

RARITAN BAY AND SANDY HOOK BAY, HIGHLANDS, NJ

COASTAL STORM RISK MANAGEMENT PROJECT

PUBLIC INFORMATION MEETING

PROJECT UPDATES

MAY 14, 2024



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US Army Corps
of Engineers®



NEW JERSEY
DEPARTMENT OF
ENVIRONMENTAL
PROTECTION



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PURPOSE

The purpose of this meeting is to provide an overview of the Raritan Bay and Sandy Hook Bay Highlands project and discuss the current phase, **Pre-Construction Engineering and Design Phase (PED)**.

The project will manage flood risks from coastal storm flood events that impact the community, its infrastructure, and the economy. The project supports the resiliency of the Sandy Hook Bay communities, infrastructure and their contributions to the region and to the national economy.

**Please hold questions till the end of the presentation.
Thank you.**





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HIGHLANDS, NJ

HIGHLANDS, N.J.



Bakers
Courtesy of

- LOOKING WEST FROM P. R. BRIDGE - ABOUT 1928
- ① BRUCE'S DANCE PAVILLION - NOW SHIPYARD.
 - ② HATTEN LINE BOAT LANDING.
 - ③ JACKSON HOTEL.
 - ④ VICTORIA HOTEL, NOW STOWAWAY.
 - ⑤ MINIATURE GOLF.
 - ⑥ BELAIR'S REST.
 - ⑦ WESTERN UNION TOWER.
 - ⑧ POSTAL TELEGRAPH.
 - ⑨ HOTEL MARTIN - NOW ALPINE MANOR.
 - ⑩ JACK & MASE ROW BOATS.
 - ⑪ HOUSE BOAT FOR U.S. DREGGE DE WITT-CLINTON.

VIEW OF Highlands about 1905

WESTERN Union Tower FOREGROUND

Shrewsbury River

PLUM ISLAND

SAND Hook & R.R. TRESTLE.

Bakers
Courtesy of



LOWED HIGHLANDS - POSTAL TELEGRAPH TOWER 1905

<https://www.highlandsnj.com/history/index.shtml>

The highest point of land on the coast from Texas to Maine is in Highlands (226 feet above sea level.)

The first land sighted by millions of immigrants approaching America was the hills of Highlands.

Giovanni da Verrazano of Florence was the first European explorer to describe in 1524 the geography of the Highlands.

In September of 1609 Henry Hudson made extensive explorations of the Highlands area.

The first European settlement in Highlands was in 1678 when Richard Hartshorne built his home at Portland on the Highlands peninsula.

On April 12, 1782 revolutionary war Patriot Capt. Joshua Huddy was hanged unjustly by loyalists forces in Highlands near Huddy Park.

James Fennimore Cooper in 1830 used the hills of Highlands as the setting for his novel, The Water Witch.

The Twin Lights, built in Highlands in 1862, was the first lighthouse to use kerosene, electricity, and the French Fresnel lens to reach out some 22 miles at sea. It was the site of Guglielmo Marconi's first practical radio demonstration in America in 1899 and the site of America's first radar experiments in the mid 1930s.

Gertrude Ederle, the first woman to swim the English Channel in 1926, spent her summers in Highlands where she trained in the challenging currents beneath the Highlands bridge.



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HIGHLANDS PARTNERSHIP



Federal Sponsor

USACE



Non-Fed Sponsor

New Jersey Department Of Environmental Protection



Project Stakeholders

Borough of Highlands





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AGENDA



- Non-Federal Sponsor (NJDEP)
- Project Authority
- Project Area
- Project Objectives
- Alternatives Considered
- Recommended Plan
- Draft Renderings - Veterans Park and Snug Harbor
- Current project update



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NEW JERSEY'S SHORE PROTECTION PROGRAM



State of New Jersey

Philip D. Murphy, Governor
Tahesha L. Way, Lt. Governor

Dept. of Environmental Protection

Shawn M. LaTourette, Commissioner

Watershed & Land Management Program

Katrina Angarone, Assistant Commissioner





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NEW JERSEY'S SHORE PROTECTION PROGRAM



Watershed & Land Management Divisions

Division of Land Resource Protection

Director: Jennifer Moriarty

Division of Watershed Protection & Restoration

Director: Anika Andrews

Division of Resilience Engineering & Construction

Director: Dennis Reinknecht



Office of Dam Safety & Flood Engineering (Trenton)

Office of Coastal Engineering (Toms River)

Erick Doyle, Assistant Director

Kelley Staffieri, Bureau Chief





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NEW JERSEY SHORE PROTECTION FUND



“To protect existing development and infrastructure from storm surges, sea-level rise and shoreline migration through dune creation and maintenance, beach nourishment projects, and construction and repair of shore protection structures.”

\$25 million dedicated annually

Realty Transfer Tax (N.J.S.A. C.13:19-16.1)





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NEW JERSEY'S SHORE PROTECTION PROGRAM



Federal Projects - NJDEP –Non-federal Sponsor (NFS) on these projects

- Studies
- Storm Damage Reduction/Shore Protection/CSR
- Environmental Restoration

State Projects - Municipalities -local sponsor in these projects

- Storm Damage Reduction/Shore Protection/CSR

Professional and Technical Services

- Stevens Institute of Technology
- Richard Stockton College of New Jersey
- Division of Fish and Wildlife
- New Jersey Geological Survey





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STATE OF NEW JERSEY'S ROLE

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Non-Federal Sponsor (NFS) with the Corps

- Funding
- Real Estate
- Technical & Professional Assistance

Project Partner with Local Municipality

- Liaison to the Corps for the Municipality
 - Municipal obligations memorialized through a State Aid Agreement with NJDEP





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PROJECT IMPLEMENTATION

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- Execution of a State Aid Agreement
- Real Estate Acquisition
- Finalize Plans and Specifications
- Contract Advertisement and Award (Army Corps)
- Initial Construction
- Operations & Maintenance





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LEGISLATIVE AUTHORITY AND HISTORY



The Highlands Feasibility Study was authorized on August 1, 1990, in a resolution of the Committee on Transportation and Infrastructure of the U.S. House of Representatives.

A Feasibility Cost Sharing Agreement with the New Jersey Department of Environmental Protection for the Highlands Coastal Storm Risk Management Study was executed in 2001.

The Highlands CSRM Study was included in the Second Interim Report in response to the Disaster Relief Appropriations Act, Public Law 113-2.

A Feasibility Cost Share Agreement amendment for \$1,500,000 to complete the feasibility study at full Federal expense was executed with NJDEP on 23 August 2013.

The PED study is 100% Federally funded. However, construction authority and appropriation will be required for project implementation and project will be cost shared 65% Federal and 35% non-Federal.



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STUDY LOCATION



Highlands Study Area

Federal Navigation Channel



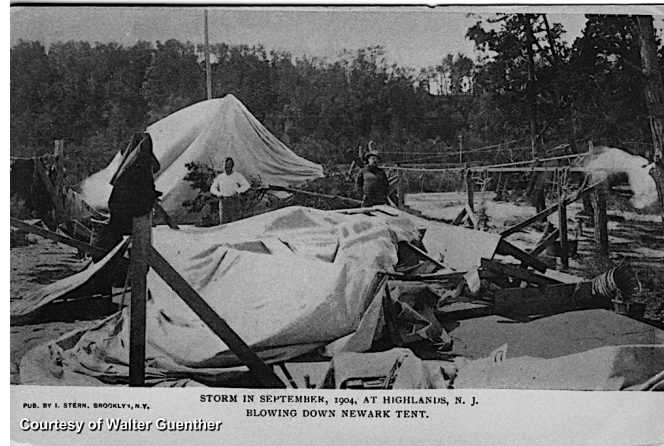
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WHY WE ARE HERE



Courtesy of Highlands Historical Society



STORM IN SEPTEMBER, 1904, AT HIGHLANDS, N. J.
PUB. BY I. STERN, BROOKLYN, N. Y.
COURTESY OF WALTER GUENTHER

September 1904

<https://www.highlandsnj.com/history/Archives/Storms/Archives-Storms.shtml>



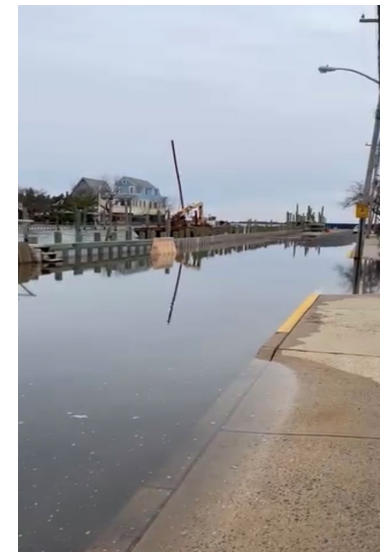
Superstorm Sandy, Highlands, Oct 2012



Corner of Waterwitch Ave. and Bay Ave.
December 23, 2022.



Icy Seawater Floods Highlands In
Nor'easter Snowstorm, Feb 2021



Feb 2024 and March 2024

THE PROBLEM

- The community of Highlands experiences damages from flooding due to coastal storms including tropical storms, hurricanes, and nor'easters and large rain events.
- Highlands has a history of devastating flood damages. In general, flooding due to storm surge occurs over a large area of the Borough as during the Hurricane Sandy event in 2012.



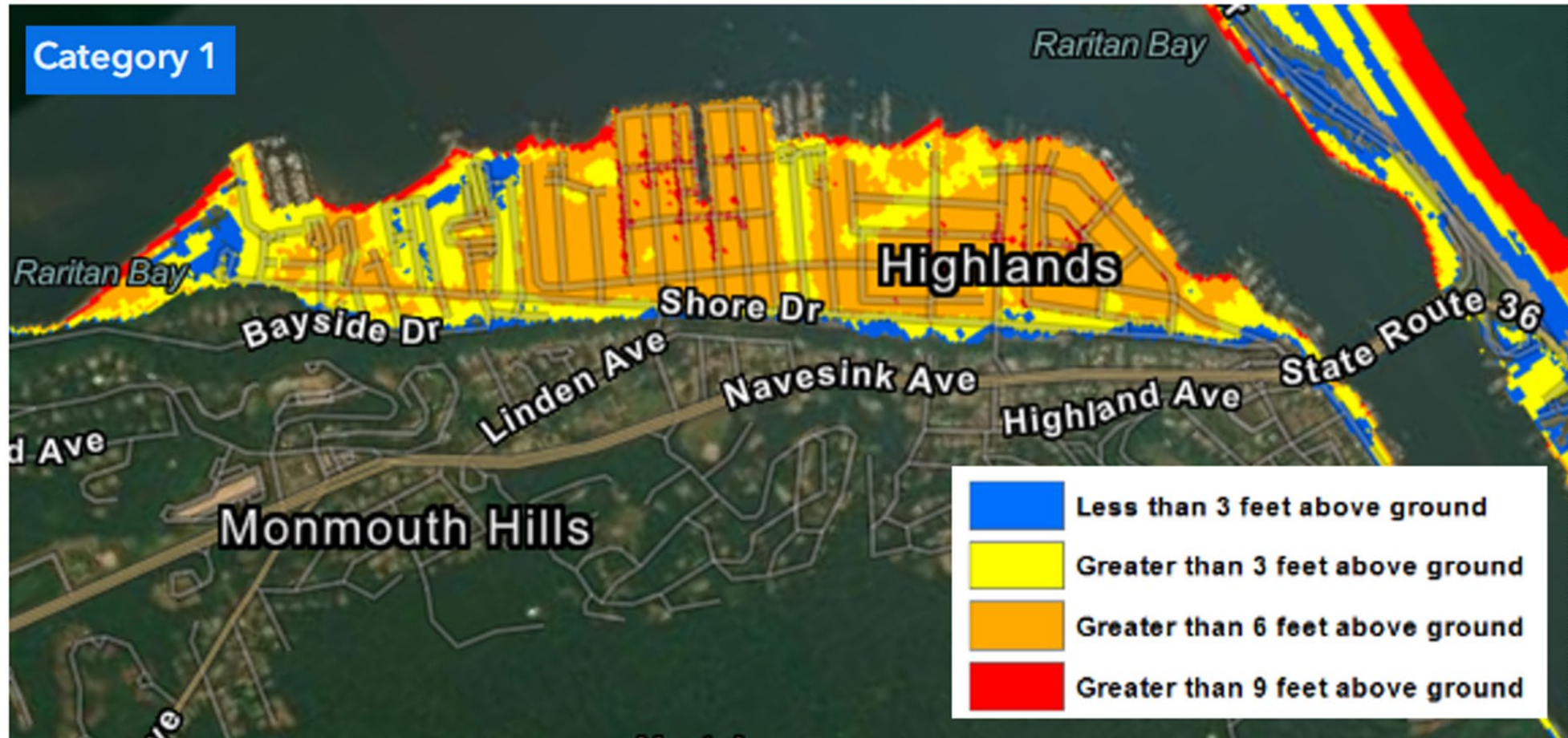


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THE PROBLEM

National Hurricane Center Storm Surge Risk Maps





PROJECT OBJECTIVES



REDUCE DAMAGES
REDUCE LIFE SAFETY RISK
SUPPORT COMMUNITY RESILIENCE



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HIGHLANDS FUTURE WITHOUT THE PROJECT

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- 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.**





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PREVIOUS PUBLIC MEETINGS & OUTREACH

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TWO MAJOR TAKEAWAYS:

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



ALTERNATIVES CONSIDERED



Non- Structural Measures

Buyouts (acquisition) of frequently flooded structures

Elevation (raising) of frequently flooded structures

Ringwalls/ structural peripheral wall

Floodproofing, of frequently flooded structures

Hard Structural Measures

Seawall/ bulkhead with closure gates (raised epoxy coated steel sheet pile bulkhead)

Offshore closure structure

Navigation sector gates

Removable fabricated floodwall (inland)

Floodwalls (T-type and I-type floodwall)



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RECOMMENDED PLAN

Private Development Raised Bulkhead

Detention Pond

Pressurized Pipes



328 lf of raised ground surface and 55 lf closure gate at East End (Veterans Memorial Park and Bay Avenue)



DISCLAIMER RENDERINGS

These are just examples. Elevations provided hereon are based upon results of surveys completed in 2002. Site photo information has been compiled utilizing publicly available data at the time of rendering preparation. Neither has been verified against current field conditions and both are provided for reference only. Line of protection is provided to show relative height and location of same relative to existing conditions onsite.

Location and type of protection is subject to change based upon formal site investigation and design by the USACE.



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DRAFT RENDERING – VETERANS PARK





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VETERANS PARK PREFERRED OPTION



Location and type of protection is subject to change based upon formal site investigation and design by the USACE.



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VETERANS PARK PREFERRED OPTION STREET VIEW

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VETERANS PARK OPTION 2



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VETERANS PARK OPTION 2 – STREET VIEW



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VETERANS PARK OPTION 3



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VETERANS PARK OPTION 3 – STREET VIEW



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SNUG HARBOR PREFERRED OPTION



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SNUG HARBOR PREFERRED OPTION AERIAL VIEW

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SNUG HARBOR PREFERRED OPTION GROUND VIEW

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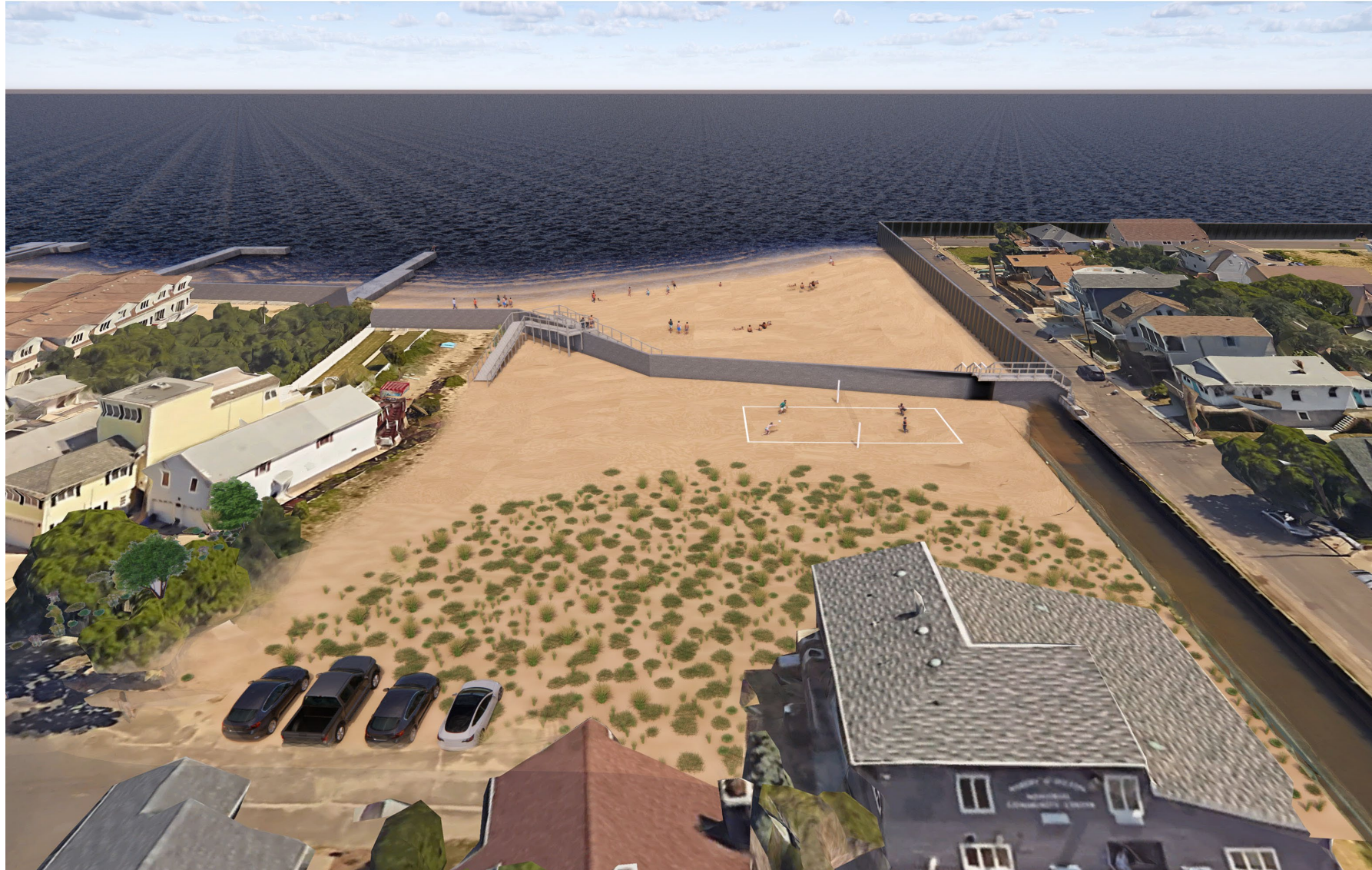


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SNUG HARBOR OPTION 2



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SNUG HARBOR OPTION 2 AERIAL VIEW

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SNUG HARBOR OPTION 2– GROUND VIEW

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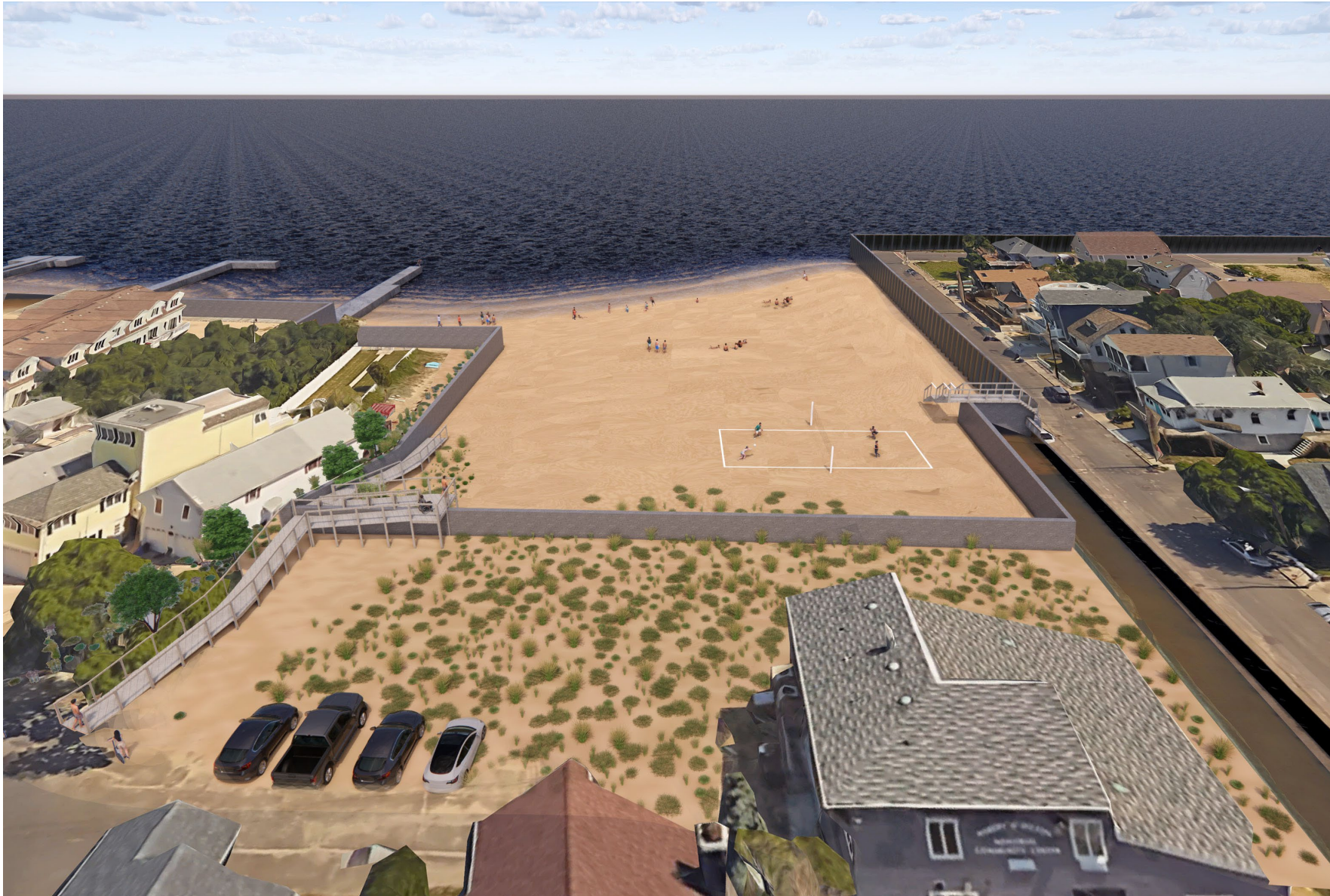


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SNUG HARBOR OPTION 3



Location and type of protection is subject to change based upon formal site investigation and design by the USACE.



SNUG HARBOR OPTION 3 AERIAL VIEW



Location and type of protection is subject to change based upon formal site investigation and design by the USACE.



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SNUG HARBOR OPTION 3 GROUND VIEW

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EXAMPLE BULKHEADS



WATERFRONT ACCESS EXAMPLES





FLOODWALL EXAMPLES





ROAD CLOSURE GATE EXAMPLE



Floodgate at Port Monmouth

INTERIOR DRAINAGE STRUCTURES





WHERE WE ARE AND NEXT STEPS



Currently in PED 30%

- First Constructible Element
 - Flood gate closure across Bay Avenue at Veterans Park
- Topographic/Utility Surveys
 - ROEs

Schedule

- PED
 - Design 1yr
 - Construction 1-1/2 yrs
 - **Requires timely decision making by all stakeholders**
 - As PED moves to completion, USACE will enter into a Project Partnership Agreement (PPA) with the Non-Fed Sponsor (NFS) for the Construction Phase of the remainder of the authorized project
- Design & Construction of the remainder of the project
 - Approximately 4yrs
 - Construction will be done in phases

Project Costs & Costs Share

- PED - 100% FED \$2.4M (DRSAA)
- CG – Estimated (subject to change) \$129M (BIL)
 - 65% Federal (\$84M); 35% Non-Federal (\$45M)



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PROJECT CONTACTS

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Project website:

<https://www.nan.usace.army.mil/Missions/Civil-Works/Projects-in-New-Jersey/Raritan-Bay-Sandy-Hook-Bay/>

Highlands Borough Contact:

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RARITAN BAY AND SANDY HOOK BAY, HIGHLANDS, NJ

COASTAL STORM RISK MANAGEMENT PROJECT

THANK YOU
QUESTIONS



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