

Passaic River Main Stem and Tributaries, New Jersey, Flood Risk Management Project

New York District

Wallington Civic Center

29 October 2015, 7pm

Public Information Session



US Army Corps of Engineers
BUILDING STRONG



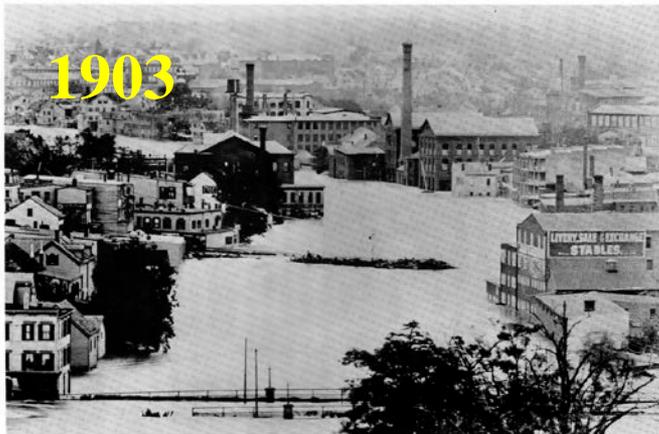
New Jersey Department of
Environmental Protection

Purpose of Meeting

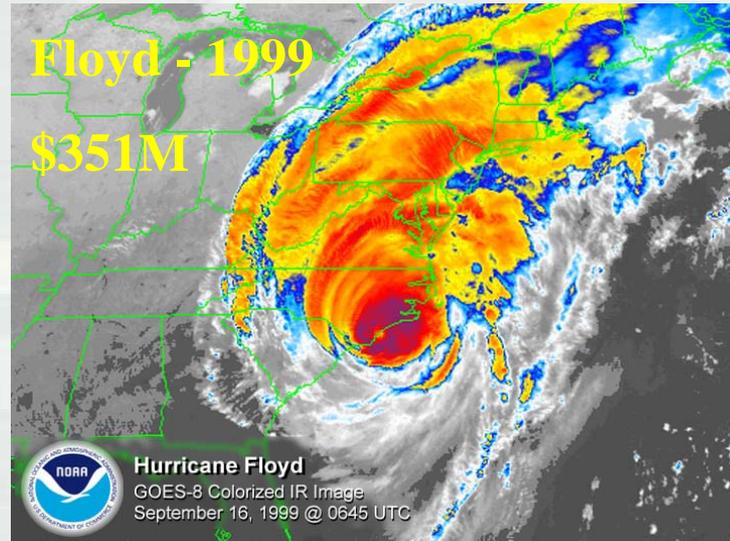
- Flooding History & Facts
- Study Request
- Study Goals & Schedule
- Questions & Answers



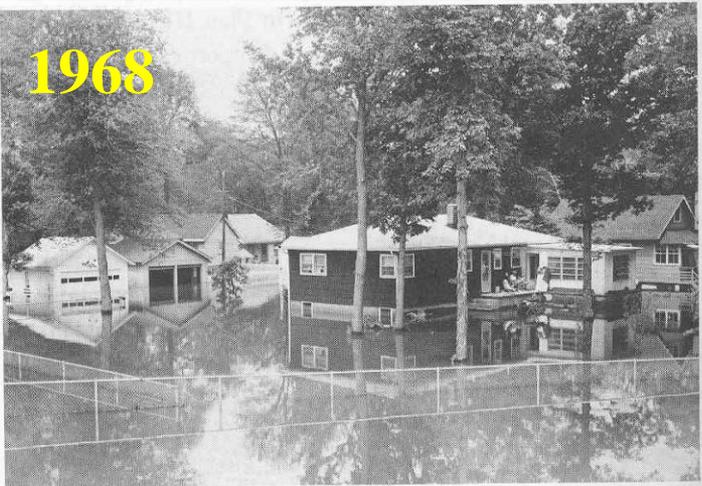
Passaic River Basin – Flooding History



Passaic River flood of 1903 in Paterson, showing bridges awash. Photo by G. K. Livitsanos, Passaic County Historical Collections



Hurricane Floyd
GOES-8 Colorized IR Image
September 16, 1999 @ 0645 UTC



Flooded homes in Fairfield in May, 1968. Photo by Gene Collard, courtesy of the Caldwell Progress



Passaic River Basin – Flooding History



April 2007
~\$780M



March 2011
~\$700M



March 2010
~\$772M



Irene 2011
>\$1B

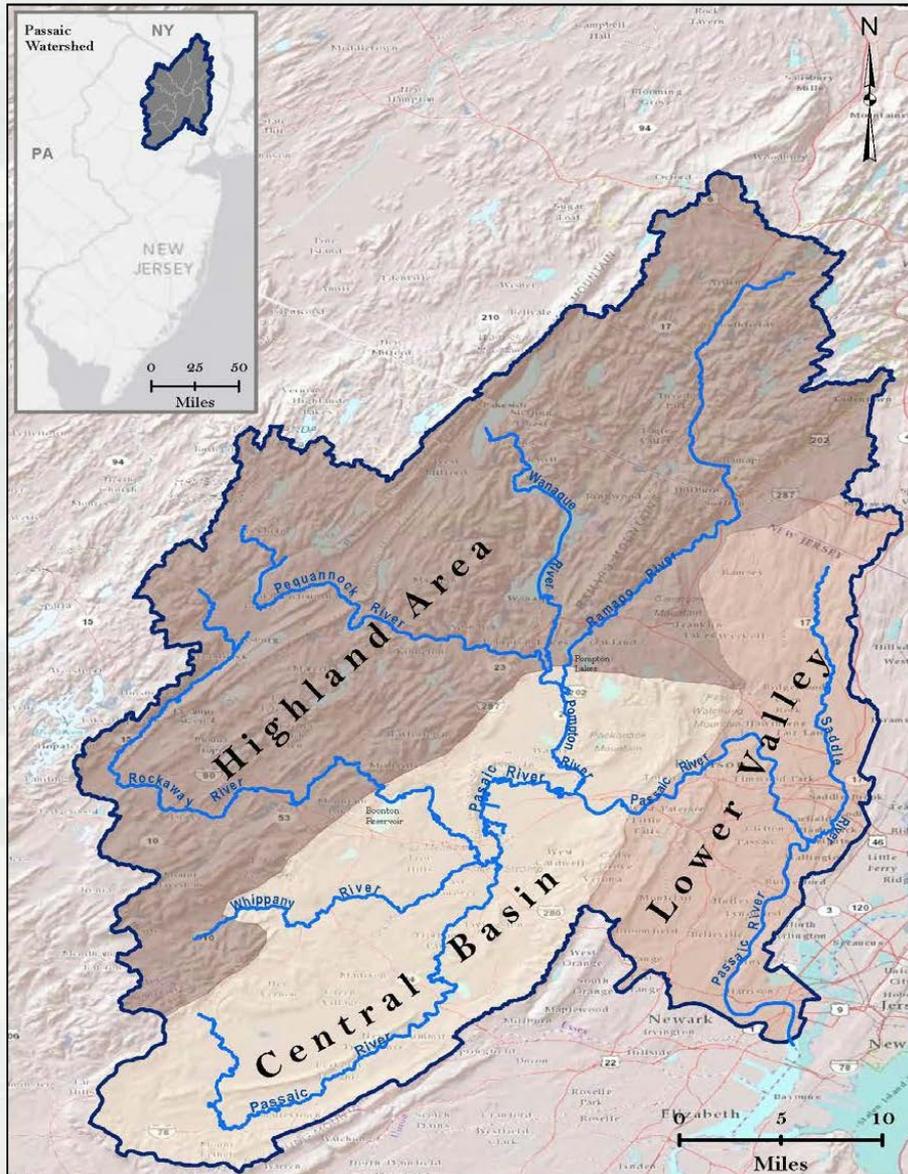


Passaic River Basin – Flooding Facts

- Occurrence of 100 year flood (1903 Flood equivalent) would result in over \$2.5 billion in damages
- Annual expected damages due to flooding are approximately \$240 million
- 15 Federal disaster declarations since 1968
 - ▶ 6 of those since 2005
- Since 1900, 26 lives lost and over \$6 billion in losses



Passaic River Basin Facts



- 935 square mile basin
- ~2.5 million people
- 20,000 homes, businesses & public buildings in 35 communities in the floodplain
- Main Stem & major tributaries 100 year floodplain covers 40,000 acres (~60 mi²) of which half is fully developed
- One of the most densely developed floodplains on the eastern seaboard
- Extensive environmental degradation to river system coupled with significant repetitive flooding
- Eight Congressional Districts



Study History

- 1976 – Congressional study authority requiring comprehensive investigation
- 1987 – Feasibility Report for the Basin approved
- 1989 – Chief’s Report approved by the Secretary of the Army, Civil Works, ASA(CW)
- 1990 – Comprehensive “Tunnel” project was authorized by Congress
- 1995 – Design for the authorized project was completed
- 1996 – Governor Whitman withdrew non-federal project support
- 2000 – WRDA 2000 prohibited funds to design and construct the “Tunnel” project



Passaic River Basin – Floodplain Today

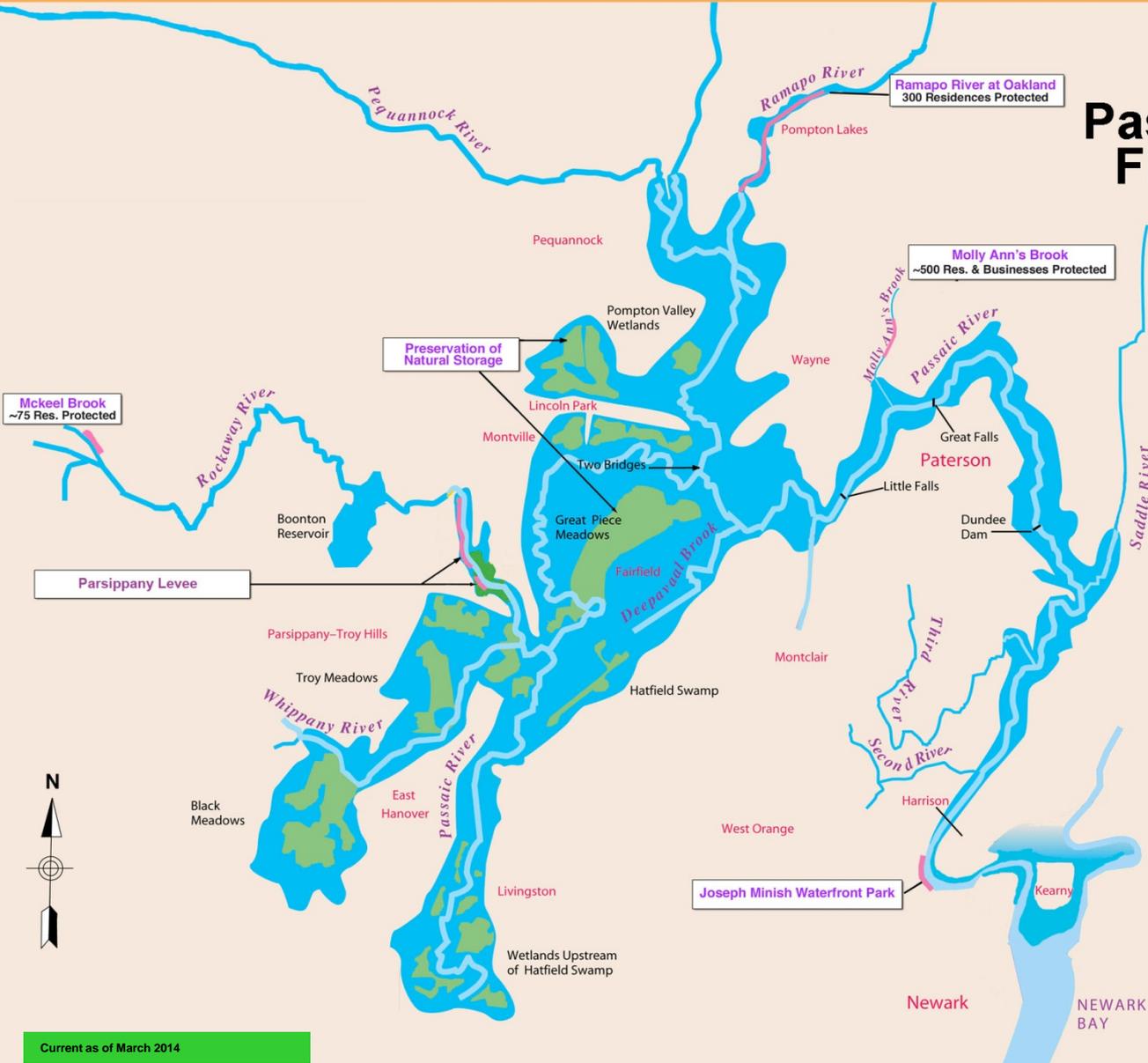


Passaic River Basin Floodplain Today

AREA IMPACTED BY 100-YEAR FLOOD (SHOWS CENTRAL BASIN AND LOWER VALLEY MAIN STEM ONLY)

PRESERVATION OF NATURAL STORAGE AREA

LOCAL FLOOD PROTECTION PROJECT



Current as of March 2014

Passaic River Tidal Protection Area



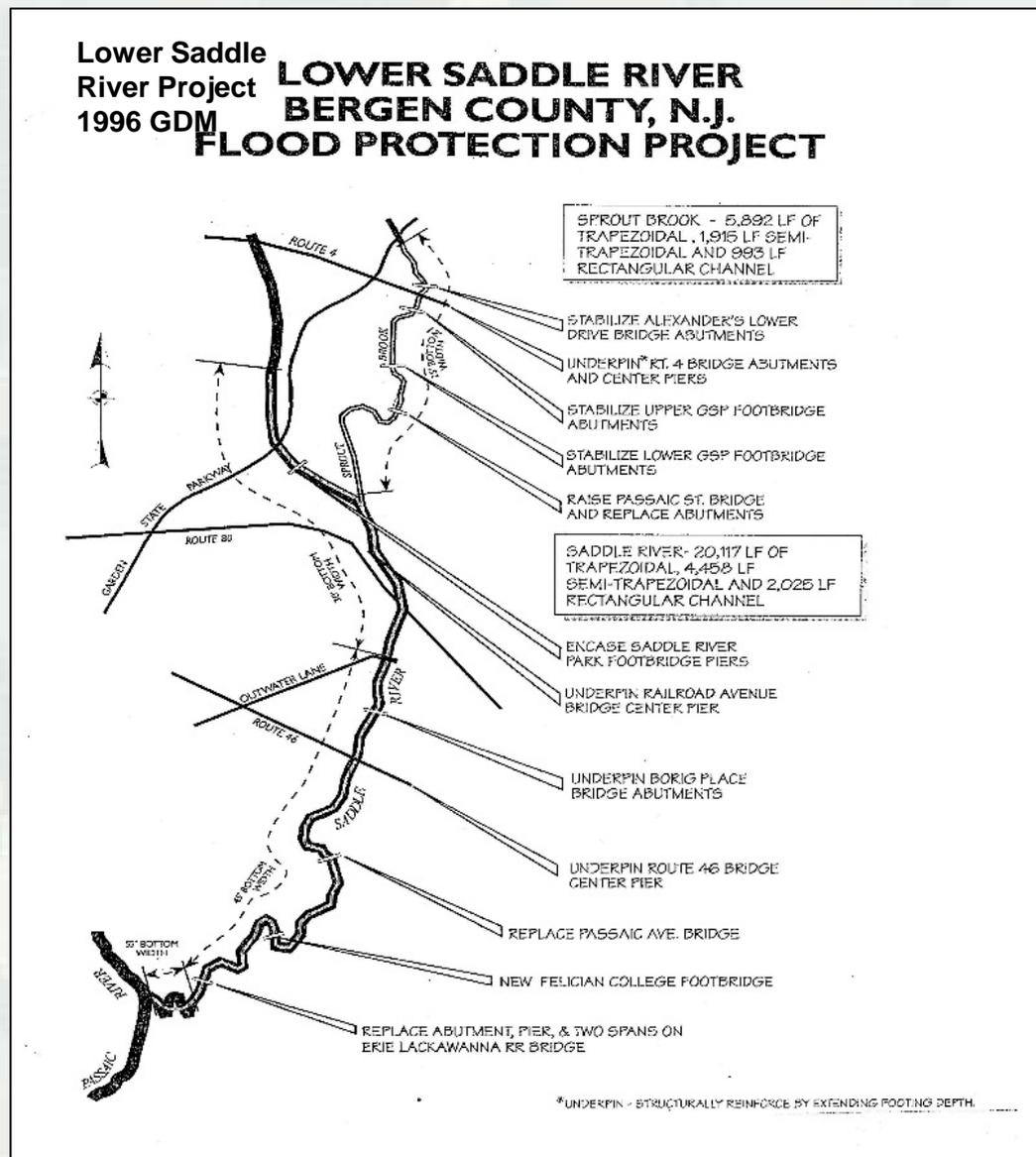
**Light Shade Blue is FEMA 100 yr flood zone
Red lines are Authorized Project levees and
floodwalls**

- Conducted as part of Sandy Disaster Relief Act PL 113-2
- 5.5 miles of levees and 5.0 miles of floodwalls to manage risk in Harrison, Kearny, and Newark
- Public release of draft report in April 2016



Lower Saddle River Project

- The Lower Saddle River basin is located in the eastern most portion of the Passaic River Basin in Bergen County. As shown in the figure, the Lower Saddle River and Sprout Brook flooding area impacts municipalities of Garfield, Wallington, South Hackensack, Lodi, Saddle Brook, Rochelle Park, Paramus, and Fair Lawn.



- NY District is scheduled to complete the updated economics by 30 Nov 2015, in order to incorporate changes that have occurred adjacent to the project area (i.e. new building construction, bridge modifications, roadway modifications, etc.).



Passaic River Study Request

- Apr 2010 – New Jersey Governor created Passaic River Basin Flood Advisory Commission through Executive Order 23.
- Jan 2011 – Commission officially recommended reevaluation of the Passaic River Basin for long term flood risk management.
- Mar 2011 – Letter from Governor Christie to Chief of Engineers that requested support of
 - Preservation of Natural Flood Storage Areas
 - Floodway Buyout
 - Reevaluation of the Passaic River Main Stem Project
- Jun 2012 – NJDEP and USACE executed Cost Sharing Agreement, initiating Phase 1.
- Sep 2012 – NJDEP and USACE Public Meetings
- Sep 2013 – USACE submitted Preliminary Alternatives Analysis Report to NJDEP (reevaluation of six (6) alternatives).
- Feb 2014 – NJDEP notified USACE of three alternatives for Phase 2.
- June 2014 – HQUSACE requires additional data in Phase 1 so that NJDEP can determine which one (1) alternative to proceed to Phase 2.
- Oct 2014 – NJDEP and USACE executed cost sharing agreement to refine Phase 1.



Current Study Phase

This Phase of the Study reevaluated six (6) alternatives from the 1989 Chief's Report and determined that three (3) alternatives may remain economically justified. Reevaluation of the three (3) alternatives to determine which one (1) plan the state of New Jersey selects for detailed analysis and design is on-going.

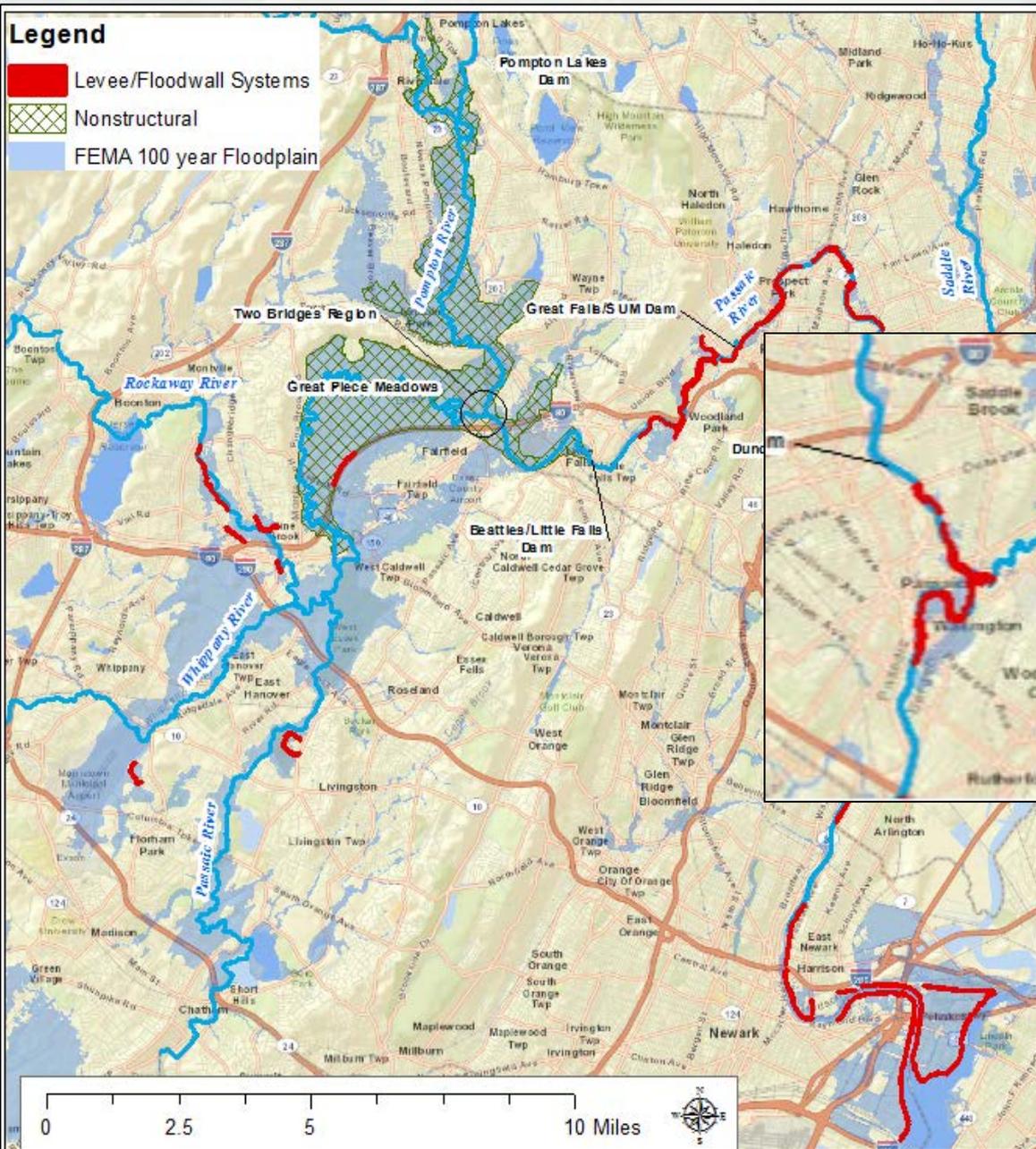
- Alternative 14A – Levees, Floodwalls, and Non-Structural Plan
- Non-Structural Plan
- Diversion Tunnel

- Investigation includes –
 - ▶ Acquisition of Structure Data for Economic Damage Assessment
 - ▶ Real Estate
 - ▶ Base Environmental Analysis
 - ▶ Phase 1 HTRW Analysis
 - ▶ Hydraulic and Hydrologic Analysis



Legend

-  Levee/Floodwall Systems
-  Nonstructural
-  FEMA 100 year Floodplain



Alternative 14A Levees, Floodwalls, and Non-Structural Plan

- 24 miles of levees
- 17 miles of floodwalls
- 4,262 non-structural improvements
- 0 miles of channel improvements
- 33 ponding areas
- 46 pump stations

Risk:

- 1% exceedance lower and upper basin (100 year)
- 10% exceedance highland & central (10 year)



10 Year Non-Structural Alternative

Plan includes (structures):

- Floodproof 8,740
- Raise 646
- Ringwall 494
- Buyout 68

Non-Structural Total 9,948

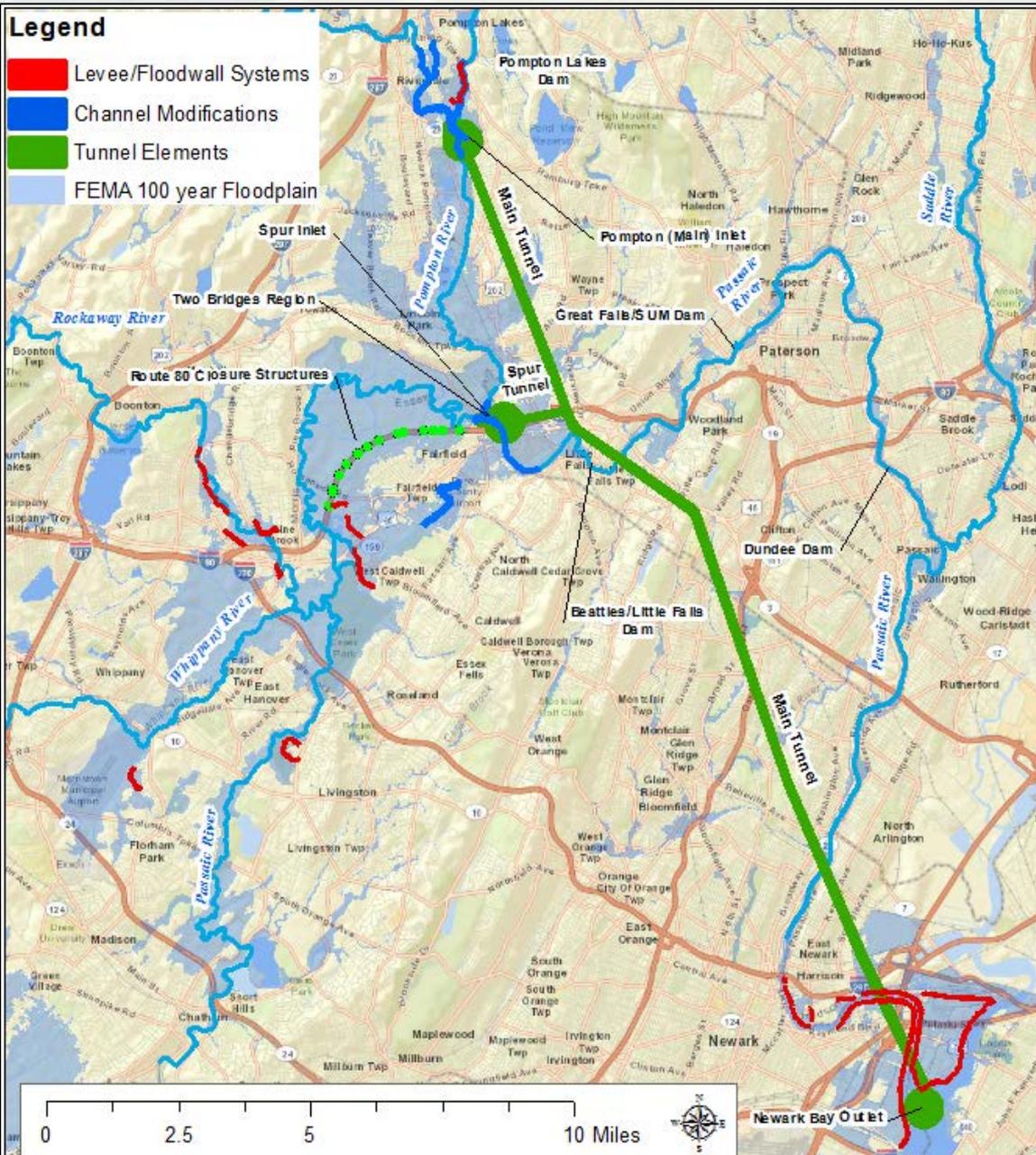
Risk:

- 10% exceedance throughout (10 year)



Legend

- Levee/Floodwall Systems
- Channel Modifications
- Tunnel Elements
- FEMA 100 year Floodplain



Dual Inlet – Newark Bay Outlet Tunnel Alternative

- 20 mile, 42 ft. dia. main diversion tunnel
- 1.2 mile, 23 ft. dia. spur tunnel
- 7 miles of channel improvements
- 7 miles of levees
- 13 miles of floodwalls
- 17 ponding areas
- 15 pump stations

Risk:

- 1% exceedance throughout (100 year)



Comparison of Alternatives

Levees and Floodwalls	Diversion Tunnel	Non-Structural	No Action
•100-year level and 10-yr level	•100-year level	•10-year level	•2- to 5-year level
•High Cost	•Higher Cost	•Moderate cost	Annualized damages in excess of \$240 mil
•Provides comprehensive risk reduction	•Provides most comprehensive risk reduction	•Does not provide comprehensive risk reduction	•Does not provide comprehensive risk reduction
•High benefits during construction	•Low benefits during construction	•Highest benefits during construction	•No benefits
•Lowest performance if project is exceeded	•High performance if project is exceeded	•Low performance if project is exceeded	•No risk reduction
•No existing construction authorization	•Authorized but design and construction funding currently prohibited	•No existing construction authorization	•N/A
•Significant environmental impacts	•Significant environmental impacts	•Significant environmental impacts associated with flooding	•Significant environmental impacts associated with flooding



Path Forward

- Results will provide a basis for NJ DEP to select one plan for next phase of work.
- October 2016 – Preliminary Alternative Analysis Phase 1 Report submitting to State of New Jersey for support
- Plan selection will drive next steps and schedule.
 - ▶ Final General Reevaluation Report (GRR) = Preliminary Alternative Analysis Phase 1 Report (Current Phase) + Detailed Analysis (Phase 2)
- Detailed analysis will include optimization and NEPA analysis for study approval and project authorization.



QUESTIONS?



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