The recommended project will manage risk against inundation, erosion and waves, reducing the potential for storm induced damages along the Atlantic Ocean coastline.

- Federal coastal storm risk management projects are typically formulated and designed to maximize net benefits, optimizing at more frequent events, i.e. 50-100 yr storms.

- The level of coastal storm risk management provided by the recommended project is equivalent to a 100-yr storm, or a storm that has a 1% chance of occurring in any given year.

- Hurricane Sandy was approximately a 180-yr storm. The recommended project would have been overtopped, but would have reduced the damages experienced.

- The project will not address coastal storm risks from the bayside of the Island.

- The project would work as part of a larger coastal storm risk management system if risk management measures are implemented along the bayside in the future.
Plan Components

Length of Beachfill
35,000 linear feet (LF), extends from east end of Point Lookout to west boundary of the City of Long Beach at Nevada Avenue, with an incidental taper into East Atlantic Beach

Point Lookout & Lido Beach (east of Nickerson)
- 110 ft berm from seaward toe of dune; elevation +9 ft NAVD88
- 1V:20H slope to existing bathymetry
- Dune with crest width of 25 ft; top elevation +14 ft NAVD88 with 1V:5H landward and seaward slopes

City of Long Beach & Lido Beach (west of Nickerson)
- 190 ft stepped berm from seaward toe of dune
  - 40 ft flat berm; elevation +9 ft NAVD88
  - 20 ft berm at 1V:10H slope to +7 ft NAVD88
  - 130 ft flat berm; elevation +7 ft NAVD88
  - 1V:30H slope to existing bathymetry
- Dune with crest width of 25 ft; top elevation +14 ft NAVD88 with 1V:5H landward and seaward slopes (1V:3H landward slope fronting the boardwalk in Long Beach)
- 10 foot buffer in front of boardwalk before dune slope

Nassau County (Nickerson Beach)
- ~5,000 LF, existing berm provides equivalent coastal storm risk management
- Berm area undisturbed to allow for bird nesting and foraging
- Dune with crest width of 25 ft; top elevation +14 ft NAVD88 with 1V:5H landward and seaward slopes
- Incorporates existing dunes into construction of HSLRR Plan

Beachfill, Dune Grass, and Sand Fence Quantities
- initial fill placement: 4,720,000 cy
- renourishment:
  - 1,770,000 cy fill
  - 5-yr intervals for 50-yr period of analysis
- planting dune grass: 34 acres
- sand fence: 75,000 LF

Offshore borrow area
- Contains ~36 million cy of beachfill
- located ~one mile offshore of the barrier island of Long Beach

Groins
- Existing groins
  - 17 total rehabilitation
  - rehabilitation/100 ft extension of Point Lookout terminal groin
- Newly constructed groins
  - 4 total at eastern end of island
  - 250,000 tons of stone

Access for Pedestrians and Vehicles (Dune Crossovers)
- City of Long Beach: 31 total
- Town of Hempstead: 20 total
- Nassau County: 6 total
Project Layout

Legend:
- Historical Shorebird Nesting Area
- Dune
- Groins
- Ephemeral Ponds
- Slope 1V:2H
- Slope 1V:2H
- Beach Berm with Step
- Beach Berm without Step

Atlantic Coast of Long Island, Jones Inlet to East Rocaway Inlet, Long Beach Island, New York Coastal Storm Risk Management Project

Scale: NTS
Bird Nesting and Foraging Area
Incorporated into Project Design

Note: Bird nesting area location is approximate and will continue to be coordinated with resource agencies. HSLRR incorporates the existing dune into the construction of project dune. The area shown in blue is the location where the existing berm height and width are sufficient and no beachfill is needed.
Construction Implementation

Significant 100% Federal Investment in your Community: Estimated total of $230M

Contract #1: Awarded Mar 2016 to H&L Construction ($38M)

• For all groin construction
• 2.5 year duration
• Reach 1: Point Lookout to Lido Beach
• Reach 2: Long Beach
• 250,000 tons of stone from NJ

Contract #2: To be awarded by November 2017

• All beach fill work-4.7M cubic yards
• Dune crossings
• Planted vegetation
• Estimated two year duration
Where Will the Sand Come From?

Long Beach Borrow Area

ATTANTIC OCEAN

PROPPOSED AREA
Consideration of Environmental Impacts

**Impacts Considered:** Benthic Communities, Fisheries, Shorebirds, Water Quality, Air Quality and Noise, Cultural Resources, Aesthetics, Surfing, Fishing, Beach Usage, Boardwalk Usage

### Impacts Avoided or Minimized

**Benthic:**
Short term, recovery expected within 2-6.5 months nearshore and 1.5 to 2.5 years offshore following construction

**Fisheries:**
No long-term impacts expected, will generally avoid construction area

**Shorebirds/Endangered Species:**
No construction during breeding season
Avoidance and enhancement of existing foraging/nesting habitats

**Water Quality:**
Short term turbidity (including impacts to dissolved oxygen), ends as soon as each element is constructed

**Air Quality and Noise:**
Temporary impacts, during 24-7 construction only

**Cultural Resources:**
Coordinated with New York State Historic Preservation Office – No Significant Impact

**Aesthetics:**
New sand similar to the existing beach and rehabilitated groins

### Unavoidable, Minimal &Temporary Recreational Impacts

**Beach Access:**
Access no longer available from under boardwalk. Access will occur off boardwalk via walkovers over the dune

**Aesthetics:**
Potential impacts to view of beach from boardwalk

**Surfing and Fishing:**
Will be temporary and will dissipate as the beach returns to equilibrium

**Beach Usage:**
Impacts end as construction moves along beach

**Boardwalk Usage:**
Impacts end as construction moves along boardwalk
Contract 1 Construction Methods

• Work hours: Monday through Friday 7:00AM-3:30PM

• Major aspect will be stone delivery by truck
  • Two trips by 20 trucks per day from quarry in NJ
    • One morning delivery, one afternoon
    • All trucks will use Atlantic Beach Bridge
    • Deliveries start in July for Reach 1
    • Reach 2 stone work will start after August 2017
    • Trucks are regular tractor trailers-not oversize

• This summer, only one crew, but by September, two crews
  • 1 Komatsu 1250 Material Handler
  • 2 Komatsu HM400 Off-road Haulers
  • 1 Komatsu Payloader
Point Lookout Reach 1: Construction Schedule - Stone Contract


Nov 16-Dec 17*  Sep 16-Dec 17*  Nov 16-Dec 17*  Sep 16-Dec 17*  Dec 17-Mar 18  Dec 17-Mar 18  Jul 16-Nov 16

* No work in Reach 1 between April 2017 and Sept 2017
CONTRACT OCEAN VIEW AT MEAN HIGH WATER

EXISTING MHW SHORELINE

NEW MHW SHORELINE
## Long Beach Reach 2: Construction Schedule - Stone Contract

<table>
<thead>
<tr>
<th>Groin #</th>
<th>Street Name</th>
<th>Start</th>
<th>Finish</th>
<th>Crew</th>
<th>Notes</th>
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<tbody>
<tr>
<td>25</td>
<td>Georgia Ave</td>
<td>Aug 17</td>
<td></td>
<td>A</td>
<td><em>only two groins under construction at one time</em></td>
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<tr>
<td>27</td>
<td>Tennessee Ave</td>
<td></td>
<td></td>
<td>B</td>
<td></td>
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<tr>
<td>29</td>
<td>Arizona Ave</td>
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<td></td>
<td>A</td>
<td></td>
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<tr>
<td>30</td>
<td>New York Ave</td>
<td></td>
<td></td>
<td>B</td>
<td></td>
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<tr>
<td>32</td>
<td>Grand Blvd</td>
<td></td>
<td></td>
<td>A</td>
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<tr>
<td>34</td>
<td>Washington Blvd</td>
<td></td>
<td></td>
<td>B</td>
<td></td>
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<tr>
<td>35</td>
<td>Lafayette Blvd</td>
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<td></td>
<td>A</td>
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</tr>
<tr>
<td>36</td>
<td>Laurelton Blvd</td>
<td>Sep 17</td>
<td></td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>38</td>
<td>National Blvd</td>
<td>Jan 18</td>
<td></td>
<td>A</td>
<td>No Summer Work</td>
</tr>
<tr>
<td>39</td>
<td>Edwards Blvd</td>
<td></td>
<td></td>
<td>B</td>
<td>No Summer Work</td>
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<tr>
<td>40</td>
<td>Riverside Blvd</td>
<td>May 18</td>
<td></td>
<td>A</td>
<td>No Summer Work</td>
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<tr>
<td>42</td>
<td>Monroe Blvd</td>
<td>Apr 18</td>
<td></td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>43</td>
<td>Lincoln Blvd</td>
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<tr>
<td>44</td>
<td>Franklin Blvd</td>
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<td>47</td>
<td>Roosevelt Blvd</td>
<td>July 18</td>
<td></td>
<td>A</td>
<td></td>
</tr>
</tbody>
</table>

This work will be year round, two different groin areas will be closed for access at all times.
Potential Access Routes
• Rock delivery trucks will use Park Ave and/or E Broadway to get to access locations at New York Ave and Pacific Blvd
• 100’ x 200’ Staging Area near Pacific and individual stockpiles near each groin
Long Beach Reach 2: Construction

- This work will be year round (except National, Edwards, and Riverside)
- Two different groin areas will be closed for access during construction
- Each groin rehabilitation will take around two months of work depending on condition and size
Typical Groin Rehabilitation

GROIN 30 REHAB. PLAN

GROIN 323 REHAB. PROFILE

NOTE: REFER TO SHEET CS-309 FOR CROSS SECTIONS
For More Information, Contact:

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