NEPA SCOPING
RESPONSE TO COMMENTS

Rahway River Basin
Flood Risk Management Feasibility Study
Essex and Union Counties, NJ

November 2015

Prepared by:

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US ARMY CORPS
OF ENGINEERS
NEW YORK DISTRICT

NEW JERSEY
DEPARTMENT OF
ENVIRONMENTAL
PROTECTION

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LIST OF ACRONYMS

Acronym	Title
Corps	U.S. Army Corps of Engineers
District	U.S. Army Corps of Engineers, New York District
EIS	Environmental Impact Statement
NEPA	National Environmental Policy Act
NJDEP	New Jersey Department of Environmental Protection
PII	Personally Identifiable Information

1.0 INTRODUCTION

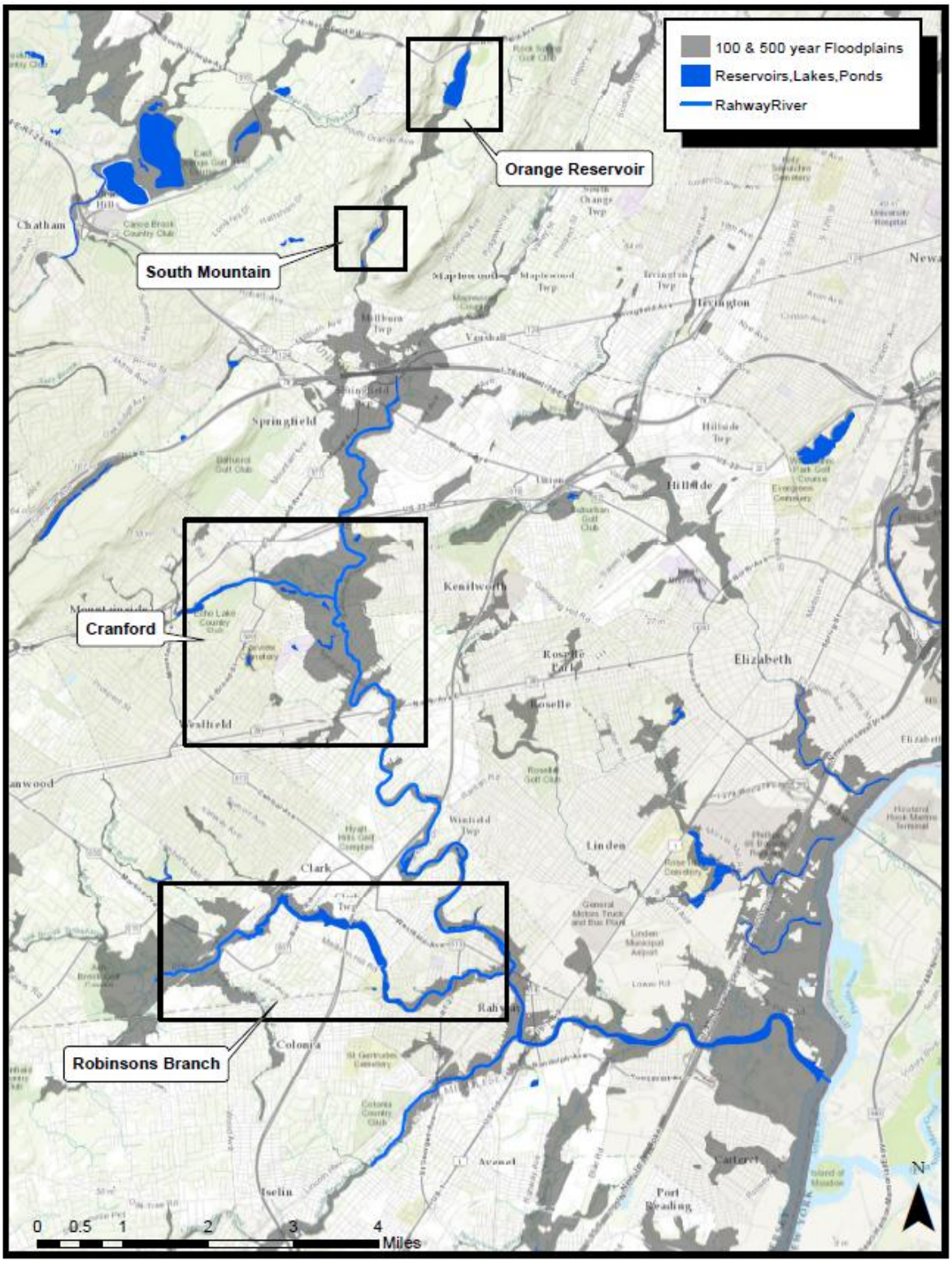
The U.S. Army Corps of Engineers (Corps), New York District (District), in partnership with the New Jersey Department of Environmental Protection (NJDEP) as the non-federal sponsor, is investigating the feasibility of implementing flood risk management measures along the Rahway River and its tributary, the Robinson's Branch, in the Townships of Cranford, Millburn and the City of Rahway in Union and Essex Counties, New Jersey (Figure 1).

The District was authorized under U.S. House of Representatives Resolution Docket 2548, dated March 24, 1998 to identify recommendations in the interest of water resources development, including ecosystem restoration. Accordingly, the Rahway River Basin Reconnaissance Study completed in 1999 established Federal interest for providing flood risk management measures and lead to the initiation of the Rahway River Basin Flood Risk Management Feasibility Study in 2002.

The District will be preparing an Environmental Impact Statement (EIS) as part of the Feasibility Study to document the proposed action, alternatives formulated and evaluated, environmental effects, and any necessary mitigation to compensate for impacts from the proposed action. As part of the EIS development, the District conducted a public National Environmental Policy Act (NEPA) Scoping Meeting on 15 June 2015 at the Union County Community College to introduce and obtain input from the local community regarding the Rahway River Basin Flood Risk Management Feasibility Study. The NEPA Scoping Meeting also served as the initiation of a 30 day Scoping Period that concluded on 15 July 2015.

This *NEPA Scoping Meeting Response to Comments Document* has been developed to identify and summarize the questions and concerns raised by the public as a result from the NEPA Scoping Meeting and provide District responses to the questions and concerns related to the Rahway River Flood Risk Management Feasibility Study. This document was prepared in accordance with the National Environmental Policy Act (NEPA), the Council on Environmental Quality's *Guidance Regarding NEPA Regulations,* and the USACE's *Procedures for Implementing NEPA* (ER-200-2-2), and is intended for distribution to municipal, county, state and Federal agencies that may have an interest in the impacts and benefits derived from the implementation of a flood risk management study.

Figure 1: Rahway River Basin Flood Risk Management Study Area



1.1 STUDY WEBPAGE AND CONTACT INFORMATION

Additional information and updates as the Feasibility Study progresses is located at:

www.nan.usace.army.mil/Rahway

Questions about the overall Rahway River Basin Flood Risk Management Feasibility Study should be directed to:

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2.0 Public Scoping Meeting

2.1 PUBLIC MEETING SUMMARY

The public NEPA Scoping meeting was held on 15 July 2015 in the Roy W. Smith Theater at the Union County Community College. The meeting format included a poster viewing session from 7:00 - 7:30 pm, a PowerPoint presentation that summarized the feasibility study history, NEPA process, Corps Civil Works Process and alternatives being evaluated from 7:30-8:00 pm, and a poster board session and information exchange from 8:00 – 9:00 p.m. Approximately 110 people attended the meeting. The scoping document, presentation, and posters are included in Appendices A, B and C, respectively.

2.2 COMMENT SUMMARY SECTION

This section provides a summary of comments received from the public as a result of the NEPA Scoping Meeting and thirty day Scoping Period. Generally, comments and statements received primarily pertained to the study design, environmental, aesthetic and recreational impacts and existing conditions within the Rahway River Basin.

To facilitate the organization and presentation of public concerns, all comments have been given a commenter identification number that includes the manner in which the comment and/or statement was received. For example, comments received on comment cards are identified as CC, comments received by email are identified as EC and comments received by mailed letters are identified as LC. Copies of the original written comments are included in Appendix D. In accordance with Corps policy on the protection of Personally Identifiable Information (PII), addresses, names and emails of individuals who provided comments in a non-professional capacity have been redacted.

Each comment has been assigned a comment category based on its context and primary issue of concern. Tables 1-3 identifies each commenter in addition to the category of each comment.

Table 1: Comments Submitted Via Comment Cards

Commenter Identifier	Cranford Alternatives Design and Analysis	Rahway Alternatives Design and Analysis	Environmental Impacts	Recreational Impacts	Socio-Economic Impacts	Environmental and/or Recreation mitigation and compensation	Development
CC#1 Cranford Resident	**X**			**X**			**X**
CC#2 Springfield Resident	**X**						**X**
CC#3 Scotch Plains Resident		**X**				**X**	
CC#4/EC#7 Cranford Resident	**X**		**X**	**X**	**X**	**X**	**X**
CC#5 Cranford Resident	**X**						
CC#6 Cranford Resident				**X**			
CC#7/LC#2 Cranford Resident			**X**				

Table 2: Comments Submitted Via Email

Commenter Identifier	Cranford Alternatives Design and Analysis	Rahway Alternatives Design and Analysis	Environmental Impacts	Recreational Impacts	Socio-Economic Impacts	Environmental and/or Recreation mitigation and compensation	Development
EC#1 Cranford Resident							
EC#2 Cranford Resident			**X**	**X**			
EC#3 Middlesex Resident		**X**					
EC#4 Cranford Resident	**X**			**X**			
EC#5 Individual	**X**						
EC#6 Rahway Resident	**X**						
EC#7/CC#4 Cranford Resident							
EC#8 Cranford Resident				**X**			
EC#9 Cranford Resident				**X**			
EC#10 Cranford Environmental Commission	**X**		**X**	**X**		**X**	**X**
EC#11 Cranford Resident	**X**		**X**	**X**	**X**		

Table 3: Comments Submitted Via Mailed Letters

Commenter Identifier	Cranford Alternatives Design and Analysis	Rahway Alternatives Design and Analysis	Environmental Impacts	Recreational Impacts	Socio-Economic Impacts	Environmental and/or Recreation mitigation and compensation	Development
LC#1 Cranford Mayor	**X**						
LC#2 /CC#7 Cranford Resident			**X**				
LC#3 Union County			**X**				

2.2.1 Comments and Questions Regarding Cranford Alternatives Design and Analysis

a) Comment: Commenters CC#1, CC#4/EC#7, and EC#4 expressed support for upstream measures involving detention basins. Commenter EC#4 further remarked that Orange Reservoir offers the highest relief with minimal National Environmental Policy Act impacts.

Possible District Response: Although a stand-alone alternative that involves modifying the Orange Reservoir may potentially have the least environmental impacts as compared to Cranford Alternatives 4, 8 and 9, it does not offer the highest level flood risk management.

b) Comment: Commenter CC#4/EC#7 noted that they do not feel the removal/replacement of the North Union and North Avenue bridges can be done in a cost effective manner.

District Response: The costs developed for the removal/replacement of the North Union and North Avenue bridges were based on recent examples of this type of work within this region of the state and have been included in the preliminary Benefit Cost analysis.

c) Comment: Commenter CC#4/EC#7 inquired if the project considers stormwater runoff from upstream development and continued development in the flood zone in Cranford.

District Response: Stormwater runoff and continued development within the flood zone is considered as part of both the Future Without Project condition analysis and With Project condition analysis, which is based on a 50 year project life cycle.

d) Commenter CC#5 requested additional details of the channel improvements being proposed in the Alternatives

District Response: Descriptions of channel improvements may be found in Section 3 of the NEPA Scoping Document which included as Appendix A of this report. Additional information on channel improvement design will become available as plan formulation progresses.

e) Comment: Commenter CC#6 requested additional information regarding how dredging associated with channel improvement alternatives would impact their property.

District Response: Additional information will become available on channel improvement design as plan formulation progresses.

f) Comment: Commenter CC#7/LC#2 expressed concern that increasing the height of existing embankments will increase downstream flooding once they are breached and noted that a more comprehensive plan is needed to control water before it reaches Lenape Park.

District Response: Corps policy and regulations prevent flood risk management projects from inducing flooding anywhere. For improbable failure situations, a dam break analysis

will be conducted should any alternative involving Lenape Park embankment modifications be identified as the Tentatively Selected Plan.

g) Comment: Commenter CC#7/LC#2 stated that the area around Springfield Road and 14th Street where Black Brook enters Lenape Park is unprotected and vulnerable to street and residential flooding and inquired if there is plan is to protect this area.

District Response: Cranford Alternatives 4, 8 and 9 will provide some level of flood risk management to the location identified by the commenter. The exact level of protection will be determined as plan formulation progresses.

h) Comment: Commenter EC#4 inquired as to what residents can do about removing trees and dirt built up under bridges.

District Response: Clearing and snagging is a local concern; residents should consult their municipal officials and the New Jersey Department of Environmental Protection.

i) Comment: Commenter EC#6 expressed concerns that the Cranford Alternatives may exacerbate flooding in Robinson's Branch and inquired if that will be addressed in the overall analysis.

District Response: Corps policy and regulations prevent flood risk management projects from inducing flooding anywhere and is analyzed as part of the plan formulation process.

j) Comment: The Cranford Environmental Commission (EC#10) recommended a collaborative initiative between municipal, county, state and Corps officials to buyout properties in the flood zone and restrict development in the flood zone.

District Response: Structure buyouts are evaluated as an element of the non-structural alternative. Regarding restriction of development in the flood zone, regulation of such development is governed by local municipalities.

k) Comment: Commenter EC#11 mentioned that during the question and answer session of the Public Scoping Meeting, it was explained to them that the Corps never attempted the type of channel improvements proposed in the Cranford Alternatives in a residential setting. In addition, the proposal does not address future maintenance such as continued dredging and removal of fallen/dead trees. Commenter EC#11 further recommended developing a plant that maintains the recreational and economic benefits of river, does not decrease the value of aesthetics of adjacent properties, and places the burden of mitigation on all New Jersey residents affected by Rahway River flooding.

District Response: The Corps has extensive experience in implementing channel improvements such as what is being proposed in Cranford. The nearest example is located in South Orange along the East Branch Rahway River.

Regarding maintenance, operations and maintenance is included in project costs and upon completion of the project, the Corps turns the project over to the non-federal sponsor who then assumes responsibility of operations and maintenance requirements.

The District will remain sensitive to minimizing impacts to recreational and aesthetic impacts as plan formulation progresses.

2.2.2 Comments and Questions Regarding Rahway Alternatives Design and Analysis

a) Comment: Commenter CC#2 asked if the analysis takes into consideration continued development in the affected area and increase in impervious surface.

District Response: Urbanization is considered as part of both the Future Without Project condition analysis and With Project condition analysis, which is based on a 50 year project life cycle.

b) Comment: Commenter CC#3 suggested returning Ash Swamp to wetlands as natural storage area to relieve pressure on the Clark Reservoir and Rahway.

District Response: Flood storage upstream and along Robinson's Branch is being evaluated.

c) Comment: Commenter EC#3 requested additional information on the potential lowering of the Clark/Middlesex Reservoir.

District Response: Information will become available on Robinson's Branch Alternative 2, Modification to Clark/Middlesex Reservoir as plan formulation progresses.

2.2.3 Comments Regarding Environmental Impacts

a) Comment: Commenter CC#1 expressed concern that the channel improvement alternatives of the Rahway River would include lining the river with concrete.

District Response: Any channel improvements proposed to either the Rahway River or the Robinson's Branch will involve stabilizing the channels with vegetation and potentially riprap. No concrete will be proposed.

b) Comment: Commenters CC#4/EC#7, EC#2, the Cranford Environmental Commission (EC#10) and EC#11 expressed concerns about impacts to river channel and removal of trees associated with channel improvement alternatives.

District Response: The District will minimize impacts to the river channel and removal of trees to the greatest extent possible and will compensate for any unavoidable impacts through mitigation.

c) Comment: Commenter CC#7/LC#2 expressed concern that increasing the water retention depth and duration in Lenape Park would be detrimental to park habitat and wildlife inhabiting the park.

District Response: Flood duration is expected to be similar to existing conditions. As the Cranford Alternatives 8 and 9 include increasing the height of the embankments, water depths during flood events will be increased. Should one of these alternatives be determined to be the Tentatively Selected Plan, impacts to habitat and wildlife will be assessed and documented in the Environmental Impact Statement.

d) Comment: Commenter CC#7/LC#2 inquired if endangered and threatened species surveys have been conducted within Lenape Park as part of the Feasibility Study.

District Response: Surveys to determine the presence of endangered and threatened species within Lenape Park will not be conducted during the Feasibility Study. The District will use available existing information and will coordinate with the New Jersey Division of Fish and Wildlife and the U.S. Fish and Wildlife Service to identify the occurrence potential endangered and threatened species within the entire Project Area. Endangered and threatened species surveys may be conducted prior to construction of any flood risk management alternative depending on results of coordination with the aforementioned agencies.

e) Comment: Commenter EC#4/EC#7, the Cranford Environmental Commission (EC#10) and Union County (LC#3) expressed concern with the potential environmental and impacts to Lenape Park related to the Corps policy requiring a 50 foot vegetation management zone in which only mown grass is allowed. Both the Cranford Environmental Commission and Union County noted that the County has successfully maintained the integrity of the dam and embankments for 40 years without the vegetation management zone.

District Response: The District is currently coordinating with Corps Headquarters and the Corps Center of Dam Safety Expertise as to the Corps policy regarding this issue. Additional information will be provided upon conclusion of the coordination.

2.2.4 Comments Regarding Recreational Impacts

a) Comment: Commenters CC#1, CC#6, EC#1, EC#4, EC#8, EC#9, the Cranford Environmental Commission (EC#10) EC#11, and Union County (LC#3) expressed concerns about how the potential removal of Hansel Dam would impact water depths and the ability to canoe/kayak, fish and ice skate in the river.

District Response: The District is aware of the public's concerns related to the potential of the dam removal and are taking them into account during plan formulation process. Additional details will be provided as plan formulation progresses.

b) Comment: Commenter EC#2 noted that Lenape Park is used for walking, bicycling and birding.

2.2.5 Comments Regarding Socio-Economic Impacts

a) **Comment:** Commenter EC#7/CC#4 stated that it seems unfair that the majority of Cranford residents who do not flood will be affected by this project by having to pay for it while receiving no benefit as well as having public resources like parks negatively impacted.

District Response: Any Corps Flood Risk Management project is required to demonstrate that for every federal dollar spent, more than a dollars' worth of flood damage is prevented. Additionally, benefits are not solely limited to structures impacted by flooding but include general community cost, such as life safety services that are activated during flood events including fire and police and post flooding clean up.

The District will minimize impacts to parks and open space to the greatest extent possible and will compensate for any unavoidable impacts through mitigation.

b) **Comment:** Commenter EC#11 expressed concern that channel improvements, specifically deepening the Rahway River, would negatively affect property values as the river would no longer be visible.

District Response: The District is sensitive to visual impacts flood risk alternatives may have and is taking it into account during the plan formulation process. Generally, properties that have reduced flooding risk have an increase in property values.

2.2.6 Comments Regarding Environmental/Recreation/Cultural Resource Mitigation and/or Compensation

a) **Comment:** Commenter EC#7/CC#4 expressed concerns that the Benefit Cost Ratio for alternatives involving the Lenape Park does not correctly take into account the compensation required for tree removal.

District Response: The cost for compensation of tree removal in the preliminary cost estimates were based on available existing information and agency coordination. These costs may be updated as plan formulation progresses.

b) **Comment:** Commenter EC#7 inquired as to the type of mitigation/compensation that will be conducted for impacts to wildlife and New Jersey Threatened and Endangered species, and who would be responsible for paying for it.

District Response: The specific type of mitigation/compensation measures required will be determined once the Tentatively Selected Plan is identified. Mitigation costs are included as part of the project cost which is cost shared at 65% Federal and 35% non-federal sponsor.

c) **Comment:** The Cranford Environmental Commissions (EC#10) noted that that loss of some public outdoor recreation opportunities can be expected during construction of the project and should be considered in compensation and mitigation.

District Response: The property owner is compensated for loss of land use through temporary easement required to construct the project.

d) **Comment:** The Cranford Environmental Commission (EC#10) noted that Lenape Park is encumbered by the National Park Service through the Land and Water Conservation Fund monies to Union County and that compensation may be required should any work be done at Lenape Park.

District Response: Compensation based on available existing information and agency coordination is included in the cost estimates. These costs may be updated as plan formulation progresses.

e) **Comment:** The Cranford Environmental Commission (EC#10) stated that they would like to participate in local input on mitigation measures and provided a list of suggestions, which can be found in Appendix D.

District Response: The District will assess the specific environmental, cultural and recreational resource mitigation requirements once a Tentatively Selected Plan is identified, and will evaluate the suggestions provided by the Cranford Environmental Commission for potential use to satisfy mitigation requirements. The District will coordinate any mitigation requirements with the appropriate local and state entities to include the Cranford Environmental Commission.

2.2.7 Comments Regarding Further Development within the Rahway River Basin

a) **Comment:** Commenter CC#1 stated that further building upstream and paved parking lots should be prohibited and that utilities should be placed underground.

b) **Comment:** Commenter CC#2 stated that many municipalities have minimal statutes regarding development or use of impervious materials.

2.3 INFORMATION PROVIDED BY COMMENTERS

2.3.1 Flood Damages

a) The Cranford Environmental Commission (EC#10) noted that Hurricane Irene affected 25% of the homes in Cranford and that the Township incurred $50 million of damages.

b) Commenter EC#2 stated that their house had floodwaters pour in the back door and basement windows during Hurricane Irene and that this was the first time the house was flooded from something other than seepage.

c) Commenter CC#7/LC#2 noted that during flood events such as Hurricane Irene, the high water mark came within 2-3 feet of topping the Lenape Park embankments and that floodwaters came within 25 feet of Springfield Road near 14th Street.

2.3.2 Fish and Wildlife

a) The Cranford Environmental Commission (EC#10) and Commenter CC#7 noted the following bird species listed in Table 4 below.

Table 4: Species and State Listing Status of Birds Observed in the Project Area

Latin Name	Common Name	State Listing Status	Area of Observation
Haliaeetus leucocephalus	American bald eagle	Endangered	Project area of Cranford Alts 4,8 9
Podilymbus podiceps	Pied-billed grebe	Endangered	Lenape Park
Buteo lineatus	Red-shouldered hawk	Threatened	Lenape Park. Confirmed breeding observation.
Doichonyx oryzivorus	Bobolink	Threatened	Project area of Cranford Alts 4,8 9
Falco sparverius	American kestrel	Threatened	Project area of Cranford Alts 4,8 9
Melanerpes erythrocephalus	Red-headed woodpecker	Threatened	Project area of Cranford Alts 4,8 9
Nycticorax nycticroax	Black-crowned night heron		Project area of Cranford Alts 4,8 9
Pandion nycticorax	Osprey	Threatened	Project area of Cranford Alts 4,8 9
Accipiter cooperii	Cooper's hawk	Special Concern	Lenape and Nomahegan Parks; Rahway River Corridor in Cranford
Accipiter striatus	Sharp-shinned hawk	Special Concern	Lenape and Nomahegan Parks; Rahway River Corridor in Cranford
Ardea Herodias	Great blue heron	Special Concern	Lenape and Nomahegan Parks; Rahway River Corridor in Cranford
Chordeiles minor	Nighthawk	Special Concern	Lenape and Nomahegan Parks; Rahway River Corridor in Cranford

b) The Cranford Environmental Commission (EC#10) noted that Red fox (*Vulpes vulpes*), coyote (*Canis latrans*) and otter (*Lontra Canadensis*) and mink (*Neovison vison*) have been seen in Lenape Park. In addition, the Rahway River is stocked with trout by the New Jersey Department of Fish and Wildlife and brook trout (*Salvelinus fontinalis*) were found in the Nomahegan Brook in Lenape Park during the 2004 BioBlitz.

2.3.3 Cultural Resources:

a) Commenter CC#7 noted that a mastodon bone was found in Lenape Park inn the 1930's and is currently on display at the Union County's Trailside Science Center and that the park served as a storage area during World War I.

Appendix A

Rahway River Basin

Flood Risk Management Feasibility Study

NEPA Scoping Document

SCOPING DOCUMENT

Rahway River Basin
Flood Risk Management Feasibility Study
Essex and Union Counties, NJ

June 2015

Prepared by:

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US ARMY CORPS
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LIST OF ACRONYMS

Acronym	Title
BCR	Benefit Cost Ratio
CERCLA	Comprehensive, Environmental Response, Compensation Liability Act
CERCLIS	Comprehensive Environmental Response, the Compensation and Liability Information System
CEQ	Council of Environmental Quality
CFR	Code of Federal Regulation
Corps	United States Army Corps of Engineers
CWA	Clean Water Act
District	United States Army Corps of Engineers, New York District
EIS	Environmental Impact Statement
ETL	Engineering Technical Letter
GRR	General Reevaluation Report
HTRW	Hazardous, Toxic and Radioactive Waste
KCS	Known Contaminated Sites
LPP	Locally Preferred Plan
MBTA	Migratory Bird Treaty Act
NAAQS	National Ambient Air Quality Standards
NED	National Economic Development
NEPA	National Environmental Policy Act
NGO	Non-Government Organizations
N.J.A.C.	New Jersey Administrative Code
NJDEP	New Jersey Department of Environmental Protection
NJHPO	New Jersey Historic Preservation Office
NPL	National Priority List
NWI	National Wetlands Inventory
P&G	Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies
RCRIS	Resource Conservation and Recovery Information System
TSP	Tentatively Selected Plan
U.S.C.	United States Code
USFWS	United States Fish and Wildlife Service

1.0 INTRODUCTION

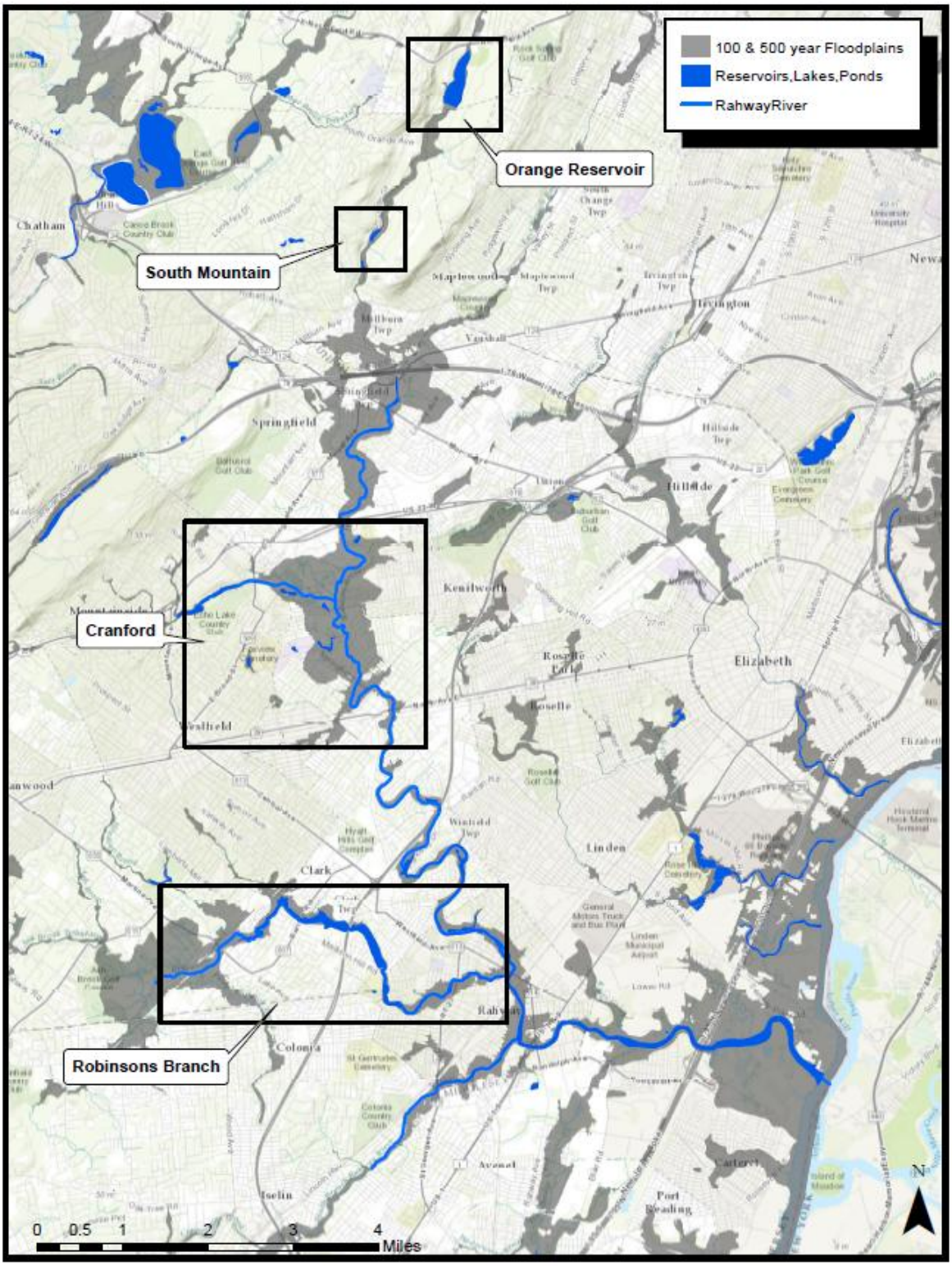
The U.S. Army Corps of Engineers (Corps), New York District (District), in partnership with the New Jersey Department of Environmental Protection (NJDEP) as the non-federal sponsor, is investigating the feasibility of implementing flood risk management measures along the Rahway River and its tributary, the Robinson's Branch, in the Townships of Cranford, Millburn and the City of Rahway in Union and Essex Counties, New Jersey (Figure 1).

The District was authorized under U.S. House of Representatives Resolution Docket 2548, dated March 24, 1998 to identify recommendations in the interest of water resources development, including ecosystem restoration. Accordingly, the Rahway River Basin Reconnaissance Study (USACE 1999) established Federal interest for providing flood risk management measures.

The District will be preparing an Environmental Impact Statement (EIS) to document the proposed action, alternatives formulated and evaluated, environmental effects, and any necessary mitigation to compensate for impacts from the proposed action. As part of the EIS development, the District is initiating public scoping. This Scoping Document was prepared in accordance with the National Environmental Policy Act (NEPA), the Council on Environmental Quality's *Guidance Regarding NEPA Regulations*, and the USACE's *Procedures for Implementing NEPA* (Environmental Regulations [ER]-200-2-2) for distribution to local, county, state, and Federal agencies that may have an interest in the impacts and benefits derived from implementation of flood risk management measures.

It should be noted that the Corps is also currently conducting a separate, Coastal Storm Risk Management Feasibility study in the lower, tidally influenced portion of the Rahway River. The Coastal Storm Risk Management Study was authorized under the Disaster Relief Appropriations Act of 2013 and is not part of this Scoping process.

Figure 1: Rahway River Basin Flood Risk Management Project Area



1.1 SCOPING

Scoping is the process used to identify issues, concerns, and opportunities for enhancement or mitigation associated with a proposed action. The purpose of the scoping process is as follows:

- Invite the participation of federal, state and local resource agencies, Indian tribes, non-governmental organizations (NGOs), and the public to identify significant environmental and socioeconomic issues related to the proposed project;

- Determine the depth of analysis and significance of issues to be addressed in the EIS;

- Identify how the project would or would not contribute to cumulative effects in the Rahway River Basin. This includes the identification of any federal, state, or local resource plans, and any future project proposals in the affected resource area and implementation schedules and any existing information and any data that would help to describe the past and present actions and effects of the project and other developmental activities on environmental and socioeconomic resources;

- Information, quantitative data, or professional opinions that may help define the geographic and temporal scope of the analysis (both site-specific and cumulative effects), and that helps identify significant environmental issues;

- Solicit, from participants, available information on the resources at issue, including existing information and study needs; and

- Identify any information sources that might be available to characterize the existing environmental conditions and analyze and evaluate impacts.

The District will be accepting comments, concerns and information related to the Scoping process through July 15, 2015.

1.2 STUDY WEBPAGE AND CONTACT INFORMATION

Additional information and updates as the Feasibility Study progresses is located at:

www.nan.usace.army.mil/Rahway

Questions about the overall Rahway River Basin Flood Risk Management Feasibility Study should be directed to:

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New York District, Programs and Project Management Division, Civil Works Programs Branch,
26 Federal Plaza, Room 2127, New York, NY 10279-0090
Phone: (917) 790–8215; Email: rifat.salim@usace.army.mil.

Written comments and suggestions concerning the scope of issues to be evaluated within the EIS to:
Kimberly Rightler, Project Biologist/NEPA Coordinator,
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2.0 STUDY DESCRIPTION/BACKGROUND

Flooding within the Rahway River Basin is caused principally by the rapid development of the area, which has resulted in a large increase of stormwater runoff into the Rahway River and its tributaries. The increased runoff coupled with inadequate channel capacities and bridge openings account for most of the flooding problems. Measures to reduce flood damages have been sought by local interests for many years. Storm events in the Rahway River Basin which caused significant damage are the storms of July 1938, May 1968, August 1971, August 1973, November 1977, July 1979, June 1992, October 1996, July 1997, Tropical Storm Floyd in September 1999, April 2007 and Tropical Storm Irene in August 2011.

At the beginning of the feasibility study, an assessment of the entire basin took place for the purpose of identifying all fluvial and tidal flood risk management problems and opportunities in the Rahway River Basin. The Initial Screening Report (2006) documented this assessment, and recommended further investigation in the Township of Cranford and the City of Rahway along the Robinson's Branch, two areas within the basin that experienced regular flooding in past storm events.

Subsequent of Tropical Storm Irene in August 2011, local stakeholders requested the District through the NJDEP to investigate potential flood storage opportunities outside/upstream of the Township of Cranford that would benefit not only Cranford but other municipalities as well. As a result, the Project Area was expanded to include the South Mountain Reservation and Orange Reservoir located in the Townships of Millburn and Maplewood and West Orange in Essex County.

2.1 CORPS CIVIL WORKS PLANNING PROCESS

The Corps planning process follows the six-step process defined in the "Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies" (often called the "Principles and Guidelines", or P&G). The Principles and Guidelines define the Federal objective of Corps project planning, which is to contribute to national economic development consistent with protecting the nation's environment, pursuant to national environmental statutes, applicable executive orders, and other Federal planning requirements. The alternative with the greatest net economic benefit, often called the National Economic Development (NED) Plan, must be identified.

The six-step process is a structured approach to problem solving which provides a rational framework for sound decision making and is used for all planning studies conducted by the Corps of Engineers. Below further describes each step in the process.

Step 1: Identifying Problems and Opportunities: Define the study area, problems and opportunities, as well as study constraints, goals, and objectives. Because this is a flood risk management study, problems and opportunities are developed to address the Federal objective of National Economic Development (NED). Goals, objectives, and constraints are developed to provide potential solutions to reduce flood risk and achieve the opportunities within the confines of legislative authority, policies, and other restrictions.

Step 2: Inventory and Forecast Conditions: Develop an inventory and forecast of critical resources (physical, economic, social, environmental, etc.) relevant to the problems and opportunities under consideration in the study. This step also involves forecasting to predict what changes will occur to resources throughout the 50-year period of analysis, assuming no actions are taken to address the problems in the study area.

Step 3: Formulate alternative solutions (e.g. Flood Risk Management Alternatives). Alternative plans are formulated across a range of potential scales to demonstrate the relative effectiveness of various approaches at varying scales.

Step 4: Evaluate Effects of Alternative Plans: Alternative plans are evaluated for their potential results in addressing the specific problems, needs, and objectives of the study (e.g. flood risk management) compliance with environmental protection requirements, the P&G's four evaluation criteria (completeness, effectiveness, efficiency and acceptability) and other criteria deemed significant by participating stakeholders. Evaluation of the beneficial and adverse effects of the alternatives will provide a basis to determine which plans should be considered further, dropped or reformulated.

Step 5: Compare Alternative Plans: Alternative plans are compared to each other in terms of benefits (damages avoided), costs and net benefits of alternatives. Beneficial and adverse effects of each plan must be compared. These include monetary and non-monetary benefits and costs.

As part of the analysis, a Benefit Cost Ratio (BCR) is developed for each alternative. A BCR is based on estimated benefits, including damages prevented during modeled storm events, and estimated costs, including cost of initial construction and long-term operations and maintenance. This ratio is critical to determining whether a project would be economically justified and be implementable.

The plan that maximizes net benefits relative to other plans is identified as the National Economic Plan or NED Plan. A Locally Preferred Plan (LPP) may be requested by the non-Federal sponsor if they favor another plan over the NED Plan.

Step 6: Select Recommended Plan: Select the plan, (referred to as the Tentatively Selected Plan [TSP]) that best meets the study objectives and the four evaluation criteria in the P&G (completeness, effectiveness, efficiency, and acceptability). In the absence of a LPP, the TSP is identified as the NED Plan. A TSP, whether the NED Plan or a LPP, must have a Benefit Cost Ratio greater than one to be economically justified for Federal participation.

The Benefit-to-Cost Ratio is based on estimated benefits, including damages prevented during modeled storm events, and estimated costs, including cost of initial construction and long-term operations and maintenance. This ratio is critical to determining whether a project would be economically justified and be implementable. No action could be recommended if all alternatives have a BCR of less than one.

2.2 STUDY SCHEDULE

Tentatively Selected Plan	March 2016
Release of Draft Report/EIS	June 2016
Final Feasibility Report/EIS	January 2017
Chiefs Report (for Congress)	June 2017

3.0 ALTERNATIVES

As discussed in Section 2.0, the Project Area boundaries were increased to evaluate potential flood risk reduction opportunities within the Orange Reservoir and the South Mountain Reservation following a request by local stakeholders through NJDEP. In addition to their request, the local stakeholders presented several flood risk management alternatives utilizing these two areas for the Township of Cranford. As a result, the District conducted a preliminary alternative analysis to determine whether those alternatives that should be considered for further evaluation.

In total, nine flood risk management alternatives to address flooding in the Cranford and upstream areas were developed. Two public information sessions were held in Cranford and Millburn Townships in May 2014 to provide the public with status of the study and present to

them the preliminary alternatives for the Cranford area and upstream areas. Table 1 summarizes the preliminary alternatives for the Township of Cranford that were formulated and evaluated to be carried forward for further consideration.

In addition, a meeting was held in February 2014 with representatives from the City of Rahway and the NJDEP to discuss potential flood risk management alternatives within the City of Rahway. It was determined that the proposed plan identified in a General Reevaluation Report (GRR) prepared by the Corps in 1985 should be restudied and updated. A second alternative involving the use of the Middlesex Reservoir for flood storage was also discussed (Table 2).

Table 1. Cranford Preliminary Flood Risk Management Alternatives

Alternative	Status
1. Channel work and modification to Lenape Park Levees	Removed from further consideration due to BCR less than 1 and negative net excess benefits. *
2. Channel work and modification to the Nomehegan levees and Lenape Park	Removed from further consideration due to BCR less than 1 and negative net excess benefits. *
3. Channel work, dredging Orange Reservoir	Removed from further consideration due to BCR less than 1 and negative net excess benefits. *
4. Channel work and Orange Reservoir Modification	Carried forward for further consideration.
5. Channel work and South Mountain Regional Detention Basin	Removed from further consideration due to BCR less than 1 and negative net excess benefits. *
5a. Channel work and South Mountain Regional Detention Basin with relocation of Brookside Drive	Removed from further consideration due to BCR less than 1 and negative net excess benefits. *
6. South Mountain Regional Detention Basin.	Removed from consideration due to lack of public support.
6a. South Mountain Regional Detention Basin with relocation of Brookside Dr.	Removed from further consideration due to BCR less than 1 and negative net excess benefits. *
7a. Nonstructural-10-yr floodplain in Cranford	Carried forward for further consideration.
7b. Nonstructural-100-yr floodplain in Cranford	Carried forward for further consideration.
8. Lenape Park Detention Basin and Orange Reservoir Outlet Modification	Carried forward for further consideration.
9. Lenape Park Detention Basin, Orange Reservoir Outlet Modification and Channel Modification	Carried forward for further consideration.

* Refer to Step 5 in Section 2.1 for explanation of BCR.

Table 2. City of Rahway Preliminary Flood Risk Management Alternatives

Alternative	Status
1. Re-evaluation of GGR	Carried forward for further consideration.
2. Middlesex Reservoir	Carried forward for further consideration.

3.2.1 ALTERNATIVES TO BE SCOPED

3.2.1.1 No Action

The option of "No Action" must be considered as one of the alternatives for both the Township of Cranford and the City of Rahway in order to comply with the requirements of the NEPA. With the No Action Plan, it is assumed that no project would be implemented and forms the basis against which all other alternatives are measured.

3.2.1.2 Non-Structural

Non-structural measures will be considered for both Cranford Township and the portion of the City of Rahway along the Robinson's Branch.

Nonstructural features reduce flood risk by modifying the characteristics of the buildings and structures that are subject to floods or modifying the behavior of people living in or near floodplains. In general, nonstructural features do not modify the characteristics of floods nor do they induce development in a floodplain that is inconsistent with reducing flood risk. Some measures include removing buildings from floodplains by relocation or acquisition; flood proofing buildings; placing small levees, berms or walls around buildings; implementing flood warning and preparedness activities; and implementing floodplain regulation. The District is required to develop and present at least one action that is primarily nonstructural in nature. Nonstructural measures will also be considered for integration with structural features to maximize effectiveness of all alternatives. Following is a list of measures that will be considered:

Elevation

Elevation is the process of raising a structure so that the main living area (main floor) will be above design flood elevation. In most cases, the process involves separating a structure from its foundation, raising it on hydraulic jacks, and holding it in place with temporary supports while a new or extended foundation is constructed below. The result is the living area is raised and only the foundation remains exposed to flooding. The new or extended foundation may consist of continuous walls or separate piers, posts, columns or pilings.

Buy-Out or Acquisition

Buyout or acquisition results in the permanent removal or evacuation of the structure from the floodplain and is typically applied when other nonstructural measures are too costly. Buy-outs involve the acquisition of a property and its structures, either by purchase or by exercising the powers of eminent domain. Following acquisition, the structure and associated property development is either demolished or relocated. Acquired lands are typically restored to a natural condition and used for recreation or other purposes that would not be jeopardized by the flood hazard.

Flood Warning System

Flood warning systems may be utilized to warn property owners of impending floods, and therefore allow time to evacuate and relocate property subject to flood damage. Although a state-of-the-art flood warning system would increase the awareness of residents and allow for a more orderly evacuation, a warning system alone would not provide sufficient time to significantly reduce flood damages.

Floodproofing

Floodproofing is the process of making any combination of structural or nonstructural changes or adjustments incorporated in the design, construction, or alteration of individual buildings or properties in order to reduce flood damages. There are two categories of floodproofing: wet floodproofing and dry floodproofing.

Wet floodproofing refers to the protection of a building in a manner that allows floodwaters to enter and exit freely, in such a way that internal and external hydrostatic pressures are equalized. This equalization of pressures reduces the loads imposed on a structure and reduces the probability of structural damage or failure. Basement utilities subjected to flooding may be relocated to an above-grade utility room, where space permits, otherwise, the basement utilities may be surrounded by a watertight barrier.

Dry floodproofing is the process of protecting a building by sealing its exterior walls and by providing removable flood shields at structure openings to prevent the entry of floodwaters. Dry floodproofing is practical only for buildings with structurally sound walls and only where flood depths are low: no more than 2 to 3 feet for wood frame structures, or 3 to 4 feet for brick with masonry foundation walls.

Surface Periphery Floodwalls or Ringwalls:

For structures that are too large to elevate (generally in excess of a 2,000 SF footprint), a concrete wall or levee (ringwall) may be considered around the structure's property, where space and aesthetics permit.

Rebuilding

If the estimated cost of any other nonstructural alternative exceeds the estimated cost to demolish a structure and rebuild an equivalent structure, rebuilding the structure above the design flood elevation may be an economically viable nonstructural alternative.

3.2.1.3 Cranford Alternative 4: Channel Improvements and Orange Reservoir Outlet Modification

This plan includes approximately 15,500 ft. channel work throughout the extent of the Rahway River in Cranford Township, from Kenilworth Blvd, just downstream of Lenape Dam, to a point approximately 1,500 ft. downstream of the Lincoln Avenue Bridge (Figure 2). Approximately 1,400 ft. of the channel work is expected in Nomahegan Park. The downstream slope is approximately 2.6 ft./mile with a maximum deepening of about 3.7 ft. near Hansel Dam. The

new trapezoidal channel will consist of a combination of natural bed channel or riprap material, a 60 ft. bottom width with side slopes ranging from one vertical on two horizontal (1:2), to one vertical on two and a half horizontal (1:2.5). There will be approximately 2,000 ft. of new and removed/replaced retaining walls. Also, the Union Ave. and North Ave. Bridges will be removed and replaced.

This plan requires little to no dredging in the reservoir. There will be an installation of two additional 36 in. in diameter outlet pipes (Figure 3). The analysis requires the operation of the dam two days prior to a storm event for a drawdown between 10 ft. to15 ft. of the reservoir.

Figure 2: Cranford Alternative 4: Channel Improvements

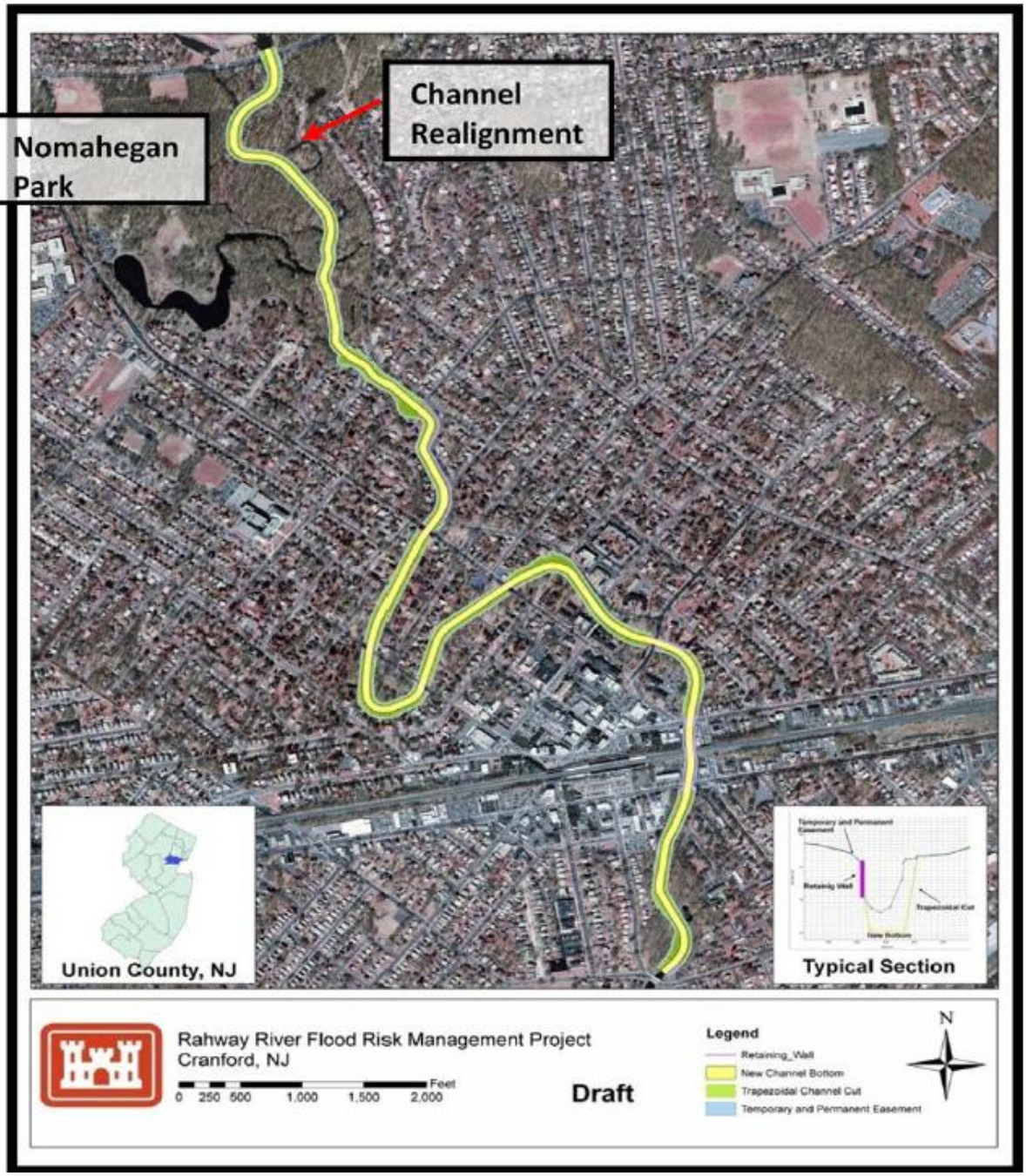
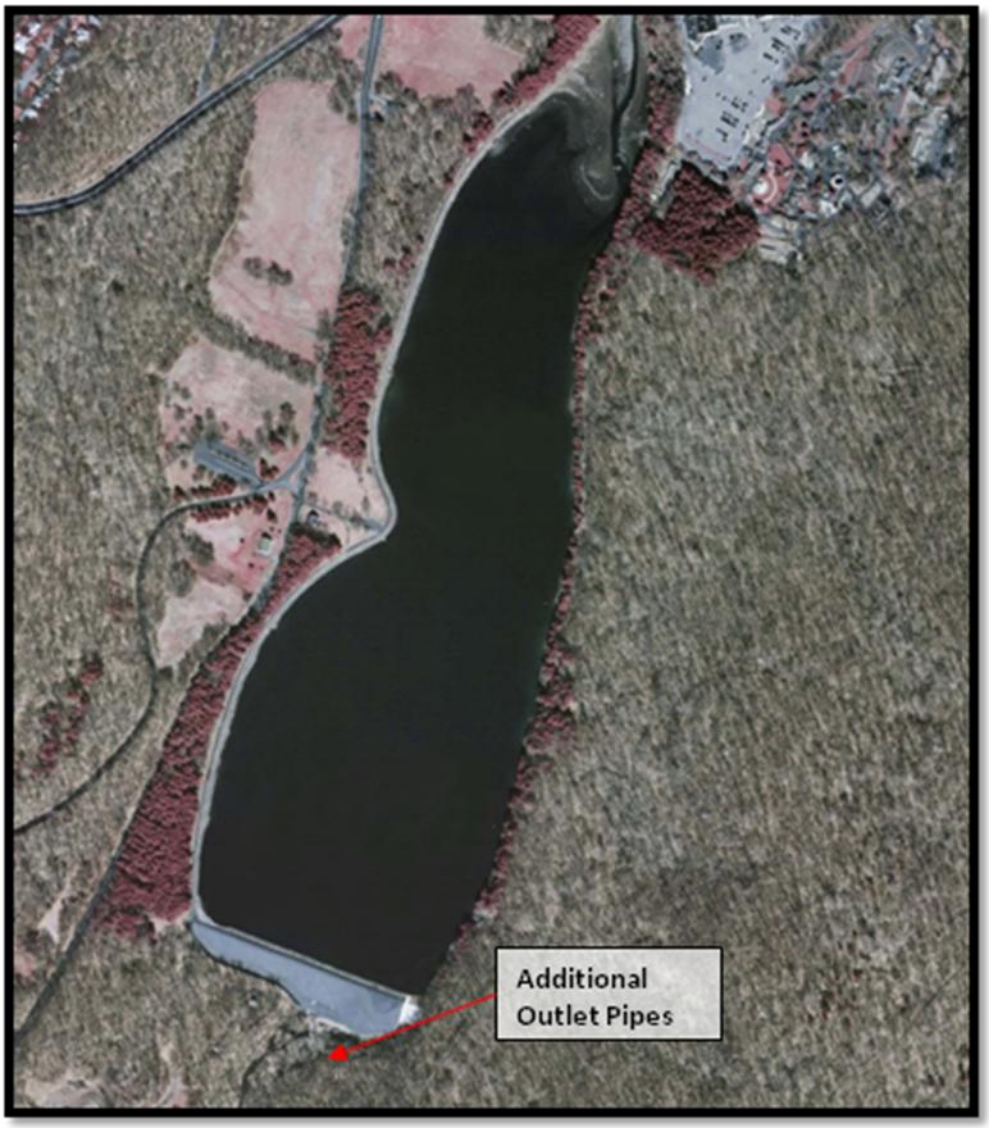


Figure 3: Cranford Alternative 4: Orange Reservoir Outlet Modification



3.2.1.4 Cranford Alternative 8: Modification to Lenape Park Dam and Orange Reservoir Outlet Modification

This plan includes the modification of the Lenape Park Dry Detention Dam to increase the water storage capacity in the basin. This modification will include three main components; (1) raising the existing Lenape dam structure and widening the orifice, (2) raising embankments 6 ft. above the existing, and (3) adding 6 ft. of floodwalls to the existing embankments in the northern area of Lenape Park near Fadem Rd. at Springfield Township.

As per Corps Engineering Technical Letter (ETL) 1110-2-583 *Guidelines for Landscape Planting and Vegetation Management at Levees, Floodwalls, Embankment dams and Appurtenant Structures*, a minimum of 50 feet from the dam/embankment toe on either side of said dam/embankment must remain free of vegetation, particularly trees and shrubs. Within this vegetation free zone, only maintained grass is typically permitted.

In addition, the plan requires the installation of two additional 36 in. diameter outlet pipes in Orange Reservoir and operation of the dam two days prior to a storm event for a drawdown of about 10ft. to15 ft. from a maximum depth of about 30 ft. to a depth of about 15 feet (see Figure 3).

3.1.2.5 Cranford Alternative 9: Modification to Orange Reservoir and Lenape Park Dam, and Channel Improvements

This plan includes the modification of the Lenape Park Detention Dam to increase the water storage capacity in the basin. This modification will include three main components; (1) raising the existing Lenape dam structure and widening the orifice, (2) raising embankments 6 ft. above the existing, and (3) adding 6 ft. of floodwalls to the existing embankments in the northern area of Lenape Park near Fadem Rd. at Springfield Township.

As per Corps Engineering Technical Letter (ETL) 1110-2-583 *Guidelines for Landscape Planting and Vegetation Management at Levees, Floodwalls, Embankment dams and Appurtenant Structures*, a minimum of 50 feet from the dam/embankment toe on either side of said dam/embankment must remain free of vegetation, particularly trees and shrubs. Within this vegetation free zone, only maintained grass is typically permitted.

In addition, the plan requires the installation of two additional 36 in. diameter outlet pipes in Orange Reservoir and operation of the dam two days prior to a storm event for a drawdown of about 10ft. to15 ft. from a maximum depth of about 30 ft. to a depth of about 15 feet (see Figure 3).

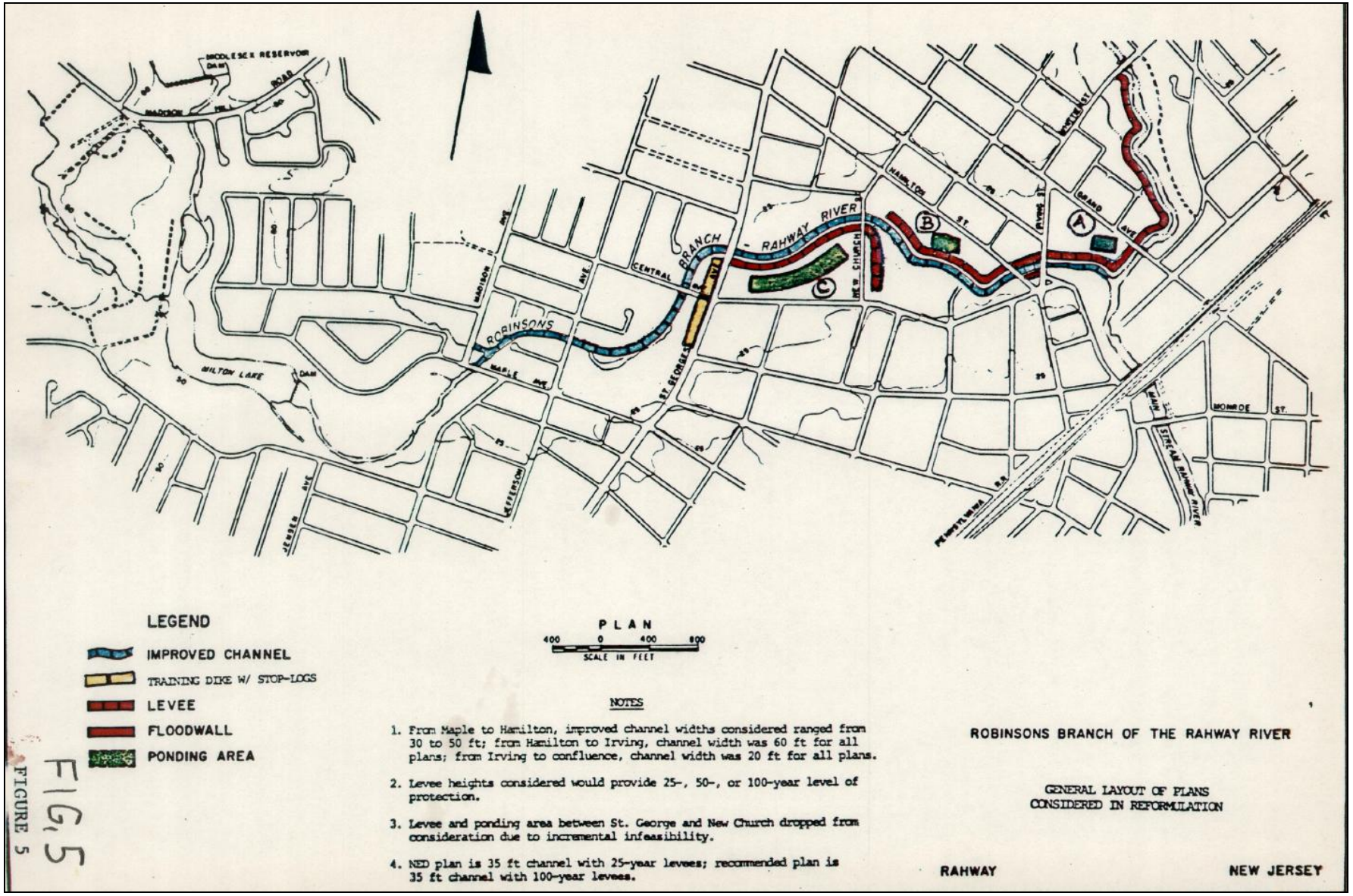
Some channel work is expected from Nomahegan Park to Lincoln Ave. Bridge. The extent and magnitude of the channel work will be determined in the coming months. The channel work may include deepening of up to 2.5 ft in the Hansel Dam area, minimizing the impact to the channel banks. Modification of Hansel and Droescher's Dam may be possible for this alternative. No bridge modification will be considered and a minimum use of retaining walls will be considered.

Figure 4: Cranford Alternative 9: Modification to Orange Reservoir and Lenape Park Dam, and Channel Improvements

3.1.2.6 Robinson's Branch Alternative 1: Re-evaluation of 1985 General Re-evaluation Report, Floodwalls/Levees and Channel Improvements

This District will re-evaluate the plan recommended in the 1985 General Re-evaluation Report (Figure 5) which includes approximately 6,500 ft of channel work involving modification of the Robinson's Branch to a 35 ft wide trapezoidal channel from Maple Avenue to the Robinson's Branch confluence with the Rahway River, approximately 6,600 ft of levees and floodwalls, approximately 750 ft of retaining walls and potentially three ponding areas.

Figure 5: Rahway Alternative 1: Re-evaluation of 1985 General Re-evaluation Report Plan



3.1.2.7 Robinson's Branch Alternative 2: Modification to Middlesex Reservoir

This plan will include the analysis of the storage available for flood risk reduction in the Robinson's Branch and possible modifications of the existing spillway and outlet. This alternative will require lowering the reservoir level prior to a storm event. This alternative might be analyzed in combination with the Robinson's Branch Alternative 1 or non-structural flood risk management measures.

4.0 ENVIRONMENTAL RESOURCES

This section briefly summarizes the major federal and state environmental laws, and federal executive orders (Tables 3-5) typically included as part of the EIS along with a brief description of some of the resources regulated under those laws and executive orders within the Project Area. The information presented in this section is not comprehensive, but presents general descriptions of some of the key environmental resources that are typically evaluated during the Feasibility Study. Additional environmental resources and specific environmental resource issues to be evaluated will be refined based on feedback from the Scoping Meeting, additional agency and public coordination and as alternative formulation and selection progresses.

Table 3. Federal Laws

Legislative Title U.S. Code/Other		Compliance
Clean Air Act (CAA)	42 U.S.C. §§ 7401-7671g	The General Conformity Rule of the CAA requires federal agencies to ensure that any federal actions occurring in areas designated as nonattainment or maintenance for any of the National Ambient Air Quality Standards do not interfere with a state's plans to meet national standards for air quality. As the Project Area is located in a region that is in non-attainment for ozone and carbon monoxide, an air quality analysis will be conducted to determine the level of project air emissions. Based upon the completed analysis, either a Record of Non-Applicability demonstrating that project emissions are considered to have an insignificant impact on the regional air quality, or a General Conformity Statement will be prepared. The analysis and corresponding document demonstrating compliance with the Clean Air Act will be included as an appendix to the EIS.
Clean Water Act	33 U.S.C. §§ 1251 et seq.	The Clean Water Act (CWA) is the principle law governing pollution control and water quality of the Nations' waterways, including wetlands. The objective of the CWA is to restore and maintain the chemical, physical and biological integrity of the Nations' waters. Sections of the CWA applicable to Corps Civil Works Projects include Sections 401 and 404. Compliance with this law includes preparation of a 404(b)(1) Evaluation which will be included as an appendix.
Endangered Species Act of 1973	16 U.S.C. §§ 1531 et seq.	The District will continue informal coordination with the U.S. Fish and Wildlife Service to comply with ESA requirements. Typical measures to avoid impacts to protect Indiana bat and Northern long-eared bat is to implement a tree clearing restriction of 1 April through 30 September.
Fish and Wildlife Coordination Act (FWCA)	16 U.S.C. § 661 et seq.	The FWCA requires Federal agencies to consult with the U.S. Fish and Wildlife Services and relevant state wildlife resources agencies whenever the waters of any stream or body of water are proposed or authorized to be modified (e.g. impounded, diverted, deepened, etc.). A Planning Aid Letter has been prepared by the USFWS for initial coordination purposes. Once a TSP is identified, the District will request the USFWS to prepare a FWCA Report to serve as compliance for this law. Both documents and associated correspondence will be included in an appendix in the EIS.
Migratory Bird Treaty Act (MBTA)		This law prevents the Typical compliance with this law requires a shrub and tree removal restriction to protect nesting migratory during construction. For the region in which the flood risk management measures are proposed, the typical restriction during which no woody vegetation may be removed occurs from 15 March through 31 July.

Legislative Title U.S. Code/Other		Compliance
National Environmental Policy Act of 1969	42 U.S.C. §§ 4321-4347	The circulation of the EIS will fulfill the requirements of this act. The draft EIS have public review period of a minimum of 45 days. The final EIS and draft Record of Decision will have a public review period of a minimum of 30 days.
National Historic Preservation Act of 1966	16 U.S.C. §§ 470 et seq.	Federal agencies are required to evaluate the effects of a proposed action on cultural and historic resources. The District will coordinate with the State Historic Preservation Office to fulfill requirements of this act. All correspondence and associated documents will be included as an appendix to the EIS.

Table 4: Federal Executive Orders

Executive Order Title	Date Executed	Compliance
Executive Order 11990, Protection of Wetlands	May 24, 1977	Federal agencies are required to minimize adverse impacts to wetlands and provide public disclosure of actions proposed in wetlands. Circulation of the EIS for public and agency review will fulfill the requirements of this order. Compliance with this EO including any mitigation requirements will be assessed and documented in the EIS.
Executive Order 12898 Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations	February 11, 1994	Federal agencies are required to identify and address the potential for disproportionately high and adverse environmental and human health effects on minority and low-income populations resulting from the agencies' programs, policies, and activities. According to EO 12898, minority populations exist where the percentage of minorities exceeds 50%, or where the minority population percentage in the affected area is meaningfully greater than in the general population. EO 12898 does not provide criteria to determine if an affected area consists of a low-income population. Based on a cursory analysis, the City of Orange, the owner of Orange Reservoir, has a minority population greater than 50% and a higher low income population than the County in which it is located (Essex County) and surrounding other municipalities. Therefore, if any alternative involving the Orange is selected as the NED or LPP, further evaluation analysis on Environmental Justice issues and additional coordination with the City of Orange will be conducted and documented in the EIS.

Executive Order Title	Date Executed	Compliance
Executive Order 13175 Consultation and Coordination with Indian Tribal Governments	November 6, 2000	Federal agencies are required to establish regular and meaningful consultation and collaboration with federally-recognized Tribes and recognizes a government-to-government relationship with federally-recognized Tribes.

Table 5: State Laws

State Law Title		Compliance
Water Quality Certification (WQC)	33 USC §1341; N.J.A.C. 7:13 (N.J.S.A 58:16A)052	Water Quality Certification (Section 401 of the CWA) is delegated to the State for review and approval of compliance with State water quality standards. Although a permit will not be applied for until project construction, compliance with this law including any mitigation requirements will be assessed and documented in the EIS.
Flood Hazard Area Control Act (FHACA)	N.J.S.A. 58:16A-50 (N.J.S.A. 13:8A	The FHACA regulates activity in flood hazard areas and includes the requirement of providing compensatory mitigation for removing woody vegetation within the riparian zone at a 2:1 ratio. As the Rahway River and Robinsonn's Branch are designated as FW2-NT waters, the regulated riparian zone width is 50 feet. Although a permit will not be applied for until project construction, compliance with this law including riparian mitigation requirements will be assessed and documented in the EIS.
Freshwater Wetlands Protection Act	N.J.A.C. 7:7A (N.J.S.A. 13:9B)	Regulates activities in state wetlands and surface waters (e.g. streams) and is associated with CWA Section 404. Although a permit will not be applied for until project construction, compliance with this law including any mitigation requirements will be assessed and documented in the EIS.
New Jersey Green Acres	N.J.A.C. 7:36	The Green Acres Program, provides funds for the State or local municipalities through financial assistance by the State, to acquire and maintain lands for the purposes of recreation. Compliance with this law including any mitigation requirements will be assessed during the Feasibility Study and documented in the EIS.

4.1 Water Resources

Surface Waters

Surface waters within the Project Area that may be subject to modification from flood risk management measures include the Rahway River and its tributary, the Robinson's Branch.

Originating in the Watchung Mountains in Essex County, the Rahway River flows south for approximately 24 miles before discharging into the Arthur Kill strait. The Rahway River has four major tributaries: the West Branch, the East Branch, South Branch and Robinson's Branch. The East Branch joins the West Branch just above the Study Area in Springfield Township, forming the mainstem of the River. The South Branch and Robinson's Branch then join the mainstem at the City of Rahway, where it flows until its confluence with the Arthur Kill.

The Rahway River and Robinson's Branch are designated as FW2-NT or freshwater river not supporting trout spawning or maintenance until the City of Rahway where it becomes tidally influenced (N.J.A.C. 7:9B 2008). By definition, designated uses for FW2 waters include: 1. Maintenance, migration and propagation of the natural and established biota; 2. Primary contact recreation; 3. Industrial and agricultural water supply; 4. Public potable water supply after conventional filtration treatment and disinfection; 5. Any other reasonable uses. Non-trout waters are those "not generally suitable for trout because of their physical, chemical or biological characteristics but are suitable for a wide variety of other fishes" (NJDEP, 2010).

Wetlands

An initial review of New Jersey's environmental mapping database (NJ GeoWeb) and the U.S. Fish and Wildlife Service National Wetland Inventory maps and state environmental mapping resources indicate a forested wetland complex runs along the Rahway River between Orange Reservoir and Campbell's Pond in the South Mountain Reservation and the presence of small, fragmented wetland complexes in various locations along several locations of the Rahway River and the Robinson's Branch within the Project Area. The majority of the Lenape and Nomahegan Parks are identified as forested wetlands.

4.2 Endangered and Threatened Species

The District has completed initial coordination with the U.S. Fish and Wildlife Service (USFWS) through the preparation of a Planning Aid Letter (PAL). Based on this initial coordination, the USFWS identified the Federally endangered Indiana bat (*Myotis sodalis*), and the Federally threatened northern long-eared bat (*Myotis septentrionalis*) and bog turtle (*Clemmys muhlenbergii*) as potentially occurring within the Project Area.

The USFWS also noted a known nest site of the bald eagle is located within 3 miles of the Project Area and suitable foraging areas exist throughout the Project Area. Although the bald eagle was removed from the Federal List of Endangered and Threatened Widlife in 2007, the bald eagle remains protected through the BGEPA and the Migratory Bird Treaty Act.

In addition, the USFWS is currently evaluating the little brown bat (*Myotis* lucifugus), tri-colored bat (*Perimyotis subflavus*) and American eel to determine if listing under the Endangered

Species Act (ESA) is warranted. A decision on whether to list the American eel is anticipated in September 2015.

The PAL included a list of state endangered, threatened and special concern species that may occur within the Project Area which are listed in Table 6. Further coordination with the USFWS and State E&T will occur as the Feasibility Study progresses.

Table 6: New Jersey State Listed Endangered, Threatened and Special Concern Species

Latin Name	Common Name	Listing Status
Accipter gentilis	Northern goshawk	Endangered
Asio flammeus	Short-eared owl	Endangered
Haliaeetus leucocephalus	American bald eagle	Endangered
Podilymbus podiceps	Pied-billed grebe	Endangered
Ammodramus savannarum	Grasshopper sparrow	Threatened
Bubulcus ibis	Cattle egret	Threatened
Buteo lineatus	Red-shouldered hawk	Threatened
Dolichonyx oryzivorus	Bobolink	Threatened
Eremophila alpestris	Horned lark	Threatened
Falco sparverius	American kestrel	Threatened
Melanerpes erythrocephalus	Red-headed woodpecker	Threatened
Nycticorax nycticorax	Black-crowned night heron	Threatened
Pandion haliaetus	Osprey	Threatened
Strix varia	Barred owl	Threatened
Accipiter cooperii	Cooper's hawk	Special Concern
Accipiter striatus	Sharp-shinned hawk	Special Concern
Ardea herodias	Great blue heron	Special Concern
Chordeiles minor	Nighthawk	Special Concern
Egretta caerulea	Little blue heron	Special Concern
Plegadis falcinellus	Glossy ibis	Special Concern
Sturnella magna	Eastern meadowlark	Special Concern

Source: USFWS, 2015

4.3 Cultural Resources

The District has conducted preliminary investigations to identify potentially significant cultural resources within the study area of the proposed Rahway River Flood Control Project, with a focus on the Area of Potential Effect for alternatives for the Township of Cranford and the City of Rahway. A review of historic maps was undertaken at the New Jersey State Library and research on previous surveys and documented archaeological sites was undertaken at the New Jersey State Historic Preservation Office (NJSHPO) and the New Jersey State Museum (NJSM).

Since the 1970's the study area and its vicinity has been the subject of a number of cultural resources surveys. The New York District conducted an archaeological and historical survey in 1977 (Kraft 1977). The study area in 1977 was smaller in scope from what it is today. The project focused mainly on the area of the River south of Nomahegan Park, ending at the Garden State Parkway. At the time, project plans included channelization for the entire length of the River, replacement of the Hansel dam, levees and flood walls at certain locations, replacement of several bridges and modifications to the Droescher's Mill. A pedestrian survey and limited archaeological investigations were carried out in areas of proposed disturbance. The survey found no evidence of prehistoric sites in the area but there were two historic sites, Crane's Mill and the Droescher's Mill and dam, which were believed to be threatened by their proximity to the proposed project elements.

Two investigations, both conducted in the 1980s, are relevant for the Robinson's Branch project area. They include the 1983 reconnaissance of the original flood control project and the documentation of the Carriage Factory Site (Raber et al 1988) both of which covered a portion of the current project area. The 1983 study focused on 15 areas designated as archaeologically sensitive based on topography and landform characteristics. This survey identified a 19th century carriage factory complex on the north bank of the Rahway River. The carriage factory was subsequently studied in 1988, by which time much of the main factory building had collapsed or was demolished. Additional investigations have looked at the elements of the Union County Park System within the project area documenting elements associated with the Olmsted Brothers Landscape Architects, as well as the numerous bridges that cross this stretch of the river (Dietrich 2004, Cinquino et al 2002, Nolte et al 2013; Lichtenstein and Associates 1994; NJDOT 2001).

The site files at the New Jersey State Historic Preservation Office list two National Register of Historic Places (NRHP) listed properties and four eligible properties within the APE project area. There are five additional NRHP listed or eligible properties with one mile of the project area (Table 7). A search of the site files at the New Jersey State Bureau of Archaeology at the New Jersey State Museum identified four archaeological sites within the study area and another site approximately 500 feet outside the study area. These are listed below in Table 8.

Table 7: State and National Register Eligible and Listed Historic Sites for both the Township of Cranford and City of Rahway

Property Name	SR/NR Status	Proximity to Area of Potential Effect
Rahway River Park Historic District (includes Rahway River Parkway, Rahway River Park, Milton Lake Park, Bezega Park/Allen Conservation Area as contributing elements to the Historic District.	SR/NR Eligible	Within APE
Upper Rahway Historic District	SR/NR	Within APE
Regina Historic District	SR/NR	Within APE
Pennsylvania Railroad Historic District	SR/NR	Within APE
Union County Park System Historic District		
North Cranford Historic District	NR Eligible	Within APE
Modification to North Cranford Historic District – Hanson House	NR Eligible	Within APE
Droescher's Mill	SR/NR	Within APE
Central Railroad of New Jersey Mainline Historic District	NR Eligible	Within APE
Crane-Phillips House	SR/NR	Within APE
Rahway Theater/"Arts District"	SR/NR	Within APE
Historic Cemeteries – Rahway Cemetery (18th C to present), Hazel Wood Cemetery and Old Church Cemetery (both 19th C to present)	Potentially eligible	Within and adjacent to the APE
Staten Island Railroad	NR Eligible	1000 feet
Garden State Parkway Historic District	NR Eligible	0.37 miles
Baltustrol Golf Club	SR/NR	0.37 miles
Oswald Nitschke House	SR/NR	0.37 miles
Caldwell Parsonage	SR/NR	0.72 miles

Table 8: Archaeological Sites

Archaeological Site	Description	Proximity to Study Area
28-UN-7 "Cranford"	Prehistoric, Archaic point, surface find	Within study area
28-UN-4	Historic Saw Mill "Cranes Mill"	Within study area
28-UN-5	Historic Grist Mill	Within study area
28-UN-12 "Springfield"	Prehistoric, stone point, surface find.	500 feet

4.4 Environmental Contamination

As required by the Corps Engineering Regulation 1165-2-132 (Hazardous, Toxic and Radioactive Waste Guidance for Civil Works, 26 June 1992), an assessment of hazardous, toxic, and radioactive waste (HTRW) will be conducted in the project area. Hazardous, Toxic, and Radioactive Waste (HTRW) are defined as any "hazardous substance" regulated under Comprehensive, Environmental Response, Compensation, Liability Act (CERCLA), 42 U.S.C. 9601 et seq, including "hazardous wastes" under Section 3001 of the Resources Conservation and Recovery Act (RCRA), 42 U.S.C. 6921 et seq. The District will conduct a file searches utilizing the the NJDEP "Known Contaminated Sites" list (KCS) and US Environmental Protection Agency data bases, including the National Priority List (NPL), the Comprehensive Environmental Response, the Compensation and Liability Information System (CERCLIS), the Toxic Release Inventory System (TRIS), and the Resource Conservation and Recovery Information System (RCRIS). Field investigations may be conducted once the NED plan is identified.

4.5 New Jersey Green Acres Lands

Under the Green Acres program, lands obtained or developed with Green Acres funding and lands held by a local government for recreation and conservation purposes must permanently remain in use for such purposes. In general, lands subject to the rules of the program cannot be disposed of or diverted unless it can be demonstrated to the State that the modification will protect or enhance the use of the area. By definition, land that is used for purposes other than recreation and conservation is considered a "diversion" while a "disposal" is the selling, donating, or some other form of permanent transfer of possession of parkland.

Construction of structures including flood risk management measures may constitute as a diversion and could require some form of compensation in the form of replacement land, parkland improvements or compensatory funding.

A review of the Green Acres Program Open Space Database indicates the following locations within the Project Area of which all or portions of were acquired with Green Acres Program funds and are within the footprint of flood risk management alternatives being evaluated.

- South Mountain Reservation, Millburn and Maplewood Townships, West Orange
- Lenape Park, Cranford Township
- Hanson Park/Canoe Club, Cranford Township
- McConnell Park, Cranford Township
- Sperry Park, Cranford Township
- Rahway River Parkway, Cranford Township
- Nomahegan Park, Cranford Township
- Milton Lake Park, City of Rahway
- Arts Center Park, City of Rahway
- Kiwanis Park, City of Rahway

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Appendix B

Rahway River Basin

Flood Risk Management Feasibility Study

15 June 15 NEPA Scoping Meeting PowerPoint Presentation

NEPA Scoping Meeting
Rahway River Basin, New Jersey
Flood Risk Management Feasibility Study

U.S. Army Corps of Engineers
New York District

New Jersey
Department of Environmental Protection
Non-Federal Sponsor

15 June 2015

US Army
Corps of Engineers

Photo By The Cranford Chronicle

Rahway River Basin Flood Risk Management Feasibility Study

Scoping Meeting Outline

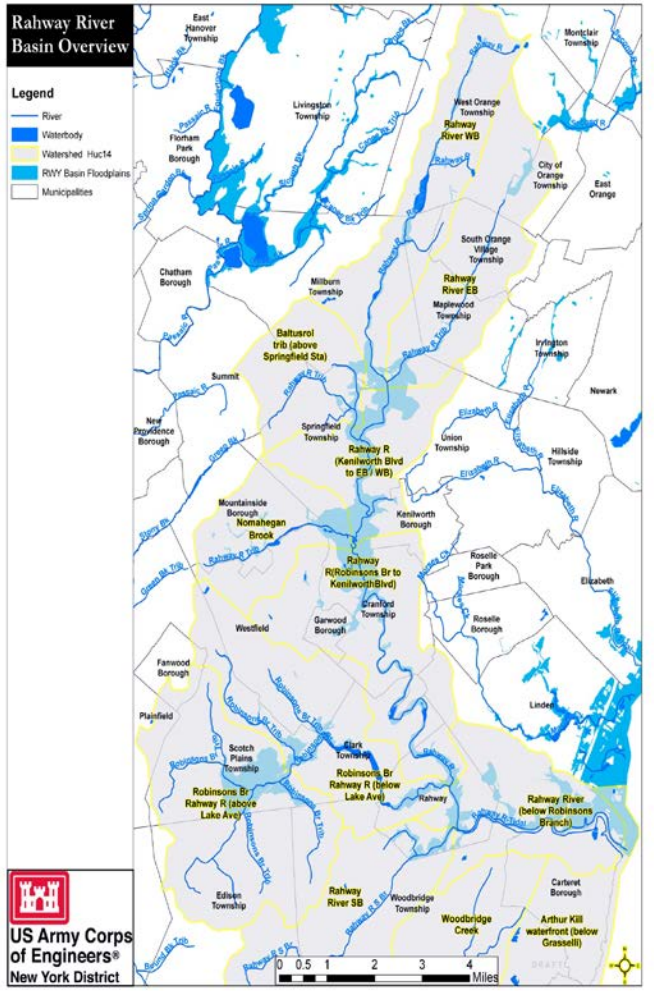
- Study Background
- NEPA Overview
- Alternative Formulation Process
- Alternatives Description
- Next Steps
- Study Schedule
- Contact Information

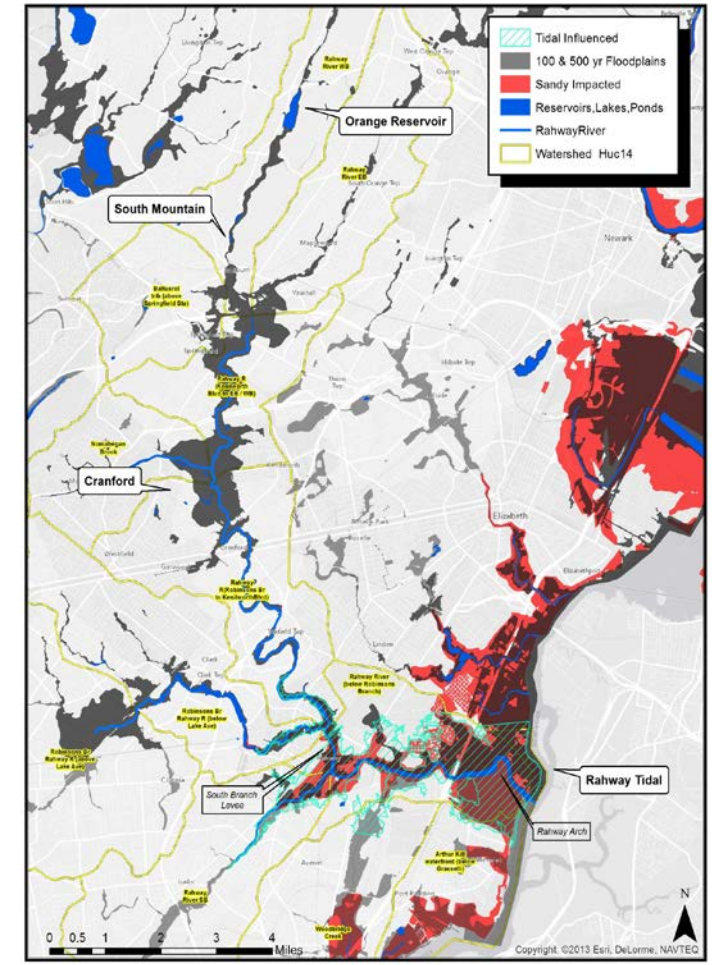
Background

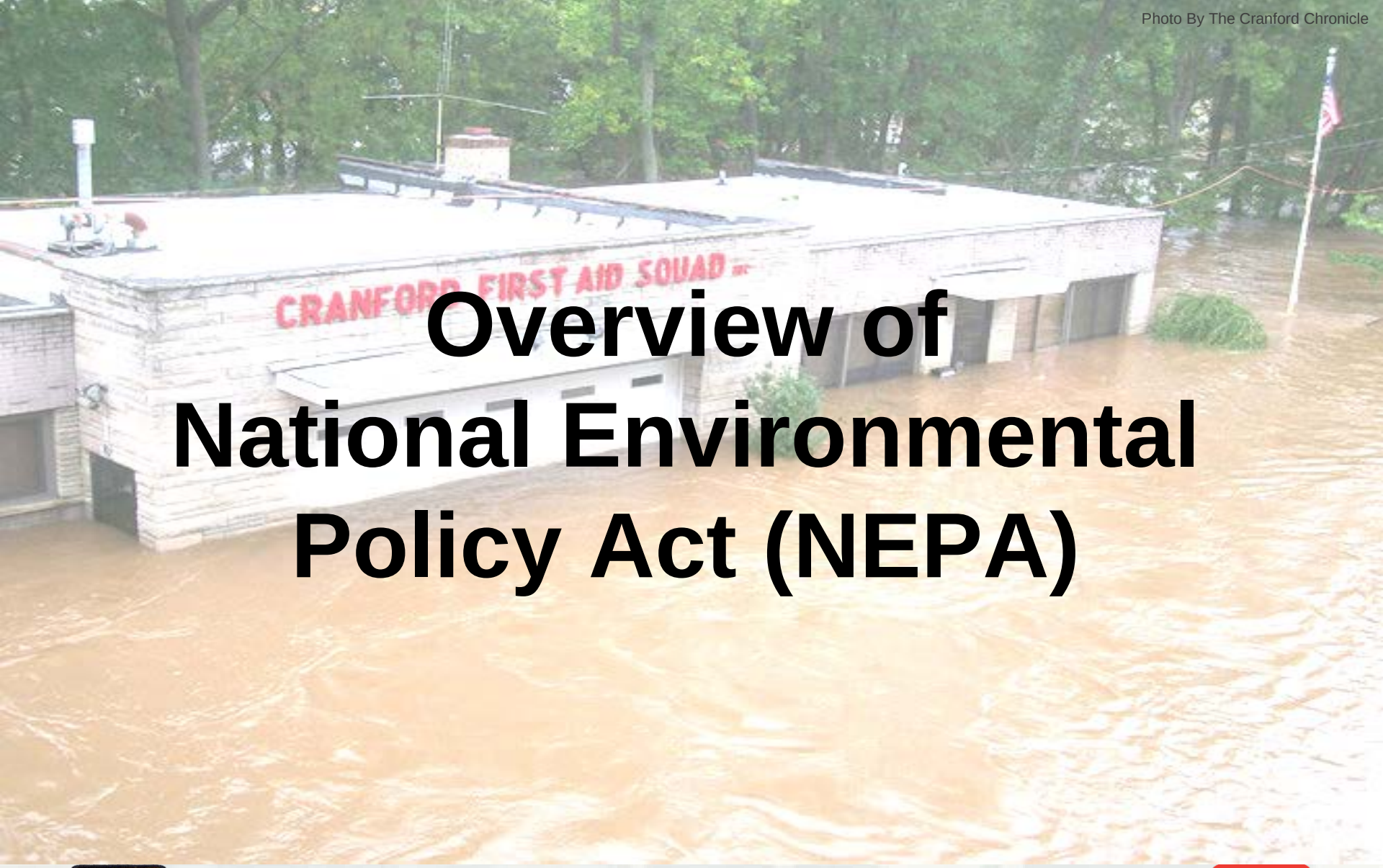
- 1999: Completion of a Reconnaissance Report recommending a feasibility study to develop flood risk management alternatives within the Rahway River Basin.
- 2002: Feasibility Study Cost Share Agreement (FCSA) executed between the USACE and New Jersey Department of Environmental Protection (NJDEP) as the Non-federal sponsor.
- 2006: Completion of an Initial Screening Report identifying Cranford Township and a portion of the City of Rahway along Robinson's Branch having greatest potential for Federal Interest.
- 2011: Study Area expanded to areas upstream of Cranford Township as a result of Tropical Storm Irene.
- 2014: Separate Tidal Study Area initiated as a result of Hurricane Sandy.

Rahway River Basin Flood Risk Management

Project Area Description







Overview of National Environmental Policy Act (NEPA)

National Environmental Policy Act (NEPA)

- Federal agencies are required to determine and consider the "effect of their actions on the human environment" during planning and decision making:
  - Social
  - Economic
  - Natural Resources
  - Historic Resources
- Federal Actions that can trigger NEPA:
  - Funding
  - Permits
  - Construction

National Environmental Policy Act (NEPA)

- Multiple laws, executive orders and regulations are considered as part of the NEPA process.
  - Clean Water Act
  - Endangered Species Act
  - Environmental Justice
  - National Historic Preservation Act
  - Clean Air Act
  - State laws
- Disclosure: proposed action, alternatives, environmental effects, and mitigation.

Types of NEPA Analysis

- Council on Environmental Quality (CEQ) regulations provide three types of NEPA analysis based upon potential for significant impact:
  - Categorical Exclusion
  - Environmental Assessment
  - Environmental Impact Statement (EIS)

Scoping Process

- Required when preparing an EIS.
- Identify people or organizations who are interested in the proposed action.
- Identifies any information sources that might be available to analyze and evaluate impacts.
- Assists with plan formulation process.
- Identifies significant resources to be evaluated.
- NEPA Scoping Document: www.nan.usace.army.mil/Rahway
- Citizens Guide to NEPA: Having Your Voice Heard. Located at http://energy.gov/nepa/public-participation

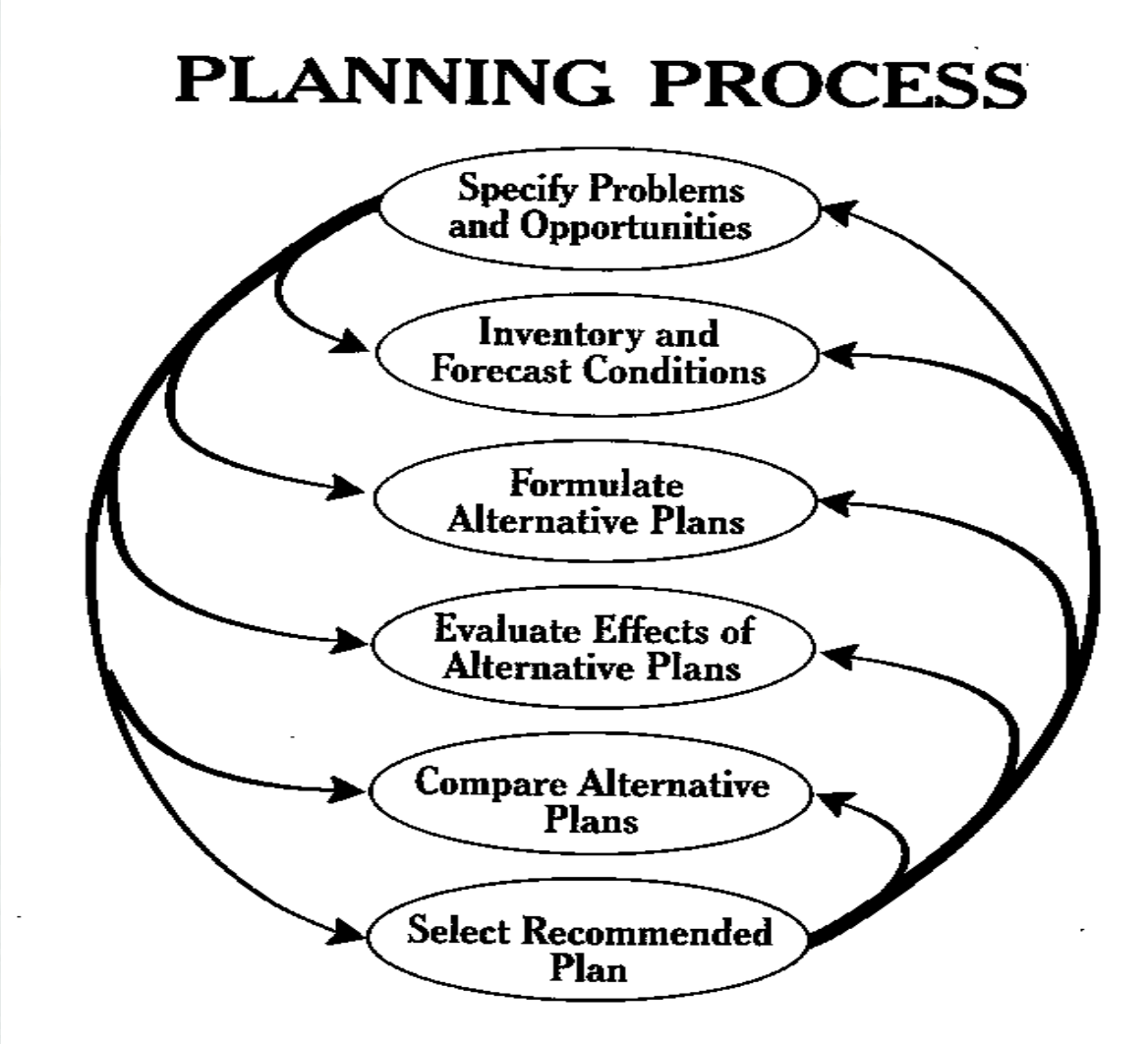
Photo By The Cranford Chronicle

USACE Alternative Formulation Process and Alternatives

Flood Risk Management (FRM)

- No Flood Risk Management project can eliminate the risk of flooding. Given a long enough period of time, most projects will experience an event that is larger than the event which they were designed.
- Flood Risk Management projects can only reduce the frequency and/or severity of flooding and provide additional time to respond.
- Physical features are only a single component of a flood risk management approach. Insurance, zoning and an Emergency Action Plan (EAP) are some other important aspects of Flood Risk Management.
- Communication of accurate and timely information about the risk of living in a flood prone area is critical and best implemented at the local level.
- Flood safety is a shared responsibility and a collaborative approach is required to effectively manage the risk of flooding and to save lives. (Corps, FEMA, State, County, Local Gov., Emergency Personnel, Residents)

USACE Alternative Formulation Process



USACE Alternative Formulation Process

- Formulate Flood Risk Management (FRM) Alternatives
- Evaluate Alternatives
  - Plans are screened for completeness, effectiveness, efficiency, and acceptability.
  - Compare reduced damages of proposed alternatives against without project conditions to determine benefits.
  - Perform initial evaluation of Environmental Impacts.
  - Compare benefits to costs for each alternative. To be economically justified a plan must have a Benefit-to-Cost Ratio (BCR) greater than one.

USACE Alternative Formulation Process

- Determine Tentatively Selected Plan (TSP)
  - The Alternative that maximizes net benefits relative to other alternatives is identified as the Tentatively Selected Plan (TSP).
- The non-Federal sponsor can request a Locally Preferred Plan (LPP).
- A TSP or a LPP must have a BCR>1.
- Optimize & Select a Plan
  - The TSP size that maximizes net benefits relative to other TSP sizes is identified as the National Economic Development Plan, or NED Plan.
- Establish the Recommended Plan – NED Plan, LPP or other.
- No action would be recommended if all alternatives have a BCR <1.
- Project Cost must be shared (Fed & Non-Fed sponsor).

USACE Alternative Formulation Process

No alternatives analyses is complete until the following evaluations are conducted:

1. Hydrology & Hydraulics
   - Model existing and improved conditions of the project area, including flows and water surface elevations.
   - Perform Risk and Uncertainty Analysis.
2. Cost Estimates
   - Determine costs based on quantities and mitigation.
3. Economic Justification for Plan Selection
   - Determine Benefits.
   - Develop Benefit Cost Ratio (>1) & Maximum net benefits.
4. Environmental Impacts
   - Cultural Resources, HTRW, Biological and Habitat considerations.
5. Social Consequences
   - Community impacts (e.g. displacement, recreational feature/business loss or gains).

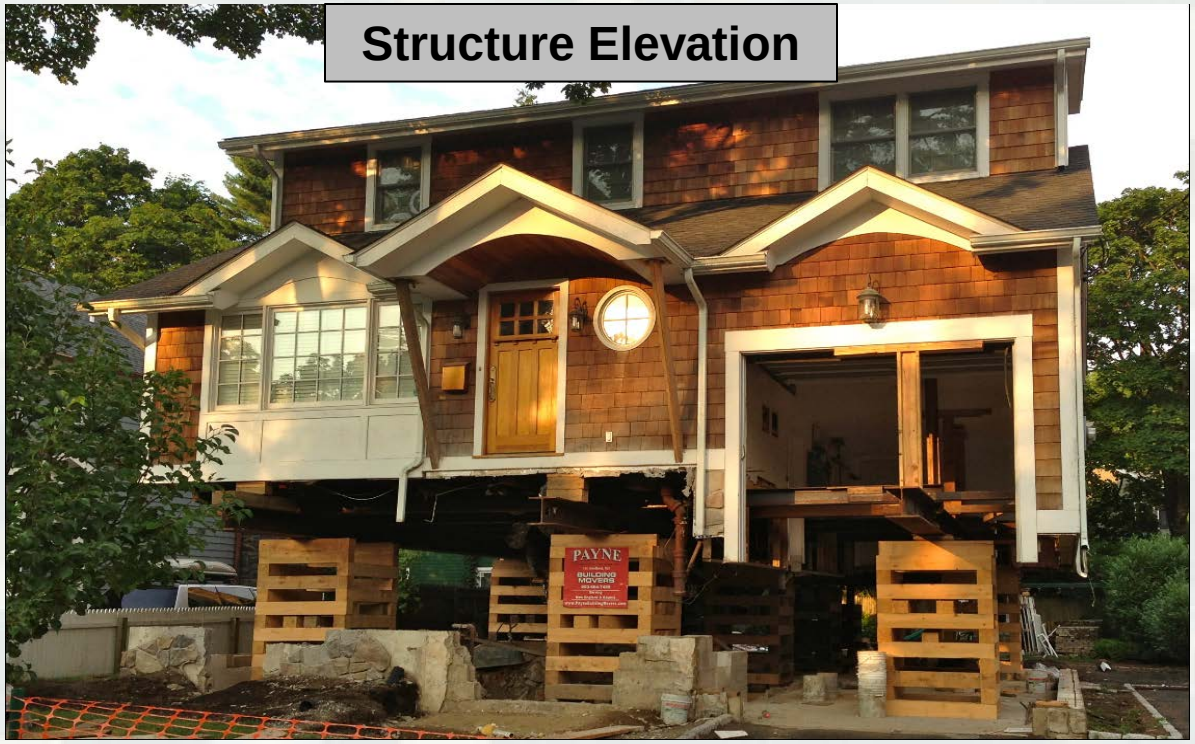
Alternatives Overview

- No Action
- Non-Structural
- Cranford Alt. 4 - Channel Improvements and Orange Reservoir Outlet Modification
- Cranford Alt. 8 – Lenape Park Levee and Orange Reservoir Outlet Modifications
- Cranford Alt. 9 – Lenape Park Detention Basin, Orange Reservoir Outlet Modifications and Channel Improvements
- Robinson’s Branch Alt. 1: Levees/floodwalls and Channel Improvements
- Robinson’s Branch Alt. 2: Middlesex Reservoir Modification

Alternatives

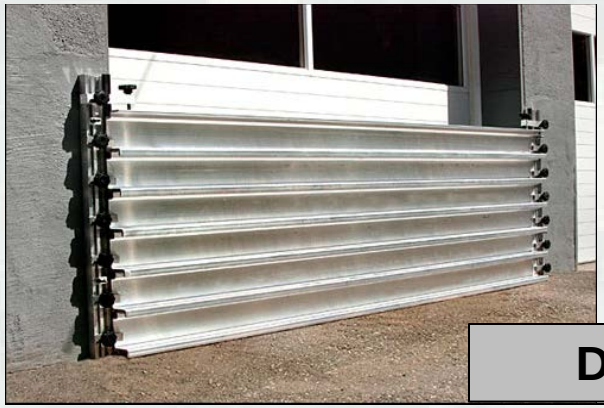
- No Action
  - No additional Federal Actions would be taken to provide for flood risk management.
  - Serves as a baseline for the existing and future trends against which other alternatives are measured.
  - Required under NEPA.
- Non-Structural
  - Structure Raising
  - Wet or Dry Floodproofing
  - Ringwalls
  - Buy-out

Typical Non-structural Measures



Structure Elevation

Wet Proof



Dry Proof

Rahway River Basin Flood Risk Management Feasibility Study

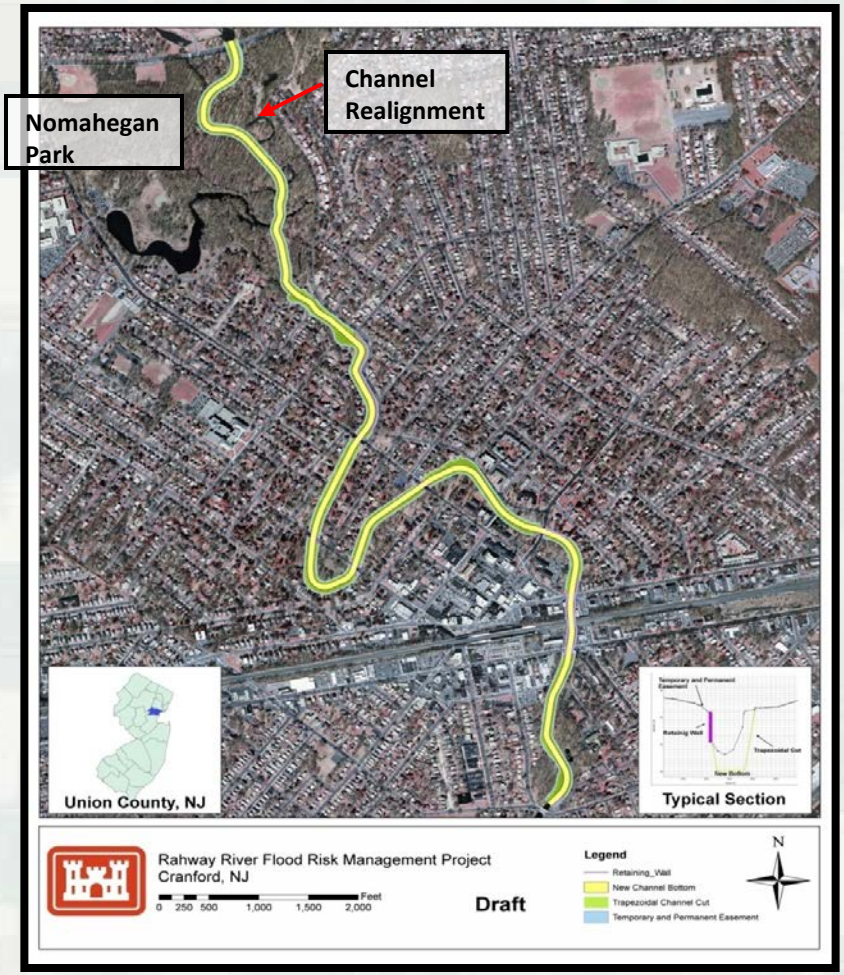
Cranford Alt. 4: Channel Improvements and Orange Reservoir Outlet Modification

- Description:
  - New outlet 2- 36” pipes at Orange Reservoir, with manual operation.
  - Approximately 15,500 ft of trapezoidal channel improvements throughout the Rahway River in Cranford Township.
  - Two bridge replacements.
  - Removal of Droescher’s and Hansel Dam.
  - Utility relocation.
- This alternative is likely to contain the 1%-2% chance of annual exceedance flood in Cranford Township. The flow detention capacity of the Orange Reservoir will mitigate the increase in downstream flow caused by deepening and widening the channel.
- Potential Environmental Considerations:
  - Aquatic, Wetland and Riparian Habitats
  - Historic Properties
  - Green Acres

*Events	Time
Drawdown	2 days
Re-fill - (25 yr event)	30 hrs
Re-fill - (1 yr event)	One week
Maximum re-fill	Two weeks

*Drawdown and refill depth = 15ft.

Rahway River Basin Flood Risk Management Feasibility Study
Cranford Alt. 4: Channel Improvement and Orange Reservoir Outlet Modification



Typical Channel Improvement
South Orange, NJ, 30 ft wide + retaining walls

Rahway River Basin Flood Risk Management Study
Cranford Alt. 8: Lenape Park Dam and Orange Reservoir Outlet Modifications

- Description:
  - New outlet 2- 36” pipes at Orange Reservoir, with manual operation.
  - Raising the existing Lenape Dam structure and widening the orifice.
  - Raising existing Lenape embankments six feet above current top elevation.
  - Addition of 6 ft of floodwalls to existing embankments in northern area of Lenape Park near Fadem Rd at Springfield township.
- This alternative is likely to contain the 4% chance of annual exceedance flood in Cranford Township and has some addition benefits below Cranford.
- Potential Environmental Considerations:
  - Aquatic, Wetland and Riparian Habitats
  - 50 ft no woody (trees and shrubs) vegetation buffer on either side of dam/embankment per Corps Policy.
  - Historic Properties
  - Green Acres

Typical Dry Detention Basin
Lenape Park, Springfield/Cranford, NJ

Rahway River Basin Flood Risk Management Feasibility Study
Cranford Alt. 9: Lenape Park Dam and Orange Reservoir Outlet Modifications and Channel Improvements

- Description:
  - New outlet 2- 30” pipes at Orange Reservoir, with manual operation.
  - Raising the exisiting Lenape Dam structure and widening the orifice.
  - Raising existing Lenape embankments six feet above current top elevation.
  - Addition of 6 ft of floodwalls to existing embankments in northern area of Lenape Park near Fadem Rd at Springfield township.
  - Up to 9,000 ft of channel improvement.
- This alternative is likely to contain the 2% chance of annual exceedance flood in Cranford Township and has some additional small benefits downstream of Cranford.
- Potential Environmental Considerations:
  - Aquatic, Wetland and Riparian Habitats
  - Historic Properties
  - Green Acres
  - 50 ft no woody (trees and shrubs) vegetation buffer on either side of dam/embankment per Corps Policy.

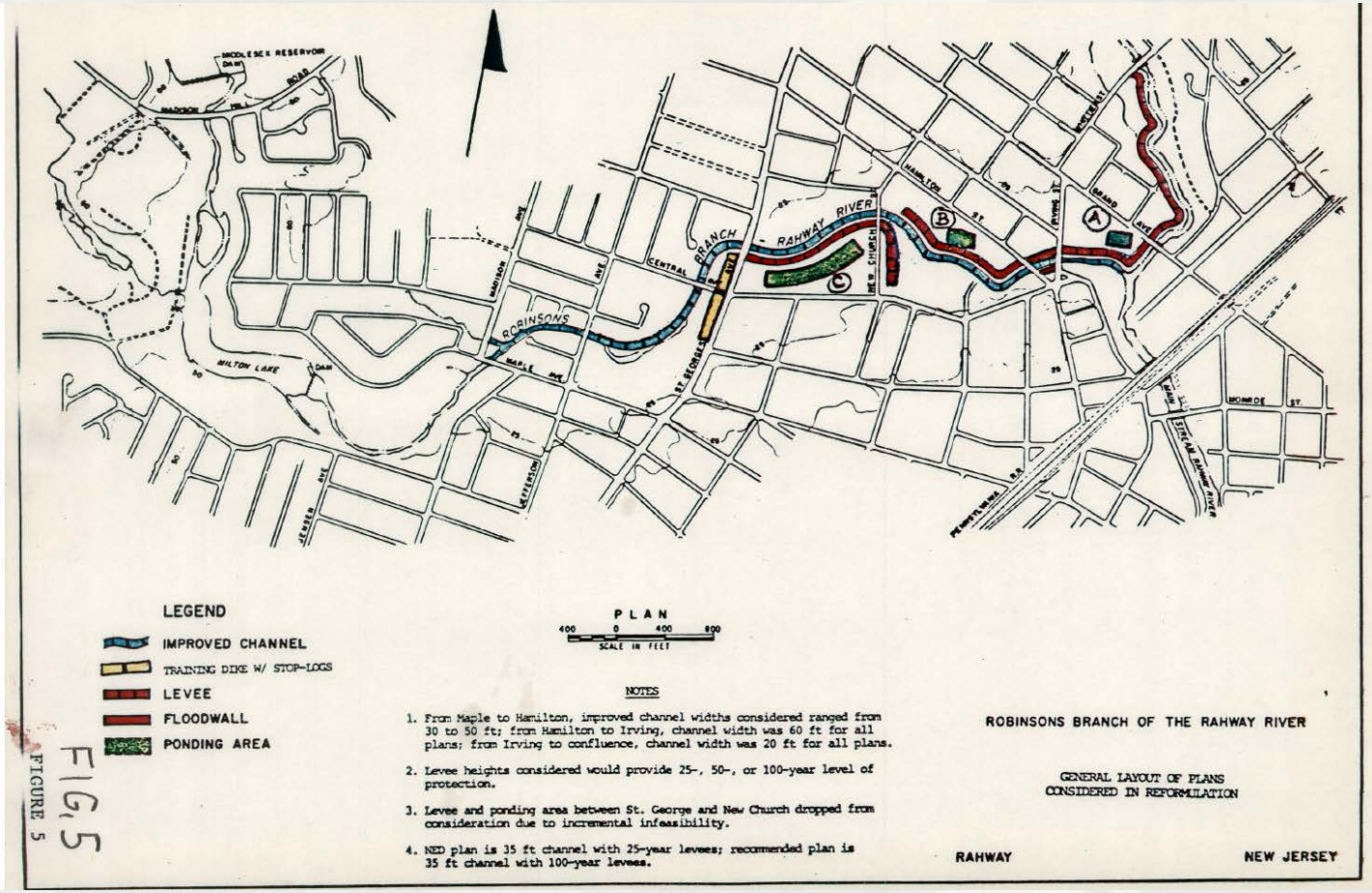
Rahway River Basin Flood Risk Management Feasibility Study

Robinson's Branch Alt. 1 Channel Improvements with Levees & Floodwalls

- Description: Re-evaluate the1985 GRR Channel & Levee/Floodwall Plan
  - Approximately 6,500 ft of 35' wide trapezoidal channel from confluence to Maple Ave. with 750 ft of retaining walls.
  - Approximately 6,600 ft of levees/floodwalls.
  - Three ponding areas.
- This alternative is likely to contain the 1% to 4% chance of annual exceedance flood in Rahway along the Robinson's Branch.
- Potential Environmental Considerations:
  - Aquatic, Wetland and Riparian Habitats
  - Historic Properties
  - Green Acres

Rahway River Basin Flood Risk Management Feasibility Study

Robinson's Branch Alt. 1 Channel Improvements with Levees & Floodwalls



Rahway River Basin Flood Risk Management Feasibility Study

Robinson's Branch Alt. 2 Modifications to Robinson's Branch Dam (Middlesex Reservoir)

- Description:
  - New outlets or modified spillway at Middlesex Dam, with manual operation to lower the reservoir before a pending storm.
- The degree of flood risk reduction in Rahway along the Robinson's Branch is unknown at this time.
- Potential Environmental Considerations:
  - Aquatic, Wetland and Riparian Habitats
  - Historic Properties
  - Green Acres

Photo By The Cranford Chronicle

Next Steps

Rahway River Basin Flood Risk Management Study Feasibility

Next Steps

- Receipt of Public Scoping Comments – 15 July 2015.
- Preparation of Response to Comment Document.
- Economic Analysis, Benefit-to-Cost Ratio for Robinson's Branch measures.
- Basin wide determination and optimization of Tentatively Selected Plan for Cranford measures & Robinson's Branch measures (TSP).
- Conduct Environmental Field Investigations.
- Develop Real Estate Plan.
- Prepare a Feasibility Report and NEPA Documentation (Environmental Impact Statement).
- Public and Agency Reviews.
  - Draft EIS 45 day review and comment period.
  - Final EIS 30 day review and comment period.

Rahway River Basin Flood Risk Management Feasibility Study

Feasibility Study Schedule

Milestones	
Milestones	**Dates**
Tentatively Selected Plan	**March 2016**
Release of Draft Report	**June 2016**
Final Report	**January 2017**
Chief's Report (for Congress)	**June 2017**

Rahway River Basin Flood Risk Management Feasibility Study

Study Contact and Webpage Information

Study Contacts

- Rifat Salim
  Project Manager
  U.S. Army Corps of Engineer, New York District
  917- 790 - 8215
  rifat.salim@usace.army.mil

- John Moyle, P.E.
  Chief of Dam Safety & Flood Control
  NJ Dept of Environmental Protection
  609 – 984 - 0859
  John.Moyle@dep.state.nj.us

Scoping Meeting Comments

- Kimberly Rightler
  Project Biologist
  U.S. Army Corps of Engineers
  New York District
  CENAN-PL-E
  26 Federal Plaza
  New York, NY 10278
  or by email to:
  kimberly.a.rightler@usace.army.mil

Project Webpage

www.nan.usace.army.mil/Rahway

Appendix C

Rahway River Basin

Flood Risk Management Feasibility Study

15 June 15 NEPA Scoping Meeting Posters

US Army Corps of Engineers
New York District

US Army Corps of Engineers
New Jersey Department of Environmental Protection

NEPA SCOPING MEETING

Rahway River Basin
Flood Risk Management Feasibility Study

7:00 – 7:30	**Welcome and Poster Board Viewing**
7:30 – 8:00	**US Army Corps of Engineers Presentation**
8:00 – 9:00	**Poster Board Session and Information Exchange**

US Army Corps of Engineers
New York District

Rahway River Basin Flood Risk Management Feasibility Study

Identifying What Impacts to Assess

NEPA Scoping: The Corps of Engineers and the New Jersey State Department of Environmental Protection are conducting NEPA scoping.

- This provides the public with the opportunity to present any potential environmental concerns they may have with any alternatives being evaluated.
- Concerns brought up during this process will be addressed in the Environmental Impact Statement that will be prepared.
- To compare the feasible alternatives identified in the previous posters in terms of their potential to affect the environment, each of their impacts on the following resources will be assessed, as well as cumulative impacts.

Topography and Soils

Land Use and Zoning

Water Resources
- *Groundwater*
- *Surface Water*
- *Water Quality*

Vegetation

Fish and Wildlife
- *Fish*
- *Aquatic Macroinvertebrates*
- *Mammals*
- *Birds*
- *Amphibians and Reptiles*

Threatened and Endangered Species

Socioeconomics
- *Population*
- *Housing*
- *Environmental Justice*
- *Economy/Income*

Cultural Resources

Environmental Contamination

Aesthetics and Scenic Resources

Recreation
- *New Jersey Green Acres*

Transportation

Air Quality

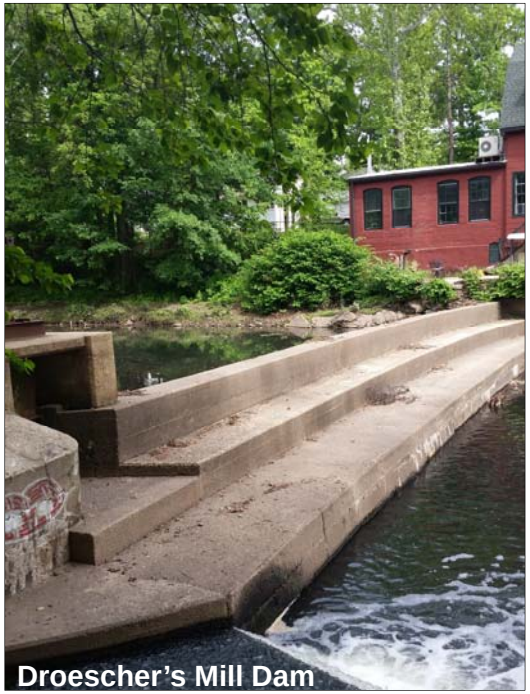
Noise

Cumulative Impacts (nearby past/ ongoing/proposed projects)

US Army Corps of Engineers
New York District

Rahway River Basin Flood Risk Management Feasibility Study

Environmental Considerations


Droescher's Mill Dam

Wetlands

Environmental Contamination

Endangered & Threatened Species

New Jersey Green Acres Lands

Cultural Resources


Great Blue Heron on Droescher's Mill Dam


www.fws.gov

Indiana bats

US Army Corps of Engineers
New York District

Rahway River (Fluvial) Flood Risk Management Feasibility Study

Alternative #4: Channel Improvements & Modifications to Orange Reservoir Outlet

Concept of Channel Improvements:

- Rahway River would be dredged so as to increase the capacity of the river in the city of Cranford.
- This will increase the capacity of the river, so it can hold more water and thus would exceed its banks and flood the community less often.

Concept of Orange Reservoir Outlet Modifications:

- Construction of new outlets at the Orange Reservoir would allow for drawdown ahead of storm events.
- Outlets would be operated manually and managed by the non-federal sponsor.
- This would allow for increased storage capacity in the Orange Reservoir ahead of storm events, so it could contain water that would otherwise flood communities downstream.

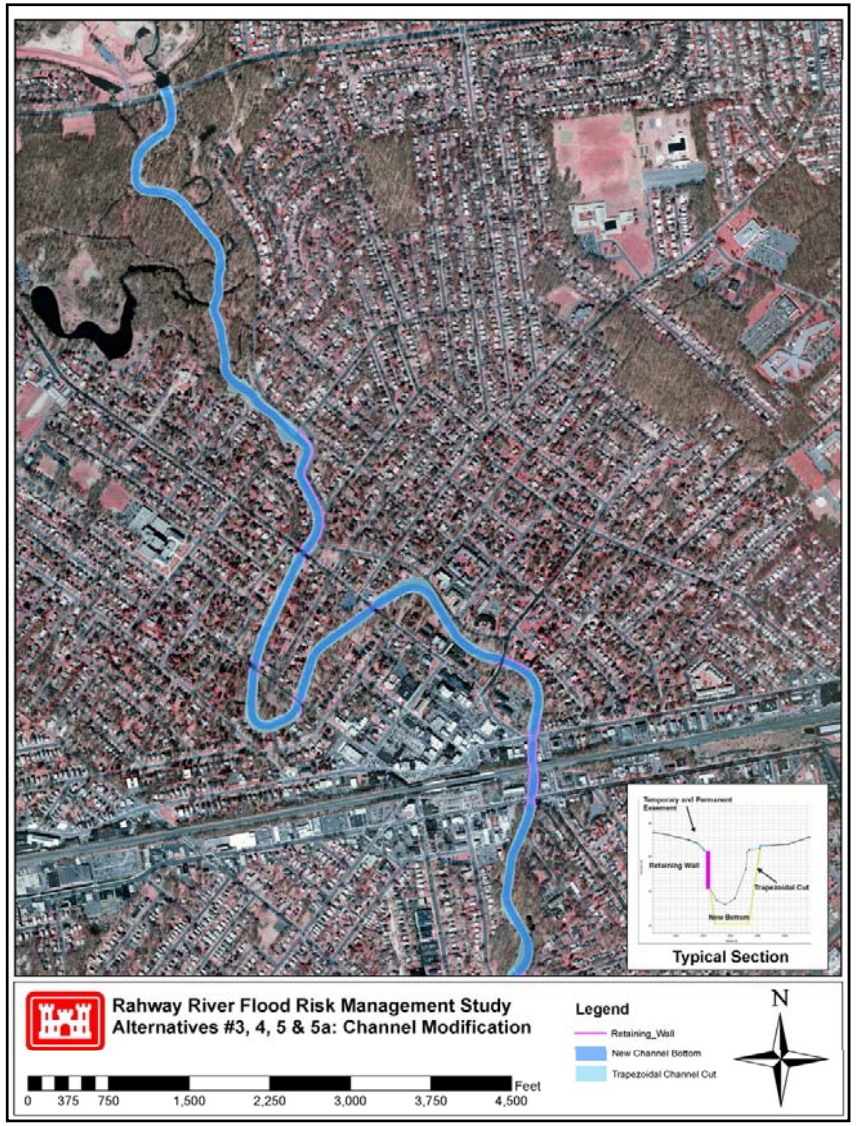
Estimated time for refill of Orange Reservoir after a potential flood events:

Events	Time
Drawdown Time	2 days
25 yr	30 hrs to re-fill
1 yr	One week to re-fill
Base Flow	Two weeks to re-fill
*Maximum drawdowns and re-fill depth = 15 ft	

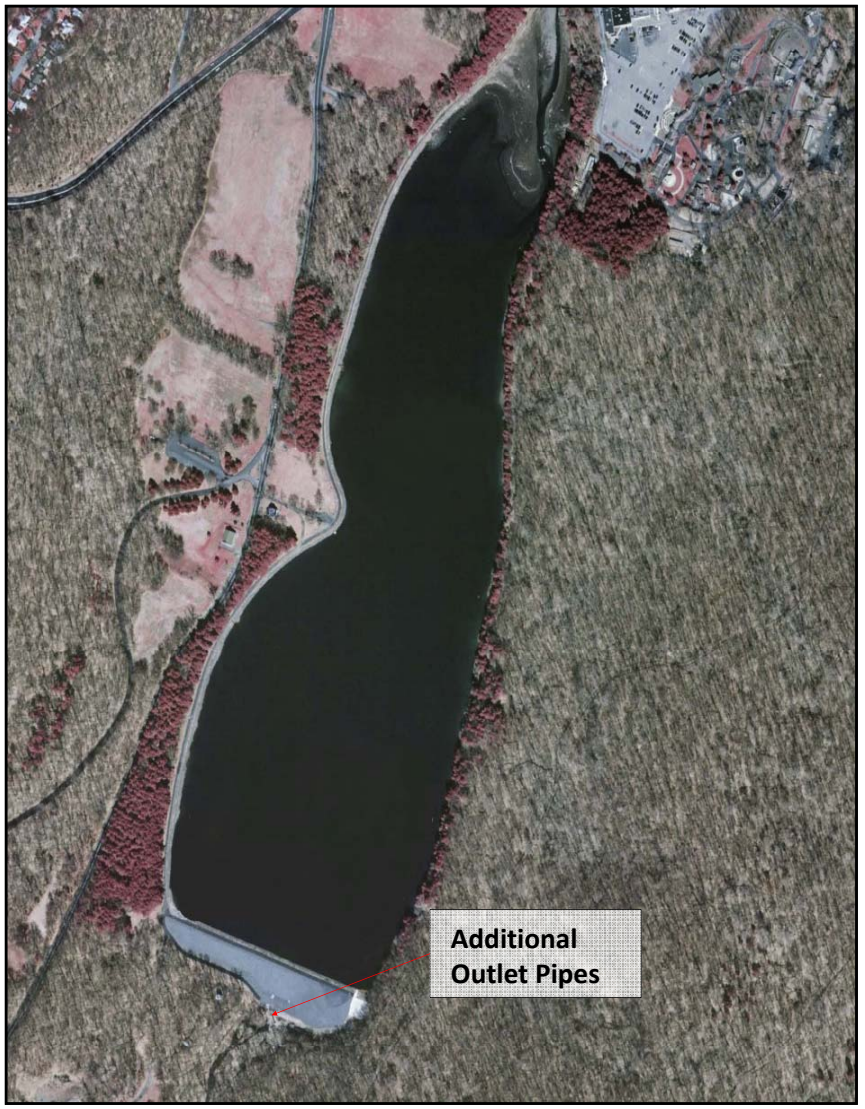
US Army Corps of Engineers
New York District

Rahway River (Fluvial) Flood Risk Management Feasibility Study

Alternative #4: Channel Improvements and Modifications to Orange Reservoir Outlet



Channel Improvements



Orange Reservoir Outlet Modifications

US Army Corps of Engineers
New York District

Rahway River (Fluvial) Flood Risk Management Feasibility Study

Alternative #7a & 7b: Non-Structural 10-yr & 100-yr Plan

- Non-structural measures are being finalized for approximately 700 structures contained in the 1% annual exceedance (100-yr event) and approximately 100 structures contained in the 10% annual exceedance (10-yr event) flood inundation areas for the Rahway River in Cranford.

- All structures will be treated to an elevation of one foot above the 1% annual exceedance event.

Non-structural Measures	Chance of Exceedance	
	10% (10-yr)	1% (100-yr)
Dry Flood proofing	0	11
Wet Flood proofing	1	326
Ringwall	1	37
Raise	62	311
Buyout	2	41
Total of Structures	66	726

US Army Corps of Engineers
New York District

Rahway River (Fluvial) Flood Risk Management Feasibility Study

Alternative #8: Modification to Lenape Park Dam & New Outlets at Orange Reservoir

Concept of Modification to Lenape Park Dam:

- Approximately 9,500 ft of dam embankment will be raised by 6 ft.
- Similar existing spillway design, 400 ft long and raised by 6 ft. Orifice will be 3.5 ft wide by 40 ft long.
- Auxiliary spillway to be increased to a length of 1400 ft and raised by 6 ft.
- Impact to vegetation along both sides of the dam embankments.

Concept of Orange Reservoir Outlet Modifications:

- Construction of new outlets at the Orange Reservoir would allow for drawdown ahead of storm events.
- Outlets would be operated manually and managed by the non-federal sponsor.
- This would allow for increased storage capacity in the Orange Reservoir ahead of storm events, so it could contain water that would otherwise flood communities downstream.

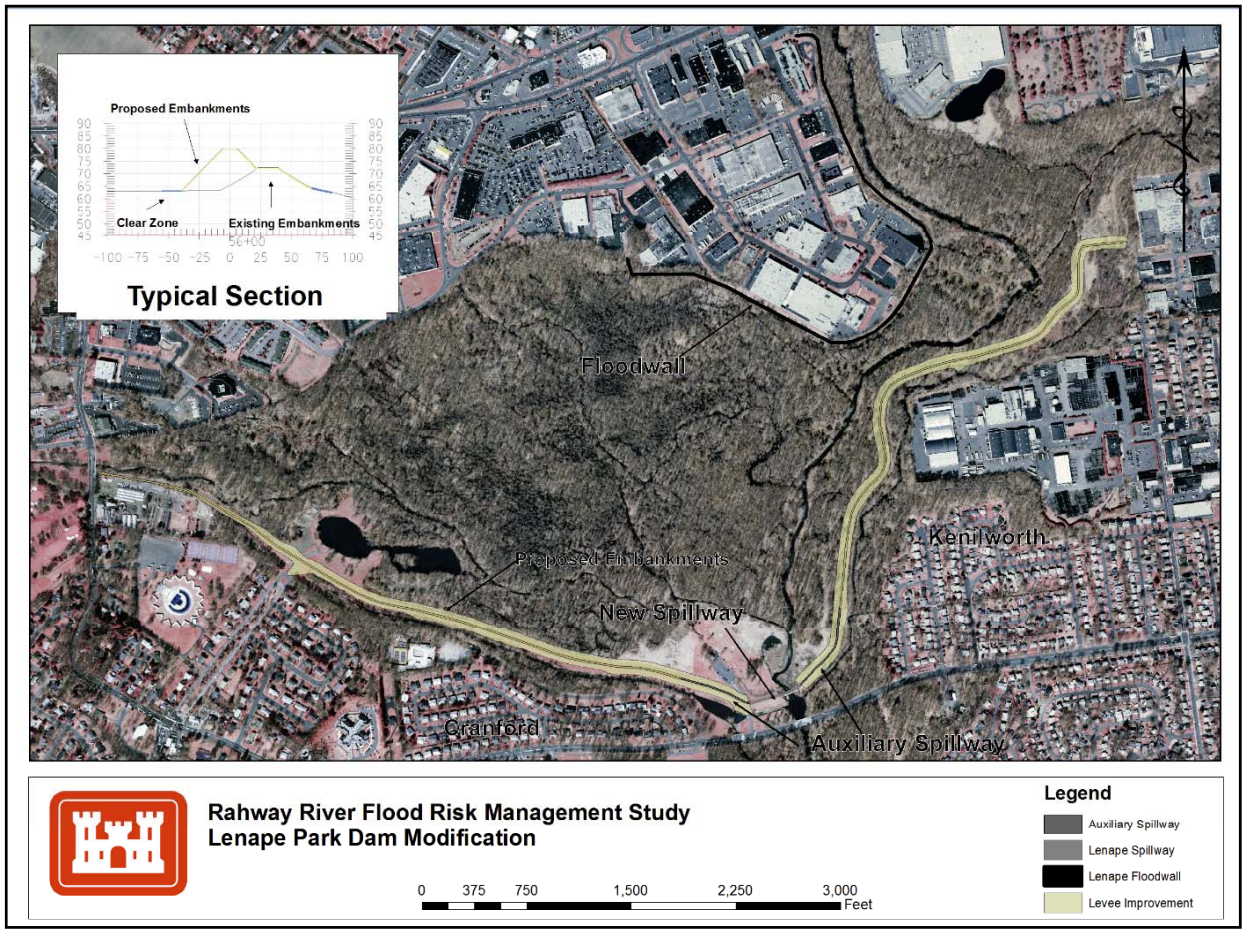
Estimated time for refill of Orange Reservoir after a potential flood events:

Events	Time
Drawdown Time	2 days
25 yr	30 hrs to re-fill
1 yr	One week to re-fill
Base Flow	Two weeks to re-fill
*Maximum drawdowns and re-fill depth = 15 ft	

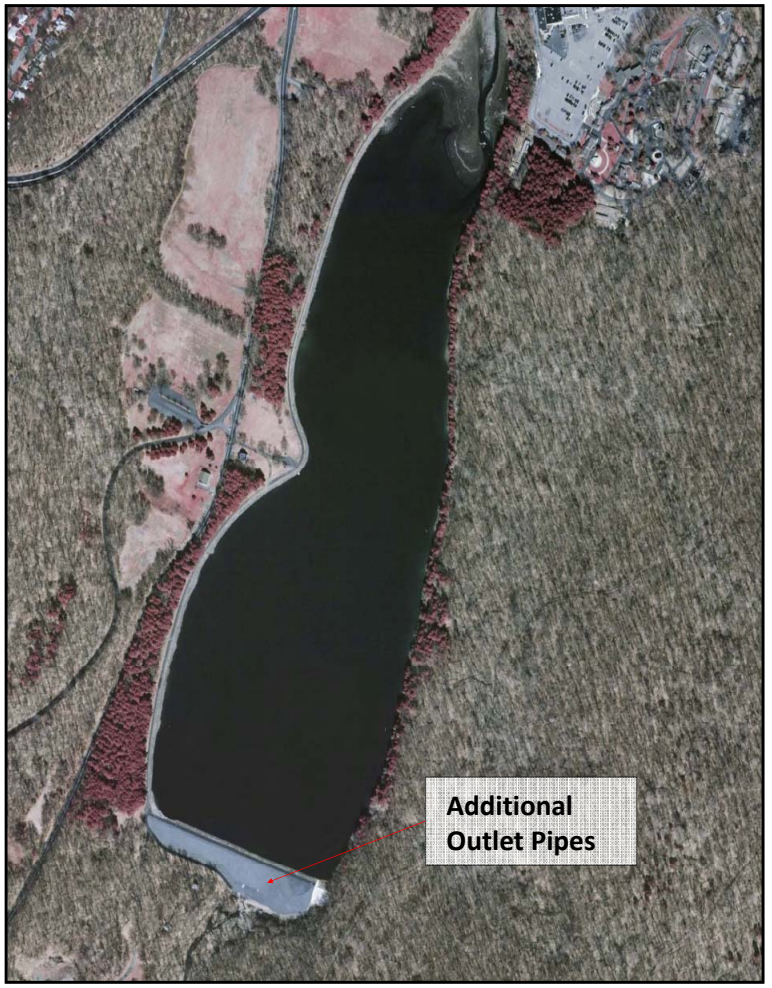
US Army Corps of Engineers
New York District

Rahway River (Fluvial) Flood Risk Management Feasibility Study

Alternative #8: Modification to Lenape Park Detention Dam & New Outlets at Orange Reservoir



Lenape Dam Modification



Orange Reservoir Outlet Modifications

US Army Corps of Engineers
New York District

Rahway River (Fluvial) Flood Risk Management Feasibility Study

Alternative #9: Modification to Lenape Park Detention Dam, New Outlets at Orange Reservoir & Channel Improvements

Concept of Modification to Lenape Park Dam:

- Approximately 9,500 ft of dam embankment will be raised by 6 ft.
- Similar existing spillway design, 400 ft long and raised by 6 ft. Orifice will be 3.5 ft wide by 40 ft long.
- Auxiliary spillway to be increased to a length of 1400 ft and raised by 6 ft.
- Impact to vegetation along both sides of the dam embankments.

Channel improvements:

- Some channel work is expected from Nomahegan Park to Lincoln Ave. Bridge.
- The channel work will be approximately 9,000 ft long with up to 2.5 ft deepening in the Hansel Dam area.
- Modification of Hansel and Droescher's Dam may be possible for this alternative.
- No bridge modification will be considered and a minimum use of retaining walls.

Concept of Orange Reservoir Outlet Modifications:

- Construction of new outlets at the Orange Reservoir would allow for drawdown ahead of storm events.
- Outlets would be operated manually and managed by the non-federal sponsor.
- This would allow for increased storage capacity in the Orange Reservoir ahead of storm events, so it could contain water that would otherwise flood communities downstream.

Estimated time for refill of Orange Reservoir after a potential flood events:

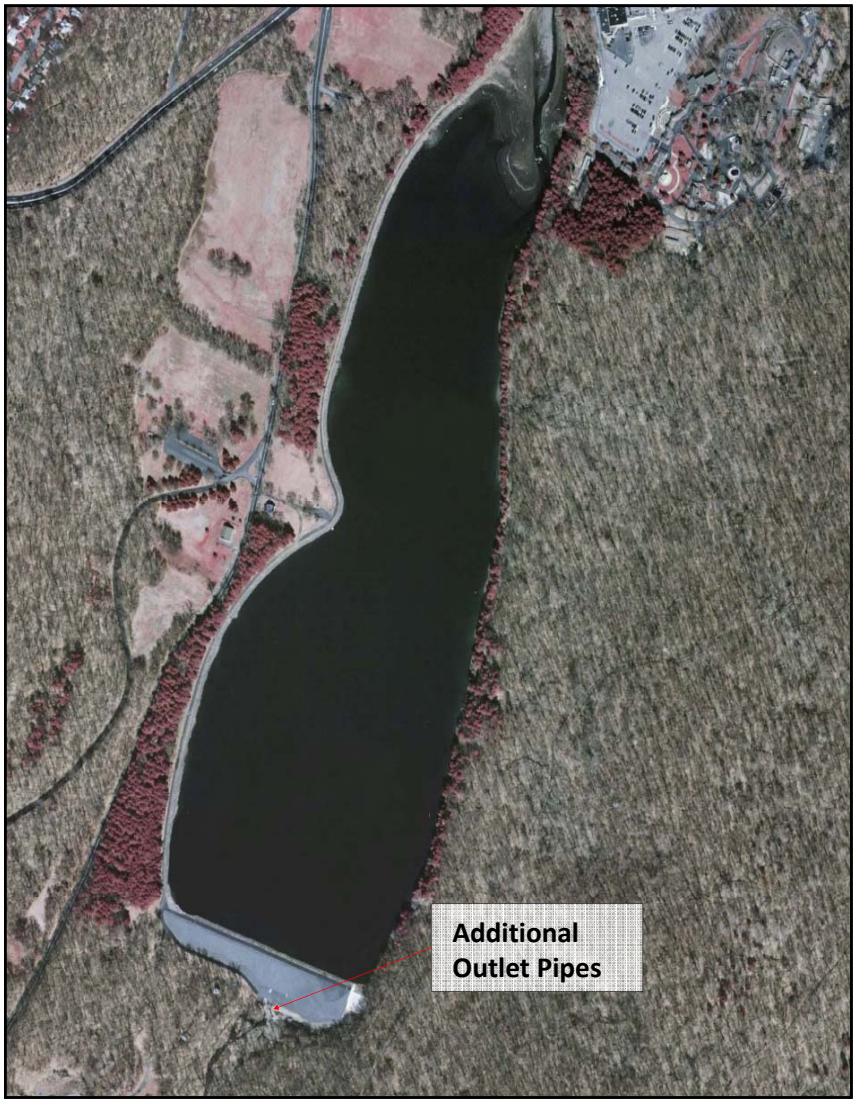
Events	Time
Drawdown Time	2 days
25 yr	30 hrs to re-fill
1 yr	One week to re-fill
Base Flow	Two weeks to re-fill
*Maximum drawdowns and re-fill depth = 15 ft	

US Army Corps of Engineers
New York District

Rahway River (Fluvial) Flood Risk Management Feasibility Study

Alternative #9: Modification to Lenape Park Detention Dam, New Outlets at Orange Reservoir & Channel Improvements

Channel Improvements



Orange Reservoir Outlet Modifications

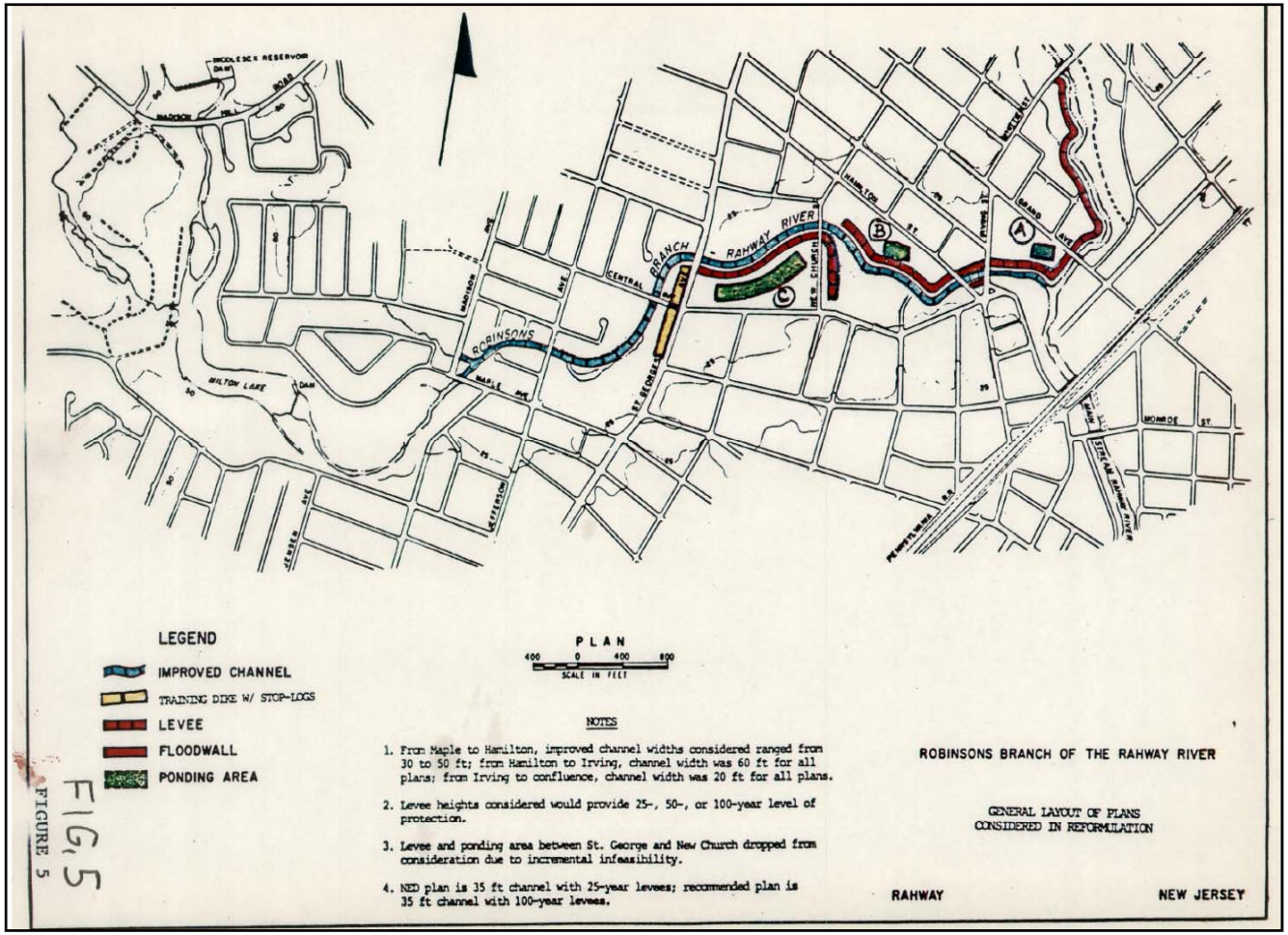
US Army Corps of Engineers
New York District

Rahway River (Fluvial) Flood Risk Management Feasibility Study

Alternative #1: Combination of levees/floodwalls and channel improvements

This plan will reevaluate the 1985 GRR Plan:

- Approximately 6,500 ft of channel improvements, a 35 ft wide trapezoidal earthen channel, from Maple Ave. to the confluence with the Rahway River.
- Approximately 6,600 ft of levees and floodwalls.
- Approximately 750 ft of retaining walls.
- 3 ponding areas



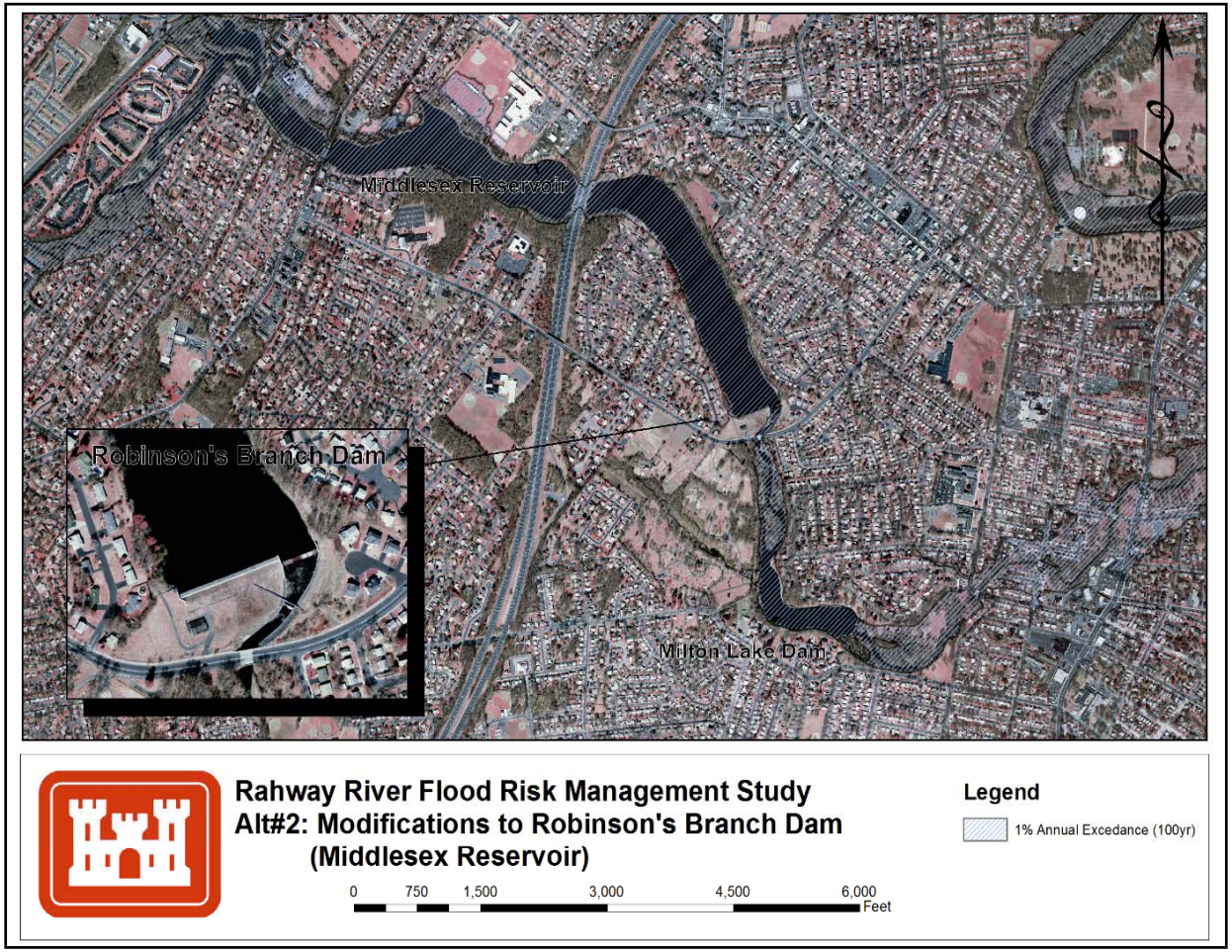
Layout from 1985 GRR Plan

US Army Corps of Engineers
New York District

Rahway River (Fluvial) Flood Risk Management Feasibility Study

Alternative #2: Modification of Robinson's Branch Dam (Middlesex Reservoir)

- This plan will include the analysis of the storage available for flood risk reduction in the Robinson's Branch and possible modification of spillway and outlet.
- This plan will require lowering the reservoir level prior to a storm event.
- This alternative may be analyzed in combination with the alternative #1 and/or alternative #3 (non-structural) of the lower segment of the Rahway River Basin



Modification of Middlesex Reservoir

US Army Corps of Engineers
New York District

Rahway River (Fluvial) Flood Risk Management Feasibility Study

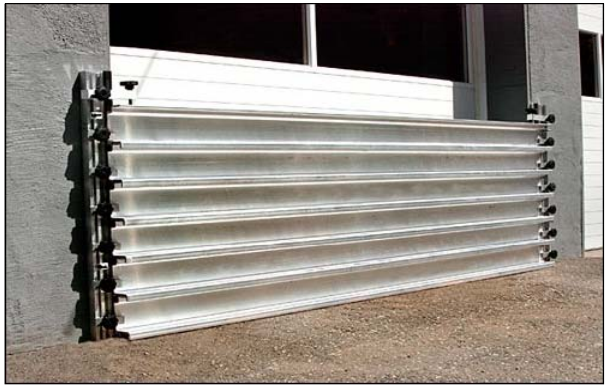
Alternative #3: Non- Structural Measures

The nonstructural analysis will be done for the Robinson's Branch and other areas along the Rahway River for the 10-yr and 100-yr event.

Possible Elements Include:

- Dry Flood-proofing
- Wet Flood-proofing
- Structure Raising
- Ring-walls/Ring levees

Above: Structure Raising



Left: Dry Flood-proofing

Below: Ring levee

US Army Corps of Engineers
New York District

Rahway River Basin Flood Risk Management Feasibility Study

Study Contact and Webpage Information

Project Webpage:

www.nan.usace.army.mil/Rahway

NEPA Scoping Comment Period:
15 June – 15 July 2015

Study Contacts

Rifat Salim
Project Manager
U.S. Army Corps of Engineers
New York District
917-790-8215
Rifat.Salim@usace.army.mil

John Moyle, P.E.
Chief of Dam Safety & Flood Control
NJ Dept of Environmental Protection
609-984-0859
John.Moyle@dep.state.nj.us

Scoping Meeting Comments

Kimberly Rightler
Project Biologist
U.S. Army Corps of Engineers
New York District
CENAN-PL-E
26 Federal Plaza
New York, NY 10278
or by email to:
Kimberly.A.Rightler@usace.army.mil

Appendix D

Rahway River Basin

Flood Risk Management Feasibility Study

NEPA Scoping Comments Received

CC#1

US ARMY ENGINEER DISTRICT, NEW YORK
JACOB K. JAVITS FEDERAL BUILDING
NEW YORK, NY 10278-0090

STATE OF NEW JERSEY DEPARTMENT OF
ENVIRONMENTAL PROTECTION
401 EAST STATE STREET
TRENTON, NJ 08608

RAHWAY RIVER BASIN
FLOOD RISK MANAGEMENT FEASIBILITY STUDY

NEPA Scoping Meeting

15 June 2015

Roy E. Smith Theatre at Union County College
1033 Springfield Ave
Cranford, NJ 07016

7:00 PM – 7:30 PM	**Informational Poster Board Session and Information Exchange**
7:30 PM – 8:00 PM	**US Army Corps of Engineers Formal Presentation**
8:00 PM – 9:00 PM	**Informational Poster Board Session and Information Exchange**

COMMENTS

Name (optional): [redacted] Address [redacted]

Affiliation/Location: _____

How is the best way to communicate with you? [redacted]

Questions/Comments:

The river is a rich source of beauty, recreation, animal, fish + water-fowl life. Trees absorb flooding - we need more. You cannot destroy Hansel's dam without destroying our river. Don't line or cover our river w/concrete. I live on the riveredge because of its beauty, although my home has been flooded three times. I urge you to take measures upstream, with detention basins. Prohibit all further building upstream. Forbid paved parking lots. Put all utilities under-ground. Thank you.

The Scoping Document and additional information can be found at: www.nan.usace.army.mil/Rahway
Comments or issues can also be submitted to Project Manager: Rifat.Salim@usace.army.mil
Comments concerning NEPA Scoping Process/EIS can be submitted to Ms. Kimberly Rightler, Project Biologist: Kimberly.A.Rightler@usace.army.mil

CC#2

US ARMY ENGINEER DISTRICT, NEW YORK
JACOB K. JAVITS FEDERAL BUILDING
NEW YORK, NY 10278-0090

STATE OF NEW JERSEY DEPARTMENT OF
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COMMENTS

Name (optional): BARBARA R Address SPRINGFIELD

Affiliation/Location: SPRINGFIELD FLOOD MITIGATION CMTE, SPRINGFIELD UNION CTY

How is the best way to communicate with you? ADDRESS SFMC Email: W_ESPRINGFIELD@yahoo.COM

Questions/Comments:

DOES THE ANALYSIS TAKEN INTO CONSIDERATION CONTINUED DEVELOPMENT IN THE AREAS IN QUESTION & INCREASE IN IMPERVIOUS SURFACES? ALSO MANY MUNICIPALITIES HAVE MINIMAL STATUES Re: Development or Use of IMPERVIOUS MATERIALS

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Comments concerning NEPA Scoping Process/EIS can be submitted to Ms. Kimberly Rightler, Project Biologist: Kimberly.A.Rightler@usace.army.mil

CC#3

US ARMY ENGINEER DISTRICT, NEW YORK
JACOB K. JAVITS FEDERAL BUILDING
NEW YORK, NY 10278-0090

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8:00 PM – 9:00 PM	**Informational Poster Board Session and Information Exchange**

COMMENTS

Name (optional): [redacted] Addres[redacted]

Affiliation/Location: —

How is the best way to communicate with you? [redacted]

Questions/Comments:

ALTERNATIVE #2.5 – ROBINSON'S BRANCH

– ASH SWAMP RECLAIMATION

HISTORICALLY ASH SWAMP WAS THE WETLAND AREA OF THE ROBINSON'S BRANCH. RETURNING IT TO THE WAY IT WAS 200 YEARS AGO WILL RELIEVE PRESSURE ON THE CLARK RESEVOIR & RAHWAY

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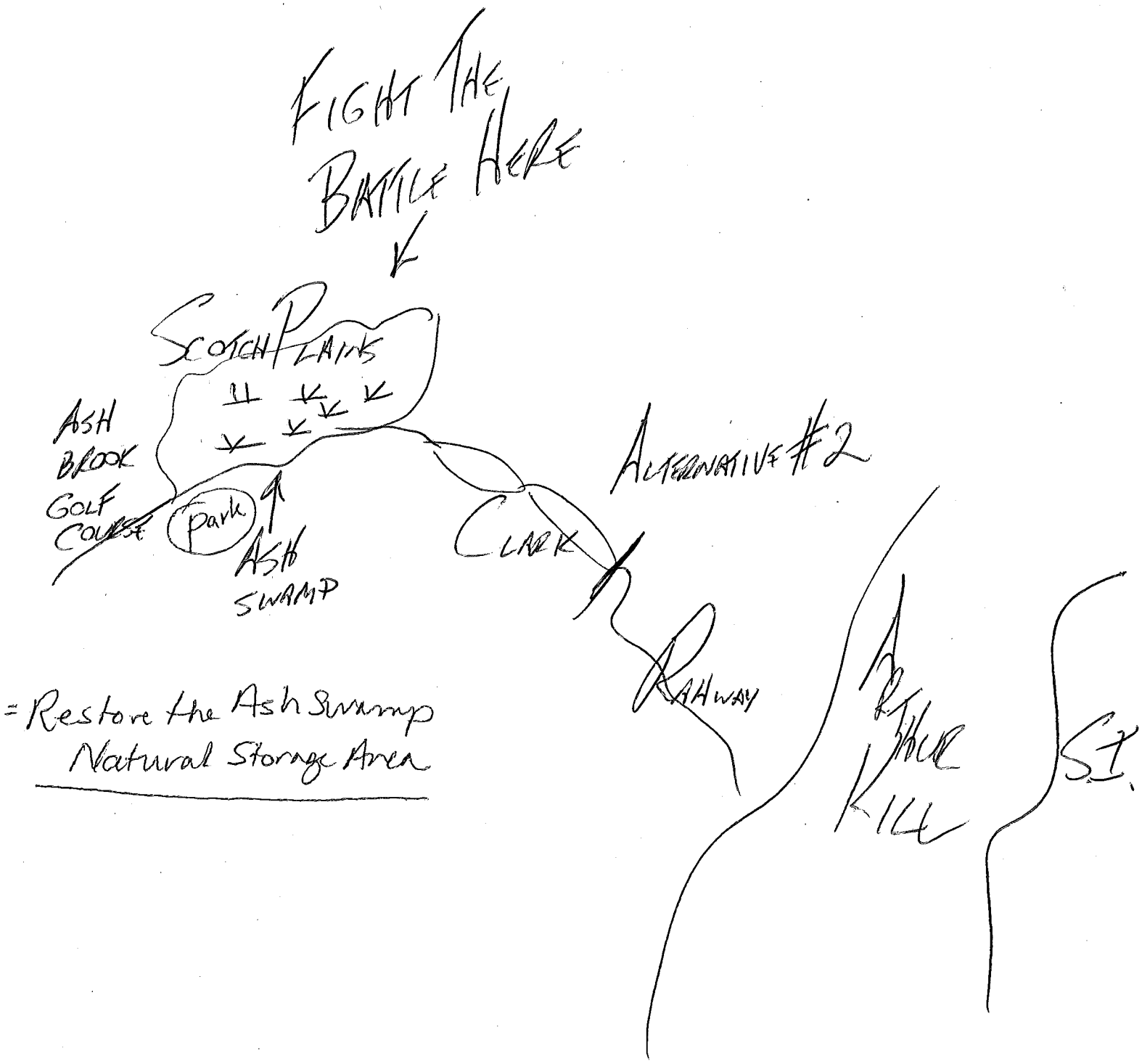
Comments or issues can also be submitted to Project Manager: Rifat.Salim@usace.army.mil
Comments concerning NEPA Scoping Process/EIS can be submitted to Ms. Kimberly Rightler, Project Biologist: Kimberly.A.Rightler@usace.army.mil



= Restore the Ash Swamp Natural Storage Area

CC#4

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COMMENTS

Name (optional) [redacted] Addre[redacted]

Affiliation/Location: Cranford Resident

How is the best way to communicate with you? Emai[redacted]

Questions/Comments: Emai[redacted]

Concerned about Tree loss, loss of Recreation opportunities, Wildlife, impacts and impacts to parkland. Also concerned about cost to Cranford. I understand that Local gov't cost share is 10% - it will be important to determine how much Cranford's cost share will be. Concerned about raising dikes in Lenape Park and impacts to birding, biking. Would like to see Droescher's & Hansel Dam Removed

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CC#5

US ARMY ENGINEER DISTRICT, NEW YORK
JACOB K. JAVITS FEDERAL BUILDING
NEW YORK, NY 10278-0090

STATE OF NEW JERSEY DEPARTMENT OF
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8:00 PM – 9:00 PM	**Informational Poster Board Session and Information Exchange**

COMMENTS

Name (optional): [redacted]

Affiliation/Location: Cranford Environmental Commission

How is the best way to communicate with you?

Questions/Comments: Email: [redacted]

Please explain the details of the channel work in a few of the alternatives.

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CC#6

US ARMY ENGINEER DISTRICT, NEW YORK
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COMMENTS

Name (optional): [redacted] Address [redacted]

Affiliation/Location: _____

How is the best way to communicate with you? _____

Questions/Comments: Email: [redacted]

We understand the need to mitigate the flooding but have concerns with any option that would remove the dams at the North Union Ave Bridge. It would eliminate the ability to canoe. I'd also like more input on how any dredging would impact my property.

The Scoping Document and additional information can be found at: www.nan.usace.army.mil/Rahway
Comments or issues can also be submitted to Project Manager: Rifat.Salim@usace.army.mil
Comments concerning NEPA Scoping Process/EIS can be submitted to Ms. Kimberly Rightler, Project Biologist: Kimberly.A.Rightler@usace.army.mil

CC#7

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COMMENTS

Name (optional): [redacted]

Affiliation/Location: FRIENDS OF LEWAPE PARK

How is the best way to communicate with you? E-MA[redacted]

Questions/Comments: Email: [redacted]

PROGRAM WAS WELL PRESENTED AND INFORMATIVE.
SEE ATTACHED STATEMENT FOR DETAILS OF MY QUESTIONS
AND CONCERNS.

[redacted]

The Scoping Document and additional information can be found at: www.nan.usace.army.mil/Rahway
Comments or issues can also be submitted to Project Manager: Rifat.Salim@usace.army.mil
Comments concerning NEPA Scoping Process/EIS can be submitted to Ms. Kimberly Rightler, Project Biologist: Kimberly.A.Rightler@usace.army.mil

Dear Ms Salim & Righter;

From: [redacted]

The following response concerns the Feasibility Study for the Rahway River Basin (Cranford, NJ) presented on Monday, 15-June-15. In Particular, 3.2.1.4, Cranford Alternative # 8 and 3.1.2.5, Cranford Alternative # 9. Both proposals deal with increasing embankment height and by an additional six (6) feet and raising and widening the existing dam, and adding two (2) 36 inch outlet pipes in the Orange Reservoir.

This proposal places minimum up stream modification for flood control and with maximum water retention in the 385 acres of Lenape Park. Such a modification would be highly detrimental to the park's habitat including plant, animal, tree, bird and other living matter. Several endangered species of birds nest and use the park as a feeding area during migration.

My Questions to you are:

1) How will the increase of water retention affects the park and downstream flow?

2) Affects of higher water levels on vegetation, trees and breeding and nesting animals and birds?

3) The north east section (Springfield Rd. & North 14th St.) where the Black Brook enters the park is unprotected and vulnerable to street and residential flooding. What is the plan to protect this area?

4) Has a endangered and threatened species survey been conducted?

5) With increase height of embankment how much more water will be contained, how far will the back water extend and how long will it take for the water to recede to normal levels?

Lenape Park is highly impacted by urban sprawl, causing many of the park's areas susceptible to invasive plant species and floatable's from surrounding commercial businesses with inadequate water retention systems. During the most recent flood events (Floyd, 1999; Nor-easter, 2007; and Irene, 2011), the existing embankments at their highest level were not breached. The high water mark came within two (2) to three (3) feet of topping over. The back water area of the aforementioned of Springfield Rd. and & N. 14 St. at the outflow of the Black Brook, the high water mark came within twenty-five (25) feet of the road. Adding an additional six (6) feet to the embankments will surely result in significant flooding of surrounding areas once the holding capacity has been breached.

Upstream retention areas need to be explored to contain some of the flow in order to reduce the impact on Lenape Park and the downstream areas of the town of Cranford. Channelizing sections of the Rahway River, which only increases the speed of the water flowing downstream, needs to be contained in retention basins before it reaches Lenape Park. More water in ("Lake Lenape") will have a disastrous affect on the habitat of this "Urban Wilderness" known as Lenape Park. The recreational value of Lenape Park will be highly impacted as will the plants and animals who rely on it for breeding and migration.

Thank you for your consideration in this matter, and I look forward to hearing from you with answers to the question at the beginning of this message.

[redacted]

[redacted]

EC#1

From: [redacted]
To: Salim, Rifat NAN02; Rightler, Kimberly A NAN02; john.moyle@dep.state.nj.us
Subject: [EXTERNAL] Rahway River Basin Flood Risk Management Feasibility Study
Date: Monday, June 15, 2015 11:53:25 PM

Thank you for the informational meeting at Union County College this evening.

I am resident of Cranford, NJ who owns a home that backs up to the Rahway River. I attended this meeting along with several of my neighbors who also own homes that back up to the river. At the conclusion of the meeting we all had similar questions and discussed amongst ourselves the following issues:

It seems that proposal #4 is the best case scenario to mitigate the flooding but it also includes the removal of 2 dams. Our question is if you remove the 2 dams what effect would that have on the height and depth of the river and the recreational canoeing?

Being able to launch a canoe off your dock in the backyard seems to be the only perk to living on the river.

How far would you be able to canoe upstream and downstream if proposal #4 was selected? How will this affect the Cranford Canoe Club rentals to Union County Residents and significant community impact?

If you have any questions or need additional feedback please feel free to contact me.

Respectfully,

[redacted]

EC#2

From: [redacted]
To: Rightler, Kimberly A NAN02
Subject: [EXTERNAL] Rahway River scoping presentation comments
Date: Tuesday, June 16, 2015 4:27:45 PM

Greetings,

Thank you for the opportunity to comment on the Rahway feasibility scoping. Your presentation provided a good overview.

I am very interested in the project and hope that some flood mitigation can soon be achieved. During Hurricane Irene, my Cranford house had floodwaters pour in the back door and basement windows. It was the first time this house had water come in that was not just seepage. The rapidity of the flooding was incredible; we had very little time to save belongings. If a project provided time to prepare and slowed the rapidity of rising waters that would be greatly positive to the community.

In selecting an alternative, it is important to me as a 58 year long homeowning, nature loving, member of this community that:

1. The river continues to provide a healthy environment for plants and animals.

2. The river has a natural appearance and clean water; providing recreation in the form of kayaking and canoing.

3. The area surrounding the river in Lenape and Nomahegan Parks continues to be used recreationally for walking, bicycling, birding, etc.

4. Trees and plants adjacent to the river and preserved or enhanced.

It was difficult for me to get details on the degree of changes to the river presented in the alternatives, so I cannot object to or recommend a specific alternative.

Sincerely,

[redacted]

EC#3

From: [redacted]
To: Rightler, Kimberly A NAN02
Subject: [EXTERNAL] Questions
Date: Tuesday, June 16, 2015 10:15:32 PM

Dear Ms. Rightler,

I am hoping that perhaps you can share with me what kind of changes are proposed for the old middlesex reservoir in Clark.

I live directly next to it and am curious how these proposed changes will impact my home and family.

Thank you for any information you can share with me.

[redacted]

[redacted]

EC#4

From: [redacted]
To: Salim, Rifat NAN02
Subject: [EXTERNAL] Rahway River Flood Risk Management
Date: Tuesday, June 16, 2015 5:41:13 PM

Hi Rifat,

Thank you to you and your team for walking us through the Rahway River Flood mitigation options. While I understand your analysis is not yet complete, It seems like the Orange Reservoir offers the highest flood relief with minimal impact NEPA considers. Having lived in town for the first 20 years of my life (in the flood zone), leaving Cranford for 10 years and recently moved back into the flood zone (on the river) this year I have seen many floods. The estimated 3.5 feet of relief would seem to take the majority of people along the basin out of any real danger or damage.

The river also offers a heart of recreational activity and local tourism. From fishing, canoeing, and ice skating to simply running along the river it is still the Venice of New Jersey and many eyes. I am curious how the removal of the dams would change the water table while at normal levels. Would it still allow for canoeing, ice skating ect? Or would it leave a muddy, rocky bottom while not raining?

Lastly, is there anything local residents such as myself can do in the meantime while the study is complete. I noticed there are natural dams of broken trees and dirt which have built up under key bridges which can simply be removed in the meantime.

Thank you again for your efforts.

[redacted]

EC#5

From: [redacted]
To: Salim, Rifat NAN02
Subject: [EXTERNAL] Rahway River Basin Flood Risk Management Feasibility Study: NEPA Scoping Meeting Comments
Date: Tuesday, June 16, 2015 5:54:53 PM

Dear Ms. Salim:

Thanks to you and your team for the thorough explanation of remaining, viable options for effective flood control for the Rahway River Basin towns that are subject to severe flooding, as we saw with Hurricane Irene a few years ago. I noticed a common element in Alternatives 4, 8 and 9; that is, modification of the Orange Reservoir outlets by installing (2)-36" pipes with manual valves. The concept here being to open the valves and drain the reservoir in a controlled fashion should a storm event be imminent, close the valves to retain potential upstream flood waters within the reservoir during the storm, and then gradually open the valves as necessary to get back to the ideal level. This seems like a relatively simple design and construction effort. I'm not sure the add-on options to this one in the (3) alternatives will be so easy. I also think that the Orange Reservoir part of the alternatives is a significant contributor to much improved flood control for the downstream towns.

Based on the above, my recommendation is to break the Orange Reservoir effort away from its add-on options and move forward on this first, giving it a high priority. It could be done relatively quickly resulting in a better BCR since benefits would be realized much sooner than if it was tied down to the other alternatives.

Please give this recommendation the consideration it deserves, and I look forward to hearing from you on this matter.

Regards,

[redacted]

EC#6

From: [redacted]
To: Salim, Rifat NAN02
Subject: [EXTERNAL] Rahway River Basin NEPA scoping meeting.
Date: Tuesday, June 16, 2015 3:22:24 PM

I attended last nights meeting, and as requested I am submitting my comments for your consideration.

I live in Rahway, nearby the Robinon's Branch. Our area floods, and I am concerned that some of the alternates being considered for Cranford could worsen our situation in Rahway. Raising the heights of dikes and dredging the river in Cranford will increase the volume of water moving downstream to Rahway. This increased volume could exacerbate flooding along the Robinson Branch, as both branches flow into the same river in the downtown area. I assume this will be addressed in your analysis and ways to mitigate the flooding situation in Rahway will be part of any plan for Cranford.

[redacted]

EC#7

From: [redacted]
To: Rightler, Kimberly A NAN02
Subject: [EXTERNAL] Rahway River Basin NEPA Scoping Comments
Date: Saturday, June 20, 2015 7:20:50 PM

Hi Kimberly,please find below my comments on the Rahway River Basin Flood Risk Management Feasibility Study.

Lenape Park Levees: Aside from the visual impact of raising the levees 6 ft., the requirement that 50 ft. in either direction from the toe of the embankment must be kept clear of trees and shrubs, will have an enormous impact visually and environmentally. It would change the character of the park dramatically and would require maintenance by someone to ensure that no growth occurs. Lenape Park is heavily wooded in the Kenilworth section, which has a very popular biking and walking trail as does the Cranford section of the park. Trees which aid in flood protection as well as providing wildlife habitat and addressing climate change should be encouraged where possible rather than targeted for removal. I do not believe that the BCR correctly takes into account the compensation that will be required for tree removal.

Environmental Justice: It seems unfair that while only a small minority of Cranford residents are affected by flooding, the majority of residents who do not flood and did not purchase a home in a documented flood zone, will be affected by this project through having to pay for it while receiving no benefit and also having public resources like parks negatively impacted. Not sure of the LMI population in Cranford but its likely that they will be affected both in a positive and negative manner. Cranford has created much of its flooding problem by historically allowing development in the flood zone and continuing to do so; two developments were approved on the river and flooded during Irene. As a result of these approvals, more people are now living in the flood zone as well as more businesses. This makes no sense to me. Cranford also refuses opportunities to purchase homes for sale in the flood zone. Two homes were for sale located next to the Canoe Club on the river, and the town refused to purchase them and now people are living in both homes.

Channel Improvements: Depending on which alternative is selected, the impacts to the river channel and appearance of the river may be dramatic and have a substantial environmental impact. Tree removal could be significant as well. And if easements are required from property owners, given Cranford's inability to get easements from a few property owners for another project on Orchard Brook, makes me question how this will be done for a much larger number.

Wildlife: The project area contains many species of wildlife, some of them on the NJ T&E species list, that will likely be impacted from this project. What type of mitigation/compensation will be done for this and who is responsible for paying for it? The same issue goes for parkland impacts and lost recreation opportunities as a result of the project, the parkland impacts are many and who will pay for compensation for taking/using these parklands?

Bridges/Dams: I do not understand how removing and replacing the North Union Avenue and North Avenue bridges can be done in a cost effective manner. I strongly support the removal of the Hansel Dam and the Droescher's Mill Dam as they serve no purpose and their removal would allow the Rahway River to return to a more natural flow and state and could serve as ecological mitigation. I realize canoeing on the river is a Cranford tradition but then so is flooding, so something has got to give in order to have some level of better protection.

Upstream Development: Development upstream will continue which means even larger amounts of stormwater will be generated and drain into Cranford. Does the project consider any of this or the fact that Cranford will continue to build in the flood zone?

Orange Reservoir Use: I support this project element, same for the Clark Reservoir. Instead of negatively impacting parks, using existing features like the reservoirs should be done. I realize that Lenape Park was a Corps project in the 70s or so and if additional storage could be created without the excessive tree removal proposed now, the impact may not be so large.

Thanks for the opportunity to submit comments.

EC#8

From: Salim, Rifat NAN02
To: [redacted]
Cc: [redacted]; Rightler, Kimberly A NAN02
Subject: RE: Rahway River Basin Flood Risk Management Feasibility Study (from web site) (UNCLASSIFIED)
Date: Wednesday, July 01, 2015 5:40:12 PM

Classification: UNCLASSIFIED
Caveats: NONE

Thank you for your e-mail. We will review your comments/concerns.

Rifat

-----Original Message-----
From: [redacted]
Sent: Wednesday, July 01, 2015 10:48 AM
To: Salim, Rifat NAN02
Cc: [redacted]
Subject: [EXTERNAL] Rahway River Basin Flood Risk Management Feasibility Study (from web site)

Hello Ms. Salim,

I reside at [redacted] in Cranford and the Rahway river runs directly through my backyard. One of the reasons we bought our house 10 years ago and wanted to live on the river in Cranford is because of its uniqueness and sheer beauty. I believe there is one remaining Canoe Club in town whereas Canoe Clubs used to thrive in years past. My family and neighbors frequent the many different uses that the river offers including, canoeing, fishing, picnicking, etc.

If the damn were to go away, we would be stuck with a shallow creek per say, that would be extremely disappointing, and would lessen the quality of life for everyone in town. There have to be other alternatives that are being considered, that would not take away from the fun and beauty of having a river running through town.

The current system of the town lowering the damn when heavy rains are expected has proven to work nicely. Hurricane Irene was the only catastrophe that we've observed where lowering the damn did not completely save everyone from damage (but it helped). Please re think all of the options and do everything you can to help keep that damn in place.

I am available to discuss my feelings further.

[redacted]

Classification: UNCLASSIFIED
Caveats: NONE

EC#9

From: [redacted]
To: Salim, Rifat NAN02
Subject: [EXTERNAL] Fwd: Rahway River Basin NEPA Scoping Meeting feedback
Date: Tuesday, June 23, 2015 10:01:03 AM

Thank you for hosting the June 15, 2015, Rahway River Flood Risk Management NEPA scoping meeting. I am a lifelong Cranford resident (4th generation in Cranford) and currently live on the Rahway River at 12 Hampton Street in Cranford. After attending the meeting, I have several comments:

1) Mitigating flood risk is absolute priority and I'm willing to make sacrifices – including losing some footage on my property if needed to channelized the river behind my home.

2) Recreation is important – will the proposal to remove the dams threaten recreation? The 99.9% of the time that the river is not in a flood state, the river is an important part of the town's identity, scenic beauty and offers a lot of recreation – fishing, canoeing, kayaking, ice skating, etc. Some of the proposals involve removing 2 dams on the river – I'm concerned without the dams, the town will lose the ability to regulate the water level on the river, leaving us at the mercy of nature. We are used to the dams leaving us with a few feet of water year round so that we may enjoy the river. With no dams I worry in a dry period we would be left with a dry/muddy river bed that does not support recreation, is unsightly, and would harm the wildlife that lives in and near the river.

3) The banks on the river have not been maintained, are eroding, and causing trees to fall into the water. Based on this fact alone, channelizing and stabilizing the river banks is greatly supported.

4) If you need 5', 10', or 15' of my property to channelize and reduce flooding, take it. No one wants to lose property in their backyard, but the upside to home values by dramatically reducing flood risk is worth it.

5) Do whatever you want to do in Lenape Park.

6) I suspect any damage to historic preservation or the environment caused by the mitigation plan will pale in comparison to the damage caused by a flood event (destroying homes, releasing oil and chemicals into the river, etc).

[redacted]

EC#10

From: [redacted]
To: Rightler, Kimberly A NAN02
Cc: [redacted]
Subject: [EXTERNAL] Rahway River Basis Flood Risk Study Comments
Date: Saturday, July 11, 2015 12:09:56 PM
Attachments: EC - ArmyCorpFloodControl.doc

Dear Ms. Rightler:

Please find in the attached document the scoping comments of the Cranford Township Environmental Commission for the Rahway River Basin Flood Risk Management Study.

Sincerely,

Nelson Dittmar
Chair
Cranford Environmental Commission

Dear US Army Corps of Engineers:

Re: National Environmental Policy Act Scoping Comment from the Cranford Environmental Commission

As an Environmental Commission, it is our duty to comment on environmental impacts of the US Army Corps of Engineers proposed solution to the long-term flooding problems of Cranford. We also must keep in mind that land development in the flood zone and flood control should be on our radar as they are inexorably tied to the environment and both have wildlife and human impacts to our town. For example, Hurricane Irene affected twenty-five percent of the homes in Cranford with tens of thousands of tons of debris piled in front of people's homes in Cranford. Much of the debris was laden with chemicals that could be introduced back into the environment and have negative impacts on wildlife and people.

The US Army Corps solutions came after many years of thought and research. We understand no solution will resolve all impacts but an acceptable plan will be an important step.

As an Environmental Commission, we must not only be sensitive to the environment but also keep in mind the truly desperate situation the township finds itself in as a result of the serious flooding issues faced. That said, we must also try to be flexible in our response in regards to environmental impacts realizing that the flooding problem is a perilous situation that may call for very serious measures and "out of box solutions."

The National Environmental Policy Act (NEPA) requires all environmental impacts of the Rahway River Flood Mitigation Plan be evaluated. No action, however, on the proposed alternatives is not an option. Cranford alone suffered upwards of $50 million of damages and extreme weather patterns suggest we need to come to a solution that can be implemented sooner rather than later.

Below we catalogue the known environmental factors, as we understand them in Cranford and Lenape Park. The comments relate to Alternative 4, 8 and 9. Needless to say we support the plan that can significantly minimize the environmental impacts to the greatest degree.

Channel Improvements in Cranford and Lenape Park

The proposed channel work in Alternative 4, relating to 15,500 feet of river channel in Cranford, would have significant impact to the river's ecosystem,

especially wildlife habitat and wildlife in and along river. Tree loss resulting from Alternatives 4 and to a lesser extent alternative 9 would largely affect the character of the river and have substantial visual impacts. Mitigation measures will be required. As we understand it, Alternative 9 would contain the channel work in the river, be of a lesser length and width and not significantly affect the banks. Any new, levees, dikes, floodwalls, or riprap will remove the natural appearance of the river in those areas and have visual and wildlife impacts.

The deepening of the river as part of the channel work which will provide additional flow capacity for flood control will require the removal of significant amounts of sentiment that will need to be dewatered requiring the use of various properties around Cranford for the dewatering process. In addition, these sediments will require testing for contamination. The channel work may dramatically alter the appearance of the Rahway River in Cranford and mitigation measures must be required.

Wildlife

- We understand that seven species listed as NJ Threatened and Endangered Species are found in the project area of Alternatives 4,8 and 9. Notably, Red-shouldered hawk is documented as breeding in Lenape Park and American bald eagle, Bobolink, American kestrel, Red-headed woodpecker, Black-crowned night heron, and Osprey have been recorded regularly in Lenape Park by participants in New Jersey Audubon's World Series of Birding and Christmas Bird Counts. Birders in non-event activities have also seen them.

- Further, we four species of Special Concern; Cooper's hawk, Sharp-shinned hawk, Great blue heron, and Nighthawk have been regularly seen in Lenape, Nomahegan, and along the Rahway River corridor in Cranford. These species have been recorded in both the World Series of Birding and Christmas Counts.

- Many species of birds have been recorded in the project-area parklands, particularly warblers and other songbirds that utilize these parklands on both a migratory and resident basis.

- In addition the birds, given the diversity of habitats in the project area, upland woodlands, floodplain, field, river, wetlands, streams, and ponds, there is tremendous diversity of wildlife in the project area that will be impacted by the project. Red fox, coyote, otter, and mink have been seen in Lenape Park along with other mammal species.

- Reptiles and amphibians for example may be severely impacted by the project's channel work.
- The Rahway River is stocked with trout by the New Jersey Division of Fish and Wildlife and fishing is a popular recreational activity in Lenape Park and along the Rahway River in Cranford. The NJDEP sampled the Rahway River in Lenape Park in the immediate area above the dam in 2000, 2005, and 2010 and documented the presence of 21 fish species. Brook trout were found in Nomahegan Brook during a Bio Blitz in 2004 in Lenape Park.

Corps Engineering Technical Letter (ELT) 1110-583

The Cranford Environmental Commission is very concerned about the requirements of this ELT, which states that a minimum of 50 feet from the toe of a dam/embankment/levees must remain clear of any trees or shrubs on either side. While we recognize the need to maintain the integrity of the flood-control structures, maintaining a total of a 100-foot clear cut in parkland is extreme and will result in tremendous environmental impacts to public parkland, wildlife, visuals, and potential property values. Lenape Park has been a detention facility for 40 years and has functioned without the level of clearance initially proposed by Corps policy on the new dam. The existing dam integrity at Lenape has been well maintained by Union County given its importance to existing flood mitigation.

Adherence to the 50-foot US Army Corps policy would be seriously adverse to the benefit-cost ratio and probably would reduce dramatically the amount of flood mitigation that could be done economically with mitigation.

Dams

We support after further evaluation, the removal of the Hansel Dam, if warranted, and Droescher's Mill Dam, since they serve no purpose related to flood control and have negative environmental impact on the Rahway River and their removal could return the Rahway River to a more natural ecological condition and flow. However, we do need to evaluate further the impact of full removal of Hansel Dam since we understand its removal could compromise the nonstorm event water levels needed for proper use of the 100 year-old Cranford Canoe Club and water levels along the river loop in Cranford. Visual impact resulting from the removal of the Hansel Dam could be a significant impact to the private properties along the

Cranford river loop. The lower water levels year-round along with channel deepening would result in a stream rather than river flow.

The Commission is unclear as to the historic significance of the present dam at Droeschers Mill.

Parkland Impacts

There are several parks in Cranford that could be impacted by the proposed alternatives:

- Lenape Park, Nomahegan Park, McConnell Park, Sperry Park, and Rahway River Parkway, which are Union County parks.
- Hampton Park, Hanson Park and Cranford Canoe Club are Cranford Township parks.

We understand that these parks are encumbered by the NJDEP's Green Acres Program and should these parks be impacted by the flood control program they may be subject to compensation in the form of land replacement at a minimum ratio of 2 to 1. The US Army Corps of Engineers is required to incorporate estimates of land costs in the calculation of the BCR ratio. Depending on the NJDEP decision and extent of impacts the cost of this may be more or less accounted for in the existing estimates.

Lenape Park is also encumbered by the National Park Service through the Land and Water Conservation Fund monies to Union County. Compensation may also be required for work done in Lenape Park.

Historic/Cultural

Cranford has significant interest in the protection of its history and has been a strong protector of its past. The Rahway River has been a center point to that history with Crane's Ford, the historic Droescher's Mill, the over 100 year-old Cranford Canoe Club, the North Cranford Historic District, and the historic Crane Phillips House. With any plan that is implemented, Cranford will want to ensure that history is preserved and maintained.

Recreation

The Rahway River and area parklands are major public recreational resources for both Cranford and Union County residents. Parks are used for walking, fishing, canoeing, kayaking, birding, photography, and running. The loss of some public outdoor recreation opportunities can be expected during construction of the project and should be considered in compensation and mitigation.

Nonstructural

While the US Army Corps of Engineers Rahway River Flood Mitigation alternatives evaluated buyouts and elevations and determined that those alternatives were not economically justified, the Cranford Environmental Commission still believes a concerted effort should be made by the Corps, State, Union County, and Cranford Township to buyout properties in the flood zone and restrict development in the flood zone.

For example, the last property on Park Drive across from Nomahegan Park should be purchased immediately. Cranford should now condemn the property and have it acquired by the state Green Acres program. Cranford's Planning Board rejected an application of a developer relating to the property, which was upheld. Union County and Cranford then attempted to purchase the property but the bank failed to act since it was a short sale. The property acquisition could expand Nomahegan Park adding to floodway.

Cranford has undertaken numerous efforts to restrict development including strong opposition to the 360-unit Birchwood development. The Environmental Commission built a rain garden in front of municipal building. In a review of the Township's planning rules, Cranford has the most restrictive ordinance in Union County. Both Planning and Zoning Board members have gone to training sessions on Stormwater mitigation. We believe more efforts are required to ensure that the wisdom of the US Army Corps plan is justified and not compromised. Cranford still has on its agenda reducing impervious surfaces by 10% on municipal properties; training new Planning and Zoning Board members on Stormwater management; and further refinement of the Township's Zoning Code to advocate other Stormwater management techniques.

Mitigation/Compensation

We recommend, at every opportunity, mitigation to lessen environmental and visual impacts of the project be taken. We do understand that this is a flood control plan and Cranford has a serious problem that has to be addressed. As the Cranford Environmental Commission, it is our role to put on the record the potential impacts. While we understand the mitigation and compensation elements need to be determined as the project is designed and will be addressed in the Environmental Impact Statement, we would like to emphasize that these elements are critical parts of the project.

We also believe that local input is critical to the project's success. In that regard, we urge a dialogue on what mitigation measures could be implemented to ensure that the flood-control benefit is realized in a way that, while changing some aspects of the landscape, will remain recognizable to future generations of Cranford residents. In turn, they will recognize that we took care in implementing a critical response to a serious problem.

There are numerous mitigation measures that we would like to discuss as to their eligibility to be considered. Following is an initial listing and is not inclusive but a start. The Cranford Environmental Commission would like to participate in local input on mitigation measures to ensure they fit Cranford.

- Hire a tree forester/environmental consultant to develop a tree-restoration plan for the loop area and other areas where trees are removed. Bank deterioration and trees falling into river are an existing condition and a plan should be developed for post-channel work with local input since there are many private properties potentially affected.
- Minimize bank work.
- As part of land compensation, rezone the twenty acres of the Cranford Conservation Center property and the four acres of Solomon Schlecter park and placement on open space inventory to restrict any future development (past proposals included a 150 townhouse development and single family developments).
- Acquisition by the State, County, and Township of the private 16-acre Birchwood site to develop a natural detention basin including a ball field. The housing obligation should be transferred to other projects in Cranford. Link it to the Conservation Center nature area. This property drains into the

river several blocks away. If owned by township, removal of blacktop would help the Township to get to the 10% less impervious surface pledge.

- Acquire the 286 North Avenue property adjacent to river and the Park Drive property to add to Union County park system and use as mitigation compensation.
- Develop a downtown river walk that links South Avenue under railroad bridge by First Aid Squad to North Avenue. This would be part of the removal of the downtown choke point project and could be coordinated with the PSEG project at its property on South Avenue.
- Restore the Hanson Park banks, which are seriously eroding.
- Protect the historic Canoe Club operation by ensuring adequate water levels.
- Consider water quality improvements as part of mitigation including installation of litter traps with maintenance responsibility assigned to local governments

These are initial mitigation measures mainly related to Cranford impacts. We would welcome the US Army Corps of Engineers request to refine these and other potential measures further.

Thank you for the opportunity to make comment on this, which is one of the most important, economic and environmental issues facing Cranford for many years to come.

EC#11

July 15, 2015

Via E-Mail - kimberly.a.rightler@usace.army.mil
Kimberly Rightler, Project Biologist/NEPA Coordinator
U.S. Army Corps of Engineers, New York Division
ATTN.: CENAN-PL-E
26 Federal Plaza
New York, NY 10279-0090

Re: Rahway River Basin Flood Risk Management Feasibility Study

Ms. Rightler:

We are writing to comment on the Rahway River Basin Flood Risk Management Feasibility Study relating to the Township of Cranford, New Jersey and specifically its residents, such as us, whose property borders the River.

The Rahway River plays an important role in the Township and it was one of the reasons that drew us to Cranford and, in particular, our home.

The River's use dates back to pre-Colonial time, when the Indians used the path of the River to access the interior of the State. During the Revolutionary Period, the River was used the to power to two mills, a sawmill and a grist mill, built by John Crane. The grist mill provided grain for General Washington's army.

In the late 1800's, homes were built along the River and soon hundreds flocked to its banks for the annual river carnival and the Township became known as the Venice of New Jersey.

Today the river maintains its charm as it meanders through the Township. Canoes and kayaks, both rented in the local canoe club and owned by residents, are a common sights in the Spring, Summer, and Fall, and ice skaters can be seen in the winter. The River also serves for rubber duck races, walks along its banks, and occasional fishing.

Of course, the River has caused flooding issues which is a concern to every citizen of the Township. However, the homes along Holly Street, which were built in the late 19th century, are not in a flood zone. Yet, some of the Corps' proposed plans significantly affects those residents

that are least affected by a 50 or 100 year flood or even a heavy rain. Specifically, one of the Alternatives would take property from these residents to widen the river in the "curve." This would be a costly undertaking, given that these home are some of the most valuable properties in the Township. It would also result in the removal of numerous trees along the riverbank, many which are decades old and equally tall, and which cannot be easily replaced by saplings.

Another Alternative would be to deepen the channel in the area. This will raise the banks which will affect property values. Indeed, the water in the River will no longer be visible to the residents on Holly Street unless standing adjacent to it and will instead be replaced by a view of an overgrown and steep bank. In addition, a concern is that this Alternative would result in portions of the river turning into a spillway for the planned retention basins and thereby affecting the recreational use of the River.

During a question and answer meeting last month, we were advised that the Corp has never attempted such a river modification in a residential setting. Our concern is that the Corp will approve one of the measures that will affect property value and the use of the River but will not guarantee any effective flood mitigation. Moreover, to the extent the River channel is deepened, the proposals do not address future maintenance such as continued dredging and removal of fallen/dead trees.

Based on the above, it is our request that the Corp work in conjunction with the Township and its residents, especially those most affected by the proposed work, to adopt a flood mitigation plan that maintains the recreational and economical benefit of the river, does not decrease the value or aesthetics of the adjacent properties, and places the burden of mitigation on all New Jersey residents affected by Rahway River flooding.

Sincerely,

[redacted]

[redacted]

LC#1

TOWNSHIP OF CRANFORD

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www.cranford.com/township

OFFICE OF THE MAYOR

COMMENTS TO US ARMY CORPS OF ENGINEERS AND NJ DEP ON NEPA AND THE RAHWAY RIVER FLOOD MITIGATION PLAN BY MAYOR ANDIS KALNINS

On behalf of the Township of Cranford, I want to thank you for your efforts to date regarding flood mitigation in Cranford. As you know, our community suffered significant damages from Irene, where we had over 1,600 homes damaged by the flood waters and we have had Severe Repetitive Damage from many prior storms. Flood protection is one of our highest priorities.

I can't impress on you enough the importance of moving through the federal process to get Congressional authorization to begin construction of this flood mitigation project. We are close to a deciding on a plan that will mitigate many of our flooding concerns and which we believe has consensus of the seven communities from Millburn to Rahway. As the Township of Cranford, and through the Mayor's Council on Rahway River Flood Control, we have worked tirelessly and in cooperation with your efforts to bring this plan to reality. Recently, the US Congress demonstrated its commitment by funding the study in FY 2015 and it looks like in the next fiscal year sufficient funds are available to complete the study that has been in the works for over a decade, which is much too long.

Every time we get a serious rain, there are concerns about the impact, and that is no way to live. We need your help to complete this study as quickly and as efficiently as possible.

We take environmental concerns very seriously in Cranford, and understand that we need to be strong stewards of our environment. NEPA requires all environmental matters be addressed and we support that requirement.

I don't have any specific environmental concerns with the flood mitigation plan. I believe, while plan may have some minor impacts, those impacts will only be temporary during construction. I do believe the aesthetic, commercial and recreational identity of the river does need to be preserved in the non-flood concerned times and I appreciate the work the Corps has done already to recognize the importance of the river to the community. We are committed to work towards mitigation measures and look to start that process immediately so that there is no delay in getting the final flood project in place.

As a member of the Mayors Council on Rahway River Watershed Flood Control we have worked regionally to try to bring meaningful flood control to the affected communities. I am certain most of the other towns believe that we should proceed with as much diligence and care as we can, but also with a sense of urgency so that we can have the work completed before the next storm.

So on behalf of Cranford, we strongly support finalizing the plans before us today and pledge our continued cooperation.

Sincerely,

Andis Kalnins
Mayor

LC#2

Army Corps, NEPA & NJDEP Meeting Rahway River Basin
Flood Risk Feasibility Study

15-June-15

Lenape Park, located on the west branch of the Rahway River, is part of Union County's Greenway Park system purchased in the 1920's to create recreational opportunities, protect wildlife habitat, and for flood control. It is surrounded by five (5) communities: Westfield, Springfield, Cranford, Kenilworth, and Union.

Over the years, the 400 acre, mostly wetland forest acts as a natural water retention basin, has been highly impacted by suburban sprawl from both up stream and local development. In the 1970's a system of dikes and river channeling has drastically impacted the habitat's plant and wildlife populations with invasive plant species and runoff from surrounding development.

It should be the goal to protect the entire greenway from up stream runoff, the area surrounding the park and downstream environments. To consider Lenape Park as one huge retention basin without controlling upstream conditions would be a grave mistake. Increasing the height of the existing dikes from the 1970's project will only increase downstream flooding once they are breached. A more comprehensive plan is needed to control the water before it reaches Lenape Park.

The Friends of Lenape Park have been a cooperative organization with the Union County Adopt a Park program since the early 1990's. Its efforts have included habitat studies during two (2) County sponsored BioBlitz (2005 and 2012) and have identified almost 200 species of birds that breed or use the park as a stop over during migration. Eleven (11) of New Jersey's 29 species of birds either nest or roost in the park. Green Heron, Red-shouldered Hawk, Black-crowned Nighthawk are nesters while Bald Eagle, Osprey, Cooper's Hawk and Pied-billed Grebe winter over.

The importance of maintaining Lenape Park as a natural wildlife habitat can also be highlighted by its historical importance. During the 1930's, a mastodon bone was discovered in the interior of the park and is now on display at Union County's Trailside Science Center. The history of the park also includes its roll during the WW 1 as a storage area, the coming of the Rahway Valley Railroad and finally becoming a greenway park developed by the Olmsted Landscape firm.

While the priority of this flood control project is to mediate the distribution and management of flood water, once cannot over look the protection of the habitat for its wildlife, historical value and recreational use. Digging a huge hole in the ground, thinking it will solve flooding, is not a wise option.

LC#3

COUNTY OF UNION

OFFICE OF BRUCE H. BERGEN
Freeholder Vice Chairman

July 15, 2015

VIA EMAIL ONLY
Kimberly A. Rightler, Project Biologist
U.S. Army Corps of Engineers
New York District (CENAN-PL-EA)
26 Federal Plaza
New York NY 10278

Re: NEPA Scoping Meeting
Rahway River Basin, New Jersey
Flood Risk Management Feasibility Study

Dear Ms. Rightler;

The Union County Board of Chosen Freeholders is committed to the USACE study of Rahway River flooding, from Essex County's Orange Reservoir, through the municipalities of Union County, from Springfield to Rahway. We intend to continue to participate actively in the process to ensure the most cost-effective plan, with maximum flood remediation, is found, funded, and constructed. Further, to the extent impact upon the existing environmental conditions can be minimized and mitigated, we would support those efforts as well. Obviously, the speed in which this project is approved and funded is extremely important, as no one can predict when the next catastrophic rain event might take place, once again causing millions of dollars in physical damage to the residential and commercial properties along the river, as well as to the overall economic health of Union County.

Among the currently pending plans for the upper river (Cranford), we have certain concerns. Specifically, the potential requirement for a 50 foot "clear zone" on each side of the heightened levee in Lenape Park. The County has been responsible for and has in fact maintained the currently-existing levee for more than 4 decades, without such a clear zone, and will continue to do so in the future as concerns the increased height. We believe that to require a 50 foot buffer on each side would not only drastically increase the negative, environmental impact of the project but may also affect the cost of the project, thereby diminishing the possible mitigation effect. We suggest

COUNTY OF UNION

OFFICE OF BRUCE H. BERGEN
Freeholder Vice Chairman

that the use of the much larger buffer would have no positive effect on the project but would certainly increase the negative effects.

Further, while realizing there will be a need for certain changes to the river within county parks and along private property, to the extent possible, we would support minimizing the disruption of the current conditions of the Rahway River while still allowing for maximum flood mitigation. We do not support the full removal of the Hansel Dam. Full removal of this dam would compromise the non-storm event water levels needed for proper use of the 100-year-old Cranford Canoe Club, which is an important part of local heritage.

As concerns the lower river (Robinson's Branch), these plans are at this time less specific. Nonetheless, the County is supportive of the proposed plans there as well, with the same general concerns as to minimizing the effect upon the current conditions, while maximizing the overall remediation of the potential flooding.

Thank you for your consideration in this regard.

Very Truly Yours,

Bruce H. Bergen
Vice Chairman

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