

State Fiscal Year 2018
Barnegat Bay Restoration Grants
Grant Awards and Project Descriptions

Stormwater Basin Retrofits and Green Infrastructure Grants - \$1,275,000

1. Designing and Installing Green Infrastructure and Nutrient Reduction Practices in the Metedeconk River Watershed

Grantee: Brick Township Municipal Utilities Authority

Funding Amount: \$950,000

The Metedeconk Watershed Protection and Restoration Plan, approved by the Department in 2013, was spearheaded by the Brick Township Municipal Utilities Authority (Brick MUA). Brick MUA began to successfully lead implementation of priority projects identified in the plan in 2013 alongside other watershed stakeholders. This project will continue to implement priority stormwater quality improvement measures identified in the plan including: 1) Pathogen source tracking in the North Branch of the Metedeconk; 2) Implementation of urban (Lakewood) green infrastructure BMP's, such as tree filter boxes and rain gardens along with a constructed wetland; 3) Retrofitting a stormwater basin in Howell Township to promote infiltration (a priority project identified in the approved plan); and, 4) Initiating a winter salt alternative demonstration project that includes municipal government education and outreach.

2. Lakewood Township Stormwater Basin Retrofits

Grantee: South Jersey Resource Conservation and Development Council

Funding Amount: \$325,000

The Camden Soil Conservation District will be implementing this project on behalf of the South Jersey Resource Conservation and Development Council (SJRC&D). The Camden Soil Conservation District has extensive stormwater basin retrofit experience and has been very successful in the leveraging of funding for low cost implementation measures, most recently in the Cooper River watershed resulting in an approved EPA success story. This project proposes to partner with the Lakewood Township Department of Public Works to perform 10-15 low cost stormwater basin retrofits within the Township. These retrofit projects will complement the Metedeconk Watershed Protection and Restoration Plan implementation efforts of the Brick MUA.

Watershed Planning and Implementation Grants - \$1,895,000

3. Developing a Watershed Restoration Plan for the Southern Barnegat Bay – Little Egg Harbor Tributaries

Grantee: Rutgers University

Funding Amount: \$775,000

Rutgers University is the lead entity with multiple partners including NJIT, Steven Institute of Technology and the Jacques Cousteau National Estuarine Research Reserve. This project will

develop a watershed protection and restoration plan for the southern Barnegat Bay tributaries through a stakeholder-driven process. This plan will include a characterization and water quality assessment of the watershed area, development of load reduction estimates necessary to achieve state water quality designated uses and corresponding water quality standards, and the development of a priority list of implementation measures to achieve the necessary load reductions. The prioritization of the BMP measures will include feasibility, regulatory constraints and cost effectiveness relative to estimated load reduction of nitrogen and sediment (identified as priority pollutants in the Department's 10-point Comprehensive Action plan for the Barnegat Bay). In addition, to address excessive sediment loading from the Southern Barnegat Bay watershed \$250,000 of funding is included to implement the prioritized list of restoration projects developed as part of this watershed plan.

**4. Watershed Restoration/Protection Plan for the Cedar Creek Watershed
Watershed Restoration/Protection Plan for the Oyster Creek Watershed
Watershed Restoration/Protection Plan for the Toms River Watershed**

Grantee: Barnegat Bay Partnership

Funding Amount: \$220,000, \$200,000, \$700,000 respectively

The Barnegat Bay Partnership (Partnership) is the lead for the Barnegat Bay National Estuary Program and coordinating improvements in the Barnegat Bay watershed. The Partnership will oversee the stakeholder driven watershed plan development process for an extensive area of the northern Barnegat Bay watershed. This plan will include a characterization and water quality assessment of the northern Barnegat Bay watershed, development of load reduction estimates necessary to achieve state water quality designated uses and corresponding water quality standards, and the development of a priority list of implementation measures to achieve the necessary load reductions. The prioritization of the BMP measures will include feasibility, regulatory constraints and cost effectiveness relative to estimated load reduction of nitrogen and sediment (identified as priority pollutants in the Department's 10-point Comprehensive Action plan for the Barnegat Bay). In addition, to address excessive nutrient loading from the Toms River watershed, \$250,000 of funding is included to implement the prioritized list of restoration projects developed as part of the Toms River Watershed Restoration/Protection Plan.

Living Shorelines / Resiliency - \$4,535,000

5. Barnegat Bay Restoration Enhancement and Protection

Grantee: ReClam the Bay

Funding Amount: \$30,000

ReClam the Bay is a local organization, formed as an outgrowth of the Rutgers Cooperative Extension and Barnegat Bay Estuary Program. In partnership with the Mordecai Island Land Trust, ReClam the Bay proposes to create a 600-foot oyster and ribbed mussel living shoreline on Mordecai Island. Mordecai Island represents a priority location for shoreline stabilization efforts, with the Army Corps of Engineers estimating it has lost more than 35% of its landmass since 1920. Without substantial efforts to stabilize Mordecai Island's western shore, the island will ultimately disappear along with the nursery habitat it provides for numerous fish and colonial water bird species. ReClam the Bay has extensive experience in shellfish-based

restoration activities in the Barnegat Bay, and is providing substantial matching funds.

6. Crabbe Point Pier Shoreline Stabilization

Grantee: South Toms River Borough

Funding Amount: \$155,000

South Toms River Borough has worked closely with DEP since early 2018 to develop environmentally-friendly solutions to restore and protect a severely eroded public shoreline area adjacent to the Crabbe Point pier. This project, already reviewed by the Division of Land Use Restoration, will support the final design and construction of a 130-foot living shoreline to stabilize, restore and provide resiliency to this public area.

7. Forked River Beach, Lacey Township Living Shoreline and Oyster Reef to Improve Water Quality

Grantee: American Littoral Society

Funding Amount: \$1,000,000

The Barnegat Bay Restoration, Enhancement, and Protection Strategy (NJDEP, 2017) has identified excessive nutrients and turbidity as the leading source of water quality impairments within the Barnegat Bay. This proposed project area experiences increased turbidity due to accelerated shoreline erosion (over 108 feet due to inland progression) resulting in unfavorable conditions that don't support aquatic life uses. The American Littoral Society has extensive experience in shoreline restoration projects, and Stockton University (a project partner) has a great deal of experience in shellfish restoration within the Barnegat Bay. This project will design and construct approximately 2,600 linear feet of intertidal, shelled living shoreline, including up to 10 oyster reefs approximately 100 to 200 feet in length, near the confluence of the Forked River and Barnegat Bay. The living shoreline will be located just offshore of the recently restored Lacey Township Forked River Bay Front Park. The reefs will be constructed in doubled rowed herring bone pattern, consist of bagged whelk shells seeded with oyster spat and configured to reduce wave energy. Once in place, the living shoreline will provide resiliency against boat and wind-driven wave action, as well as habitat and water quality benefits. This project will address these impacts, providing resiliency against future severe weather events consistent with Department goals. The Society and its partners will use social media, educational outreach, and interpretive signage to promote the living shoreline and natural based solutions as a means of educating the public about water quality issues and the strategies used to mitigate their effects to restore the needed goods and services to the public. In addition, it will serve as a model project for future restoration projects throughout the watershed.

8. Cattus Island County Park Living Shoreline

Grantee: Ocean County Planning Department

Funding Amount: \$3,000,000

Cattus Island County Park (CICP) is located in Toms River along Barnegat Bay and Silver Bay and is a part of the Ocean County Park System. The park preserves a significant portion of the total remaining natural ecosystem of the northern part of Barnegat Bay, encompassing 530 acres out of over 1,000 acres of preserved public property in the immediate vicinity. Additional public property includes the

Ocean County Natural Lands Trust Fund (OCNLTF) Program's 65-acre Tilton Point preserve adjacent to the park as well as the New Jersey Natural Lands Trust's 251-acre Tilton Creek preserve. CICIP is the most significant salt marsh and the largest breakwater in the northern portion of Barnegat Bay. A review of aerial photography shows that in recent years CICIP's shorelines have experienced significant erosion and retreat. Some areas of the park have lost more than 300 feet. This erosion is likely to increase over time, especially if the northeast peninsula known as "Page's Point" is not stabilized. It is a critical landmass that serves as a wetland buffer and upland forest breakwater that protects four surrounding neighborhoods from tidal flooding and erosion. While the project's primary goal is to restore and provide resiliency to public land, the adjacent protected area includes Toms River Township's Shelter Cove Park, containing at least 825 homes with a total estimated value of \$181.5 million, and 25 businesses with a total estimated value of \$37.5 million. The continued unmitigated loss of this land area buffer would have potentially catastrophic consequences to adjoining public and private properties. This project will provide resiliency to these priority areas by designing and constructing approximately 2,600 linear feet of living shoreline including a breakwater and reef system.

9. Tuckerton Beach Living Shoreline Project

Grantee: Tuckerton Borough

Funding Amount: \$350,000

Tuckerton Borough has identified Lanyard Lagoon (public preserved land) as an area that experiences high rates of erosion making it an excellent candidate for the use of a living shoreline for stabilization. This project will complete the design and construction of approximately 12,800 square feet of living shoreline that will provide resiliency against boat and wind-driven wave action and provide important public access.

Education / Stewardship Grants – \$500,000

10. Bay Friendly Stewardship Program

Grantee: Barnegat Bay Partnership

Funding Amount: \$100,000

The Barnegat Bay Partnership (Partnership) is the lead for the Barnegat Bay National Estuary Program and functions by coordinating improvements in the Barnegat Bay watershed. The Partnership will develop and implement a Bay-Friendly Stewardship Certification Program that will be a comprehensive stewardship program for the Barnegat Bay, designed to certify residents, schools, and municipalities as "Bay-Friendly" through the completion of a suite of voluntary actions that target the reduction of non-point source pollution. The goals of this project are to actively engage community stakeholders in changing their behaviors to manage stormwater and reduce NPS pollution, and to provide programmatic support and guidance to them for meeting program standards and becoming certified.

11. NEMO & Municipal Stormwater Outreach

Grantee: Save Barnegat Bay

Funding Amount: \$100,000

Save Barnegat Bay has been active in the Barnegat Bay Watershed since 1971, engaging local stakeholders in advocacy campaigns and educational initiatives. Save Barnegat Bay has developed and implemented 2 successful programs; Nonpoint Education of Municipal Officers (NEMO) and Municipal Stormwater Outreach. These programs educate municipal elected officials about the critical link between stormwater runoff and water quality. This project will expand Save Barnegat Bay's existing NEMO and Municipal Stormwater Outreach programs to encourage NPS problem-solving through development of Barnegat Bay specific education and outreach tools for Barnegat Bay municipalities.

12. Sea Nettle Outreach and Assistance

Grantee: Berkeley Township – Underwater Search & Rescue Unit

Funding Amount: \$300,000

This project will increase community awareness about how the number of harmful Sea Nettles can be reduced and allow community members to immediately take impactful actions to reduce the polyp population nesting on hard substrates in the lagoon locations of Barnegat Bay. In addition, monitoring will be conducted to identify the most cost effective and readily implementable approaches to conduct polyp removal activities from hard, man-made substrates.

Enhanced Stormwater Mapping Grants - \$100,000

13. Lacey Township Stormwater Mapping Expansion

Grantee: Lacey Township

Funding Amount: \$70,000

This project will expand existing stormwater mapping for the Township of Lacey. Stormwater mapping was completed for the Township in 1996 under the Sewage Infrastructure Improvement Act. However, significant development has taken place in the Township since that time and as a result, stormwater facilities have been constructed that are not represented on the stormwater mapping for the Township. Updating the stormwater infrastructure mapping is important to support future Department and County pathogen source track down efforts in Barnegat Bay.

14. Point Pleasant Beach Borough Stormwater Mapping Expansion

Grantee: Point Pleasant Beach Borough

Funding Amount: \$30,000

This project will expand the existing Stormwater Mapping for the Borough of Point Pleasant Beach. Stormwater mapping was completed for the Township in 1996 under the Sewage Infrastructure Improvement Act. However, significant development has taken place in the Township since that time and as a result, stormwater facilities have been constructed that are not represented on the stormwater mapping for the Township. Updating the stormwater infrastructure mapping is important to support future Department and County pathogen source track down efforts in Barnegat Bay.

Pathogen Source Tracking Grants - \$600,000

15. Identify and Eliminate Pathogen Pollution from Sanitary Sewage Sources in the Toms River Watershed

Grantee: Clean Ocean Action

Funding Amount: \$600,000

Clean Ocean Action has been investigating and responding to pathogen impairment of the Navesink River Watershed since 2015. This initiative has led to a successful citizen science volunteer monitoring program in partnership with the Department's Bureau of Marine Water Monitoring. This project will use advanced monitoring techniques to identify potential cross-connections between the sanitary and stormwater systems and other infrastructure issues in the Toms River watershed and will lead to corrective measures and water quality improvements thereby reducing closures of recreational bathing beaches on the Toms River.

Submerged Aquatic Vegetation and Shellfish Restoration, Enhancement and Protection; Environmentally Sensitive Area Enforcement - \$1,095,000

16. Restoration/Enhancement of SAV in Barnegat Bay

Grantee: Montclair State University

Funding Amount: \$300,000

Montclair State University has been very successful at restoring seagrass (SAV) in Barnegat Bay over the last 18 years, establishing preferred timing for restoration activities and documenting long-term success of sites exceeding 10 years. SAV areas are important for both water quality and habitat purposes. This project will result in the creation of (8) 196 square meter SAV restoration areas.

17. SAV Habitat Suitability Modelling and Restoration to Improve Ecological Health and Reduce Turbidity in Southern Barnegat Bay

Barnegat Bay Oyster Reefs—Scaling a Successful Pilot Project to Achieve Water Quality Improvements

Grantee: Stockton University

Funding Amount: \$225,000 and \$300,000 respectively

Stockton University is an active partner in multiple aspects of restoration work in Barnegat Bay, with their marine sciences faculty coordinating studies on both oyster and submerged aquatic vegetation (SAV) restoration in the Bay. These projects will result in the creation of (2) 0.25-acre dual (SAV and oyster) restoration sites (Project #21) and the installation of three acres of oyster reef at (2) locations within Barnegat Bay (Project #27).

18. Barnegat Bay Ecologically Sensitive Area Education and Enforcement

Grantee: Ocean County Sheriff's Department

Funding Amount: \$270,000

In 2012, in recognition of the ecological importance of submerged aquatic vegetation (SAV) communities and the human threats posed to them, the Department created the Ecologically Sensitive Area (ESA) designation for areas in Barnegat Bay where substantial SAV beds and wildlife are found. Boats and personal watercraft are excluded from ESA's, as these vessels damage SAV, and harm marine life. Protecting SAV stabilizes bottom sediments, enhances sediment removal from the water column, and provides nutrient uptake. This project will fund additional patrol of ESA's in addition to education, outreach and ESA signage.