

South Shore of Staten Island, New York

Dec '92 Nor'easter



Oct 2012 Sandy



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
- 80% structures damaged in project area
- Over \$1B in damages

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 @ +16.9 ft NAVD

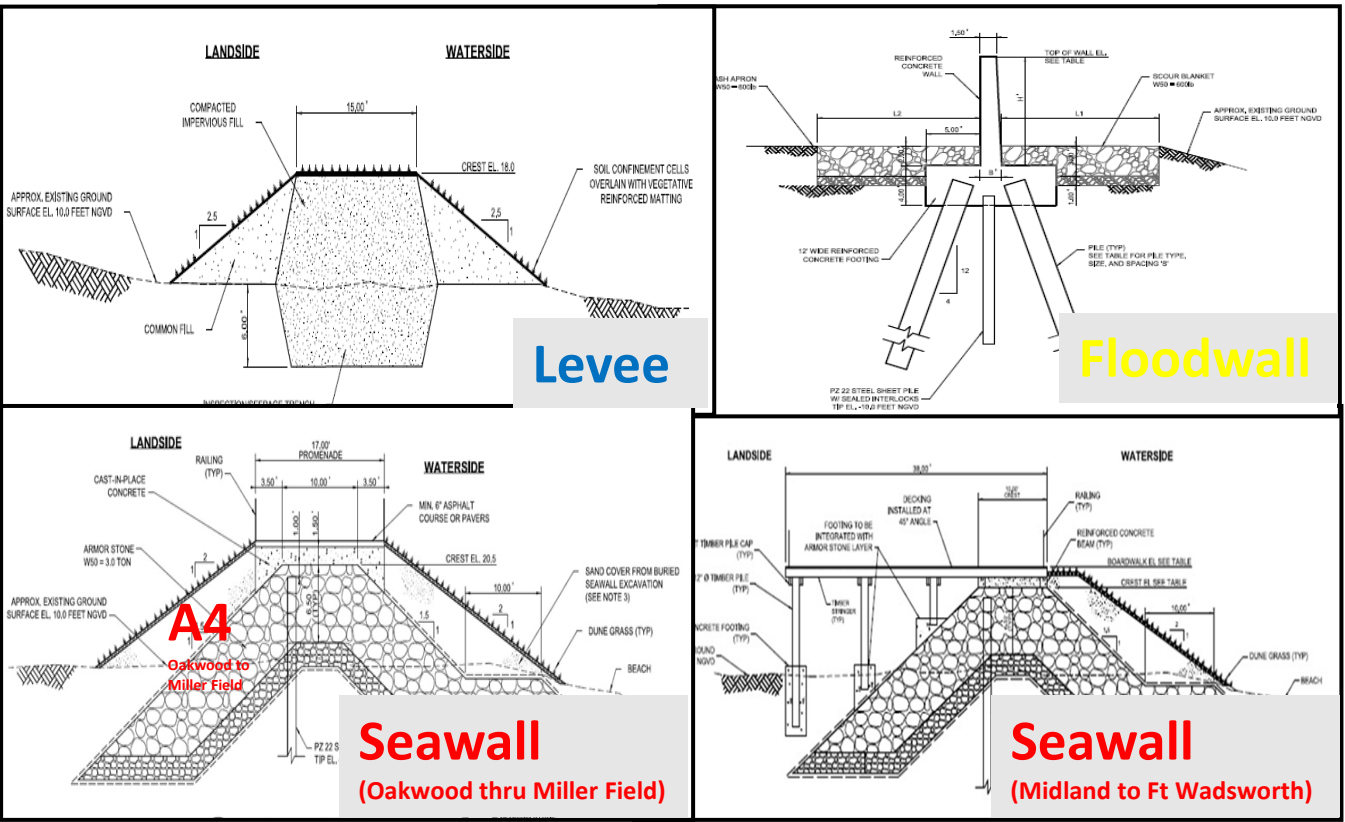
A-3 (floodwall) 2,100 ft @ +19.4 ft NAVD

A-4 (seawall) 22,700 ft @ +21.4 ft NAVD



Typical Project Cross-Sections

(Several project design revisions are currently underway)



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; Staten Island Hospital; Fire/police stations; schools & senior centers

October 2021



US Army Corps
of Engineers
New York District
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Hurricane Sandy Inundation

Source: FEMA MOTF Hurricane Sandy Impact Analysis

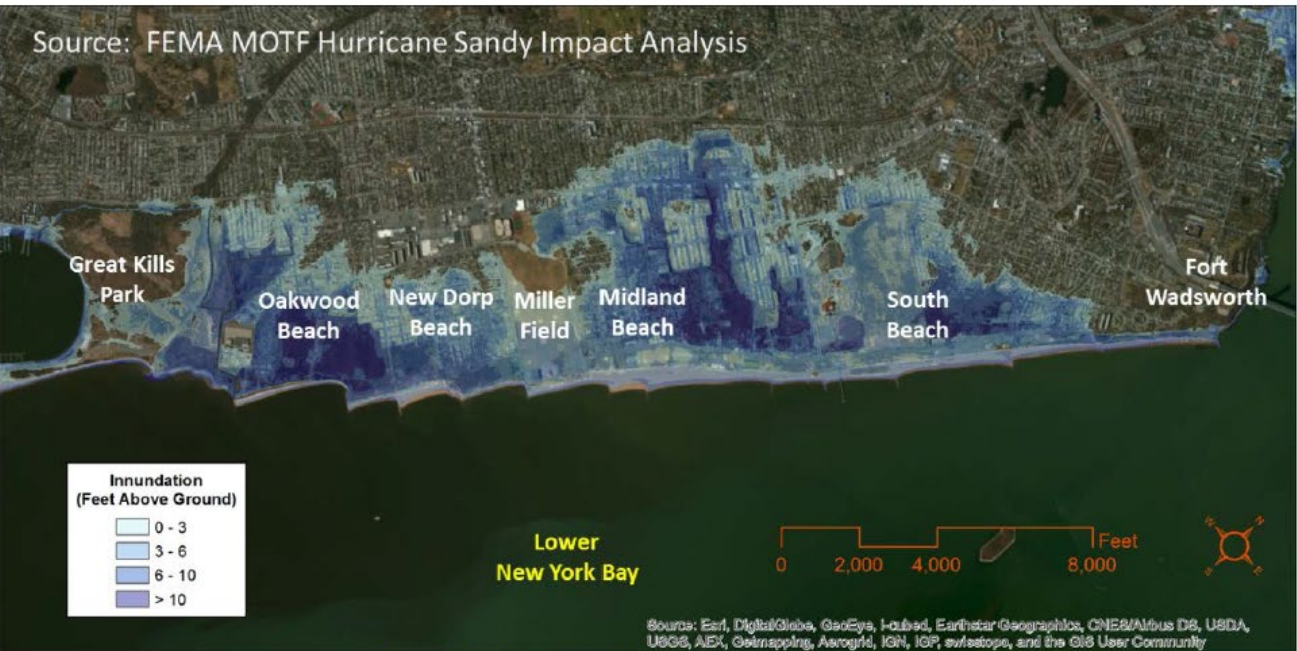
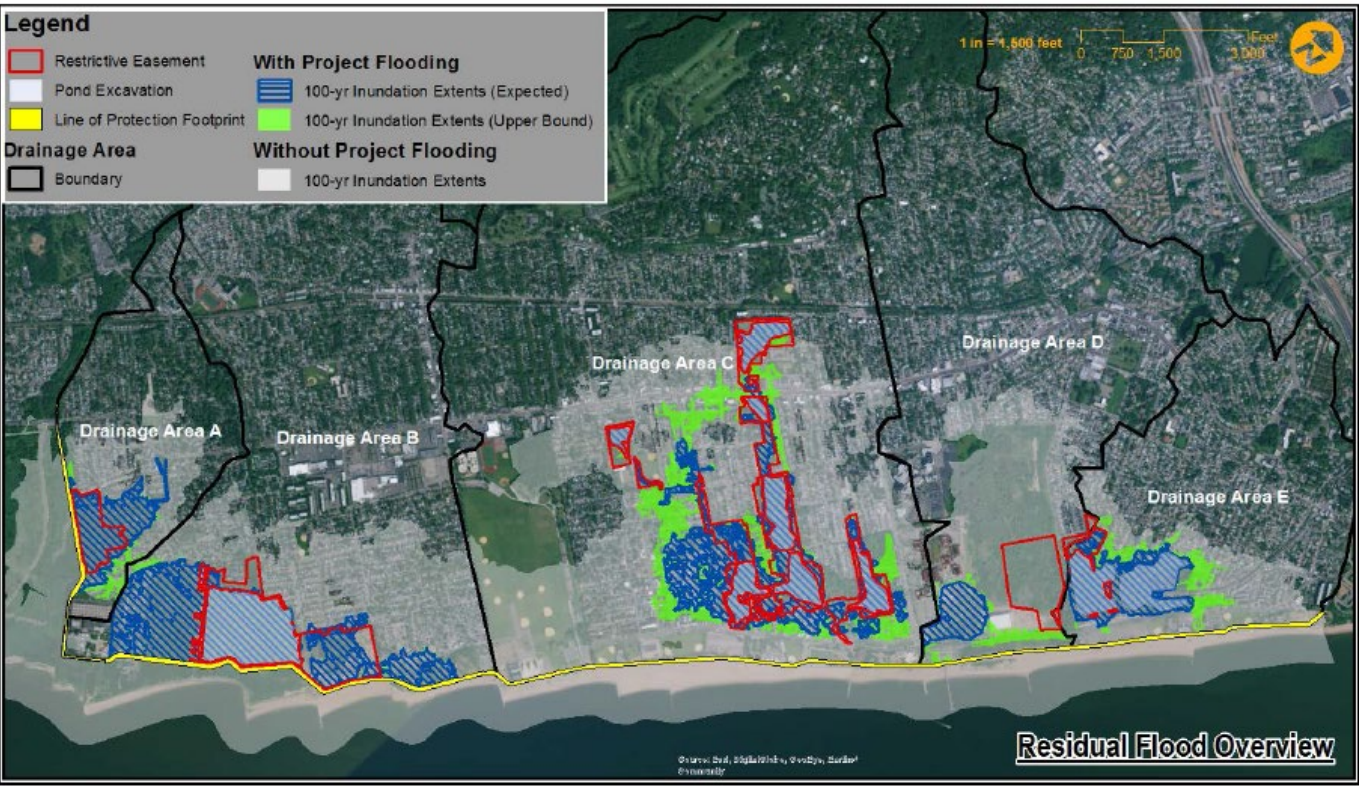
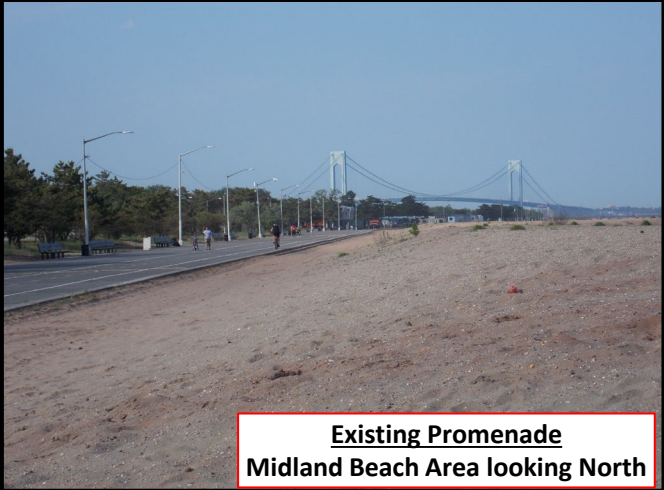


Figure 11 - Hurricane Sandy Flood Inundation

Residual Flooding After Project Construction



Project Renderings (Before & After)



- ✓ Project is technically feasible, economically justified, environmentally acceptable
- ✓ Federally funded through Public Law 113-2
- ✓ Assistant Secretary of Army approved Final Feasibility Report, EIS, Record Of Decision, Director's Report, with Congressional notification, Dec 2016
- ✓ 3-party agreement with Corps, NYS (sponsor), NYC (party) executed 15 Feb 2019
- ✓ Initial Construction cost-shared 65% Federal, 35% Non-Federal
- ✓ Project Operation & Maintenance is State/City of New York 100% responsibility
- ✓ Residual Risk – project annual exceedance probability is 0.3% (300-yr event)
- ✓ Resiliency – allows emergency response in previously flooded areas; accelerated recovery
- ✓ Reliability – proven engineering solution to withstand multiple storms
- ✓ Adaptability - project can be modified in future to address sea level rise, if required
- ✓ Design Phase of entire project is currently underway: Surveys/mapping, utilities, geotechnical, cultural investigations, physical modeling, interior drainage modeling, construction contract designs, plans, specifications, various contractual packages
- ✓ Coordination is underway with various sponsors/stakeholders: Corps of Engineers, State of New York, Gov Office, City of New York, Mayor Office, City Parks/DEP/DOT, Boro Pres Office, National Park Service, FEMA, Congressional and local interests
- ✓ **Design of all eight (8) construction contracts is currently underway, including significant coordination with the State and City of New York to finalize specific project design details**

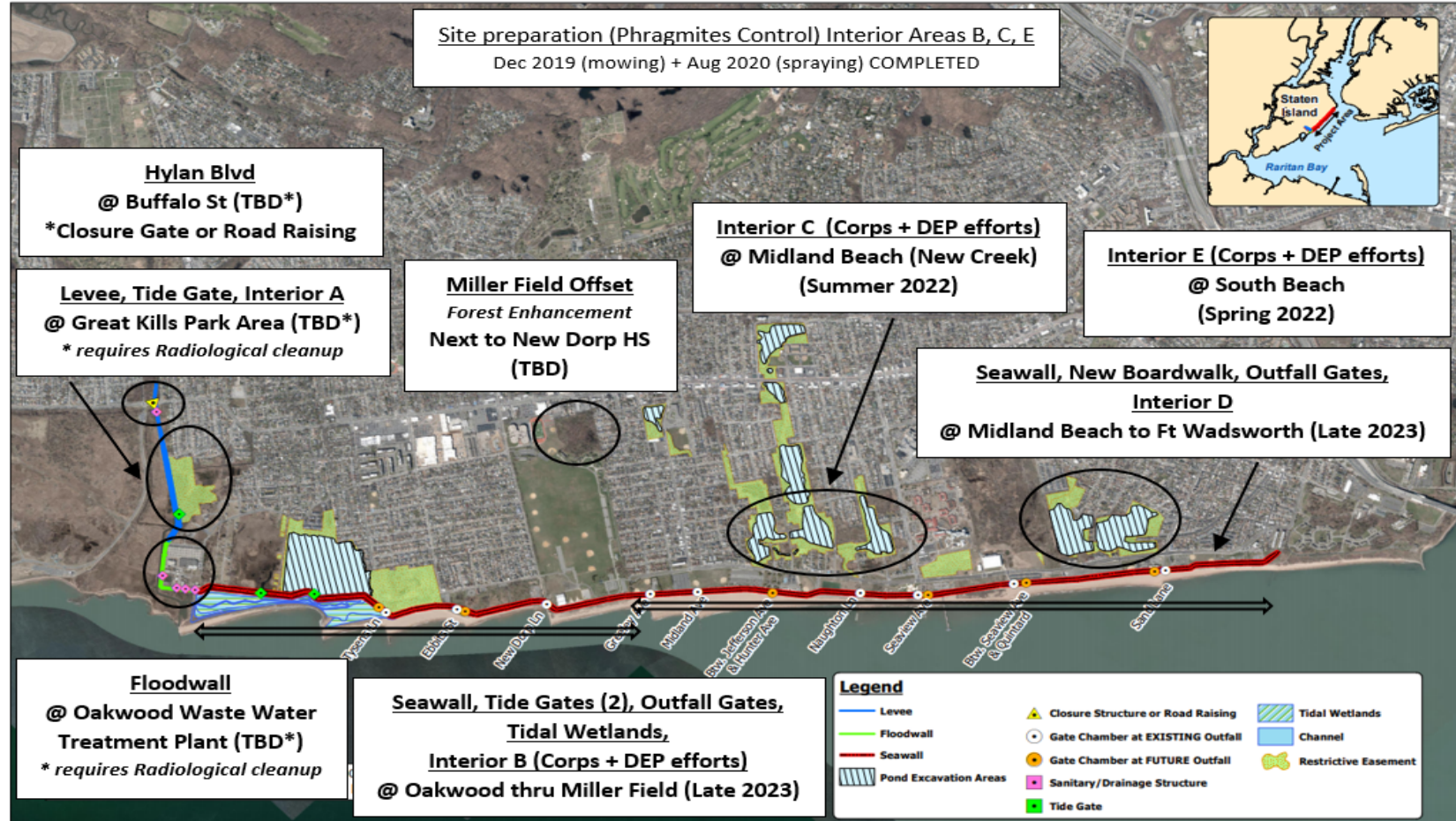
Estimated Project Cost

Initial Construction Cost (ESTIMATED)	\$615,231,000
Project Cost-share – Federal (65%)	\$399,900,150
Project Cost-share – Non Federal (35%)	\$215,330,850
Annual Operation & Maintenance (Non Federal)	\$679,000

Estimated Project Schedule

Project Partnership Agreement Executed between Corps, NYS, NYC	15 Feb 2019
Phragmites control efforts completed within Interior Areas B, C, E	2019 (mow) 2020 (spray)
Estimated Start Construction Additional contracts coming in 2023	Interior E (Late Spring 22) Interior C (Late Summer 22)
Estimated Project Total Completion	Late 2026 (estimated)

Anticipated Contract Breakouts with Estimated Contract Award Timelines



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NEW YORK STATE
Department of Environmental Conservation

NYC

NYC
Environmental Protection

NYC Parks

NATIONAL PARK SERVICE

NEW YORK CITY
DOT

US Army Corps of Engineers (website)
<http://www.nan.usace.army.mil/Missions/Civil-Works/Projects-in-New-York/South-Shore-of-Staten-Island/>