Lower Passaic River Restoration Project

Passaic River Symposium
9 October 2014

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Lower Passaic River Feasibility Study

- Lower Passaic River is within one of eight Planning Regions within the Hudson Raritan Estuary (HRE) Feasibility Study Area.
- USACE conducted HRE Restoration Reconnaissance Study identifying Passaic River as priority area.
- Joint WRDA/Superfund Study for Comprehensive Solution for Remediation and Restoration.
USEPA/USACE Study Area for the Lower Passaic River:

- 17-miles tidal portion of the river from Dundee Dam to Newark Bay

- USEPA focus on mainstem and three tributaries (Second River, Third River and Saddle River)

- USACE considers opportunities within the watershed- 118 sq miles
Project Relationships

WRDA
Hudson Raritan Estuary-Lower Passaic River Restoration Feasibility Study
US Army Corps of Engineers®
New Jersey

CERCLA
Superfund
~ 70 Potential Responsible Parties
Cooperating Parties Group

NRD
Natural Resource Damage Trustees
New Jersey Department of Environmental Protection

Stakeholders
Project Goals/Opportunities

- Remediate contamination (led by EPA)
  - Reduce Human and Eco risks
  - Reduce contaminant loading to harbor*
- Restore degraded coastal/freshwater wetlands
- Create new habitats
- Restore Tributary Connections
- Improve water quality
- Improve human uses

*Additional USACE Goal:
- Reduce USACE Dredged Material Management Costs
Data Collection

- Literature review of historic biological community data (2005)
- Characterization of habitat, sediment quality and biological communities within the 17-mile stretch (2005 and 2010-2013).
- Sediment Profile Imaging (SPI) Survey of Sediment and Benthic Habitat Characteristics (2005)
- Erosion Testing (2005) (microcosm and Sedflume reports [2006])
- Geophysical Surveys (2006)
- Kingfisher Investigation (2007)
- Low Resolution Coring (2008)
- Avian Surveys (2010-2011)
- Fish/Decapod Tissue Chemistry Analysis and Fish Community Survey (2009-2010)
- 3-D Visioning Flyover (2011)
- Toxicity Tests
- Bioaccumulation Testing- Fish, Crabs and Bivalves (2012)
- Surface Water Chemistry (2012-2013)
- Background Sediments (2012-2013)
- Supplemental Sediment Sampling (2013-2014)
Activities Supporting Superfund

Current/Future Navigation Use

Environmental Dredging & Decontamination Pilots

NJDOT In-Situ Stabilization Pilot

Figure 1. Environmental Dredging Pilot on the Passaic River
Analysis of Current & Future Navigation Use in Support of FFS

USACE Berth by Berth Analysis and User Outreach (2009)

- Authorized channel to RM 15.4
- Current commercial navigation in lower 1.7 miles and potential future use up to RM 2.2.
- Channel depths in Preferred Alternative:
  - 30-ft up to RM 1.2
  - Modification from RMs 1.2 to 2.2
  - De-authorization upstream of RM 2.2
Municipality Plans for Shoreline and Future Navigational Use

Proposed Waterfront Redevelopment

State of NJ Position based on Regional Master Plans and Municipalities
Components of the Remedial Investigation/Feasibility Study

**Time Critical Removal at RM 10.9**: 16,000 CY Removal with Capping (completed 2013-2014)

**17-Miles**: Comprehensive Restoration Feasibility Study (CERCLA/WRDA Coordinated Effort) for Remediation and Restoration (complete 2015/2016)

**Focused Feasibility Study (Lower 8.3 miles)**: EPA Proposed Plan- Dredge 4.3 MYC with Off-site disposal and capping

**Phase I Tierra Removal Action**: 40,000 CY removal and backfill (Completed 2012)
Restoration Planning Activities

- Total of 53 restoration opportunities within 17-miles and tributaries
- Restoration would be sequenced following remediation or where remediation is not required.
- All restoration sites recommended for authorization requires Non-Federal Partner and potential coordination of restoration to leverage funding (NRDA, Mitigation)
- Draft Feasibility Study 2015
Open Access Space Information System (OASIS) Database
Restoration goal is to create:

“a mosaic of habitats that provide society with new and increased benefits from the estuary environment.”
Restoration Actions

- **Wetlands**: Creation or restoration of low and high emergent marsh [freshwater and estuarine] (re-grading, restoring hydrologic connection, planting)

- **Shorelines and Shallows**: Softening hardened shoreline to create habitat, living shoreline construction, modify intertidal zone to improve shallow water habitat

- **Fish, Crabs and Lobster Habitat**: Create complex structure along mudflat including rock reefs, reef balls to diversify habitat.

- **Tributary Connections**: Shoreline stabilization if needed, improvement of riparian habitat within the tributaries through creation of forested floodplain, or in some cases improve fish passage (including installation of fish ladder, rock ramp, bathymetric modification, weir modification, etc.)

- **Enclosed and Confined Waters**: Improved water and habitat quality through improved hydrodynamics and bathymetric alterations.

- **Sediment Quality**: Improving benthic habitat through capping or removal of contamination (If CERCLA action is NOT required)
Site Conceptual Plans

Kearny Point
- Public Access Dock
- Public Access Trail
- Shorelines & Shallows
- Tidal Channel
- Coastal Wetlands
- Fish, Crab, Lobster

Third River Clarks Pond
- Tributary Connections
- Public Access Trail
- Stream Corridor
- Freshwater Wetlands
- Flood Plain
Screening & Evaluation of Restoration Opportunities

► Field Sampling: Ecological Functional Assessment Model (Evaluated Planned Wetlands) to determine baseline conditions and ecological benefits of planned improvement (Fall 2014)
► Prepare up to 3 Alternatives
► Prepare Preliminary Engineering Designs and Costs
► Conduct Cost Evaluation/Incremental Cost Analysis (CE/ICA)- Determine “best buy plan”
► Obtain concurrence on Tentatively Selected Plan for each footprint and sequencing approach.
Implementation Strategy/Sequencing Plan

- Sequencing remediation and restoration actions results in 3 categories:
  1. **Restoration Unaffected by Remediation (Tier 1):** 25 restoration opportunities in major tributaries that could advance since no remedial action will be implemented via the Superfund Study.
  2. **Restoration Pending Remediation in the Lower 8 miles (Tier 2):** 17 opportunities in mainstem of the lower 8 miles. Deferred until remediation is implemented.
  3. **Restoration Pending Completion of 17-mile Superfund RI/FS:** 11 opportunities identified in the upper 9 miles of the River. Opportunities in areas that may require remedial action (similar to RM 10.9) would be deferred (possibly up to RM 14).

- Sites unaffected by remediation could advance with Feasibility Level Designs
Recommendation and Sequencing Categories

1- First Phase Implementation  
   [Tier 1]

2- Deferred until Remedial Action- FFS  
   [Tier 2]

3- Deferred or First Phase depending on  
   EPA RI/FS Decisions
Before....
After…
After...

GATEWAY PARK
Additional Ongoing Activities in Lower Passaic River

- Superfund Cleanup Sites
  - Newark Bay
  - Riverside Industrial Properties
  - White Chemical
  - Diamond Head Oil

- Flood Risk Management
  - Passaic River Main Stem
  - Passaic River Tidal Protection Area
  - Joseph G. Minish Park
  - Lower Saddle River

- CSOs
- Brownfield Re-Development
- NY/NJ Harbor Estuary Program Stewardship Grants
- Operation & Maintenance Navigation
Urban Waters Federal Partnership

- USFWS
- US Dept of Commerce
  - NOAA
  - Economic Development Administration
- US Dept. of Agriculture
- US Dept. of Education
- US Dept of Health and Human Services
- US Dept of Housing & Urban Development
- US Dept of the Interior
- US Dept of Transportation
- FEMA
- Corporation for National and Community Service

*Sandy Regional Infrastructure Coordination Group*
Future Schedule

2015
- EPA and Partners continue working with the Cooperating Parties Group to prepare Human Health and Ecological Risk Assessment, Modeling, Remedial Investigation/Feasibility Study for 17-mile Study Area
- Decisions on Upstream Remedial Actions (EPA)
- Record of Decision for Lower 8.3 Miles (EPA)
- Draft Ecosystem Restoration Feasibility Report (HRE and Lower Passaic River)

2016
- Remedy Selection for 17 miles (EPA)
- Finalize Restoration Sequencing Strategy
- Detailed Level Designs and Cost Estimates for recommended restoration sites
- Final Restoration Feasibility Report

2016/2017
- Proposed Plan for 17 miles (EPA)
- Chief’s Report for Ecosystem Restoration - Recommendations for Construction (USACE)