

Improvement of the Atlantic Coast of New York City, Rockaway Inlet to Norton Point Project at Sea Gate



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Meeting Purpose

The U.S. Army Corps of Engineers, the New York State Department of Environmental Conservation, and the New York City Department of Parks and Recreation invite you to learn about the upcoming project at Sea Gate. The project will improve the functioning of the existing Coney Island Project, which was constructed to reduce property damages due to storm surges and waves from the Atlantic Ocean.

7:00 – 7:15

Welcome and Poster Board Viewing

7:15 – 9:00

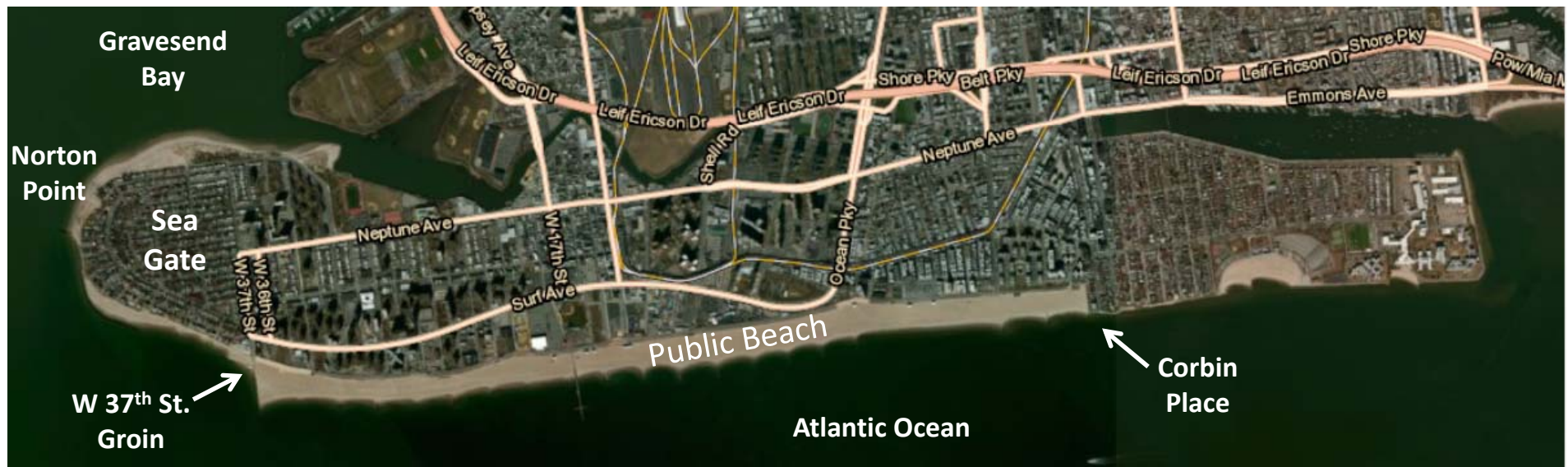
Informational Poster Board Session

The Coney Island Project

Features:

- Beachfill on approximately 3 miles of public beachfront from Corbin Place to W 37th Street
- Extension of the Terminal Groin at W 37th Street
- Placement of a sand fillet to the west of the W 37th Street Terminal Groin in Sea Gate
- Periodic beach nourishment from 1995 to present
- Extension of three outfall pipes

Constructed 1994 - 1995



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Project History

- **1986: Project authorized** for construction by the Water Resources Development Act of 1986. Subsequent **reauthorization** was provided by the Surface Transportation Act of 1991.
- **1995: Initial construction** of Coney Island Project.
 - Project included widening and elevating beach from Corbin Place to the W 37th Street Terminal Groin.
 - Project also included placement of sand west of the W 37th Street Terminal Groin (Sea Gate community).
- **2000:** As sand placed west of the W 37th Street Terminal Groin eroded and drifted to the Gravesend Bay side of Sea Gate, the USACE obtained **authorization for the Sea Gate Project** to improve project performance (WRDA 2000).
 - This authorization included the placement of sand west of the W 37th Street Terminal Groin, as well as the construction of T-groins.
 - This work will serve to protect the W 37th Street Terminal Groin from flanking and will reduce rapid erosion of fill on the Atlantic coast of Coney Island/Sea Gate that occurs from the groin westward to Norton Point.
- **2004: USACE New York District completes Limited Reevaluation Report** for the Sea Gate Project and designs project.
- **2012: Hurricane Sandy** hits the northeast, significantly impacting coastal communities. The Disaster Relief Appropriations Act of 2013 (Public Law 113-2), often referred to as the Sandy Relief Bill, is later signed into law.
 - Provides funding (100% Federal) to construct the Sea Gate project.
- **2014: USACE New York District completes Limited Reevaluation Report** for the Sea Gate Project by updating it to post-Sandy conditions.
 - Construction contract slated to be awarded Fall 2014.



The Disaster Relief Appropriations Act of 2013

- The Disaster Relief Appropriations Act of 2013 was passed by Congress and signed into law by the President on January 29, 2013 as Public Law 113-2 (P.L. 113-2).
- The legislation provides funding to construct projects in areas impacted by Hurricane Sandy, and to reduce future flood risk in ways that will support long-term resiliency.
- Provides \$5.08 billion to the U.S. Army Corps of Engineers to address areas impacted by Hurricane Sandy.
- Requires projects to be:
 - Updated to current engineering standards
 - Economically justified
 - Environmentally acceptable
 - Support long-term sustainability and resiliency



The Problem

- Rapid sand erosion in Sea Gate west of W 37th Street Terminal Groin.
- Accretion of sand along Gravesend Bay.
- Risk of flanking the W 37th Street Terminal Groin, which may lead to groin failure and significant impact to the Coney Island Public Beach.
- Repeated beachfill events were needed to mitigate the erosion at Sea Gate.

Flanking: water breaking around the landward end of a groin. Flanking will result in scouring landward of the groin and will compromise its stability.

1993 PRE-CONSTRUCTION



1995 POST-CONSTRUCTION



2005 10-YEARS POST-CONSTRUCTION



Date	Action	Quantity of Fill (CY)
October 1994 – January 1995	Initial construction <i>Removal:</i> Project offshore borrow area <i>Placement:</i> Corbin Place to B42nd Street	2,317,513
May 1996 – July 1996	Bypassing from updrift of W37th St. groin to Sea Gate side <i>Removal:</i> W23rd Street to W37th Street <i>Placement:</i> W37th Street to B38th Street	30,000
July 1997	Removal of accumulated sand at Sea Gate Gravesend shoreline <i>Removal:</i> Bay View Avenue area, Gravesend Bay <i>Placement:</i> W37th Street to B38th Street	1,200
April – May 2000	Navigation dredging of Anchorage Area #25 north of Gravesend Bay <i>Removal:</i> Anchorage Area #25 <i>Placement:</i> W37th Street to B42nd Street	60,000
May 2000	Removal of accumulated sand Sea Gate Gravesend shoreline <i>Removal:</i> Sea Gate Avenue to B51st Street <i>Placement:</i> W37th Street to B38th Street	20,000
October 2000 – March 2001	Sand placement using backpassed sand material accumulated offshore of Gravesend Bay. Construction of stone flanking revetment, landward end W37th Street groin. <i>Removal:</i> offshore deposition basin NW corner of Coney Island <i>Placement:</i> W37th Street to B42nd Street	110,000
March – May 2004	Backpassing accumulated sand. <i>Removal:</i> B51st Street to Bay View Ave <i>Placement:</i> W37th Street to B40th Street Sea Gate Atlantic Shore	22,000
July – Sep 2013	FCCE construction Post-Hurricane Sandy. Reconstruct Beachfill to initial construction template. <i>Removal:</i> Jamaica Bay Inlet Channel (Rockaway Inlet) <i>Placement:</i> W37th Street to Corbin Place	679,000

HOW DO WE KEEP SAND ON THE BEACH?



Finding a Solution

- Since the late 1990s, the USACE has studied ways to reduce sand erosion in Sea Gate west of W 37th Street Terminal Groin and accretion of sand along Gravesend Bay.
- Many alternative solutions investigated:
 - Deposition Basin
 - Spur Groin with Terminal Groin
 - Groin Field
 - Offshore Breakwaters
 - T-groins
 - Revetment
 - Gravel Beaches and Perched Beaches
- Alternatives evaluated for cost effectiveness, efficiency, engineering performance, and environmental acceptability.



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The Solution

T-Groins

- T-groins help with sand retention and maintaining the shoreline position.
- T-groins are found in many coastal environments with erosion problems.



Physical Model of the T-Groins



T-Groins at Sea Gate



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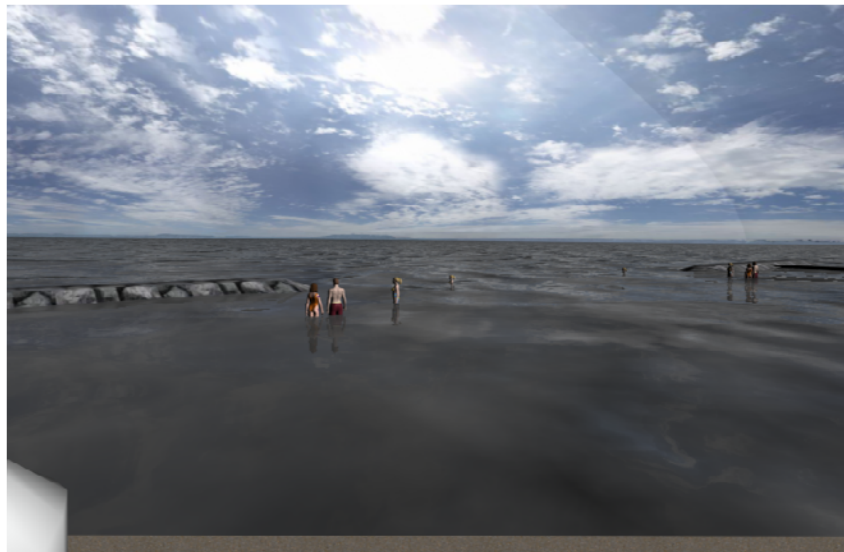
What Will It Look Like?



Pre-construction



Post-construction



View from the shore at mean high water one year post-construction



One year post-construction



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Project Completion

- **Project Schedule**

- Fall 2014 Contract Award
- Fall 2014 - Winter 2016 T-groin Construction
- Spring 2016 Sand Placement
- Spring/Summer 2016 Completion

- **Construction**

- Stone for T-groins likely transported by barge.
- Construction activities will be coordinated over the 2015 beach season to minimize disruption.
- 150,000 cubic yards of sand from the Jamaica Bay Federal Navigation Channel and Gravesend Bay will be hydraulically placed within T-groins.

- **Operation and Maintenance**

- Responsibility of the NYS Department of Environmental Conservation, NYC Department of Parks and Recreation, and the Sea Gate Association.

