Waquoit Bay National Estuarine Research Reserve October 22, 2015

CZM Coastal Resilience and Green Infrastructure Grant Programs

CZM StormSmart Coasts Program

- StormSmart Coasts Program provides information, strategies, and tools to help communities and people working and living on the coast to address the challenges of erosion, flooding, storms, sea level rise, and other climate change impacts.
 - StormSmart Communities (Tools for Local Officials) Resources for local officials to improve erosion and floodplain management
 - StormSmart Properties (Tools for Home Owners) Information to help improve resilience for coastal homeowners
 - Assessing Vulnerability of Coastal Properties
 - CZM Grant Programs \$\$\$
 - Coastal Community Resilience Grants
 - Green Infrastructure Grants

CZM Stormsmart Coast Program

Coastal Community Resilience Grant

Program - provides financial and technical resources to advance new and innovative local efforts to increase community resilience

Green Infrastructure Grant Program –

provides financial and technical resources to advance the understanding and implementation of **natural approaches** to mitigating coastal erosion and flooding problems.

Coastal Resilience Grants

- Projects must implement one (or more) of these four StormSmart climate adaptation actions:
 - Conducting public education and awareness or other communication initiatives
 - Assessing vulnerability and risk
 - Identifying and implementing management measures, standards, or policies
 - Redesigning to accommodate changing conditions

Green Infrastructue Grant Program

- Projects must implement one (or more) of the living shoreline techniques below that provide coastal storm damage protection and enhance natural resources.
 - Beach, berm, and dune building, enhancement, or restoration with compatible sediment and native vegetation
 - Bio-engineering with coir rolls, natural fiber blankets, and other organic, biodegradable materials combined with planting/re-vegetation
 - Natural oyster or mussel reef creation, enhancement, or restoration
 - Fringing salt marsh creation or restoration
 - **Natural enhancement** of existing coastal structures

CZM Grant Programs

Who is eligible?

- 78 eligible coastal municipalities
- NGO's and private groups can partner with municipalities
- Grant awards up to \$750,000 GI
- Grant awards up to \$300,000 CR
- 12 month grant program
- Annual grant awards up to \$3M
- Funded 54 projects since 2014
- Awarded a total of \$7.4M



Coastal Resilience Grants

- Nantucket Inundation
 Pathways Study & Pilot
 Project \$178,000 2015
 - The town will identify and map low-lying areas that act as pathways for storm tides to inundate inland areas. The inundation maps will be used to help the town improve flood management strategies during storm events.



Coastal Resilience Grants

- Oak Bluffs Pump Station
 Hazard Mitigation
 Projects \$200,000
 - Modifications to three wastewater pump stations to mitigate existing flood hazards and address future sea level rise impacts.



Critical Infrastructure

- OB wastewater collection and treatment system serves the heavily populated downtown and commercial areas
- Three primary wastewater pump stations serve 90% of the wastewater system, and are located within newly mapped FEMA 100 yr flood plain
- Accounting for 1.5' of sea level rise over a 40-year lifespan
- Stations have already had flood impacts



Modifications

- Design and construct modifications to ensure safe operation during a 100 year flood event
 - Elevate all electrical service and control panels above flood elevations



- Construct elevated platforms for emergency generators
- Install protective flood panels around pump stations





Coastal Resilience Grant Projects

- Town of Barnstable Community Rating System Application Assistance and Outreach \$52,560
 - Prepared an application for the National Flood Insurance Program (NFIP) Community Rating System (CRS)
 - Developed an activity guide and template to assist other Cape towns with the NFIP application process
 - Developed recommendations for future floodplain management activities for CRS credit
 - Hosted a public workshop on adaptation planning for regional and municipal officials



Coastal Resilience Grants

Brewster, 2016 Coastal Adaptation Strategy for Brewster *\$159,470*

- Provide information to the public on the vulnerability of infrastructure and natural resources to flooding and erosion
- Gather input on community priorities
- Build consensus on local strategies and management principles to guide Town response changing climate conditions and Sea Level Rise





Green Infrastructure Grants

- Barnstable 2015 Shoreline Stabilization Blish Point\$186,500
- Stabilize Blish Point & Millway Beach using sandfilled coir bags, native plantings, and sand fencing
- Protects an engineered containment basin that has been used to store dredged sediments.



Blish Point

Conditions before project:



Blish Point





Green Infrastructure Grants





Blish Point





Blish Point

Completed Project, May 2015





Green Infrastructure Grants

Brewster 2015 : Parking lot Relocation Breakwater Beach \$155,000

- Remove an asphalt parking area at Breakwater Landing
- Relocate 30 parking spaces to a less vulnerable location
- restore dune habitat with sand, native vegetation and fencing
- Install stormwater treatment system
- Provide a seasonal boardwalk for beach access



Breakwater Beach



Green Infrastructure Grants

Sandwich 2016

Analyze and Permit a Nearshore Sediment Borrow Source for Town Neck Beach Restoration

- Analyze a nearshore site adjacent to Scusset Beach to determine its viability as a source of sand
- Conduct scientific and engineering analyses for borrow site
- Apply for the required local, state and federal permits



Sandwich Town Neck





Town Neck

 Previous CZM Coastal Resilience Grant project funded the design and permitting of the beach nourishment template



Sandwich Town Neck







Potential sand source area





Green Infrastructure Grant

- Edgartown, Oak Bluffs, Tisbury & The Martha's Vineyard Shellfish Group, 2014 \$35,260
- Developed innovative hatchery production of ribbed mussels and tested "living shoreline" techniques (using ribbed mussel, coir log and marsh grass for shoreline protection)





Martha's Vineyard Shellfish Group

Two low energy

- Muddy Creek (Lagoon Pond)
- Trapps Pond (Sengekontacket)
- Two high energy
 - Felix Neck (Sengekontacket)
 - MVSG Dock (Lagoon Pond)



Martha's Vineyard Shellfish Group











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