South Shore of Staten Island, New York

Dec '92 Nor'easter

Oct 2012 Sandy

Project Features (final design underway)
- 4.5 miles buried seawall
- 0.6 miles levee & road raising
- 0.35 miles floodwall
- Natural storage & excavated ponds
- Tidal wetlands

A-1/2 (levee) 3,400 ft @ +16.0 ft NAVD
A-3 (floodwall) 2,100 ft @ +19.4 ft NAVD
A-4 (buried seawall) 22,700 ft @ +21.4 ft NAVD

Project Area Key Facts
- Flood-prone, high risk, low-lying area, low capacity storm sewers
- Nearly 7,300 structures; over 30,000 people

Critical infrastructure:
- Wastewater Plant; SI University Hospital; Fire/police stations; schools & senior centers

Hurricane Sandy Inundation

Typical Project Cross-Sections (note, final design revisions underway)

Hurricane Sandy
- Water levels peaked at 12.5 ft NAVD
- Flooding depths over 10 ft
- 4 ft higher than prior record
- 24 Staten Island deaths
- 43 total in New York City
- 60% structures damaged in project area
- Over $1B in damages

Residual Flooding After Project Construction
- Project is technically feasible, economically justified, environmentally acceptable.
- Federally funded through Public Law 113-2.
- Initial Construction cost-shared 65% Federal, 35% Non-Federal.
- Project Operation & Maintenance is State/City of New York 100% responsibility.
- Assistant Secretary of Army approved Final Feasibility Report, EIS, Record Of Decision, Director’s Report, with Congressional notification, Dec 2016.
- Residual Risk - project annual exceedance probability is 0.3% (300-yr event).
- Resiliency - project allows emergency vehicle response in previously flooded areas; recovery is accelerated due to improved drainage.
- Reliability - proven engineering solution to withstand multiple storms.
- Adaptability - project can be modified in future to address sea level rise, if required.
- Design Phase underway: Surveys/mapping, utilities, geotechnical, hazardous material, cultural investigations, physical modeling, interior drainage modeling, project construction contract design, plans, specifications, contractual packages.
- Coordination underway with various sponsors/stakeholders.
  - Corps of Engineers, State of New York, Gov Office, City of New York, Mayor Office, City Parks, City DEP, City DOT, Boro President, National Park Service, FEMA, and various Congressional and local interests.
- 3-party agreement with Corps, NYS (sponsor), NYC (party) executed 15 Feb 2019.

**Anticipated Contract Breakouts with Estimated Contract Award Timeline**

- **Contract 1 (2021)**
  - Levee, Tide Gate, Interior A

- **Contract 2 (2021)**
  - Floodwall @ WWTP

- **Contract 3 (2021)**
  - Interior C
  - Combined Corps + DEP efforts

- **Contract 4 (2021)**
  - Interior E
  - Combined Corps + DEP efforts

- **Contract 5 (2021)**
  - Oakwood Beach thru Miller Field
  - Seawall, Tide Gates (2), Tidal Wetlands, Interior B

- **Contract 6 (2022)**
  - Midland Beach up to Fort Wadsworth
  - Seawall, new Boardwalk

- **Contract 7 (2021)**
  - Miller Field Offset

- **Contract 8 (2021)**
  - Hylan Blvd

- Site preparation (Interior B, C, E) – Prahgmites Control
  - Dec 19 (mowing) + Aug 20 (spraying)

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**Estimated Project Cost**

<table>
<thead>
<tr>
<th>Cost Category</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Initial Construction Cost (ESTIMATED)</td>
<td>$615,231,000</td>
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<tr>
<td>Project Cost-share – Federal (65%)</td>
<td>$399,900,150</td>
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<tr>
<td>Project Cost-share – Non Federal (35%)</td>
<td>$215,330,850</td>
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<tr>
<td>Annual Operation &amp; Maintenance (Non Federal)</td>
<td>$679,000</td>
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</tbody>
</table>

**Estimated Project Schedule**

<table>
<thead>
<tr>
<th>Event Description</th>
<th>Date</th>
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<tbody>
<tr>
<td>Project Partnership Agreement Executed between Corps,</td>
<td>15 Feb 2019</td>
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<tr>
<td>NYS, NYC</td>
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<tr>
<td>Prahgmites control efforts underway</td>
<td>Dec 2019 (mow)</td>
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<tr>
<td>(multi-season fall mow/summer spray)</td>
<td>Aug 2020 (spray)</td>
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<tr>
<td>Estimated Start Project Construction (Contract 1)</td>
<td>Early 2021</td>
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<tr>
<td>(multiple contracts to follow)</td>
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<tr>
<td>Estimated Project Total Completion</td>
<td>Late 2025</td>
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<tr>
<td>(estimated)</td>
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</tbody>
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**US Army Corps of Engineers**

[Website](http://www.usace.army.mil/Missions/Civil-Works/Projects-in-New-York/South-Shore-of-Staten-Island/)