

**American Planning Association of New Jersey
2018 New Jersey Planning Conference
January 26, 2018**

Office of Coastal and Land Use Planning

***National Fish & Wildlife Foundation Grant:
Building Ecological Solutions to Coastal Hazards***



The Guide

Four primary areas of concern:

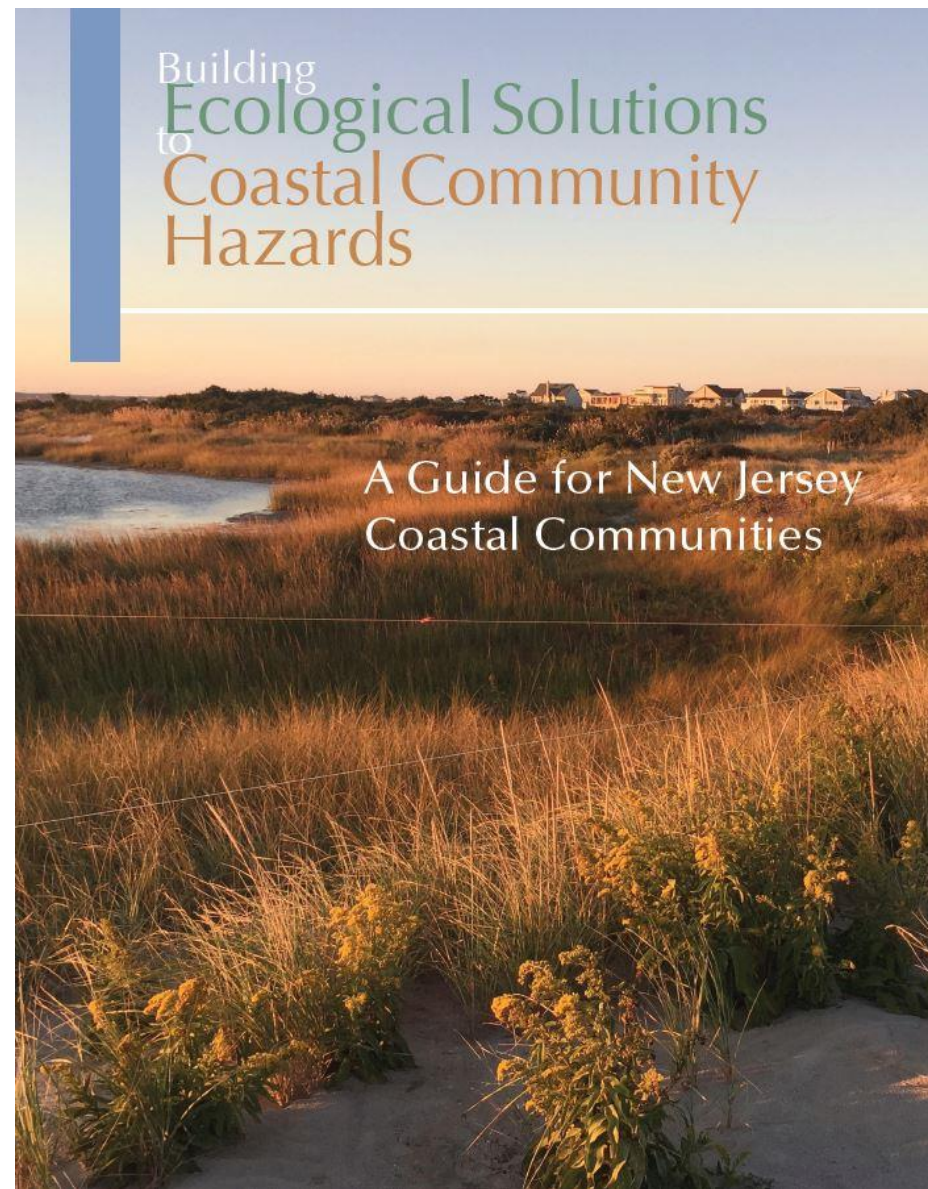
- Coastal Communities
- Beaches and Dunes
- Coastal Forests and Shrublands
- Tidal Marshes

Content for each area:

- Overview
- Protective Values
- Key Vulnerabilities
- Ecological Solutions
- Case Studies

Appendices:

- Checklists
- NJ T&E by ecosystem



Available electronically at
<http://www.nj.gov/dep/oclu/>

Content

Coastal Communities

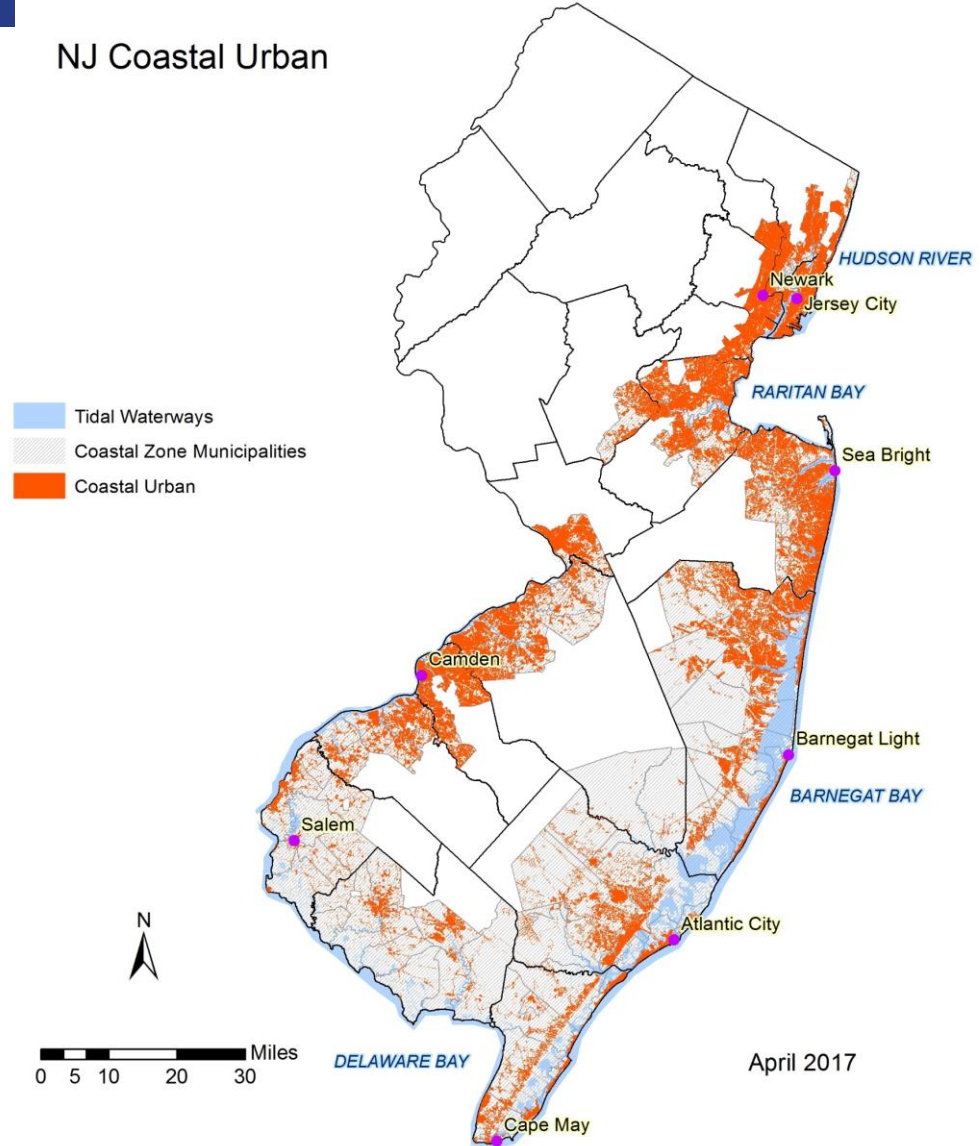
- > 50% NJ residents live in coastal counties
- 239 municipalities tidally influenced
- 1,800 miles of shoreline

Key Vulnerabilities

- Sea level rise
- Coastal storm damage
- Inland flooding and polluted runoff
- Shoreline erosion
- Saltwater intrusion
- Extreme temperature

Ecological Solutions:

- Land Use Planning and Zoning
- Conservation practices
- Public Education and Outreach



This map is for informational purposes only.
Feature data source NJDEP LULC 2012.

Ecological Solutions

Land Use Planning and Zoning

Integrate climate change, sea level rise and projections for ecosystem migration into municipal documents

Establish local development setbacks to hazards and ecosystems

Conservation Practices

Reduce reliance on engineered hard infrastructure

Encourage restoration of natural systems in strategic areas

Public Education and Outreach

Encourage residents to adopt native species demonstration gardens

Recognize and reward private stewardship of ecosystems



7 Presidents Oceanfront Park, Long Branch, NJ



Glen Cove, Berkeley Twp., NJ

Case Studies

28 case studies in 7 counties addressing ecological solutions for developed lands and ecosystems



Green Infrastructure Strategy for the City of Hoboken: With this plan, Hoboken has created a viable strategic framework for urban resilience that can address the impacts of natural hazards while creating urban wildlife habitat and encouraging residents to adopt ecological practices in their daily lives.

Case Studies

28 case studies in 7 counties addressing ecological solutions for developed lands and ecosystems



High school students from Cape May County Technical School District taking tide measurements in a local salt marsh.

Ecological Solutions to Coastal Community Hazards

Local Government Ecological Solutions

Planning and Permitting:

- Cape May County
- Lower Township
- Downe Township
- Somers Point
- Margate City

Planning, Permitting, Implementation & Monitoring:

- Atlantic City
- Brigantine Beach
- Upper Township
- Secaucus Town
- Spring Lake Township



Cape May County (Middle Township)

Green Creek Tidal Estuary Sustainability Project: Beach and Marsh Restoration

Issues:

- Widening inlets and creeks
- Loss of low marsh and forested wetlands
- Beach dune breaching during storms

Goals:

- Resilient bay front dune system
- Maintain critical shorebird and crab habitat
- Engage stakeholders to achieve goals
- Establish long term sustainability

Alternative Solutions:

- Storm events: Oct. 2015, Jan. 2016, Feb. 2016
- Build up beach dune complex
- Remove Schellinger Creek inlet
- Add sinuosity to Green Creek

Grant Award: \$200,000

Local Match: \$62,555

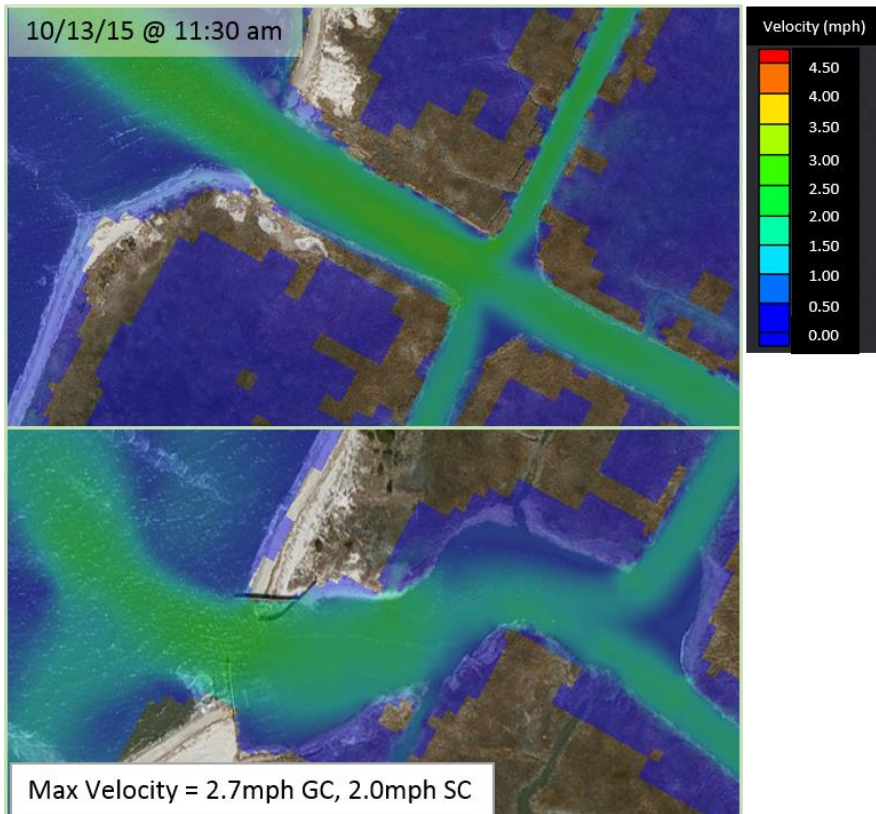


Cape May County (Middle Township)

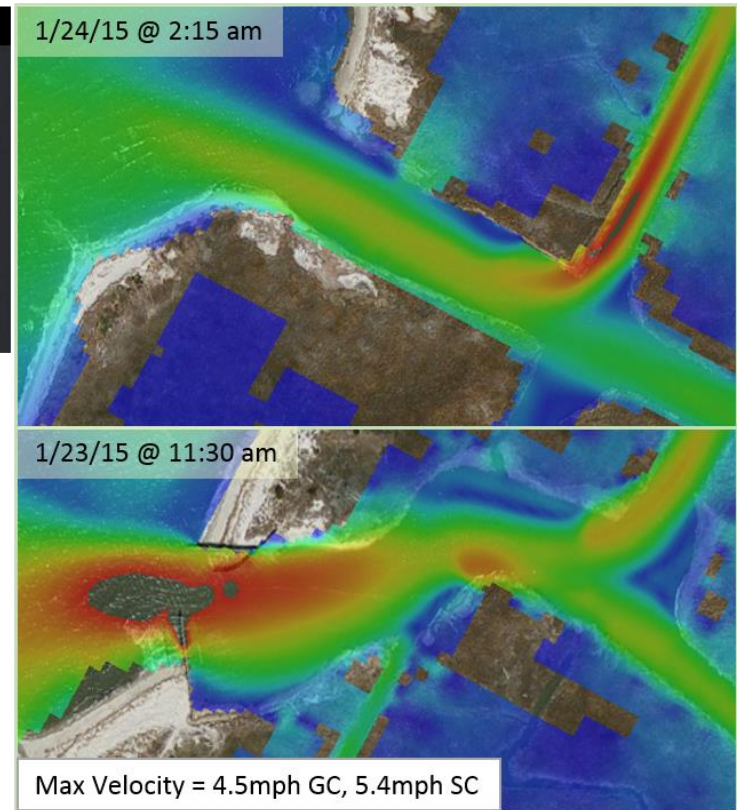
Green Creek Tidal Estuary Sustainability Project: Beach and Marsh Restoration

Scour Velocity Analysis

- TYPICAL CONDITIONS – 2 WEEK PRD



- STORM CONDITIONS – 9 DAY PRD



Solution : Tidal gate for storm surge situations only

Lower Township

Beach Replenishment, Breakwaters, Cox Hall & Fishing Creek Habitat Restoration

Issues:

- Marsh health at Cox Hall & Fishing Creek
- Impeded tidal and stormwater flows
- Beach shoreline erosion
- Tidal flooding, storm surge and SLR
- 2,800 acres impacted

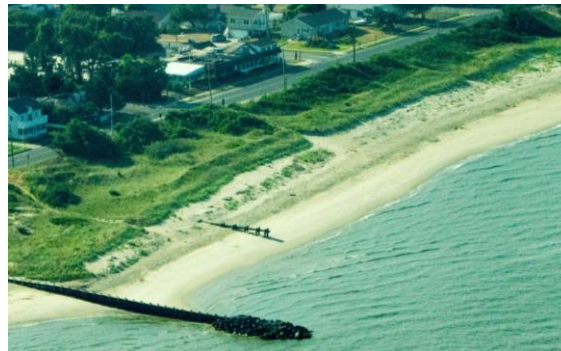
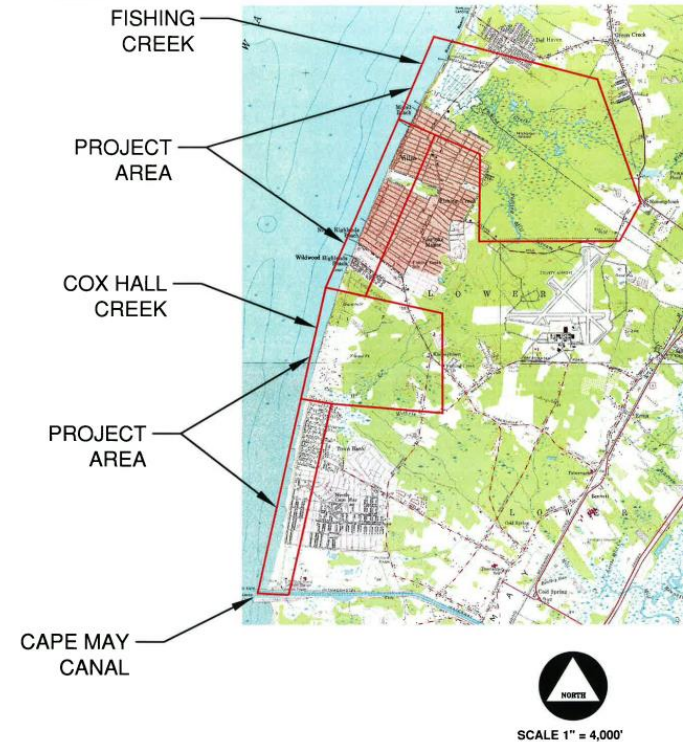
Goals:

- Enhanced marshes by improved water flow
- Resilient, sustainable bayfront dune complex
- Communities protected tidal flooding

Solutions:

- Doubled tidal/stormwater infrastructure
- Strategic shore breakwater locations
- Beach and dune replenishment
- USACE Coordination

Grant Award: \$250,000
Local Match: \$62,500



Downe Township

Gandy's Beach Breakwaters and Beach Replenishment

Issues:

- Loss of Habitat – horseshoe crab/Red Knot
- Loss of Beach and hard infrastructure
- Marsh edge erosion

Goals:

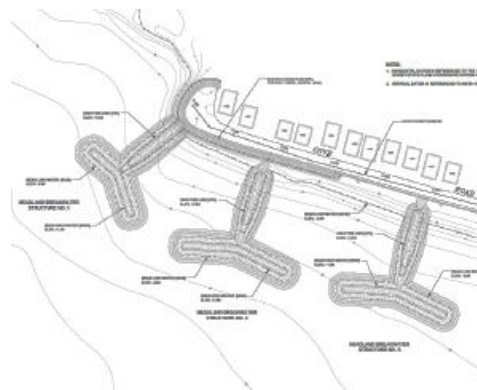
- Habitat Restoration – horseshoe crab/Red Knot
- Resilient bay front dune system
- Protection from SLR and surge

Solutions:

- Strategic Breakwater locations
- Beach and Dune Replenishment
- USACE Coordination

Grant Award: \$200,000

Local Match: \$50,000



Somers Point

Habitat Restoration, Tidal Flooding Mitigation & Beneficial Re-Use of Dredge Materials

Issues:

- Public Marina needs restoration & dredging
- Need restoration sites for dredge materials
- Tidal flooding in multiple locations

Goals:

- Beneficial reuse of dredge materials
- Habitat Creation - pollinators
- Marsh habitat restoration
- Tidal flooding mitigation

Solutions:

- 7 iterative site assessments and concepts
- Embankment for habitat and tidal flood mitigation

Grant Award: \$125,000

Local Match: \$62,500



Margate

Habitat Restoration & Beneficial Re-Use of Dredge Materials

Issues:

- Bay and lagoons need dredging
- Need restoration sites for dredge materials

Goals:

- Municipal dredging plan
- Beneficial Reuse of Dredge Materials
- Marsh elevation or edge restoration
- Dredge Hole Restoration

Solutions:

- Marsh Assessment & Restoration Plan
- Dredge Sampling Plan & material testing
- Near term Shelter Island edge restoration
- Long term Amherst Cut Restoration
- Long term Dredge Hole Restorations #90, #84

Grant Award: \$125,000

Local Match: \$62,500



Atlantic City

Habitat Creation, Shoreline Stabilization & Tidal Flooding Mitigation

Issues:

- Gap in shoreline allowed tidal flooding
- Property conditions are poor in very public area
- Potential horseshoe habitat if improved

Goals:

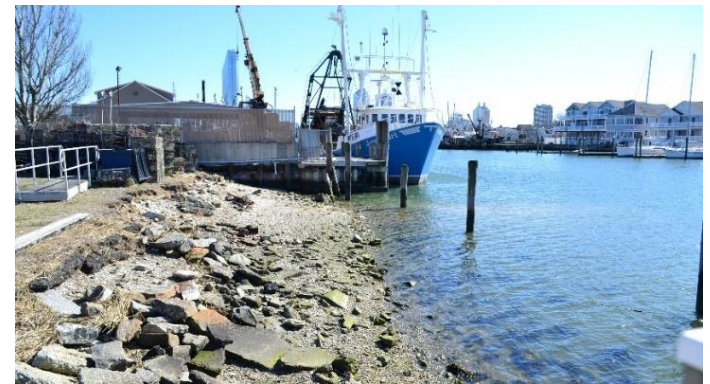
- Habitat creation - horseshoe crab & pollinators
- Shoreline stabilization
- Tidal flood mitigation
- Public education

Solutions:

- Rock & Coir Log Sills for Shoreline Stabilization
- Double Row Design for horseshoe crab access
- Low and High Marsh Creation
- Embankment for tidal flood mitigation & pollinators
- Public Information Sign for Living shorelines
- Monitoring by professionals and citizen scientists

Grant Award: \$125,000

Local Match: \$62,500



Brigantine Beach

NJSME 2017 Project of the Year - Category 8
Intergovernmental Cooperation

Habitat Restoration, Tidal Flooding Mitigation & Stormwater Management

Issues:

- Varied and poor shoreline conditions
- Tidal flooding
- Stormwater flooding from Brigantine Boulevard

Goals:

- Habitat restoration/creation – marsh & pollinators
- Tidal flood mitigation
- Stormwater management

Solutions:

- Shoreline plantings to support existing native species
- Embankment for tidal flooding & habitat
- Trench drain and outlet protection
- Formalized parking

Grant Award: \$125,000

Local Match: \$62,500



Upper Township - Strathmere

Habitat Creation & Shoreline Stabilization

Issues:

- Degraded habitat
- Shoreline erosion
- Marsh edge erosion

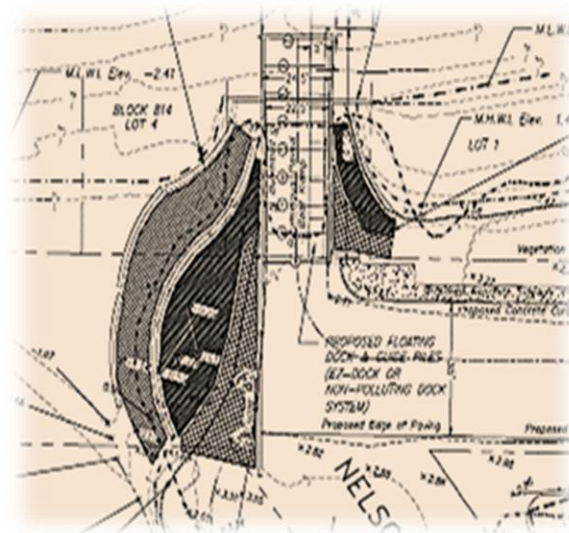
Goals:

- Marsh & habitat restoration
- Shoreline stabilization & restoration
- Marsh edge stabilization

Solutions:

- Low & high marsh creation
- Rock sill for wave attenuation
- Coir logs for marsh elevations
- Osprey nest

Grant Award: \$61,000
County Grant: \$280,230
Local Match: \$75,000



Secaucus Town

Habitat Restoration, Tidal Flooding Mitigation & Stormwater Management

Issues:

Tidal & stormwater flooding - dysfunctional ditches

Shoreline erosion

Living shoreline at storm damaged dock

Goals:

Tidal & Stormwater Flow functioning

Shoreline stabilization

Habitat Restoration

Solutions:

Tidal ditches dredged

New backflow preventers installed

Low & high marsh plantings



Grant Award: \$225,000

Local Match: \$75,000

Spring Lake - Wreck Pond

Habitat Restoration, Shoreline Stabilization, & Tidal Flooding Mitigation

Issues:

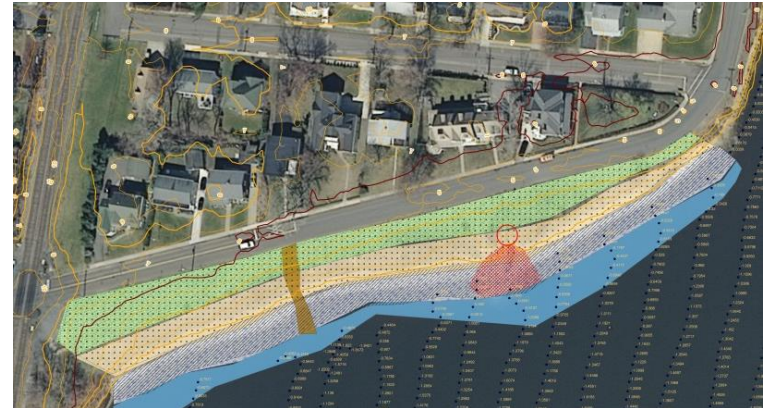
- Tidal flooding
- Shoreline stabilization

Goals:

- Tidal flooding mitigation
- Shoreline stabilization & restoration
- Low & high marsh creation

Solutions:

- Low & high marsh creation
- Embankment at Elev 6 NAVD88



Grant Award: \$130,000
Local Match: \$37,500

Websites & contact

Office of Coastal and Land Use Planning

<http://www.nj.gov/dep/oclup/>

NJ DEP Coastal Atlas

http://www.nj.gov/dep/cmp/czm_mapindex.html

NJ DEP Living Shorelines

<http://www.nj.gov/dep/oclup/lis/index.html>

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