,151,000

A summary of the cost estimate components presented compare the cost from the 1996 General Design Memorandum (October 1995 cost), including the actual sunk cost to date (4th Quarter 2014). Changes in cost reflect the impact of changes in the initial construction and the cost escalation.

**This cost is 100% federally funded and includes the construction on bulkheads, stream bank stabilization, and wetland mitigation, along with contingencies, design (engineering & design), lands and damages, supervision and administration (S&A) fully funded costs.*

*** Sunk cost is not escalated to October 2014 price level.*

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**Sections of text marked with an asterisk are applicable to the satisfaction of NEPA requirements*

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1. INTRODUCTION

The U.S. Army Corps of Engineers (USACE), New York District (District), in partnership with the non-Federal sponsor, the New Jersey Department of Environmental Protection (NJDEP), propose to continue and complete construction of Phase I of the Joseph G. Minish Passaic River Waterfront Park and Historic Area (Minish). The project is located in the lower valley of the Passaic River, in the city of Newark, New Jersey (see Figure 1). The project is located in Essex County.

The Minish project extends along the bank of the Passaic River from Bridge to Brill Streets (see Figure 2). This reach of the Passaic River is eroded, deteriorated and environmentally degraded due to past commercial and industrial use and flooding. The major features of the overall project include: a reduction in stream bank erosion; stream bank stabilization; and recreation facilities. The project was divided into three phases; however, ***this document addresses Phase I only***:

- Phase I: a preliminary plan was developed in 1996 and included construction of 6,000 feet of bulkhead and 3,200 linear feet of stream bank stabilization; these measurements represent rounded, preliminary estimates and have been revised based on updated design. This phase has been partially constructed. Remaining construction includes 2,858 linear feet of bulkhead, 2,658 linear feet of stream bank stabilization and 1.68 acres of wetland mitigation, and the installation of railings and access ladders along the bulkhead including those sections previously constructed.
- Phases II and III include a waterfront walkway and park and recreation facilities to provide recreation, social and economic development benefits.

A Design Memorandum (1996 DM) and Environmental Assessment (EA) report for the Joseph G. Minish Waterfront Park entitled "Joseph G. Minish Passaic River Waterfront Park and Historic Area, Newark, New Jersey" was prepared by the District, dated May 1996 (revised May 1997 and December 1997). The economic justification of the Minish project is linked to the Passaic River Main Stem project (Section 301(b)(10) of the Water Resources Development Act (WRDA) of 1996).

In response to extensive storm damages resulting from Hurricane Sandy and an increased vulnerability to future events, Congress passed the Disaster Relief Appropriations Act of 2013, Public Law (P.L.) 113-2. The Joseph G. Minish Waterfront Park and Historic Area was identified as an authorized but partially constructed project in the USACE Second Interim report to Congress, Disaster Relief Appropriations Act of 2013.

This Hurricane Sandy Limited Reevaluation Report (HSLRR) and integrated Environmental Assessment (EA) serves as a decision document to support the continued construction and completion of Phase I and meet National Environmental Policy Act (NEPA) requirements. An approved HSLRR would be utilized to execute a new Project Partnership Agreement (PPA) (or modify the existing 1999 PCA) with the non-federal sponsor. The authorized plan resulting from this report would continue construction of the first project phase, which would reduce stream bank erosion and meet mitigation requirements for impacts to open water and mudflats.

2. STUDY AND PROJECT AUTHORIZATION

Study Authority:

The Joseph G. Minish Passaic River Waterfront Park project is an element of a larger project, the Passaic River Flood Damage Reduction Project. The Corps involvement in the Passaic River Basin planning was first authorized in the Flood Control Act of 1936. Since then, reports recommending plans of action were issued in 1939, 1948, 1962, 1969, 1972, 1973, 1987 and 1995. None of these plans were implemented on the main stem of the Passaic River; however, there have been projects implemented on tributaries of the Passaic River.

Section 101(a) of the Water Resources Development Act (WRDA) of 1976 authorized a comprehensive study at the Passaic River Basin. Congressional guidance included in the House of Representatives Report 94-1702 directed the re-formulation of an existing plan, or in effect, the development of new plans for meeting the flood risk reduction needs of the people of the Passaic River Basin.

> ***Section 101(a) of WRDA 1976 states, in pertinent part****:*
> *The Secretary of the Army, acting through the Chief of Engineers, is hereby authorized to undertake the phase I design memorandum stage of advanced engineering and design of the following water resources development projects, substantially in accordance with, and subject to the conditions recommended by the Chief of Engineers in, the reports hereinafter designated.*
>
> *Passaic River Basin*
> *The project for flood control in the Passaic River Basin, New Jersey and New York: Report of the Chief of Engineers dated February 18, 1976, at an estimated cost of $12,000,000.*

Project Authority:

The Joseph G. Minish Passaic River Waterfront Park project was authorized by the Water Resources Development Act of 1990, P.L. 101-640, as an element of the overall Passaic River Flood Damage Reduction Project.

> ***Section 101(18) of WRDA 1990 states:***
> *(a) Projects With Report of the Chief of Engineers.--Except as provided in this subsection, the following projects for water resources development and conservation and other purposes are authorized to be carried out by the Secretary substantially in accordance with the plans, and subject to the conditions, recommended in the respective reports designated in this subsection:*
> *(18) Passaic river main stem, new jersey and new york. –*
> *(B) Stream bank restoration measures. --The project shall include the construction of environmental and other stream bank restoration measures (including bulkheads, recreation, greenbelt, and scenic overlook facilities) on the west bank of the Passaic River between Bridge and Jackson Streets in the city of Newark, New Jersey, at a total cost of $6,000,000. The non-Federal share of the project element authorized by this*

subparagraph shall be 25 percent. The value of the lands, easements, and rights -of-way provided by non-Federal interests shall be credited to the non-Federal share. Construction of the project element authorized by this subparagraph may be undertaken in advance of the other project features and shall not await implementation of the overall project.

The project authorization was modified by the Water Resources Development Act of 1992, P.L. 102-580, Section 102(p) which extended the project limits from Jackson to Brill Street, and increased the cost to $25,000,000, and by Section 118 (e) which designated the name of the project area.

Section 102(p) of WRDA 1992 states, in pertinent part:
Passaic River Main Stem, New Jersey and New York – Section 101(a)(18) of the Water Resources Development Act of 1990 (104 Stat. 4807-4610) is amended:

(2) in subparagraph (B) by striking "Jackson" and inserting "Brill";

(3) in subparagraph (B) by striking $6,000,000" and inserting "$25,000,000".

Section 118(e) of WRDA 1992 states:
Passaic River Stream bank Area, New Jersey.—

(1) DESIGNATION.—The area for which environmental and other stream bank restoration measures are authorized by section 101(a)(18)(b) of the Water Resources Development Act of 1999, relating to the project for flood control, Passaic River Mainstem, New Jersey and New York, shall hereafter be known and designated as the "Joseph G. Minish Passaic River Waterfront Park and Historic Area".

(2) LEGAL REFERENCES.—A reference in any law, regulation, document, record, map or other paper of the United States to the area referred to in paragraph (1) shall be deemed to be a reference to the "Joseph G. Minish Passaic River Waterfront Park and Historic Area".

The project authorization was again modified by the Water Resources Development Act of 1996 P.L. 104-303, Section 301 (b)(10), which further increased the project cost to a total of $75,000,000 and allows the implementation of the stream bank restoration element prior to the implementation of the remainder of the Passaic River Main Stem Project.

Section 301(b)(10) of WRDA 1996 states:
Joseph G. Minish Passaic River Park, New Jersey.--The stream bank restoration element of the project for flood control, Passaic River Main Stem, New Jersey and New York, authorized by section 101(a)(18)(B) of the Water Resources Development Act of 1990 (104 Stat. 4608) and known as the "Joseph G. Minish Passaic River Waterfront Park and Historic Area, New Jersey", is modified--

(A) to authorize the Secretary to construct such element at a total cost of $75,000,000;

(B) to provide that ***construction of such element may be undertaken before implementation of the remainder of the Passaic River Main Stem project****; and*

(C) to provide that such element shall be treated, ***for the purpose of economic analysis, as an integral part of the Passaic River Main Stem project*** *and shall be*

completed in the initial phase of the Passaic River Main Stem project."

A Feasibility Report was completed in 1987 (USACE 1987) for the Passaic River Main Stem project and the BCR was calculated as 1.1. A General Reevaluation Report (GRR) for the Passaic Main Stem is ongoing and an economics update occurred in September 2013; the most recent BCR was calculated to be between 1.1 and 1.3 for three alternatives, including the authorized plan, confirming findings in the 1995 General Design Memorandum and 1987 Feasibility Report, that an overall project for the Passaic Main Stem remains economically justified.

Status of Authorization:

Hurricane Sandy made landfall on 29 October 2012, with the worst coastal impacts occurring on the Atlantic Coast of northern New Jersey (NJ) and New York (NY). According to a letter from Mayor Quintana (Newark, NJ) to COL Paul E. Owen (Commander, USACE District) dated 4 December 2013 (see Appendix G): *"During Superstorm Sandy, the Passaic River breached its banks and Newark's residents endured flooding, exposure to pollutants, loss of power, jobs, transportation, and school days*".

Prior to Hurricane Sandy, Phase I of the Minish project was partially constructed and additional federal appropriations were required to complete the first phase. Because of the devastation sustained in the northeast region of the United States from Hurricane Sandy, P.L. 113-2, the Disaster Relief Appropriation Act of 2013, Chapter 4, authorized USACE as follows:

> *"For an additional amount for ''Construction'' for necessary expenses related to the consequences of Hurricane Sandy, $3,461,000,000, to remain available until expended to rehabilitate, repair and construct United States Army Corps of Engineers projects: Provided, That $2,902,000,000 of the funds provided under this heading shall be used to reduce future flood risk in ways that will support the long-term sustainability of the coastal ecosystem and communities and reduce the economic costs and risks associated with large-scale flood and storm events in areas along the Atlantic Coast within the boundaries of the North Atlantic Division of the Corps that were affected by Hurricane Sandy: Provided further, That $858,000,000 of such funds shall be made available not earlier than 14 days after the Secretary of the Army submits the report required under the heading ''Investigations'' to be submitted not later than March 1, 2013, and $2,044,000,000 shall be made available not earlier than 14 days after the Secretary submits the report required under the heading ''Investigations'' to be submitted not later than May 1, 2013: Provided further, That efforts using these funds shall incorporate current science and engineering standards in constructing previously authorized Corps projects designed to reduce flood and storm damage risks and modifying existing Corps projects that do not meet these standards, with such modifications as the Secretary determines are necessary to incorporate these standards or to meet the goal of providing sustainable reduction to flooding and storm damage risks: Provided further, That upon approval of the Committees on Appropriations of the House of Representatives and the Senate these funds may be used to construct any project under study by the Corps for reducing flooding and storm damage risks in areas along the Atlantic Coast within the*

North Atlantic Division of the Corps that were affected by Hurricane Sandy that the Secretary determines is technically feasible, economically justified, and environmentally acceptable: Provided further, That the completion of ongoing construction projects receiving funds provided by this division shall be at full Federal expense with respect to such funds: Provided further, That the non-Federal cash contribution for projects using these funds shall be financed in accordance with the provisions of section 103(k) of Public Law 99–662 over a period of 30 years from the date of completion of the project or separable element: Provided further, That for these projects, the provisions of section 902 of the Water Resources Development Act of 1986 shall not apply to these funds: Provided further, That up to $51,000,000 of the funds provided under this heading shall be used to expedite continuing authorities projects to reduce the risk of flooding along the coastal areas in States impacted by Hurricane Sandy within the boundaries of the North Atlantic Division of the Corps: Provided further, That $9,000,000 of the funds provided under this heading shall be used for repairs to projects that were under construction and damaged by the impacts of Hurricane Sandy: Provided further, That any projects using funds appropriated under this heading shall be initiated only after non-Federal interests have entered into binding agreements with the Secretary requiring the non-Federal interests to pay 100 percent of the operation, maintenance, repair, replacement, and rehabilitation costs of the project and to hold and save the United States free from damages due to the construction or operation and maintenance of the project, except for damages due to the fault or negligence of the United States or its contractors: Provided further, That the Assistant Secretary of the Army for Civil Works shall submit to the Committees on Appropriations of the House of Representatives and the Senate a monthly report detailing the allocation and obligation of these funds, beginning not later than 60 days after the date of the enactment of this division".

This HSLRR is being prepared in accordance with the above authority.

In the USACE's Second Interim Report, Disaster Relief Appropriations Act, 2013, the Minish project was identified as an authorized but partially constructed project with a cost estimate of $26,000,000 1995 for remaining construction.

3. PLAN FORMULATION

In the very early stages of development, alternatives ranged from installation of bulkheading of the entire riverbank within the project area to restoration of the entire riverbank to its pre-European settlement condition were formulated in the 1996 DM. These two endpoints, which were proposed by different citizen groups, would have entailed substantial alteration of the existing riverbank. Installation of bulkheading along the southern reach of the project area would have altered the existing sloping bank, and had the potential for additional office or residential construction along the southern reach. Restoration of the riverbank to its pre-European settlement condition would have required the clearing of existing commercial and public buildings along the northern reach, removal of bulkheading, and restoration of tidal mudflats and wetlands in their place.

Phase I authorized plan components includes: bulkhead from Bridge Street to Jackson Street; stabilization of the riverbank with rip-rap from Jackson Street to Brill Street. The toe of slope would be graded and seeded post construction in areas along the lower reach of the project area. The project originally included an environmental restoration component to include wetland creation; however, this piece was removed due to the discovery of a Superfund site.

Since the plan would impact open water and mudflats, wetland mitigation is required.

As the project a limited reevaluation, the two alternatives considered in this Integrated HSLRR include the Future Without Project Conditions/No Action Alternative and Phase I of the authorized plan (Action Alternative) only. The Environmental Assessment does not reanalyze alternatives, but updates the environmental analyses of the remaining construction components for Phase I of the authorized plan.

4. PROJECT DESCRIPTION/PROPOSED ACTION

The USACE, District, in partnership with the non-Federal sponsor, the NJDEP, are proposing to continue and complete construction of Phase I of the Joseph G. Minish Passaic River Waterfront Park and Historic Area. The project is located in the lower valley of the Passaic River, in the city of Newark, New Jersey (Figure 1). Although the project has three phases[2], this HSLRR addresses Phase I only.

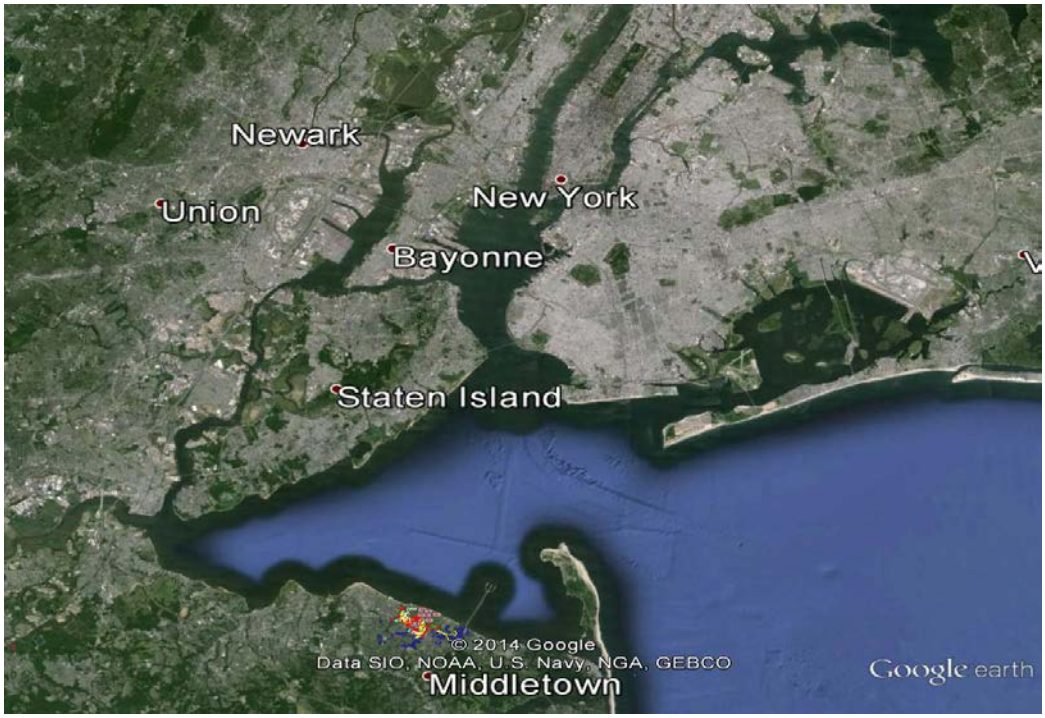

Figure 1: City of Newark New Jersey

[2] *Phase II would add a 9,200 foot riverfront walkway and Phase III would add park facilities, plazas, and landscaping. Links to the New Jersey Performing Arts Center (NJPAC), Riverbank Park, and other sites would also be provided.*

Phase I of the project extends along the bank of the Passaic River from Bridge Street in the north to Brill Street in the South; this area spans approximately 2 miles along the River, and extends from the shoreline inland approximately 40 feet. This reach of the Passaic River is eroded, deteriorated and environmentally degraded due to past commercial and industrial use and flooding.

As documented in the 1996 DM, Phase I would provide 6,000 feet of bulkhead and 3,200 feet of restored stream. Since the 1996 DM, the following project updates have occurred: a) portions of the bulkhead have been constructed; b) Newark Riverfront Park was constructed by others, including the portion of stream bank stabilization component from Station 62+00 to 69+75 (see Figure 1); c) the originally proposed on site wetland mitigation was removed due to the Superfund status of the project area. New site alternatives are being explored and negotiated with NJDEP with a preference for in-kind compensation to open water/mudflats or a combination thereof. Remaining construction, which represents the Action Alternative, includes: 2,858 linear feet of bulkhead, 2,658 linear feet of stream bank stabilization, and 1.68 acres of wetland mitigation. The following features of Phase I are constructed, with exceptions as listed (see Figure 2):

- Station 0+00 to Station 9+05 (aka Contract 3B) – bulkhead, railings and access ladders not yet constructed;
- Station 9+05 to Station 20+03 (aka Contract 3A) – bulkhead, railings and access ladders not yet constructed;
- Station 20+03 to Station 24+48.57 (aka Contract 1) - bulkhead construction completed; railings and access ladders not yet constructed;
- Station 24+48.57 to 37+10 (aka Contract 2) - bulkhead construction completed; railings and access ladders not yet constructed;
- Station 37+10 to 45+68.60 (aka Contract 4B) – bulkhead, railings and access ladders not yet constructed;
- Station 45+68.60 to 57+80.10 (aka Contracts 4 and 4A) - bulkhead construction completed; railings and access ladders not yet constructed;
- Station 57+80.10 to 62+00, Station 69+75 to 75+00, Station 75+00 to 92+13.59 - stream bank stabilization areas not yet constructed;
- All remaining bulkhead construction and stream bank stabilization would include post construction seeding.
- Wetland Mitigation – not yet constructed (location to be determined).
- Construction will also include: new stormwater inlets, pipes and outfalls, as well as modifications of existing features. See Appendix A for additional details.

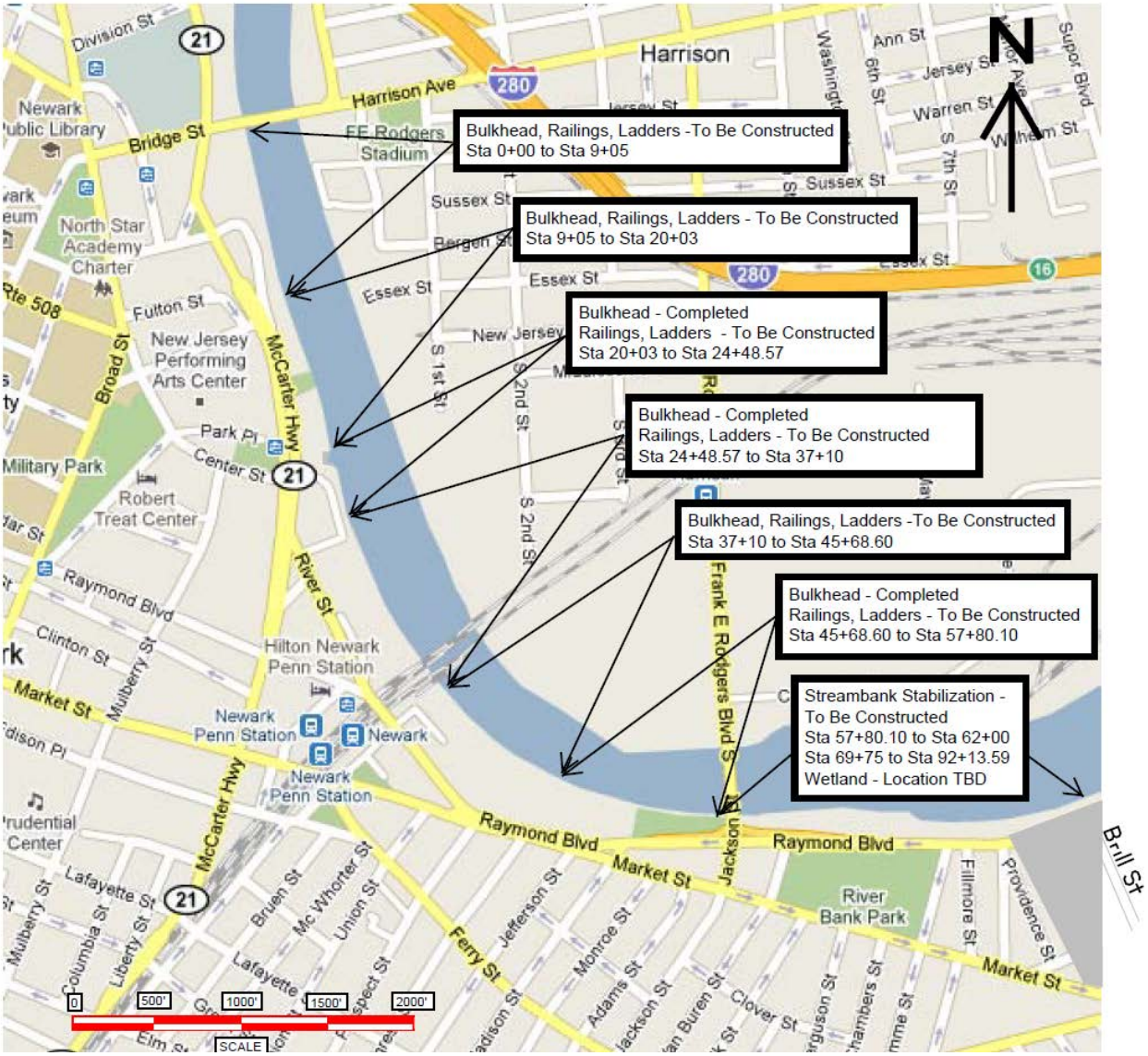

Figure 2: Phase I bulkhead and stream bank stabilization features. Completed bulkhead includes Contracts 1, 2, 4, and 4A. Completed stream bank stabilization includes Jackson Street to Carmen Court.

Bulkhead restoration consists of constructing new bulkhead in front of an existing, deteriorating wooden bulkhead. Construction of the new bulkhead would vary depending on the condition of the existing bulkhead. The typical bulkhead cross-section consists of a bulkhead wall system with a concrete cap. The proposed bulkhead will be driven in front of the existing wooden bulkhead and its top elevation will be above the existing wooden bulkhead, which will remain in place. The area on the landward side of the bulkhead will be earth filled to an appropriate grade level effectively burying the existing wooden bulkhead in place.

Bulkhead construction would require soil moving activities to extend approximately 40' landward of the bulkhead. The Landward side shall be graded to meet the proposed elevation of the authorized but unconstructed Phases II and III of the Minish Park Project; this area will be

seeded and vegetated. The soils encountered in this area are assumed to be contaminated and shall be removed from the project area and tested at a later date. A minimum of 12" of crushed stone shall be placed below the bottom of the concrete cap for soil stability during construction. A total of 15,498 cubic yards (CY) of clean fill would be required for all remaining features.

Existing utility outfalls exist throughout the project area. It has been proposed that the bulkhead be fitted with pipe sleeves and flap valves to accommodate these outfalls. Earthwork quantities are subject to change pending new topography readings, and site grading on the landward side shall be to 8 inches below the top of the wall.

Stream bank stabilization areas will require rip rap to stabilize and prevent erosion. The stream bank slope will be re-graded to achieve a desirable slope angle through cut and fill of material and will be seeded and vegetated. Areas that will require riprap and slope re-grading extend from Station 57+80.10 to Station 62+00, from Station 69+75 to Station 92+13.59.

5. NEED FOR THE PROPOSED ACTION*

This project, in its entirety, is designed to provide for improved stream bank protection to prevent erosion, and provide recreation and economic development benefits. This document focuses on Phase I only; therefore, the need for the proposed action described addresses this phase only.

The Passaic River from Bridge Street and McCarter Highway to Brill Street and Raymond Boulevard is protected by a bulkhead. At the time of the 1996 DM the stream bank showed signs of decay and erosion and provided little protection of the shoreline from tidal storms and erosion. To further determine the extent of the erosion, hydraulic engineers analyzed the project area. An analysis was conducted and resulted in the determination that approximately 75,000 square feet of water front land would be eroded over a 20 year period (Economic Analysis of the Passaic River Stream bank Restoration Project, 1995), and up to 105,000 square feet over 50 years. Construction of the Phase I bulkhead has been carried out under multiple contracts from 2000-present. Remaining Phase I work to be completed includes 3 sections of bulkhead (Stations 0 to 9+05, 9+05 to 20+03, and 37+10 to 45+68.60), stream bank stabilization (Station 57+80.10 to 62+00, Station 69+75 to 92+13.59) and installation of railings and access ladders along the bulkhead including those sections previously constructed. To prevent the loss of this land due to erosion, and protect the western Passaic River bank from tidal storms, the restoration of the remaining bulkhead and stream bank is necessary.

6. NATIONAL ENVIRONMENTAL POLICY ACT REQUIREMENTS AND STATUS

The National Environmental Policy Act (NEPA) requires federal agencies to integrate an environmental review into their planning and decision-making process, to be consistent with NEPA statutory requirements. The report reflects an integrated planning process, which avoids, minimizes, and mitigates adverse project effects associated with improved stream bank protection efforts.

An evaluation of the proposed plan and alternatives was previously conducted in the 1996 Final Environmental Assessment (EA) for the Joseph G. Minish Passaic River Waterfront Park and Historic Area with a Finding of No Significant FONSI dated May 1996 (1996 EA).

This EA update has been prepared to comply with NEPA (greater than 5 years has elapsed since the last evaluation), changes to existing conditions, and to account for changes in design since the 1996 DM. Whenever practicable and according to CEQ regulations, other documents were incorporated by reference in order to reduce the size of the EA and avoid a duplicative effort. Therefore, this document is intended to evaluate potential adverse and beneficial environmental impacts that may result from the changes of the selected plan since the original 1996 EA and ROD were issued. For a thorough discussion, please view the 1996 EA and ROD. The Environmental Assessment does not reanalyze alternatives, but updates the environmental analyses of the remaining construction components of Phase I of the authorized plan out of Section 3 Plan Formulation and include it here.

The 1996 EA for Joseph G. Minish Passaic River Waterfront Park and Historic Area included all of the appropriate US Fish and Wildlife Service (USFWS) coordination requirements including the Fish and Wildlife Coordination Act Report (FWCAR). The District is currently consulting with the USFWS to update any impacts to fish and wildlife resources. via a FWCAR Planning Aid Letter (PAL). The PAL has not yet been completed and is absent from this draft EA. When the District receives the USFWS PAL it will be given full consideration and its recommendations where applicable, will be incorporated into the final EA/FONSI.

7. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES*

7.1 Land Use and Zoning

Affected Environment

The land designated for the project currently contains light industrial, commercial, and public park land uses. Within the project area, there are two distinct groupings of existing land uses. The area between Brill Street and the Jackson Street Bridge is predominantly public park and walkway land bordering the Passaic River. A tract of land at the extreme southern end of this section (abutting Brill Street) serves as a storage area for containers used in long distance transportation of goods and materials. The area between the Jackson Street Bridge and Bridge Street--the northern end of the project area--contains parking lots, light industry, and office buildings.

Changes to the project area have occurred since the preparation of the 1996 DM and EA. The major expansion of the McCarter Highway (Rt. 21) by the New Jersey Department of Transportation (NJDOT), resulted in major changes to the project area. With the new alignment of the Rt. 21 and an associated exit ramp, concrete/brick one /two story buildings within the alignment were demolished. Associated parking lots, garage buildings and appurtenances were also demolished. Areas outside the highway realignment were graded and vegetated.

The City of Newark's Rector Street Screening Facility was also a major component of the Rt. 21 widening project. The facility consists of an influent diversion chamber, screening facility and an 8' X 8' effluent conduit emptying into the Passaic River. The effluent conduit was proposed to be a future outfall in Contract 3, but is now an existing feature at the site.

The widening and realignment of Rt. 21 as well as the construction of the screening facility, brought major utility changes to the site. Utilities in conflict were relocated, re-aligned or removed. Some of the utility works which were previously proposed are now in place. Two sanitary sewers that originally discharged into the Passaic River have been re-routed to the diversion chamber of the screening facility. A new stormwater drain from Rt. 21 discharges into the Passaic River. Changes to the utility related to the proposed bulkhead are explained in Appendix A.

The land from Station 4+00 to 9+05 (Fig. 1 above) is owned by Public Service Electric and Gas Company (PSE&G) and their site contains contaminated soil. PSE&G is undertaking a soil remediation project in this area. As part of their work, PSE&G has installed a sheet pile wall inland of the deteriorated wood bulkhead; it is not setback uniformly from the wood bulkhead.

Additionally, several projects have been developed for the downtown Newark area and are located in the immediate vicinity since the design drawings for the Minish Park Project were developed in 1998. These include the following projects sponsored by governmental agencies:

- Construction of a new Arts Center in1997 on land located across McCarter Highway (Route 21).
- Construction of the NJ PAC Center St. Station which opened in 2006.
- The first segment of Newark Riverfront Park opened in August 2013 and includes a boardwalk along the riverfront between Van Buren and Somme Street (approximate Station 60+83 to Station 71+93).
- Essex County Riverfront Park between Oxford Street and Brill Street, a 12.33 acre park comprised primarily of ball fields (approximate Station 83+04 to Station 92+13).

Environmental Consequences

The sites in which remaining construction would occur are located on open land owned by various agencies, public, and private parcels. No permanent housing exists on these sites. Implementation of the proposed plan would not change the existing land use of the site. The site would remain in the same ownership with public access remaining similar to or better than existing conditions.

7.2 Water Resources

Affected Environment

The Joseph G. Minish Passaic River Waterfront Park and Historic Area is located in the lower valley of the Passaic River. The Passaic River within the project area is approximately 300 feet

wide and ranges in depth from 0.5 feet to 8.5 feet (NOAA Nautical Chart). The banks along the project area are generally very steep leveling out to a rocky shoreline and a subtidal habitat composed of coarse substrate.

The waters of the Passaic River are mainly used as a source of water supply for public and industrial needs, and for disposal of municipal and industrial waste waters. Water quality of the Lower Valley of the Passaic River has been adversely affected by the point and nonpoint source discharges from industry and the urban areas. As a result, it currently exists in a degraded condition. The lower Valley of the Passaic River, according to the New Jersey Department of Environmental Protection (NJDEP), is classified as tidal waters "Non-trout, fresh surface water, usable as a source of potable water after necessary treatment". These waters can also be used for contact recreation, industrial, agricultural, and maintenance, migration, and propagation of fish and wildlife. The Passaic River below the Second River, to the outlet at Newark Bay, which includes the project area, is classified as similar to the above description, except that it is not suitable as a source of public water supply.

Environmental Consequences

The proposed action involves activities that have the potential to effect water quality through altering the nature of non point source pollution (runoff) or disturbing and re-suspending sediment, soils, and contamination. These activities include the filling and re-grading portions of the project area, installation of new bulkheads with concrete caps, which include excavation and replacement of material in the water near the new bulkhead, and installation of rip rap which extends from toe of slope to MLW. This area includes waters immediately bordering the shoreline along the entire project length.

The proposed activities would result in temporary adverse impacts to the Passaic River due to dispersion of suspended sediments during construction; however Best Management Practices (BMP's) would be utilized to minimize these temporary impacts. For example, below water excavation will be carried out using an Environmental "Clam Shell" bucket. This type of bucket has a rubber seal attached to the edge of the bucket. When the bucket closes, the rubber seal is compressed and seals the contents of the bucket from leaking out. This tool minimizes the amount of loose sediment spilling out of the bucket during excavation. This tool used in conjunction with slow lifting and dropping of the bucket into/out of the water will minimize sediment from sloughing off the bucket. Overall, less than one acre of river bottom habitat will be displaced by the proposed action. Upon completion of construction, these actions should minimize runoff and dampen the sediment input by stabilizing the shoreline.

7.3 Hazardous, Toxic, and Radioactive Waste

Affected Environment

A hazardous, toxic and radioactive waste (HTRW) analysis within the study area was conducted in February of 1995 (DM 1996, Appendix I: HTRW Chemical Analyses Report, April 21, 1995). These studies show that Volatile Organic Compounds (VOCs) in the soil of the project area were below the NJDEP Soil Cleanup Criteria Level (1000 mg/kg). The VOCs in the

groundwater exceeded the Surface Water Discharge Standards under the State Water Pollution Control Act (N.J.S.A. 58: 10A-l et seq) and the New Jersey Pollutant Discharge Elimination System (NJPDES) (N.J.A.C. 7:14A). For soils, the Total Organic Contaminants including Total Recoverable Petroleum Hydrocarbons (TRPH) are less than 10,000 mg/kg, precluding regulatory action. Some Target Analyte Metals (TAL) in both groundwater and soils exceeded the NJDEP Residential Soil Cleanup Criteria and the NJDEP Surface Water Discharge Criteria. River sediment samples indicate heavy metal and pesticide concentrations above the NJDEP's most stringent soil cleanup criteria.

The initial sampling results from 1995 were compared to the guidelines and thresholds in effect at that time. In the 20 years since the original investigation, the NJDEP has lowered the threshold levels on several VOC and no longer uses the term TRPH. As such, regulatory action may be required in order to comply with the lower threshold limits. Current guidelines and standards are found in Groundwater Quality Standards (GWQS) in N.J.A.C. 7:9C; Surface Water Quality Standards (SWQS) in N.J.A.C. 7:B; Soil Remediation Standards in N.J.A.C. 7:26D (http://www.nj.gov/dep/srp/guidance/rs/).

The area of the proposed action is located just upstream of the Diamond Alkali Superfund Site and within the bounds of the US Environmental Protection Agency (USEPA) Lower Passaic Remedial Investigation and Feasibility Study.

Superfund and Known Contaminated Sites

The project area contains 3 Federal Superfund Sites: 1) In 1984, the Diamond Alkali site located at 80 and 120 Lister Avenue inNewark, NJ and its associated properties were included on the National Priority List (NPL) and designated Superfund sites by the US Environmental Protection Agency (USEPA). The main contaminant of concern at these sites was dioxin, a by-product from the manufacture of the defoliant Agent Orange in the 1960's. Dioxin had directly and indirectly found its way into the Passaic River, settling into the sediments adjacent to the plant. Over the years this contaminated sediment was dispersed up and down the river through tidal action. Since the late 1980's the NJDEP conducted over-sight of remedial actions on the site, which have included demolition, capping of sediments, and the construction of subsurface slurry walls and a groundwater treatment system. Investigations showed that sediments contaminated with hazardous substances move into and out of the six-mile stretch of the River in the vicinity of the Superfund site leading USEPA, in 2002, to expand its investigation to include 2) the entire 17-mile tidal stretch of the Passaic River, from Dundee Dam to Newark Bay (Figure 3). The USEPA has pursued early remedial actions, which are segmented into four distinct initiatives: a) USEPA/Tierra Removal Action; b) USEPA Time Critical Removal Action at River Mile (RM) 10.9; c) USEPA Potential Early Action Focused Feasibility Study (lower 8-miles); and d) the Comprehensive 17-mile Remedial Investigation/Feasibility Study (see Figure 3). To date, the USEPA has completed portions of the removal action, initiated the time critical removal action, and is working on the Final Focused Feasibility Study. Finally, 3) Riverside Industrial Park in Newark, NJ is located directly on the Passaic River approximately two and half miles upstream from the Minish Park project site. The main contaminants of concern at Riverside are Polychlorinated biphenyls and Volatile Organic Compound contaminated soil and groundwater as well as leaking storage tanks and uncontrolled site access. EPA is currently working on determining the extent of contamination and containing any further releases from the site. Future

site work will include removal of contaminated soil, storage tanks and ground water treatment systems. EPA is currently working with the property owners to address eventual remediation.

The project area contains 2 State of New Jersey Known Contaminated Sites: 1) The Benjamin Moore site contains an active paint manufacturer located at 134 Lister Avenue, directly east of the Diamond Alkali Superfind site. Contaminants include volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), metals, and base chemicals. The site owners, with oversight from NJDEP site remediation program, are conducting assessments of impacted soil and groundwater; no remedial work had been completed at the time of this report. 2) The Sherwin Williams site is located at 60 Lister Avenue directly west of the Diamond Alkali Superfund Site. Contaminants include VOCs, SVOCs, PCBs, metals, base chemicals, and pesticides. The site owners, with oversight from NJDEP site remediation program, are conducting assessments of impacted soil and groundwater; no remedial work had been completed at the time of this report.

The Minish Park project is located between the Diamond Alkali and Riverside Industrial Park sites and directly on the Passaic River (Figure 3a.). Work on Minish should be aware of the three Superfund Site's impact on the river sediments and potential impact to the any work along the stream banks.

Lower Passaic River

The New York District is conducting a feasibility study evaluating the restoration opportunities within the Lower Basin. In recognition of the coincidental study areas and their related roles and responsibilities, the USEPA the NJ Department of Transportation (NJDOT) and the District have integrated their individual investigations into a single, comprehensive, cooperative effort. They formed a partnership with the Natural Resources Trustees (National Oceanic and Atmospheric Administration [NOAA], USFWS and NJDEP) to conduct a joint study that would bring each agency's legal authorities to bear on the complex environmental problems of the Lower Passaic River. Some restoration opportunities are tied to specific remediation activities while a number have been identified for advancement and are unconnected to remediation actions. Restoration of the shoreline and completion of the park may be completed independent of remediation activities.

Environmental Consequences

Widespread contamination exists within the study area and within the broader Lower Passaic River. As such, all sediment below Mean High Water (MHW) are assumed contaminated for all contract areas therefore there is the potential, through excavation and sediment transport, to spread contaminants or expose sediment with higher toxin levels than existing surface material contamination levels. These impacts will be mitigated for through Best Management Practices, for example, the use of silt curtains. Also, as stated above, all soil removed from this site encountered in this area are assumed to be contaminated and shall be removed from the project area. All soil will be tested to determine how the soil may be disposed.

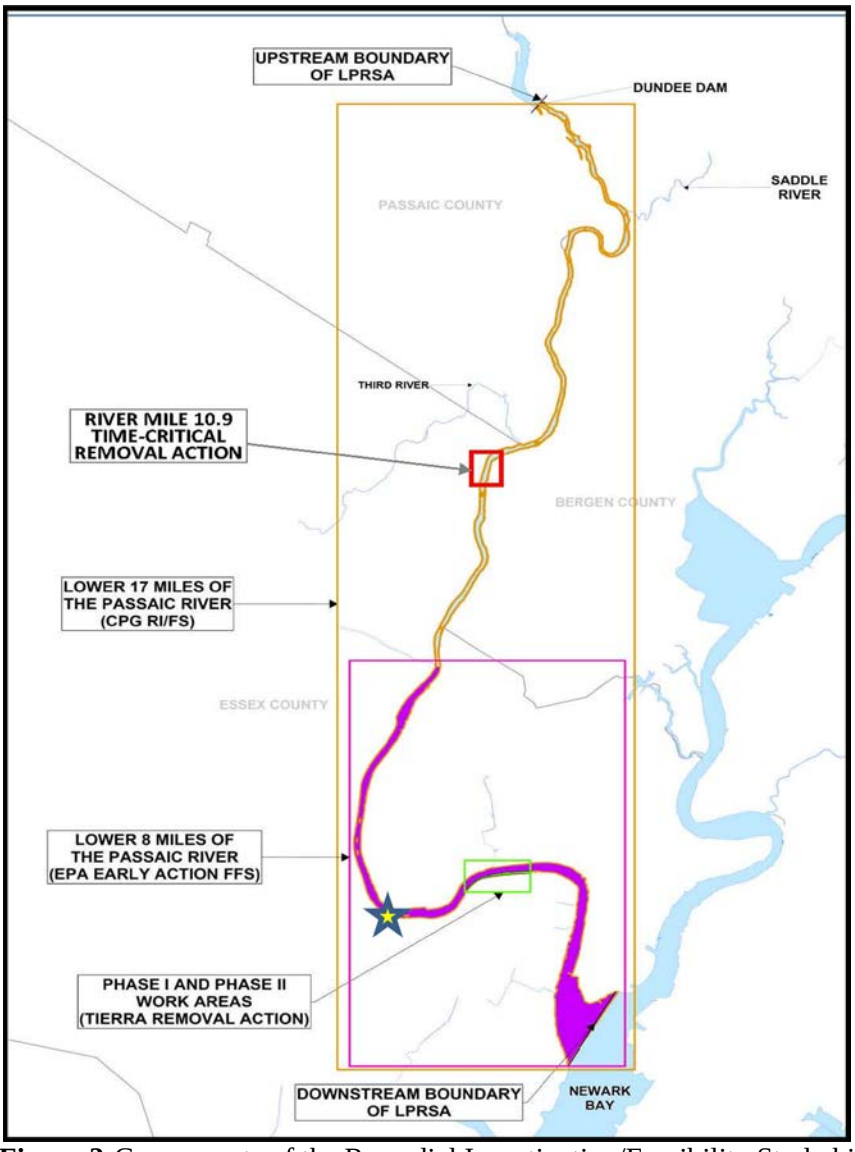

Figure 3: Components of the Remedial Investigation/Feasibility Study highlighting the 17 mile Comprehensive Restoration Feasibility Study, the lower 8.2 mile Focused Feasibility Study, the Phase 1 Tierra Removal Action, and the Time Critical Removal at mile 10.9. Star denotes Minish Park project area.

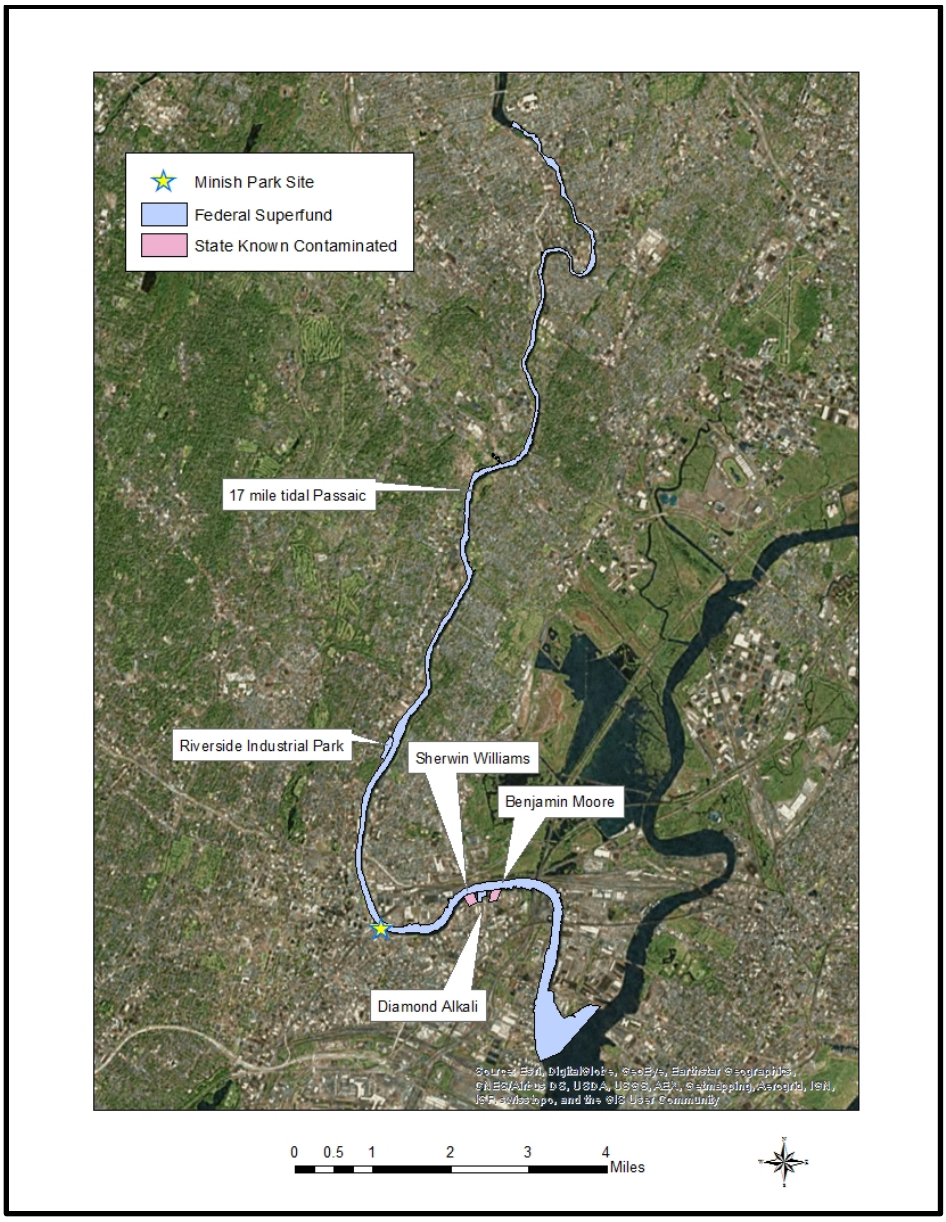

Figure 3a. Federal Superfund and State of New Jersey Known Contaminated sites in the vicinity of the Minish Park Project.

7.4 Fishery Resources

Affected Environment

The 1987 Feasibility Report for the USACE Passaic River Mainstem Project determined that anadromous fish utilize the Lower Valley Passaic River in small numbers and are mainly found further upstream beyond the project area. The low population is likely due to a limited amount of habitats, relatively short reach of the river which-is free flowing and high levels of pollutants. Fish were sampled in the tidal segment of the Passaic River from Newark Bay to Dundee Dam in 1981. The species found in 1981 included: Alewife (*Alosa pseudoharengus*), Blueback Herring (*Alosa aestivalis*), American Shad (*Alosa sapidissima*), Striped Bass (*Morone saxatilis*), and

White Perch (*Morone Americana*). Additionally, in a survey conducted from 1971 to 1973 Rainbow Smelt (*Osmerus mordax*) were also captured. In the Passaic River, the most numerous adult anadromous species collected were Alewife, followed by White Perch, Blueback Herring, and Striped Bass. Blueback Herring were the most widely distributed species, found at six locations, while White Perch were found at five locations, Alewife at four locations and Striped Bass at two locations (USACE, 1987).

Essential Fish Habitat

The regional fisheries management councils, with assistance from NOAA-Fisheries, are required under the 1996 amendments to Magnuson-Stevens Fishery Management and Conservation Act to delineate Essential Fish Habitat (EFH) for all managed species, to minimize to the extent practicable adverse effects on EFH, and to identify other actions to encourage the conservation and enhancement of EFH. EFH is defined as "those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity" (NOAA-Fisheries 2004). In addition, the presence of adequate prey species is one of the biological properties that can define EFH. The regulations further clarify EFH by defining "waters" to include aquatic areas that are used by fish (either currently or historically) and their associated physical, chemical, and biological properties: "substrate" to include sediment, hard bottom, and structures underlying the water; areas used for "spawning, breeding, feeding, and growth to maturity" to cover a species' full life cycle; "prey species" as being a food source for one or more designated fish species (NOAA Fisheries 2004).

Due to the tidal nature of the river, NOAA- Fisheries were consulted regarding the documentation of EFH within the project area. The final needs assessment for this coordination can be found in Appendix B.

The project area falls within the NOAA- Fisheries Estuary Table for Hudson River/ Raritan/ Sandy Hook Bays, New York/ New Jersey. In regard to EFH for this project, 14 species of finfish (various life stages) were identified within the action area of the project that are applicable to EFH. Additionally, Anadromous fish such as alewife and blueback herring migrate through the Kill van Kull to upstream spawning areas in the Hackensack and Passaic Rivers. These species are a food source for federally managed species such as bluefish, winter flounder, little skate, winter skate, scup, and summer flounder. An adverse effect on prey species can be considered an adverse effect on EFH.

Environmental Consequences

Activities such as bulkhead replacement, minor excavation associated with the bulkhead, back fill of bulkhead, and stream bank stabilization will cause short term adverse affect to EFH. Contaminated silty sediments exist on the river bottom within the project area and construction activities may temporarily affect migrant or resident species. Winter flounder spawning may be affected due to increased turbidity and sedimentation on eggs during the in water construction activities such as placement of the sheet pile and coffer dam (a method which may be used to construct the concrete cap). Consultation with NOAA- Fisheries has determined that these short term affects should be mitigated with specific conservation recommendations (eg. observation of

environmental windows and use of turbidity barriers) that would be included into the construction plan. For specific NOAA- Fisheries, Final Needs Response see Appendix B.

Under the proposed action there would be no long term adverse impact on fish species or populations of the project area. Over the long term, stabilization of the upper and lower reaches of the project area will reduce erosion and sediment input into the river system and there may be an increase in potential habitat and feeding areas within the stream bank stabilization areas. Additionally, the bulkhead is designed to accommodate stormwater management features in Phase II and III future work which will reduce adverse impacts of current stormwater runoff by treating such runoff prior to discharge into the Passaic River.

7.5 Benthic Resources

Affected Environment

Benthic species such as chironomid larvae and pupae, polychaete worms, and isopods have been observed in the Passaic River, however in very small numbers due to lack of habitat (Appendix B: Final Fish and Wildlife Coordination Act Report, Section 2(b), May 22, 1996). The 1987 Feasibility Report for the USACE Passaic River Mainstem Project cites benthic sampling in the lower portion of the tidal reach during 1971 to 1973, this sampling determined that species diversity was limited; with only eight species recovered during transect sampling. Oligochaete worms were the most numerous type (class) with 3 taxa observed.

Environmental Consequences

Temporary disturbances to the benthic community may result from in water construction activities associated with placement of the sheet pile, construction of the concrete cap, and the potential use of a coffer dam. These impacts are expected to be limited due to limited species diversity and pollution tolerant species composition of the benthic community.

Permanent impacts include loss of benthic habitat in areas in front of the new bulkhead which will be excavated and stabilized with gravel placed in front of the concrete cap and the area on the landward side of the bulkhead which will be earth filled to an appropriate grade level effectively burying the existing wooden bulkhead in place. Compensatory wetland mitigation for these impacts has been negotiated with NJDEP.

7.6 Terrestrial Wildlife Resources

Affected Environment

The general lack of large undisturbed or undeveloped tracts of terrestrial habitat in the project area and in general the lower basin of the Passaic River, limits the composition of the wildlife to human-tolerant species found in urban settings. For example, wildlife such as the raccoon (*Procyon lotor*), eastern gray squirrel (*Sciurus carolinensis*), eastern cottontail rabbit (*Sylvilagus floridanus*), and opossum (*Didelphis virginiana*) exist within the project area in low numbers. There is a small area in the southern portion of the project which includes some tree cover

habitat that some song birds may utilize and this is the more likely area to find any wildlife resources (USACE 1987).

Large mammals such as the White-tailed deer (*Odocoileus virginianus*), which requires multiple cover types, large quantities of food and freedom from human harassment, have been extirpated from the study area.

Urban encroachment into the floodplains has severely affected both amphibians and reptiles, along with the low water quality of the river. Loss of ground cover has destroyed the moist microclimate amphibians need to survive. Loss of prey for both amphibians and reptiles through habitat destruction has further reduced their populations (USACE 1987).

The project area provides limited habitat for avian species due to the highly urbanized nature of the site. (FWS 1996). Avian species consist mainly of common varieties such as European Starling (*Sturnus vulgaris*),Common Grackle (*Quiscalus quiscula*), House Sparrow (*Passer domesticus*), Northern Cardinal (*Cardinalis cardinalis*), American Crow (*Corvus brachyrhynchos*), doves (*Columbidae* spp.), and Blue Jay (*Cyanocitta cristata*). Species which require more seclusion and special habitats, such as some warblers, tanagers and most raptors, are rarely seen, although American Kestrels (*Falco sparverius*) still occasionally inhabit the area. Several migratory species may occur temporarily in the riverine and estuarine components of the project area including redhead *(Aythya americana),* canvasback *(A. valisineria),* bufflehead *(Bucephala clangula),* black duck *(Anas rubripes),* and northern harrier *(Circus cyaneus).* However, due to the lack of any substantial food or cover habitat for these species, the project area supports these species only temporarily. Ring-billed gulls (Larus *delawarensis)* and herring gulls (L. *argentatus)* may also be present in the project area (FWS 1996).

Environmental Consequences

As a result of the Migratory Bird Treaty Act of 1918 (MBTA) and the Migratory Bird Conservation Act of 1929 (MBCA), there is a requirement to protect bird species that may potentially nest within the project areas by implementing a restriction on shrub and tree removal during construction activities. Therefore, in order to comply with the MBTA and MBCA, trees and shrubs will be cleared outside of a 15 March through 31 July (NJDFW 2006) window to avoid adverse impacts to the listed species that are covered under this act.

One of the factors which contribute to the increase of terrestrial habitat value is the amount of groundcover. Groundcover provides habitat for a variety of small animals and birds and possibly reptiles. The proposed action, which would increase groundcover on the stream bank stabilization areas and would create refuge and foraging habitats for many of the organisms previously discussed as having little or no habitat in the vicinity of the project area.

7.7 Vegetation

Affected Environment

The project area vegetation is generally classified as upland cover types of an urban nature. Only a small amount of native vegetation remains in the lower basin. Wetlands, once commonly found in the floodplains, are now almost all gone, having been filled and developed. The extremely dense development in the lower basin of the Passaic River has diminished and degraded these environmentally sensitive areas. Although non-native and invasive vegetation is present, they do contribute to slope stability and protection from erosion (USACE 1987).

Terrestrial vegetation that exists within the project area includes the following; American Elm (*Ulmus Americana*), Norway Maple (*Acer platanoides*), Green Ash (*Fraxinus pennsylvanica*), White Mulberry (*Morus alba*), Marsh Elder (*Iva frutescens*), Black Locust (*Robinia pseudoacacia*), Silky Dogwood (*Cornus amomum*), Prunus sp., Box Elder (*Acer negundo*), Tree of Heaven (*Ailanthus altissima*), Lonicera sp., White Snakeroot (*Ageratina altissima*), Mugwort (*Artemisia vulgaris*), Japanese Knotweed (*Polygonum cuspidatum*), Swamp Dock (*Rumix verticillatus*) (USACE 2008). Also present may be Sumac (*Rhus spp*). And Silver Maple (*Acer saccarinum*) (FWS 1996). The most common salt marsh plant observed during 2007 USACE Bio-benchmark investigations was *Iva frutescens.* Wetland areas within the project area include mudflats and degraded emergent tidal wetlands composed of Common Reed (*Phragmites australis*) (USACE 1987, FWS 1996).

Environmental Consequences

The implementation of the project, Phase 1, would result in permanent impacts in front of the new bulkhead as excavation and gravel fill used to stabilize the cap will replace existing mudflats; and in areas between the new bulkhead and current shoreline which will be backfilled resulting in a loss in open water and mudflat. However, a good portion of the project is replacement of an existing deteriorated bulkhead which will not greatly alter the overall shape of the shoreline, as such it is not expected that the extent of the mudflats will be significantly decreased and both temporary and permanent impacts to mudflats are expected to be limited. Compensatory wetland mitigation for impacts to 0.56 acres of open water and mudflats has been negotiated with NJDEP. Minor impacts are expected to existing upland vegetation and adjacent emergent grasses (scarcely present within the project area). Some of these impacts may be off set as the newly graded area landward of the bulkhead would be seeded post construction with native, temporary stabilization, and lawn seed mix (See Appendix B for proposed species list). It is expected that some degree of stabilization and filtering will result from the seeding so that less sediment and debris end up in the river. The lower, riverward edge, of the stream bank stabilization would also provide small amounts of additional habitat for breeding, feeding and cover for various nekton. Several trees will be removed for construction staging (see Appendix X for locations). The designated removal areas are densely vegetated with invasive species but may contain any number of the previously listed native species. Removal of native species will be avoided when possible during construction staging.

Mitigation for impacts to open water and mudflats would include the restoration of 1.68 acres of tidal wetlands. These wetlands represent restoration of a small part of the historic tidal wetlands that once characterized the Passaic River. Wetland mitigation would likely take place at an off-site location within the watershed due to the ongoing remedial investigations conducted by USEPA, in the lower 8 miles of the Passaic River. USACE is currently consulting the non-

Federal sponsor, NJDEP, to explore off-site locations for wetland mitigation. Restored wetlands will provide additional habitat for avian species, and contribute to a limited improvement in the water quality of the Passaic River watershed by filtering runoff.

A portion of the study area lies within the 100 year floodplain and is subject to Executive Order 11988 Floodplain Management. EO 11988 requires federal agencies to avoid to the extent possible the long and short-term adverse impacts associated with the occupancy and modification of flood plains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. The floodplain within the study area exists in a severely degraded and urban state. Channelization, fill, hardened shorelines, and lack any substantial riparian vegetation have resulted in a floodplain that no longer provides ecosystem services typical of riparian and fluvial systems (providing room for migration and disturbances, slowing flood waters, decreasing water volumes etc.). While minor impacts to the floodplain cannot be avoided, BMP's will be used to minimize these impacts (see Section 11). Further, stabilizing the stream bank will prevent further erosion of any remaining floodplain.

7.8 State and Federal Protected Fish and Wildlife Resources

Affected Environment

The 1987 Feasibility Report for the USACE Passaic River Mainstem Project determined that the Federally- listed endangered Indiana bat (*Myotis sodalis*) is known to occur in the Passaic River Basin. Indiana bats hibernate in caves and abandoned mine shafts from October to April, depending on climatic conditions. In the summer of 1995, post-lactating female Indiana bats were discovered within the Passaic River Basin, confirming the presence of breeding Indiana bats in the area.

A recent review was conducted for this NEPA update, in advance of the PAL which is currently underway, using the U.S. Fish and Wildlife Service Information, Planning, and Conservation (IPaC) decision support system. This tool provides a preliminary USFWS species list and view of wetlands, GAP land cover, USFWS critical habitat, USFWS Migratory Bird Program, Golden Eagle Protection Act information and other natural resource map layers (See Appendix B for resource list). IPaC review revealed that there are no listed Endangered Species Act Species, Critical Habitats, or USFWS National Wildlife Refuges within the vicinity of the Minish Park project area. There are 23 birds on the IPaC provided Migratory Birds of Concern list that may be affected by increased noise levels, and earth moving activities during project construction (See Appendix B).

A recent review of State listed threatened and endangered species was conducted for this NEPA update using NJDEP interactive mapping tool, NJ-GeoWeb. This review indicated that the tidal rivers, inland bays, and other tidal waters of the project area are considered foraging habitat for Little Blue Heron (*Egretta caerulea*), Glossy Ibis (*Plegadis falcinellus*), and Snowy Egret (*Egretta thula*). However, due to the lack of any substantial food or cover habitat for these species, the project area supports these species only temporarily (FWS 1996).

Environmental Consequences

In order to avoid adverse impacts to Indiana bat that could potentially inhabit the project areas, a tree clearing restriction of 1 April through 30 September will be implemented for any trees six inches or greater than diameter at breast height (NJDEP 2006).

It may be possible for increased noise levels, and earth moving activities during construction to cause displacement of bird and mammal species; however, due to the limitations of the habitat found within the project area it is unlikely that many of these species would be present within the project area. One species, the American Shad (*Alosa sapidissima)*, classified by the State of New Jersey as threatened, is found in the Lower Valley.

Previously completed (1996) Section 7 coordination with the USFWS consultation is awaiting update. NOAA- Fisheries has determined that no threatened or endangered species under the jurisdiction of the NMFS are known to occur within the action area. NMFS have highlighted BMP's for conservation of anadromous fish species (See EFH Section 8.4).

7.9 Air Quality

Affected Environment

Essex County has been designated with the following attainment status with respect to the National Ambient Air Quality Standards (NAAQS) for criteria pollutants: marginal nonattainment area for the 2008 8-hour ozone standard, maintenance area for the 2006 particulate matter less than 2.5 microns ($PM_{2.5}$) standard, and maintenance area for the carbon monoxide (CO) standard. The county is part of the Ozone Transport Region. Ozone is controlled through the regulation of its precursor emissions, which include oxides of nitrogen (NO_x) and volatile organic compounds (VOCs). Sulfur dioxide (SO_2) is a precursor for $PM_{2.5}$. Because of these designations and since the project is a Federal Action taken by the USACE, this project triggers a General Conformity Review under 40 CFR §93.154 (see Appendix B). General Conformity ensures that Federal Actions do not have a negative impact on State Implementation Plans (SIPs).

Environmental Consequences

The emissions associated with the project have been estimated as part of the General Conformity Review. Emissions from this project are significantly less than applicable significance thresholds for NO_x (100 tons in any year), VOCs (50 tons in any year), $PM_{2.5}$ (100 tons in any year), SO_2 (100 tons in any year) and CO (100 tons in any year) (40CFR§93.153(b)(1) & (2)). The estimated total NO_x emissions for the project are 22 tons for 2015. Emissions of VOCs, $PM_{2.5}$, SO_2, and CO are significantly lower than the NO_x emission estimates because NO_x is the primary mass criteria pollutant emitted from diesel equipment. Therefore, emissions of all criteria pollutants are below the relevant thresholds.

The project will produce temporary and localized emission increases from the land-based diesel powered construction equipment working onsite. The duration of the localized emission

increases from the diesel powered equipment will be concurrent with the project's construction period and cease when the construction of the project concludes.

The project conforms with the General Conformity requirements and is therefore exempted from Subpart B under 40CFR§93.153(c)(1). The Record of Non-Applicability (RONA) and associated emission estimates can be found in Appendix B.

7.10 Noise

Affected Environment

The sources of noise within and adjacent to the project area are those characteristic of the urban environment. Throughout most of the project area, the primary source of noise is from passing traffic, which is continuous and steady during the entire day but more intense during the morning and evening rush hours. Additionally, the noise of passing trains from Newark Penn Station over the Passaic River railroad bridge is quite audible in the middle area of the project area. No field measurements of noise in the project area have been made, however with the addition of the Arts Center and the NJPAC on Center Street there is likely to be even more noise on a regular basis than during the evaluation of the 1996 EA.

Environmental Consequences

There will be a temporary increase in noise in the vicinity of the project area due to construction activities. However, since the project is located in an urban environment and not in close proximity to any residential neighborhoods, disturbance is anticipated to be low. It is anticipated that the greatest noise disturbance will be to the park-goers utilizing the recently redeveloped portion of the waterfront walkway. However, because the majority of the work will be completed during the winter months, this disturbance should be minimal.

7.11 Cultural Resources

Affected Environment

As a federal agency the District has certain responsibilities for the identification, protection and preservation of significant cultural resources that may be located within the Area of Potential Effect (APE) associated with the proposed undertaking. Cultural resources work was conducted by the District under the statutes and regulations governing the identification, protection and preservation of these resources include the National Historic Preservation Act of 1966 (NHPA), as amended; the National Environmental Policy Act of 1969; Executive Order 11593; and the regulations implementing Section 106 of the NHPA (36 CFR Part 800, Protection of Historic Properties). Significant cultural resources include any material remains of human activity eligible for inclusion on the National Register of Historic Places (NRHP).

Cultural resources coordination, as per Section 106 of the NHPA, has been on-going since project initiation in the 1990s between the Corps, the New Jersey Historic Preservation Office (NJHPO), the Advisory Council on Historic Preservation and other interested parties. A Memorandum of Agreement (MOA) was signed in 1997 (Appendix C) which stipulates the measures the Corps would undertake to mitigate for impacts to identified historic properties. Several stipulations have been completed to date and the remaining stipulations would be implemented as the project proceeds.

Environmental Consequences

The Phase I work may specifically impact the resources and mitigation measures addressed under Stipulations I (A), II (A) and III(A) of the PA. The historic properties of concern are the Newark Lime and Cement Company Site, the Citizens' Gas-Light Company Site, and the New Jersey Railroad & Transportation Company/Hudson & Manhattan Railway Passaic River Bridge Sites and Site of Pennsylvania Railroad Station and Freight Houses. All three resources may require monitoring in construction if subsurface work, as proposed, would impact them. The District's project archaeologist will review the plans and determine the need for monitoring. This determination will be coordinated with the NJHPO as plans are developed.

The City of Newark and The Trust for Public Land (TPL) conducted cultural resources work as part of their Riverbank Park project which lies within the District's project area. They used the District's previous studies and MOA to guide this work. A Phase III study of the Balbach & Sons Smelting and Refining Works archaeological site was conducted and they identified a new potential historic resource, outfall CSO 16, along the riverbank. They will undertake archaeological monitoring of the sewer outfall as part of their project. However, should the District's project move forward prior to the park project, and it is determined that stream bank restoration work will impact the sewer, then the District will conduct monitoring at the outfall.

7.12 Recreation

Affected Environment

The Joseph G. Minish Passaic River Waterfront Park and Historic Area consists of passive recreation parcels owned by the City of Newark and Essex County. Although much of the park currently exists in a degraded condition; Minish Park provides much needed open space acreage in an area easily accessible to those who work in downtown Newark as well as those who live in nearby residential areas, such as the Ironbound neighborhood adjacent to the south end of the project. Several parcels within the project area are under the jurisdiction of NJDEP's Green Acres Bureau of Recreation and Open Space Planning. The Green Acres program buys and preserves open space, refurbishes parks and restores historic landmarks. Once lands are acquired or developed with Green Acres funds, they must continue to be used solely for recreation and conservation purposes in perpetuity.

Environmental Consequences

During construction of Phase I, there would be temporary but minor adverse impacts to the recreation due to the presence of construction equipment and project activity. However, there are no known long term project impacts to recreation. The development of the Joseph G. Minish Passaic River Waterfront Park and Historic Area has evolved throughout the years to keep pace with adjoining development and various stakeholder and transportation projects in the region. The project compliments the existing park space by providing stream bank stabilization to the park and furnishing railings along all of the bulkheads. Additionally, all features of the project are being built to align with Phase II and III of the project, which have recreational components.

7.13 Environmental Justice

Executive Order 12898, Federal Actions to address Environmental Justice in Minority and Low Income Populations mandates that each federal agency will identify and address potential disproportionately high and adverse human health or environmental effects of its activities on minority populations and low income populations.

A cursory review was conducted to determine the potential applicability of Environmental Justice issues. The review took into account the percentage of minority and low income populations in the City of Newark, NJ where the project is proposed, and used most currently available census data; the 2010 Census data for determining the minority population and 2008-2012 American Community Survey for the low income populations.

Based on a review of the census data, Newark, NJ has a combined minority population of 71% (see Table 1 below for a comparison of demographics in the City of Newark). Twenty eight percent (28%) of the total city population is living below the poverty line.

Demographics	**Number**	**Percent**
White	80,339	29.0
Black or African American	149,512	53.9
American Indian and Alaskan Native	3,258	1.2
Asian	5,388	1.9
Native Hawaiian and Other Pacific Islander	661	0.2
Some Other Race	49,356	17.8

Table 1: Minority Population Summary Statistics
Source: U.S. Census Bureau, Census 2010

The proposed action serves as a measure to reduce stream bank erosion and provide for stream bank stabilization benefits, and is not expected to pose disproportionately high and adverse public health or environmental effects on minority and low-income populations.

The 2012 City of Newark Master Plan identified the need to make parks more secure, attractive and enjoyable for the public, to improve maintenance and programming at existing parks, and to

expand access to quality open space and recreation in neighborhoods underserved by parks (The Trust for Public Land, n.d.). In this regard, the proposed actions help to meet these objectives through stabilization of the waterfront and addition of railings to the existing and planned bulkheads.

8. FUTURE WITHOUT-PROJECT CONDITIONS/NO ACTION ALTERNATIVE

Under the No Action Alternative no activities would be undertaken to complete construction of the bulkhead, stabilize the stream bank, and wetland mitigation would not be required.

The northern portion of the project area is composed of steep slopes with varying degrees of inclines sloping away from the main road. There is virtually no natural shoreline remaining in these areas. In the absence of the project activities, the remaining wooden bulkheads (Stations 0 to 9+05, 9+05 to 20+03, and 37+10 to 45+68.60) would continue to deteriorate and any remaining shoreline would likely continue to erode, potentially leading to erosion of the slopes adjacent to the main road.

Below Jackson Street the project area is relatively level; however, there are steep inclines from the level areas toward the water's edge resulting from bank erosion. The majority of the shoreline below Jackson Street is not armored with the exception of the recently constructed Newark Riverfront Park walkway (Station 62+00 to 69+75), which will be maintained by the City of Newark. Below Newark Riverfront Park the project area contains Sycamore trees (lining Raymond Boulevard), scrub trees, shrubs and weeds. In the absence of stream bank stabilization in this area, it is likely that the already steep shoreline will continue to erode impacting the vegetation and potentially cutting into the lawn area.

Supporting activities, such as property purchase and obtaining permanent and temporary easements, would not be conducted under the No Action Alternative. As such it is likely that some of these waterfront parcels would remain in commercial and industrial use. As discussed in the HTRW section above; the project area is within the boundaries of the joint Remedial Investigation/Feasibility Study (RI/FS) with USEPA combining both the Corps' WRDA and USEPA's Superfund program (CERCLA). Remedial Action decisions (i.e., Focused Feasibility Study for the remediation of the lower 8.2 miles and hot spots in upper 9 miles) will continue even in the absence of this project.

Ongoing restoration and education efforts being coordinated by groups such as Essex County, NJDEP, Green Acres Program, and Ironbound Community Corporation in the Newark area of the Lower Passaic River would continue even in the absence of this project. It is likely that these local groups would continue to expand and maintain the county and city owned parkland that covers the project area.

9. CUMULATIVE IMPACTS*

The purpose of accounting for cumulative impacts is to analyze the incremental affects from all recent, concurrent or near future projects that occur within the same functional ecological area as the Joseph G. Minish Waterfront Park and Historic Area Project.

The geographic area for cumulative impacts analysis is defined as the tidal brackish river section of the Passaic River; preliminarily defined as the portion that falls between River Mile 0 and River Mile 6 (just north of the Interstate 280 in Newark). This section of the Lower Passaic River represents a functional ecological zone linked by salinity, ecosystem type, tidal exchange, and dredging history. Due to the highly urbanized and degraded condition of the study area; cumulative impacts to land-based resources are considered for all open space/park parcels within the study area.

Past actions include: 1) the portions of the bulkhead that have already been constructed by the USACE/NJDEP; 2) the Newark Riverfront Park and walkway; and 3) the 2012 USEPA completed Phase I Tierra Removal of 40,000 cubic yards of contaminated sediment and capping adjacent to the Diamond Alkali facility (downstream of the project area at River Mile 3).

Future actions include: 1) the EPA proposal for addressing the remaining contamination in the lower 8 miles, "Capping with Dredging for Flooding & Navigation with Off-Site Disposal of Dredged Materials"; 2) USACE/NJDEP Passaic River Main Stem Flood Risk Management Project, most alternatives are structural and include the addition of floodwalls and levees; 3) Phases II and III of the Joseph G. Minish Waterfront Park and Historic Area Project. Phase II proposes the construction of a pedestrian walkway and bicycle path. Phase III proposes recreation facilities, and enables the development of complementary facilities by others; and 4) Newark Riverfront Revival (NRR), an initiative of the City of Newark aims to re-connect Newark residents to the Passaic River waterfront. The initiatives revolve around revitalization of open space/parks (including the above mentioned Newark Riverfront Park).

The past and future actions considered have or could modify the Passaic River habitat through stabilization measures such as the addition of hard structures such as bulkhead and rip rap along the stream banks, removal and placement of sediment along the river bottom, clearing of vegetation along the stream banks, modification of the channel, and addition of pavement (Phase II and III) to the re-graded areas above stream bank.

These actions combined with the proposed action will temporarily increase turbidity in the Passaic River, temporarily degrading water quality and fishery habitat. Since the proposed action is located in a highly urbanized and degraded area that has undergone multiple disturbances, the cumulative impacts will be minimal. Impacts to open water/ mudflat accounts for < 1 acre of habitat and since the proposed project is the replacement of an existing deteriorating bulkhead, it is not expected that the overall extent of the mudflats will be significantly decreased. In water disturbance to the Passaic River will predominantly be temporary.

Land-based impacts due to potential Phase II and III addition of paths and recreational facilities and future activities of the NRR initiative will further decrease the amount of open space and

permeable surface through addition of walking/biking paths and park facilities. The cumulative environmental impacts of these park plans will be minimal as the terrestrial habitat within the study area is extremely limited. Additionally, no mature, native vegetation will be cleared from the terrestrial habitat.

Potential cultural impacts stemming from implementing Phases II and III of the Joseph G. Minish Waterfront Park and Historic Area Project are addressed in the project's signed Programmatic Agreement (PA)(Appendix C). The City of Newark has been working with the USACE's PA for areas where their project actions on the Newark Riverfront Park overlap the area covered by the PA. They have also conducted their own cultural resources investigations in coordination with the New Jersey Historic Preservation Office. The USACE is preparing cultural resource documentation for the USACE/NJDEP Passaic River Main Stem Flood Risk Management Project as part of that specific project. Any cultural resource impacts associated the EPA project would be addressed by EPA. Potential impacts from work by other entities may be subject to cultural resources review under applicable regulations.

The past and future as well as the proposed action will increase the amount of hardened shorelines along the Passaic. However, the Lower Passaic River is channelized and dominated by hardened shorelines. Within the study area, the majority of the stream banks are comprised of hardened and deteriorating structures, with commercial and industrial buildings extending to the edge of the bank. It has been estimated that only 12% of the shoreline along the lower six miles of the main stem contains either areas with aquatic/riparian vegetation interspersed with bulkhead and/or riprap or areas of riprap with substantial overhanging riparian vegetation (Iannuzzi &Ludwig 2004). Resulting hydrodynamics leaves any remaining natural shorelines susceptible to erosion. The proposed bank stabilization will prevent further erosion of the stream bank within the project area, which will secure the park and can have water quality impacts. Therefore, the proposed action will not result in additional or increased adverse environmental or cultural resources impacts.

10. SUMMARY OF ENVIRONMENTAL MITIGATION REQUIREMENTS AND BEST MANAGEMENT PRACTICES*

A total of 0.56 acres of open water/mudflats would be impacted by construction of Phase I, resulting in wetland mitigation requirements. Additionally, post construction monitoring and adaptive management would occur to evaluate and modify the restoration measures as necessary. Due to the small size of the impacted area it was determined that the use of modeling techniques would not be a cost effective method to assess mitigation needs. As such, discussions with NJDEP determined a ratio of 3:1 or 1.68 acres of mitigation to be appropriate. The wetland mitigation site was originally planned for the southern portion of the project area; however, it lies within a Superfund Site. NJDEP had agreed to either implement the originally proposed mitigation required following the Superfund remedial action or select another location to meet the mitigation requirements outside the influence of contamination. New site alternatives are being explored and negotiated with NJDEP with a preference for in-kind compensation to open water/mudflats or a combination thereof.

To minimize adverse impacts to water quality that could arise from construction activities, implementation of the following best management practices is recommended:

- Silt fences and appropriate measures would be used to reduce the risks posed by runoff during construction activities These risks include increased concentrations of suspended solids and turbidity, or contaminantion in soil or groundwater of the Passaic River;

- Soil excavated for construction would be placed behind sheet bulkheads to prevent direct contact with the Passaic River.

- Silt curtains or other appropriate devices would be used to separate areas to be excavated from the river to reduce the risk of resuspension of sediment and contaminants. Silt curtains can be held in place with weights attached to the bottom of the curtain to minimize drift, or they can be held in place with anchors resting on the stream bed. The appropriate method will be determined by the contractor as both installation methods pose minimal risk to resuspension of contaminated sediments.

- Locating heavy construction equipment on the slope of the bank near the water would be avoided to the extent possible to reduce potential runoff of soil into the Passaic River.

- Wide track ("low density") construction equipment would be used where possible to reduce the impact of the machinery on the soil and prevent potential runoff.

- The contractor may deem it necessary to use coffer dams during in water construction to more effectively control sediment pollution.

11. SEA LEVEL CHANGE

The Department of the Army Engineering Regulation (ER) 1100-2-8162 (Feb 2014) and the Engineer Technical Letter (ETL) 1100-2-1 (Dec 2014) requires that future sea level change (SLC) projections must be incorporated into the planning, engineering design, construction and operation of all civil works projects. The project team should evaluate structural and non-structural components of the proposed alternatives in consideration of the “low,” “intermediate” and “high” potential rates of future SLC for both “with” and “without project” conditions. This range of potential rates of SLC is based on findings by the National Research Council (NRC, 1987) and the Intergovernmental Panel for Climate Change (IPCC, 2007).

SLC is the combined effect of the eustatic (i.e., global average) sea level increase due to global warming trend and land movement in the region. The New Jersey coastline is one of the areas experiencing land subsistence due to geological processes; therefore the net relative sea level rise at the project area is higher than the eustatic SLC.

The future eustatic SLC by year 2060 is estimated at a low rate of +0.63 ft. The NRC global average of eustatic SLC is approximately 0.4 ft/100 years; therefore the land subsistence component is approximately 1.0 ft/100 years.

The future SLC is estimated as follows, including 0.5 ft land subsistence in 50 years:

- USACE Intermediate Rate = +1.04 ft in year 2060
- USACE High Rate = +2.34 ft in year 2060

More detailed information regarding SLC guidance, definition, and how the local SLC calculated with project is taken into account can be found in Appendix A of this report.

12. COST ESTIMATE

An update to the cost estimate from the 1996 DM (October 1995 cost) was developed, to include the actual sunk cost to date (4th Quarter 2014). The total fully funded project cost for remaining Phase I work is $56,196,000, to include contingencies, design, land and damages, and supervision and administration; this cost does not include a sunk cost of $28,955,000. A summary of the initial project first cost, and estimated Federal and non-Federal costs between the 1996 DM Plan and the HSLRR Plan is provided below. Changes in the cost reflect the impact of changes in the initial construction and cost escalation. Please see Appendix D for additional details.

Joseph G. Minish Passaic River Waterfront Park & Historic Area - Phase 1

First Cost		$	52,462,000
Sunk Cost		$	28,162,000
Investment Cost			
Interest During Construction (a)		$	862,000
	Total Investment Cost:	$	81,486,000
Annual Costs			
Annualized Investment Cost (b)		$	2,222,398
Annualized Operation & Maintenance Cost (c)		$	216,000
Total Annual Cost*		**$**	**2,438,398**

*October 2014 Price Level

(a) Based on 2 construction contracts: 12 and 13 months of construction @ 3.3750% (IDC, E&D, RE and Sunk costs calculated separately and included in this total)

(b) Annualized investment cost only includes the remaining features. For annualized investment cost with the sunk cost, please see the economic appendix.
I = 3.375% and n = 50 yrs

(c) Assume 0.5% of total construction first cost for Breakwaters & Seawalls and streambank stabilization. Assume 2 man crew for on-surface investigation (railings, riverbank, rip rap, drainage structure and etc.) four times a year and 4 man crew for diving inspection at least once every five years.

Description	Design Memo Plan (1996 DM, October 1995 price level)	HSLRR Plan (October 2014)
Estimated Federal Cost	$26,775,000	$56,196,000*
Estimated Non-Federal Cost	$8,925,000	$0
Sunk Cost	$0	$28,955,000**
TOTAL	$35,700,000	$85,151,000

Table 3: *Cost Comparison (Fully Funded Cost):* A summary of the cost estimate components presented compare the cost from the 1996 Design Memorandum (October 1995 cost), including the actual sunk cost to date (4th Quarter 2014). Changes in cost reflect the impact of changes in the initial construction and the cost escalation.
**This cost is 100% federally funded and includes the construction on bulkheads, stream bank stabilization, and wetland mitigation, along with contingencies, design (E&D), lands and damages, supervision and administration (S&A) fully funded costs.*
***Sunk cost is not escalated to October 2014 price level*

13. REAL ESTATE REQUIREMENTS

The total lands, easements, and rights-of-way (LER) required for Phase I construction is **18.56** acres. The Project as a whole (including the previously constructed bulkhead areas) impact **47 parcels** (33 publicly-owned and 14 privately-owned), including public roads/streets. In some instances, more than one estate will be acquired from the same owner. The total impacted parcels do not include land required for mitigation since the location for mitigation site has not yet been determined.

Since there are concerns surrounding the easements that were acquired (or presumed to have been acquired) for the construction of the existing bulkhead (see paragraph 4), those acres are included as part of the real estate requirements in this REP. It is recommended that the Sponsor address these concerns so that the right to enter those parcels to construct the proposed railings and access ladders can proceed without question. The recommended minimum real estate interests to acquire in support of the Project are as follows: The recommended minimum real estate interests to be acquired are (additional details are available in Appendix E):

I. **Fee**- Approximately **1.68 acres** are required in fee for the purpose of wetlands restoration to satisfy the mitigation requirements for the Project. A site to be mitigated has not yet been selected. A previously selected mitigation site was determined to be a superfund area. Any site mitigated is expected to be publicly-owned. Discussions with the Sponsor to identify a mitigation site(s) are on-going. This REP will be amended to include the locations of the mitigation site(s) upon determination.

II. **Flood Protection Levee Easement (Standard Estate No. 9)**- Approximately **5.38 acres** are required for a perpetual Flood Protection Levee Easement for bulkhead construction. This permanent easement impacts a total of 35 parcels (including public streets and roads), 14 privately-owned and 21 publicly-owned. A portion of the real estate required for this easement has been previously secured by the Sponsor for the initial Phase 1 construction.

Approximate 1.3625 acres of the 5.38 acres required for this easement consists of submerge lands below the mean high water mark (MHWM) of the Passaic River.

III. **Bank Protection Easement (Standard Estate No. 21)**- Approximately **3.46 acres** are required for a Bank Protection Easement for the placement of riprap and other soil protection measures to stabilize and prevent erosion of the riverbank. This permanent easement impacts 12 parcels, all publicly-owned.

Approximate .0421 acres of the 3.46 acres required for this easement consists of submerge lands below the MHWM of the Passaic River.

IV. **Temporary Work Area Easement (Standard Estate No. 15)-** Approximately **8.04 acres** are required for a Temporary Work Area Easement, for a **two-year duration**, for the purpose of providing multiple work/staging areas. This easement impacts a total of 29 parcels (including public streets and roads), 8 privately-owned and 21 publicly-owned.

V. LER Summary- Exhibit B-1 provides a summary of the real estate requirements for the Project. The list of impacted parcels is provided in Exhibit "B-2" and the recommended standard estates are provided in Exhibit "C". The size of real estate interests required for the Project are estimations based on available Geographic Information System (GIS) data. The Sponsor will be advised to obtain a survey and legal description for the real estate interest acquired on each parcel to determine its precise size and boundary within its respective parcel.

The non-Federal sponsor will obtain the appropriate authorization from the state agencies to allow certification of the real estate:

- The non-Federal sponsor acquired permanent easements over 15 parcels for the initial construction of the existing bulkheads. Although these easements appear to provide sufficient language that allowed for the construction of the existing bulkheads and which would allow for the installation of the proposed railings and access ladders on the existing bulkheads, they do not include the appropriate required standard estate language therein.
- Additionally, permanent easements acquired over six parcels located at the proposed stream bank stabilization area do not include the necessary standard estate language that would allow for such work. The language therein pertains only to the construction of a bulkhead. To conform to Corps policy, the non-Federal sponsor will be required to amend existing easements to include the appropriate respective standard estate language or acquire new easements for the same and recertify the real estate for these parcels.
- Furthermore, the District has been unable to confirm the existence of easements over eight parcels where the bulkhead has been constructed. It is assumed the non-Federal sponsor has obtained these easements to allow the initial project construction. However, without evidence of said easements the construction of the railings and access ladders) therein may be hindered.

An appraisal cost estimate was prepared by the Louisville District Corps of Engineers and approved by the New York District in September 2014. The total estimated land value of the required LER to support the completion of the proposed Phase 1 construction is approximately $7,547,972.

For additional information, please see Appendix E.

14. ECONOMIC ANALYSIS

The economic justification of the Minish project is linked to the Passaic River Main Stem project (Section 301(b)(10) of the Water Resources Development Act (WRDA) of 1996). The most recent BCRs for the alternatives developed in the ongoing Passaic River Main Stem General Reevaluation Report (GRR) were calculated in 2013 to be between 1.1 and 1.3 for three alternatives, including the authorized plan, confirming findings in the 1995 General Design Memorandum and 1987 Feasibility Report that an overall project for the Passaic Main Stem remains economically justified.

The 1996 Design Memorandum (1996 DM) concluded that: "Each phase is economically justified with benefit to cost ratios of approximately 2:1 when all the benefits are considered" (e.g., regional benefits). Further, only one benefit category was considered to be of high priority for budgeting purposes. The environmental restoration benefits derived from wetland creation were considered to be high priority benefits for Federal interest under the Administration policy at the time the 1996 DM was prepared. The restoration benefits were considered integral to the bulkhead/bank restoration of Phase I. Wetland creation has since dropped out of the project due to the designation of a Superfund site where creation was proposed; wetland mitigation is now a part of the project. Further, the erosion/shore protection portion of benefits in Phase I were not considered high priority at the time; the recreation and economic benefits were also not considered high priority. It was determined that the project is "not in the Federal interest due to insufficient benefits".

Phase I was authorized in Water Resources Development Act (WRDA) 1996 and has been partially constructed. The economic analysis has been updated for comparison purposes to the Design Memorandum, which includes analyzing the regional benefits. The economics justification has been authorized by Section 301(b)(10) of the Water Resources Development Act (WRDA) of 1996, as part of the Passaic River Main Stem Project. Additionally, the approved 1999 PCA states that the Minish Project is "*…technically sound, environmentally acceptable, and economically justified."*

This Hurricane Sandy Limited Reevaluation Report addresses Phase I only. The benefit to cost ratio (BCR) has been updated in this report for all benefits (e.g., regional benefits) for comparison purposes to the 1996 analysis.

The following tables describe the methods used to update the benefits since the 1996 DM, as well as a comparison of the benefits between the 1996 DM and 2014 HSLRR.

Benefit Categories	1996 DM	% of NED Benefit	2015 LRR Update Source	Update Factor
National Economic Benefits				
Erosion/Shore Protection	$1,816,021	86.8%	Recalculate Erosion damages using current discount rate	NA
Building and Infrastructure	$28,857	1.4%	ENR Construction Cost Index	1.787
Debris Removal	$5,700	0.3%	ENR Construction Cost Index	1.787
Flood Protection	$0	0.0%	NA	NA
Recreation	$95,000	4.5%	Consumer Price Index	1.592
Remediation	$127,200	6.1%	ENR Construction Cost Index	1.787
Historic Preservation	$18,700	0.9%	ENR Construction Cost Index	1.787
Total National Economic Benefits	$2,091,500	NA	NA	NA
Regional Economic Benefits	$3,700,000	NA	RECONS model	NA
Environmental Restoration	output = 7.6	NA	NA	NA
Total Annual Benefits	$5,762,621	NA	NA	NA

Table 4: Summary of methods used to update the economic analysis

Benefit Categories	1996 DM FY96 PL	2015 HSLRR FY15 PL
National Economic Benefits		
Erosion/Shore Protection	$ 1,816,021	$ 62,000
Building and Infrastructure	$ 28,857	$ 51,600
Debris Removal	$ 5,700	$ 10,200
Flood Protection	NA	NA
Recreation	$ 95,000	$ 151,200
Remediation	$ 127,200	$ 227,300
Historic Preservation	$ 18,700	$ 33,400
Total National Economic Benefits	$ 2,091,500	$ 535,700
Regional Economic Benefits	$ 3,700,000	$ 5,763,100
Environmental Restoration	output = 7.6	NA
Total Annual Benefits	$ 5,762,621	$ 6,298,800

Table 5: Comparison of benefits between 1996 DM and 2015 HSLRR

The total annual cost, factoring in sunk costs, is $4,951,800. The breakdown of this cost is summarized in Table 6.

Description	HSLRR Plan (October 2014 Price Level)
Total Project First Cost*	$90,431,100
Interest During Construction**	$17,532,800
Total Investment Cost	$107,963,900
Equivalent Annual Cost***	$4,499,600
Annual Operation & Maintenance Cost****	$452,200
Total Annual Cost	$4,951,800

Table 6: Total Annual Cost

*Project first cost includes expended construction cost updated to October 2014 price level

** Interest during construction (IDC) includes IDC for constructed elements of the project

***Equivalent annual cost at 3.375% interest rate for a 50-year period of analysis

****Annual Operation & Maintenance cost calculated as 0.5% of project first cost

Further discussion on the economic analysis can be found in Appendix F.

15. PLAN IMPLEMENTATION

To continue with construction of remaining components of Phase I, multiple contracts would be awarded for wetland mitigation, bulkhead and stream bank stabilization. The current plan includes construction of Station 0+00 to 9+05 (Contract 3A) and the installation of railings and ladders along all constructed bulkhead under one contract. The duration of construction is estimated to be twelve months. A second contract would follow to include wetland mitigation, bulkhead construction of Stations 9+05 to 20+03 (Contract 3B), 37+10 to 45+68.60 (Contract 4B), and stream bank stabilization from Stations 57+80.10 to 62.00 and 69+75 to 92+13.59. Construction duration is estimated to be 13 months.

16. GENERAL

The Joseph G. Minish Passaic River Waterfront Park and Historic Area, in its entirety, is authorized for the construction of environmental and other stream bank stabilization measures (including bulkheads, recreation, greenbelt, and scenic overlook facilities) along the Passaic River from Bridge to Brill Streets. The remaining components of the Phase I authorized plan are consistent with the purpose of the project authorization.

17. LOCAL COOPERATION

The PPA (or modification of the 1999 PCA) will be executed with the non-Federal sponsor, NJDEP, subsequent to the approval of the HSLRR. Upon execution of the PPA, the District will complete the remaining elements of Phase I construction: 2,858 linear feet of bulkhead, 2,658 linear feet of stream bank stabilization, and 1.68 acres of wetland mitigation. NJDEP and the City of Newark have indicated support for completing Phase I. The non-Federal sponsor shall be

required to comply with all applicable Federal laws and policies and other requirements, as applicable to remaining components of Phase I.

18. COST SHARING

Cost allocation and cost sharing (apportionment) between Federal and non-Federal participants is in accordance with the Disaster Relief Appropriations Act of 2013 (P.L. 113-2). The construction costs to complete Phase I of the project will be implemented at 100% Federal expense, which is dependent upon funding remaining available under P.L. 113-2.

19. PUBLIC LAW 113-2 CONSIDERATIONS

This HSLRR has been prepared to support the implementation of the authorized but partially constructed project accounting for the Disaster Relief Appropriations Act of 2013 (P.L. 113-2). Specifically, this report addresses:

1. The costs and cost-sharing to support a PPA.
2. Acknowledgement of the changes in the applicability of Section 902 of WRDA 1986, as amended.
3. The requirements necessary to determine if the project is economically justified, technically feasible, and environmentally acceptable.
4. The specific requirements necessary to determine if the project demonstrates resiliency, sustainability, and consistency with the North Atlantic Coast Comprehensive Study (NACCS).

20. PROJECT PARTNERSHIP AGREEMENT COSTS AND COST SHARING

A Project Cooperation Agreement (PCA) was executed between the Department of the Army, Assistant Secretary of the Army (Civil Works), and the New Jersey Department of Environmental Protection, Assistant Commissioner of the Department of Environmental Protection in May 1999. An updated agreement, renamed a Project Partnership Agreement (PPA), is required for Phase I due to modifications to cost-sharing under P.L. 113-2.

The 1999 PCA stated that: "…the Design Memorandum, Joseph G. Minish Passaic Waterfront Park and Historic Area, Newark, New Jersey, dated May 1996 and revised May 1997 and December 1997, approved by the Chief of Engineers on October 1, 1997 and the Addendum to the Design Memorandum, dated June 1998, and approved by the Assistant Secretary of the Army (Civil Works) on February 4, 1999 found the modification ***to be technically sound, environmentally acceptable, and economically justified***."

This HSLRR would serve as the basis for an updated PPA. The cost-sharing allocations of the remaining Phase I costs are in accordance with the provisions of P.L. 113-2, as shown below. P.L. 113-2 states that 'the completion of ongoing construction projects receiving funds provided by this provision shall be at full Federal expense with respect to such funds'.

As described in Section 12 and the Cost Engineering Appendix (Appendix D), the estimated fully funded cost to complete Phase I construction is $56,196,000 (not including sunk cost). Cost allocation for remaining construction would be 100% federally funded.

21. SECTION 902 OF WRDA 1986, AS AMENDED

P.L. 113-2 included language that changes the applicability of Section 902 of WRDA 1986, as amended, to projects funded by its appropriation. Specifically, it states in Title X, Chapter 4, "*…Provided further, That for these projects, the provisions of section 902 of the Water Resources Development Act of 1986 shall not apply to these funds…"* As such, there are no Section 902 limits associated with the initial construction of the project, assuming the construction is undertaken in accordance with P.L. 113-2 funding. Therefore, additional authorization is not required even though the current fully funded cost estimate ($85,151,600) exceeds the estimated project funding for the completion of Phase I ($26,000,000) identified in the Second Interim Report to Congress, Disaster Relief Appropriations Act of 2013.

22. RISK

This HSLRR demonstrates that the authorized plan to complete construction of bulkhead and stream bank restoration reduces erosion rates and associated land loss along the Passaic River from Bridge to Brill Streets. During Hurricane Sandy, "*the Passaic River breached its banks and Newark's residents endured flooding, exposure to pollutants, loss of power, jobs, transportation, and school days" (Appendix G).*

23. RESILIENCY AND LONG TERM SUSTAINABILITY

Resiliency is defined in the USACE-NOAA "Infrastructures Systems Rebuilding Principles" white paper as the "ability to adapt to changing conditions and withstand and rapidly recover from disruption due to emergencies" (USACE-NOAA, 2013). The authorized plan includes the stabilization of the stream bank along the Passaic River from Bridge to Brill Streets in the City of Newark, NJ. Stabilizing the stream bank through the construction of bulkhead and placement of rip-rap and would decrease the potential for land loss, erosion and sedimentation into the river. With this project in place, storm damages to the stream bank and sediment loading into the river would be less severe.

Sustainability is defined as the ability to continue (in existence or a certain state, or in force or intensity); without interruption or diminution. The project itself is physically sustainable in two ways: the permanent, hard structures forming the bulkhead will replace deteriorating wooden bulkhead and will act to stabilize the bank of the river over the long term; and stone rip-rap will be placed along the stream bank, forming a harder structure to stabilize the bank over the long term.

24. CONSISTENCY WITH THE NORTH ATLANTIC COAST COMPREHENSIVE STUDY

The North Atlantic Coast Comprehensive Study (NACCS) is authorized under P.L. 113-2 with the objective of addressing flood risks of vulnerable coastal populations in areas that were affected by Hurricane Sandy. The study area of the NACCS extends from Virginia to New Hampshire. The study is expected to be completed in 2015.

The goals of the NACCS are to (1) provide risk reduction strategies to manage risk to which vulnerable coastal populations are subject, and (2) promote resilient coastal communities to ensure a sustainable and robust coastal landscape system, considering future sea level rise and climate change scenarios, to reduce risk to vulnerable population, property, ecosystems, and infrastructure.

In assessing consistency with the NACCS, it is acknowledged that the results of the study are not yet finalized, but that there are overriding principles which have been established that can be addressed for consistency. These principles recognize that preferred plans are those that provide coastal storm risk management with the use of sand features, which are readily adaptable, and could be modified or terminated based upon findings of the NACCS. The NACCS acknowledges that hard structures may be necessary, and can be implemented if based upon current, state-of-the-art science and planning. Additionally, it emphasizes the need for integrated land-use planning, recognizing the need for local adoption of Floodplain Management Regulations, based upon current understanding of risks.

The Minish project is located in the tidal portion of the Passaic River and is subject to storm surge. Completion of Phase I of the project would reduce the risk of land loss by stabilizing a portion of the stream bank along the Passaic River in the city of Newark, NJ. The project would not use sand features, but would use hard, mostly permanent structures.

25. COORDINATION AND COMPLIANCE WITH ENVIRONMENTAL REGULATIONS*

Coordination of design of the proposed project is ongoing with the NJDEP as the partnering agency. The District has ongoing coordination with SHPO as per the 1997 MOA. The District also has ongoing coordinating with the USFWS for the development of a PAL that will be included in Appendix B.

The circulation of this EA fulfills public coordination requirements in accordance with the NEPA of 1970. Table 7 identifies the primary Federal laws and regulations applicable to the construction of the Joseph G. Minish Passaic River Waterfront Park and Historic Area.

Legislative Title U.S. Code/Other		**Compliance**
Clean Air Act	42 U.S.C. §§ 7401-7671g	An air quality analysis was completed for the project. Based upon the completed analysis, the emissions from the project are considered to have an insignificant impact on the regional

		air quality, and according to 40CFR§93.153(c)(1), the proposed project is presumed to conform with General Conformity requirements. A Record of Non-Applicability is located in Appendix B.
Clean Water Act	33 U.S.C. §§ 1251 et seq.	The District has previously obtained (2002) currently valid NJDEP water quality certifications (Appendix B) that fulfill the requirements of Section 401 of the Clean Water Act. A total of 0.56 acres of open water/mudflats would be impacted by construction of Phase I. Wetland mitigation is required; past discussions with NJDEP resulted in a ratio of 3:1, or 1.68 acres of mitigation. Site alternatives are being explored and negotiated with NJDEP. This ongoing coordination will fulfill the requirements of Section 404 of the Clean Water Act. A 404(b)1 review is included in this report in Appendix B.
Endangered Species Act of 1973	16 U.S.C. §§ 1531 et seq.	The District is currently completing Section 7 Coordination. NOAA- Fisheries assessments indicate that no threatened or endangered species inhabit the Project Area (Appendix B). USFWS coordination is ongoing.
Fish and Wildlife Coordination Act	16 U.S.C. § 661 et seq.	The District is currently coordinating with the USFWS on a PAL update to the initial 1996 FWCAR. A letter initiating the coordination for the PAL can be found in Appendix B.
Magnuson- Stevens Act Fishery Conservation and Management Act	Section 305(b)(2) 1996 Amendments	An EFH Assessment was prepared and submitted to NOAA-Fisheries as part of the Draft HSLRR/EA review. The NMFS EFH evaluation response letter along with the District's concurrence to EFH evaluation and recommendations are located in Appendix B.
National Environmental Policy Act of 1969	42 U.S.C. §§ 4321-4347	The circulation of the Draft EA fulfills requirements of this act.
National Historic Preservation Act of 1966	16 U.S.C. §§ 470 et seq.	MOA signed in 1997, coordination with SHPO is ongoing.
Executive Order 11990, Protection of Wetlands	May 24, 1977	Circulation of this report for public and agency review fulfills the requirements of this order.
Executive Order 13045, Protection of Children from Environmental	April 21, 1997	Implementation of this project will reduce environmental health risks. Circulation of this report for public and agency review fulfills the

Health Risks and Safety Risks		requirements of this order.
Environmental Justice in Minority and Low Income Populations	Executive Order 12898	The District performed an analysis and has determined that a disproportionate negative impact on minority or low-income groups in the community is not anticipated and a full evaluation of Environmental Justice issues is not required.
Floodplain Management	Executive Order 11988	The District has determined that impacts to floodplains will be minor, and managed using BMP's
National Invasive Species Council and State of New Jersey Invasive Species Council	Executive Orders 13112 and 97	In accordance with the Federal Consistency Determination, the District will ensure the wetland mitigation requirements of 85% survival and 85% area coverage of native species. All on site seeding will consist of native species.

Table 7. Summary of Primary Federal Laws and Regulations Applicable to the Proposed Project

26. CONCLUSIONS

This HSLRR was prepared in accordance with the Disaster Relief Appropriations Act of 2013, Public Law (P.L.) 113-2. The Joseph G. Minish Waterfront Park and Historic Area (Minish) was identified as an authorized, partially constructed project in the US Army Corps of Engineers (USACE) Second Interim report to Congress, Disaster Relief Appropriations Act of 2013.

In light of the changes provided in P.L. 113-2 in regard to the PPA, cost-sharing, economics update, Section 902 applicability, risks, sustainability, resiliency, and consistency with the NACCS, the District recommends that the remaining Phase I project features be completed in accordance with this HSLRR and the provisions of P.L.113-2.

The District has given consideration to all significant aspects in the overall public interest, including environmental, social and economic effects, engineering feasibility and compatibility of the project with the policies, desires and capabilities of the State of New Jersey and other non-Federal interests.

No significant impacts to environmental or cultural resources are anticipated; however, due to unavoidable impacts to mudflats and open water, there is a requirement for wetland mitigation. The following best management practices are also recommended to reduce temporary impacts to water quality during construction:

- Silt fences and appropriate measures would be used to reduce the risks posed by runoff during construction activities These risks include increased concentrations of suspended solids and turbidity, or contamination in soil or groundwater of the Passaic River;

- Soil excavated from construction would be placed behind sheet bulkheads to prevent direct contact with the Passaic River;

- Silt curtains or other appropriate devices would be used to separate areas to be excavated from the river to reduce the risk of resuspension of sediment and contaminants;

- Locating heavy construction equipment on the slope of the bank near the water would be avoided to the extent possible to reduce potential runoff of soil into the Passaic River.

- Wide track ("low density") construction equipment would be used where possible to reduce the impact of the machinery on the soil and prevent potential runoff.

- Use of coffer dams during in water construction to more effectively control sediment pollution.

Completion of Phase I of the project would reduce the risk of land loss by stabilizing a portion of the stream bank along the Passaic River in the city of Newark, NJ.

The economic justification of the Minish project is linked to the Passaic River Main Stem project (Section 301(b)(10) of the Water Resources Development Act (WRDA) of 1996)

and authorized for construction in advance of the other project features and shall not await implementation of the overall project (*Section 101(18) of WRDA 1990).* The most recent BCR for the alternatives developed in the ongoing Passaic River Main Stem GRR were calculated in 2013 to be between 1.1 and 1.3 for three alternatives, including the authorized plan, confirming findings in the 1995 General Design Memorandum and 1987 Feasibility Report, that an overall project for the Passaic Main Stem remains economically justified.

The Project Cooperation Agreement (PCA) executed in May 1999 between the Department of the Army, Assistant Secretary of the Army (Civil Works), and the New Jersey Department of Environmental Protection, Assistant Commissioner of the Department of Environmental Protection, and stated that the Assistant Secretary of the Army (Civil Works) found the Minish project "*to be technically sound, environmentally acceptable, and economically justified*."

Remaining Phase 1 construction includes 2,858 linear feet of bulkhead and 2,658 linear feet of stream bank stabilization; Phase 1 requires a total of 15,498 CY of clean fill and 1.68 acres of off- site wetland mitigation.

The analysis documented in this HSLRR concludes that the Joseph G. Minish Passaic River Waterfront Park and Historic Area, Newark, New Jersey Project remains technically sound, environmentally acceptable, and economically justified.

27. RECOMMENDATION

In making the following recommendations, I have given consideration to all significant aspects in the overall public interest in coastal storm risk management in the City of Newark, New Jersey. The aspects considered include engineering feasibility economic effects, environmental impacts, social concerns, and compatibility of the project with the policies, desires, and capabilities of the local government, City, State, Federal government, and other interested parties.

I recommend that the uncompleted portions of Phase I of the authorized project described herein for Joseph G. Minish Passaic River Waterfront Park and Historic Area, Newark, New Jersey, be designed and constructed and that implementation funds be provided. I make this recommendation based on findings that the recommended plan constitutes engineering feasibility, economic justification, and environmental acceptability. These recommendations are made with such further modifications thereof, as in the discretion of the Major Subordinate Command may be advisable, at the estimated first cost of $52,462,000 provided that non-Federal interests comply with all the requirements substantially in accordance with the PPA, which will be executed upon approval of this report.

The recommendations contained herein reflect the information available at this time and current policies governing formulation of individual projects. They do not reflect program and budgeting priorities inherent in the formulation of the national Civil Works construction program nor the perspective of higher review levels within the Executive Branch. Consequently, the recommendations may be modified before they are transmitted to higher authority as proposals for authorization and/or implementation funding. However, prior to transmittal to Congress, the non-Federal sponsor, the States, interested Federal agencies, and other parties will be advised of any modifications and will be afforded an opportunity to comment further.

David A. Caldwell
Colonel, U.S. Army
Commander

28. REFERENCES (MAIN REPORT)

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LIST OF STUDY TEAM MEMBERS AND REPORT PREPARERS*

The following individuals were primarily responsible for the preparation of this integrated report and environmental assessment.

Individual	Responsibility
David Gentile	Project Manager
Jason Shea	Project Planner
Johnny Chan	Economics
Diana Kohtio	Biologist; NEPA
Lynn Rakos	Cultural Resources
Richard Dabal	Hazardous, Toxic and Radioactive Wastes
Sheila Rice-Mcdonnell	Engineering & Design
Elena Manno	Engineering & Design
Rito Sabanal	Engineering & Design
Jenae Pennie	Engineering & Design
Cynthia Zhang	Cost Engineering
Carlos Gonzalez	Real Estate