

Passaic River Basin General Reevaluation

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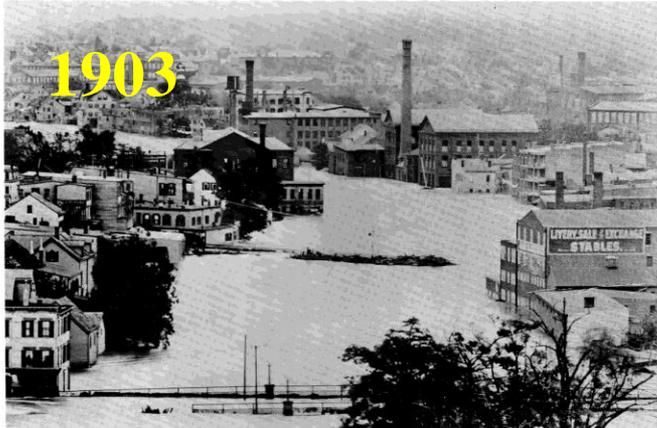
Passaic River Basin Facts



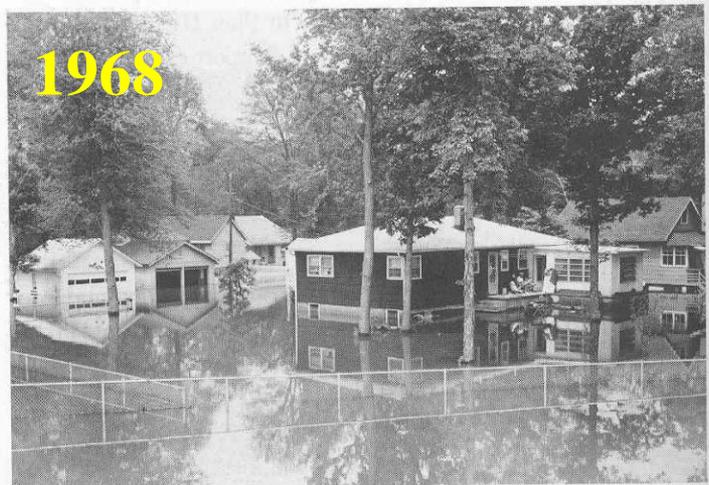
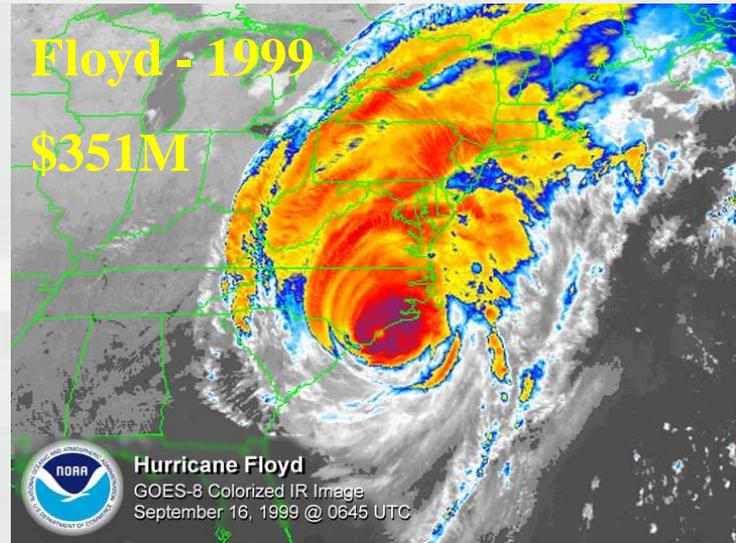
- 983 square mile basin
- ~2.5 million people (2000 census)
- ~50,000 people are in floodplain
- 20,000 homes, businesses, & public buildings in over 100 municipalities
- Main Stem & major tributaries 100 year floodplain covers 40,000 acres (~60 mi²) of which half is fully developed
- One of the most densely developed floodplains on the eastern seaboard
- Extensive environmental degradation to river system coupled with significant repetitive flooding
- Nine Congressional Districts in basin



Passaic River Basin - Flooding History



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



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 Flood Facts

- 15 Federal disaster declarations since 1968
 - 6 of those since 2005
- Since 1900 - 26 lives lost & over **\$6 billion** in losses
- Since 1990 – over **\$3.5 billion** in losses



Passaic River Basin – Previous Studies

- 1900 - 1940 ----- 8 State Studies
- 1936 - 1973 ----- 5 Federal Reports
- 1976 ----- New Basin Study Authorized
 - 150 alternatives studied including buy-outs, flood plain regulations, channels, levees, floodwalls, reservoirs, tunnels, and multiple combinations
 - Consider environmental impacts (NEPA) and Public Acceptance
- 1987 Feasibility General Design Memorandum (GDM) and 1989 Chief's Report
- 1989 Beatties Dam Reconnaissance Report – No Federal Interest
- WRDA 1990 Project Authorization
- September 1995 – Passaic River draft GDM (authorized project)
- September 1995 – Passaic River Buyout Study Report BCR of 0.1 (100 year)
- October 1995 – Passaic River Floodway Buyout Study Report BCR of 0.2
- WRDA 2000, Section 327(i) Restriction on use of funds
- February 2011 – Governor's Flood Advisory Commission Report Released

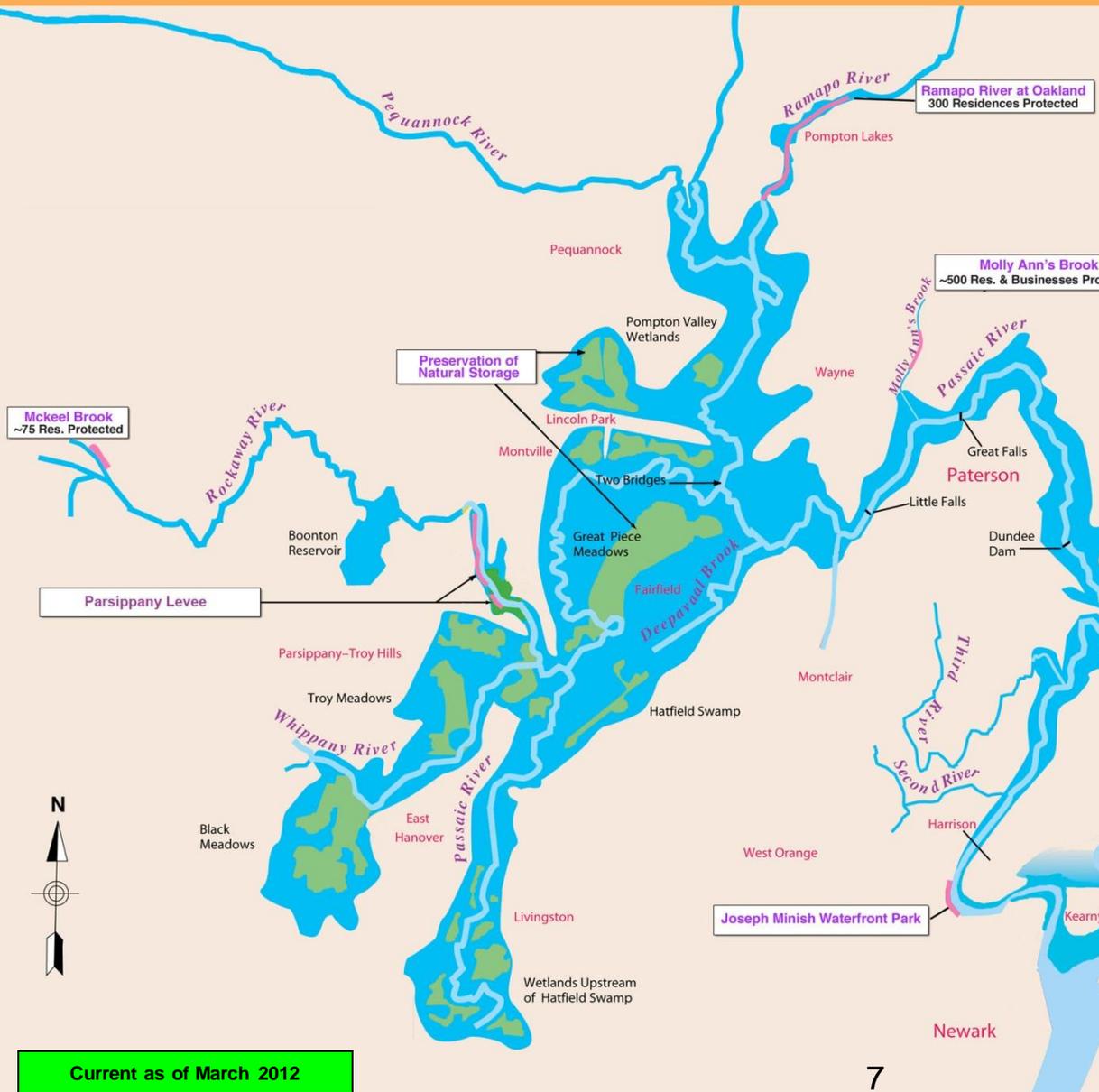


Passaic River Basin – Floodplain Today



Passaic River Basin Floodplain Today

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



Ramapo River at Oakland
300 Residences Protected

Molly Ann's Brook
~500 Res. & Businesses Protected

Mckeel Brook
~75 Res. Protected

Preservation of Natural Storage

Joseph Minish Waterfront Park

Current as of March 2012

- Permanent evacuations
- Floodproofing
- Dam and Bridge Modification
- Channel Modification
- Levees and floodwalls
- Existing reservoirs
- New reservoirs
- Preserve natural storage
- Aquifer recharge
- Tunnel diversions
- Tidal barrier
- Combinations of above

Passaic River Basin – Plans Compared

Plan	Cost (Millions)	Structures Protected/Acquired
100 Year Floodplain Buyout	\$7,350	~13,300
50 Year Floodplain Buyout	\$5,880	~11,100
25 Year Floodplain Buyout	\$4,704	~9,500
10 Year Floodplain Buyout	\$3,381	~7,400
Floodway Buyout	\$294	~800
100 Year Authorized Tunnel Diversion Plan	\$2,793	over 14,000
Levees, Floodwalls, Nonstructural Measures, Bridge and Dam Modifications (14A)	\$840	10 to 100 year level of protection
Levees, Floodwalls, Nonstructural Measures and Channel Modification (16A)	\$961	10 to 100 year level of protection®

Passaic River Basin

Next Steps

- Continue to Support New Jersey as they implement the recommendations made by the Governor's Flood Advisory Commission (Jan 2011)
- Execute Feasibility Cost Sharing Agreement with NJDEP for a reevaluation for the Passaic River Basin (13 June 2012)
- Conceptual Phase Draft Report (Jun/Jul 2013)
- Public Outreach (Jul – Oct 2013)



Passaic River Study – 6 Alternatives

- Comprehensive system of levees, floodwalls, nonstructural measures, bridge and dam modifications (alternative 14A from 1987)
- Comprehensive system of levees, floodwalls, nonstructural measures and channel modification (alternative 16A from 1987)
- 1987 NED plan (dual inlet tunnel, alternative 30E)
- Improvements to Beatties Dam and Two Bridges
- Nonstructural – 10 year
- No Action



Passaic River General Reevaluation Conceptual Phase (1 of 4)

- Major Planning tasks:
 - Existing Conditions
 - Future without project conditions
 - Economic screening of alternatives
 - Damages prevented (benefits) vs project cost
 - Public outreach



Passaic River General Reevaluation Conceptual Phase (2 of 4)

- Major Environmental tasks:
 - Identification of Threatened or Endangered Species
 - Review of existing literature, coordination with other NGOs, academic research centers with Passaic River interests, NJ Historic Preservation Office and local historic societies
 - Coordination with NJDEP Land Use, Regulation, Green Acres, Natural Heritage and USFWS
 - Google Earth will be used to identify, quantify and illustrate potential wetland and riverine habitats
 - Identify known historic resources within the project area
 - Public Outreach



Passaic River General Reevaluation Conceptual Phase (3 of 4)

- Major Engineering tasks:
 - Update rainfall and stream flow data
 - Update floodplain
 - Model alternatives to determine reduction in water surface elevations
 - Develop comparative cost estimates
 - Architectural renderings, photographs and cross-section posters of typical project features
 - Public Outreach



Passaic River General Reevaluation Conceptual Phase (4 of 4)

- Public Outreach with NJDEP:
 - Two Public Study Kick-off Meetings:
 - July 11, 2012
 - September 13, 2012
 - Ten Public Outreach Meetings (Jul-Oct 2013)
 - Plan Sheets and Posters geared towards different areas of the Basin
 - Visual Renderings
- NJDEP will have the opportunity to determine alternative(s) on which to proceed on the basis of conceptual costs and economics, environmental requirements and public input



- Passaic River Resources
 - www.nj.gov/dep/passaicriver
 - USACE webpage (in progress)
- Information about the poster boards
- Introduction of the Team Members
- Comment period

