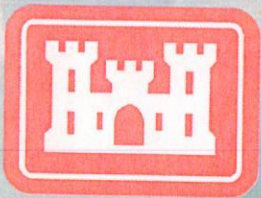


# Raritan Bay and Sandy Hook Bay, Highlands, NJ Coastal Storm Risk Management

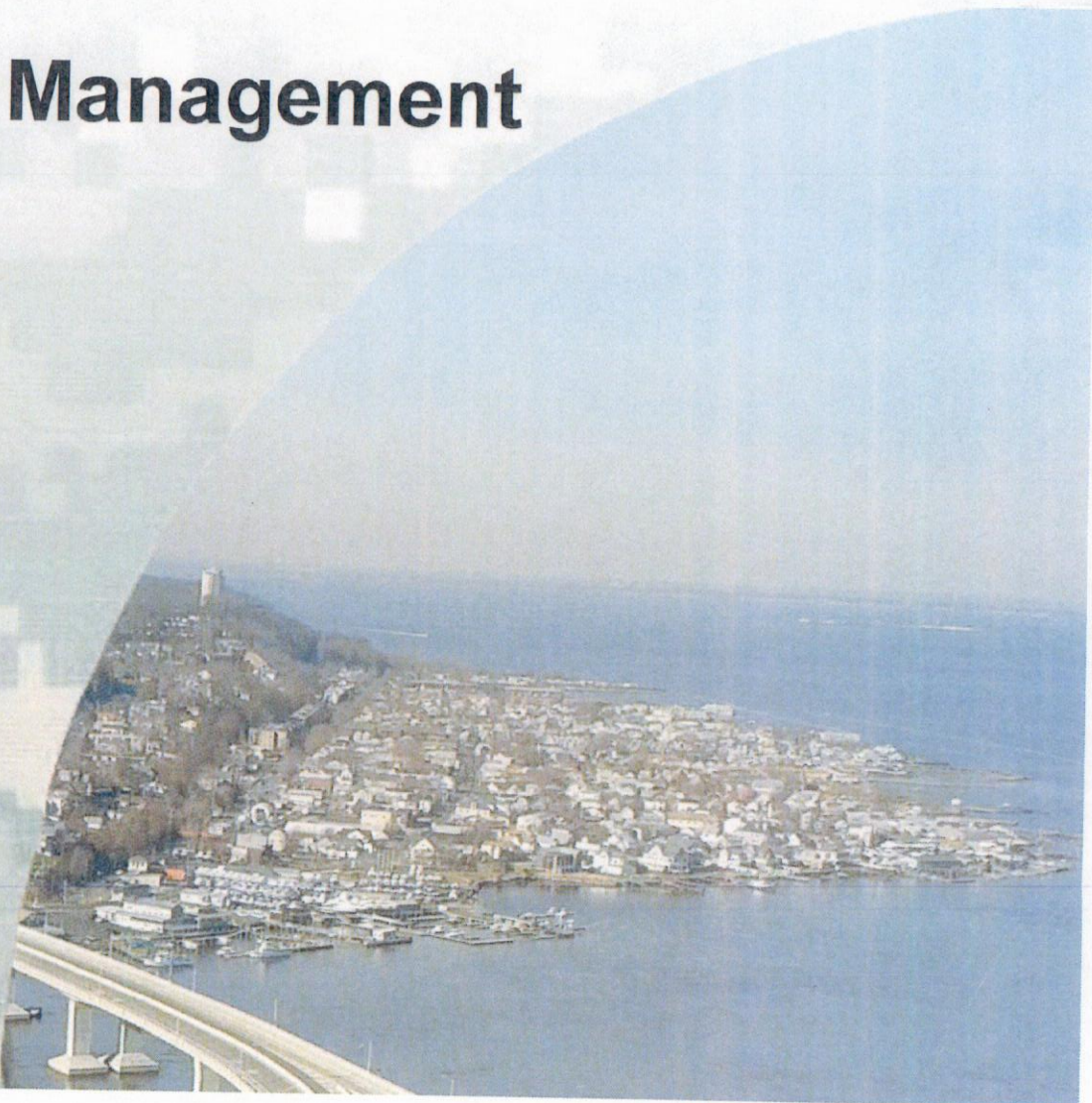
## Briefing

USACE - New York District  
January 26, 2017



®

US Army Corps of Engineers  
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# Study Authority

- Study Resolution adopted by House Committee on Public Works and Transportation, on 1 August, 1990, to  
*“...provide erosion control and storm damage prevention for the Raritan Bay and Sandy Hook Bay.”*



# “Sandy Bill”, Public Law 113-2

- Sandy Disaster Relief Appropriations
  - ▶ \$5.34B to USACE from Maine to Virginia for ***“necessary expenses related to the consequences of Hurricane Sandy...”*** including:
    - **Complete Existing Studies**
    - Construct Authorized Projects
    - Operations & Maintenance of Completed Projects
    - Emergency Rehabilitation of Damaged Projects



# Implications of PL 113-2 for Highlands

- Highlands included as an ongoing “Sandy” feasibility study.
  - ▶ Remaining \$1.5M in Federal funds to complete study at full Federal expense, accounting for post-Sandy conditions.
  - ▶ PL 113-2 could provide construction authorization if available funds are remaining in the program for construction of the project. In this case we can indicate that a Director's Report would be prepared in lieu of a Chief's Report that would be required for Congressional authorization for construction of the project under WRDA.




# Civil Works Process


- Reconnaissance Phase
  - ▶ Determine Federal Interest
  - ▶ Identify Local Partner to Cost Share 50/50
- Feasibility Phase
  - ▶ Presents the Recommended Plan
  - ▶ Congressional Authorization to Proceed to →
- Pre-Construction Engineering & Design (PED)
  - ▶ Detailed Design the Authorized Plan
- Construction
- Operation & Maintenance



# Study Area



 Highlands Study Area

 Federal Navigation Channel



# Study Area



## ➤ Waterfront Access



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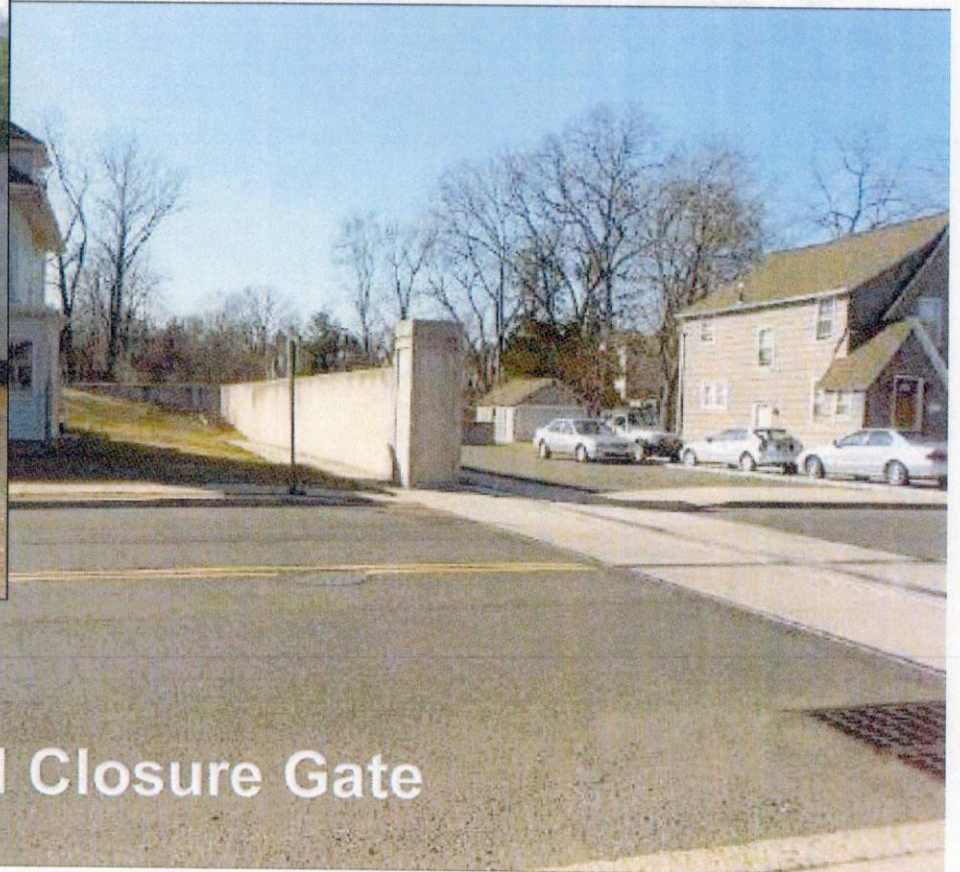
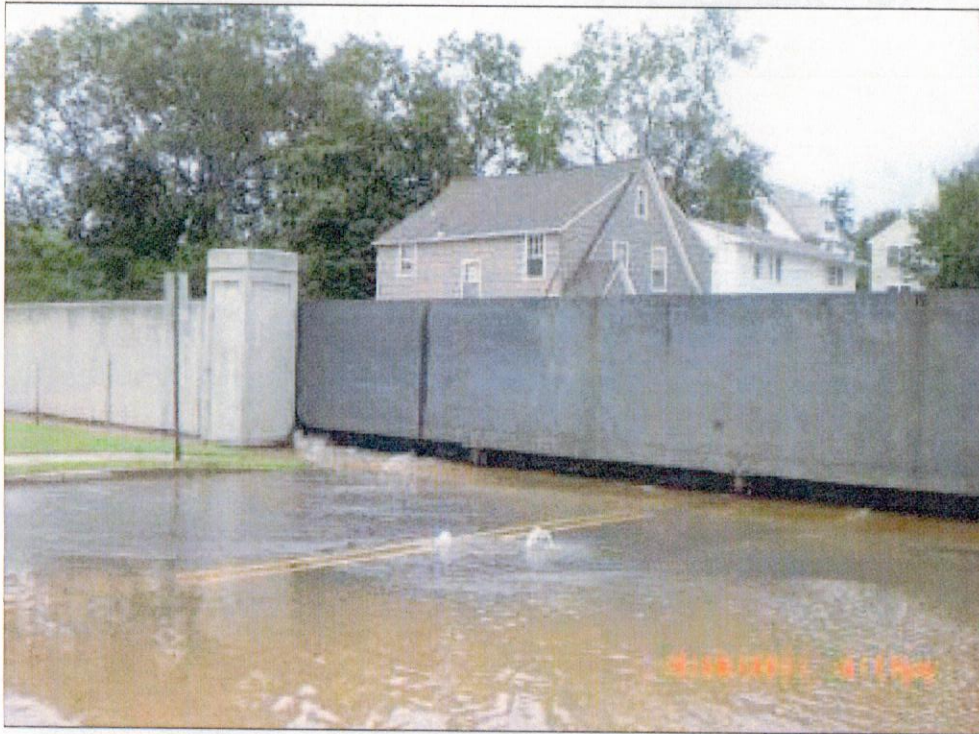
*Levee with road access*



**Waterfront Access**



➤ *What will the project look like?*



Road Closure Gate



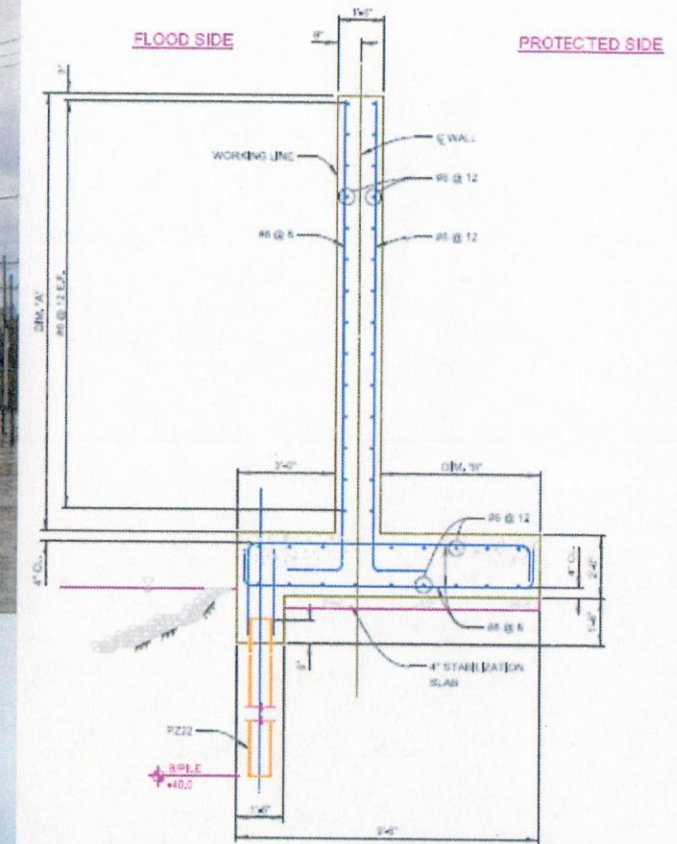
Road Closure Gate

8/28/2011 4:19pm

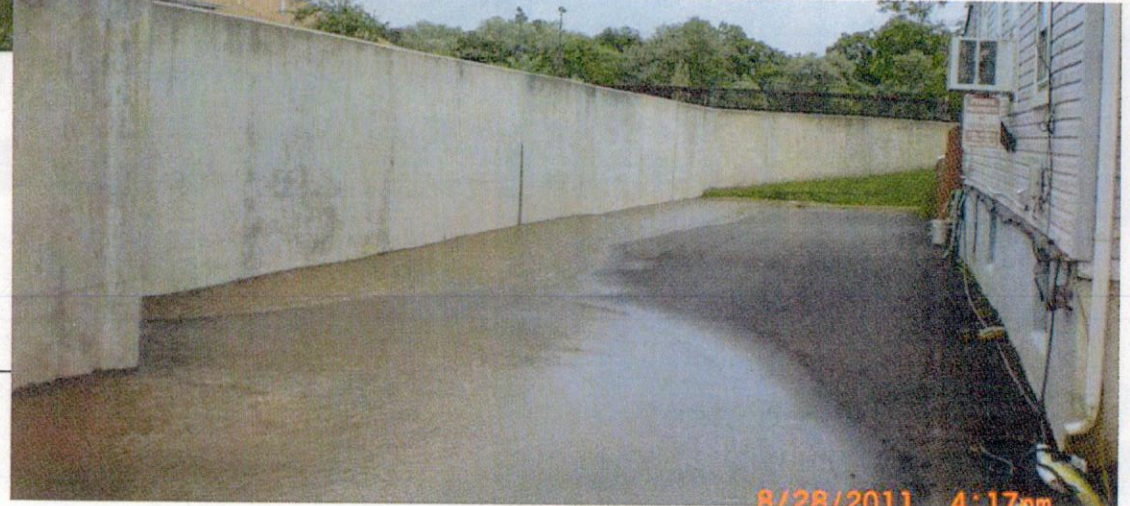


Bulkheads





# Floodwalls



8/28/2011 4:17pm



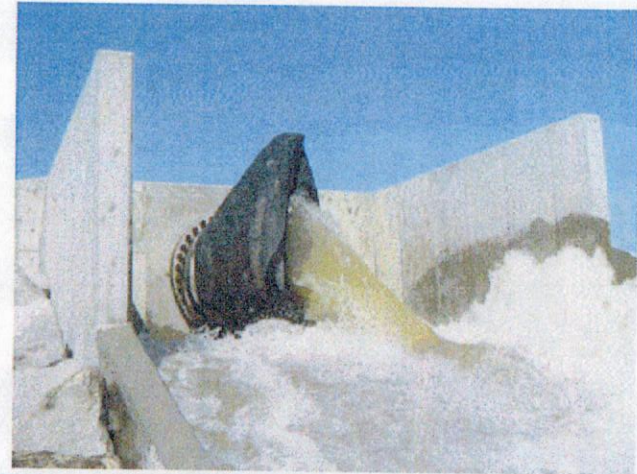
**Floodwalls**

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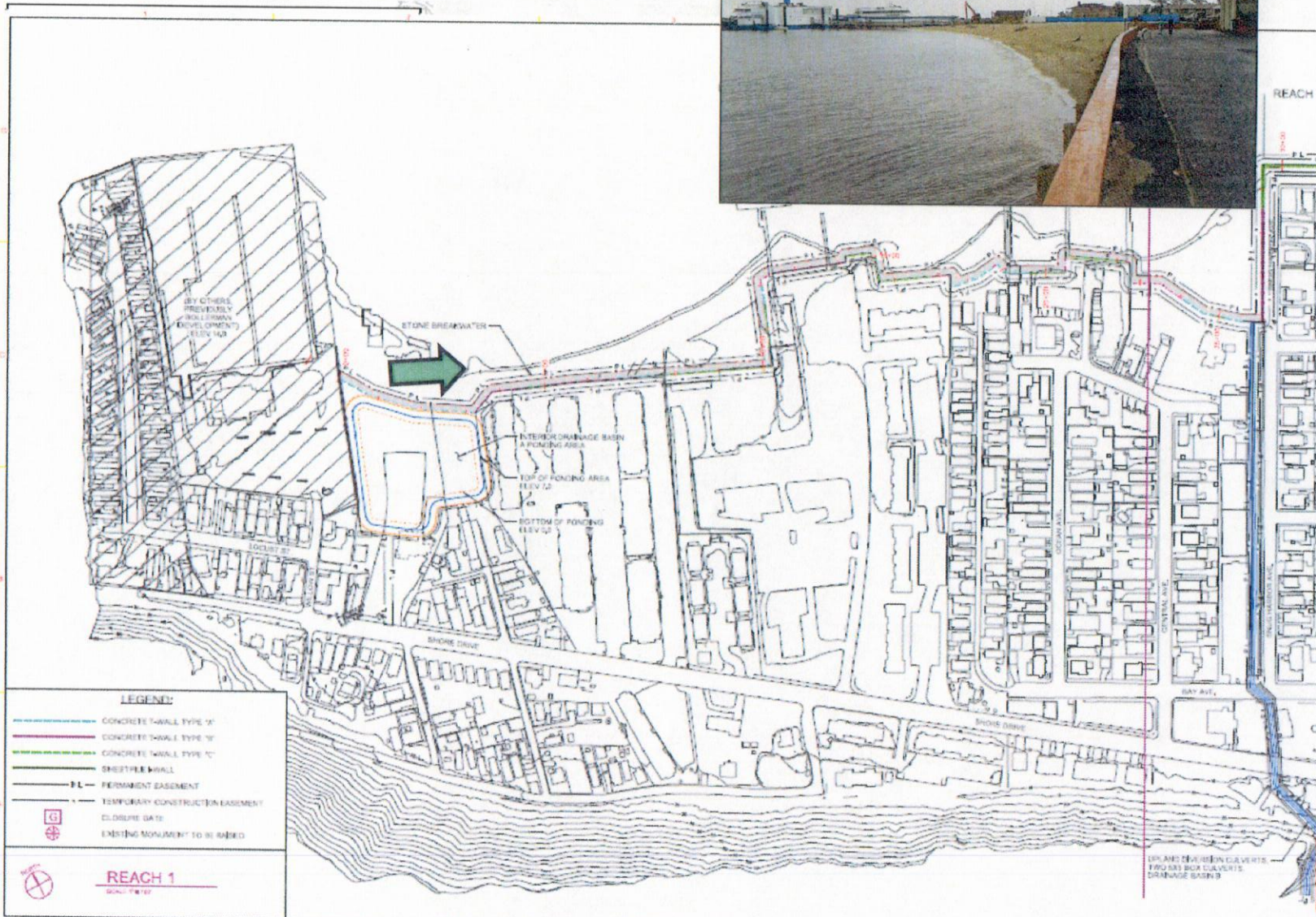


## Interior Drainage Structures

Outfall Flap Valves











# Alternative 5E Reach 1



REACH 2



**LEGEND:**

-  CONCRETE T-WALL TYPE 'A'
-  CONCRETE T-WALL TYPE 'B'
-  CONCRETE T-WALL TYPE 'C'
-  SHEETPILE WALL
-  PERMANENT EASEMENT
-  TEMPORARY CONSTRUCTION EASEMENT
-  CLOSURE GATE
-  EXISTING MONUMENT TO BE RAISED



**REACH 2**

SCALE 1" = 100'











# Alternative 5E

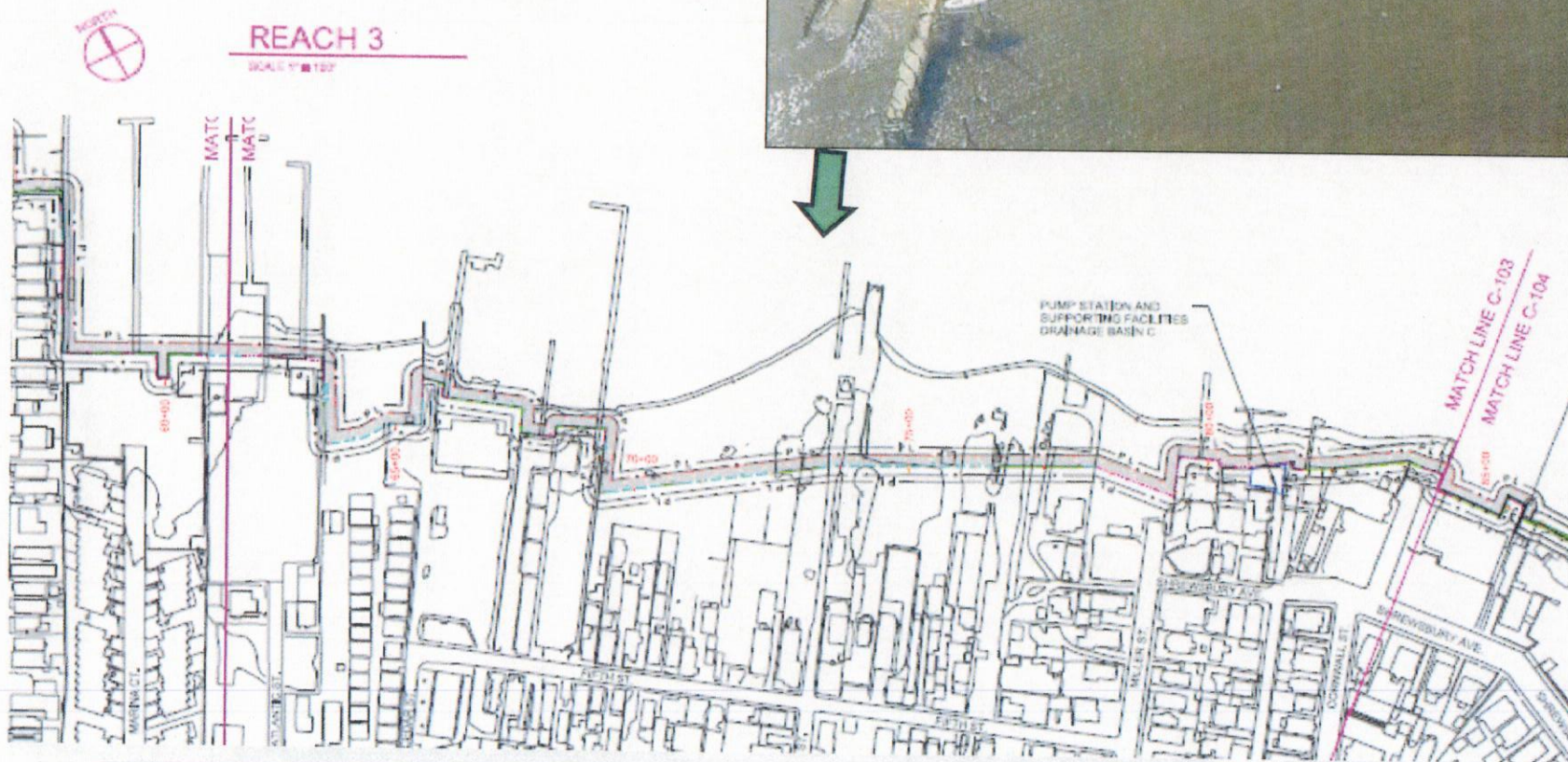
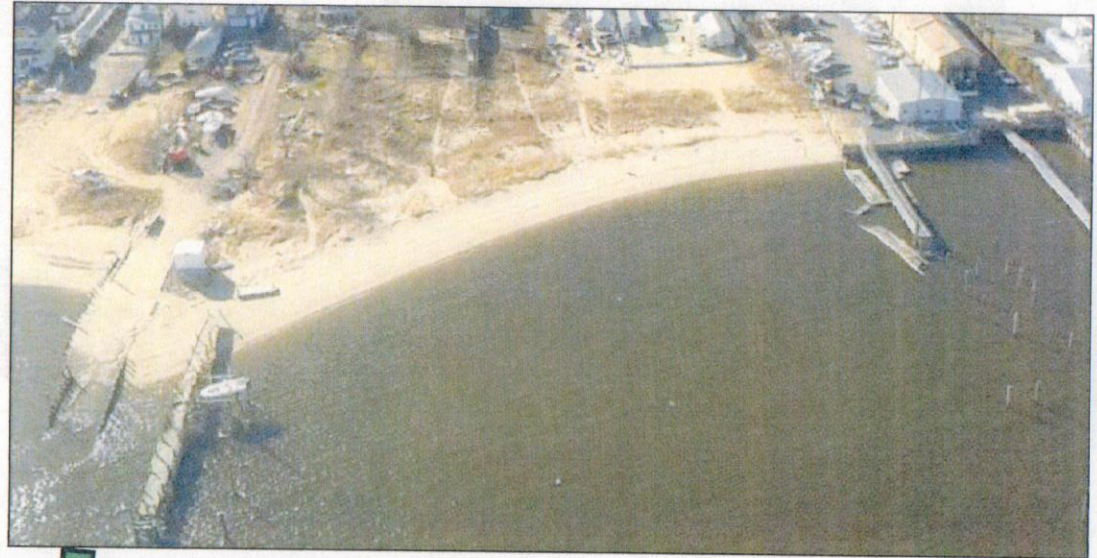
## Reach 2



# Alternative 5E Reach 3





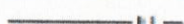
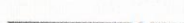

## LEGEND:

-  CONCRETE T-WALL TYPE 'A'
-  CONCRETE T-WALL TYPE 'B'
-  CONCRETE T-WALL TYPE 'C'
-  SHEETPILE WALL
-  PERMANENT EASEMENT
-  TEMPORARY CONSTRUCTION EASEMENT
-  CLOSURE GATE
-  EXISTING MONUMENT TO BE RAISED



# Alternative 5E Reach 4

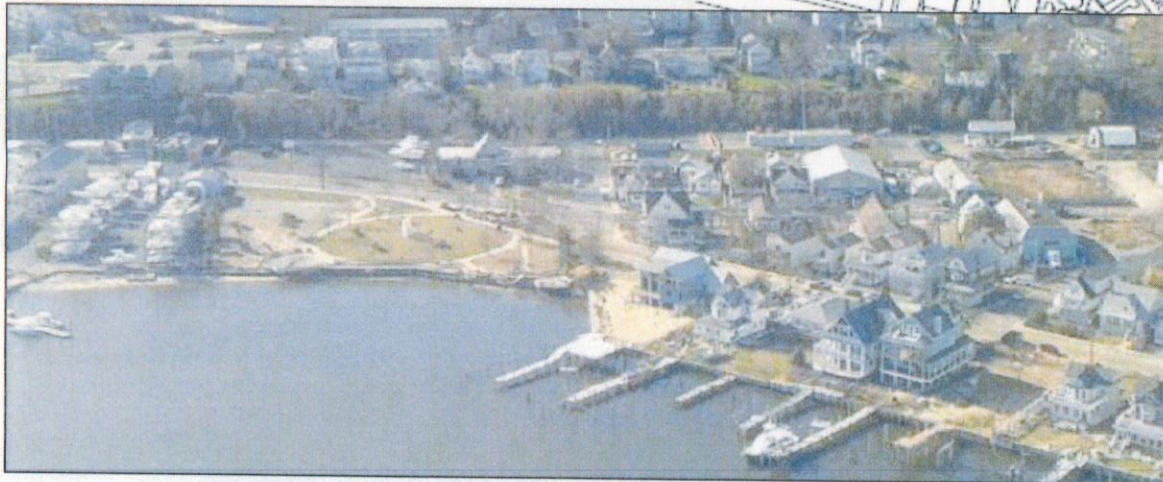
**LEGEND:**

-  CONCRETE T-WALL TYPE "A"
-  CONCRETE T-WALL TYPE "B"
-  CONCRETE T-WALL TYPE "C"
-  SHEETPILE WALL
-  P.L. PERMANENT EASEMENT
-  TEMPORARY CONSTRUCTION EASEMENT
-  CLOSURE GATE  
EXISTING MONUMENT TO BE RAISED



**REACH 4**

SCALE: 1" = 100'



# Next Steps

- Complete Final Report (scheduled Spring 2017)
  - ▶ Letter of support required
  - ▶ Environmental Coordination
  - ▶ Agency Technical Review
- Final Report – Mid-April 2017
- Washington Level Briefing & Report Approval – July 2016<sup>7</sup>
- Project Partnership Agreement – Jan 2018
  - ▶ Local Commitment to Project



# COMMENTS / QUESTIONS

## USACE

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Olivia Cackler, Senior Planner  
917-790-8705  
[olivia.n.Cackler@usace.army.mil](mailto:olivia.n.Cackler@usace.army.mil)

**Report and Comment Submission:**

<http://www.nan.usace.army.mil>

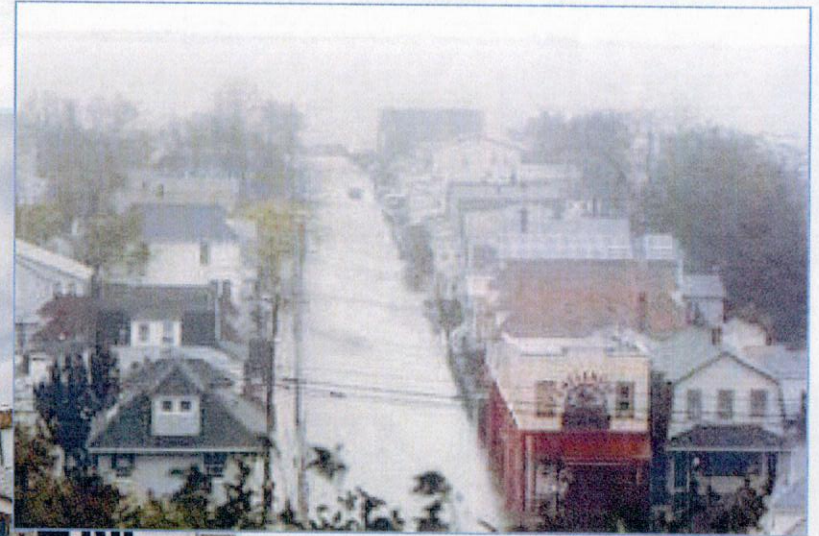
## NJDEP

Debbie Voelbel, Environmental Specialist 3  
NJDEP Bureau of Coastal Engineering  
732-255-0767  
[deborah.voelbel@dep.nj.gov](mailto:deborah.voelbel@dep.nj.gov)

**Email comments or mail to:**  
US Army Corps of Engineers  
26 Federal Plaza  
New York, NY 10278  
Attn. Jason Shea, Planning Division

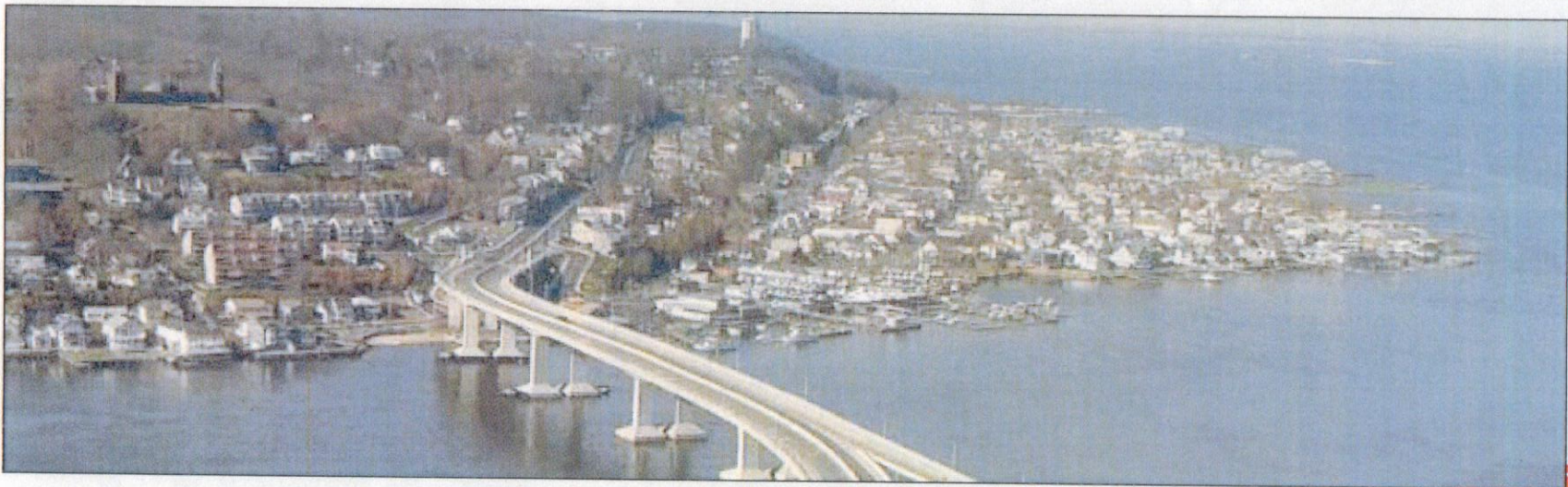


# Hurricane Sandy Damages



# Future Without Project Conditions

- Future conditions predicted, based on past events.
- Hurricane Sandy was estimated to be a 190 yr storm at Highlands
  - 1,200 out of 1,500 structures damaged by Hurricane Sandy
  - Sea level rise: 0.7 ft increase expected over next 50 years
- Long history of flood damages will continue.



# Alternative Plans

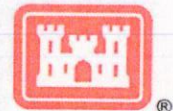
- Alternative 1 – Update of Pre-Feasibility Plan
- Alternative 2 – Non-Structural Plan
- Alternative 3 – Offshore Closure Plan
- Alternative 4 – Beach and Dune Plan
- Alternative 5 – Hybrid Plan
  - Several variations of Alternative 5 - Alternative 5e Selected
  
- Alternative 5e – Selected Plan
  - Approximately 8000-ft. Shoreline, Includes:
    - Sheetpile I-Wall Floodwall
    - Concrete T-Wall Floodwall
    - Floodwalls
    - Road Closure Structure
    - Raised Ground elevation





# Selected Plan

- Successful Agency Decision Milestone - 12 Jan 2016
- Optimized to an elevation of 14' NAVD88
- Estimated Cost: \$120M
- O&M: \$250K/yr



# Public Meetings

## **TWO MAJOR TAKEAWAYS:**

- ***Maintain Waterfront Access!***
- ***What will the project look like?***

