



## RECOMMENDATIONS TO MUNICIPALITIES TO REDUCE NONPOINT SOURCE POLLUTION AND FLOODING FROM STORMWATER

### SUMMARY

Because stormwater pollution and flooding are recognized as serious problems in localized areas throughout the watershed, the Barnegat Bay Partnership (BBP) and its partners strongly encourage all municipalities to take advantage of the recent revisions to the New Jersey Department of Environmental Protection's (NJDEP) Stormwater Regulations and consider implementing various "Additional" and "Optional" Measures and enhanced stormwater protection actions, including ordinances with standards stronger than the NJDEP minimum stormwater regulation requirements. Implementing these additional and optional measures reduces stormwater runoff, thereby reducing localized flooding and nonpoint-source pollution.

Because choosing among "Additional" and "Optional" Measures requires site-specific and other information, we encourage municipal officials and others to consult with local engineering firms specializing in stormwater management, the BBP, NJDEP, and our partners which are providing information on the MS4 Permit and Optional Measures, including Save Barnegat Bay, the Planning Departments of Monmouth and Ocean counties, Pinelands Commission, and Brick Township Municipal Utilities AuthorityMUA. We also encourage municipal officials to review other resources in New Jersey (*e.g.*, the Watershed Institute Enhanced Model Stormwater Ordinance, the Pinelands Commission 2006 Model Stormwater Control Ordinance for Pinelands Municipalities, the Sustainable Jersey Enhanced Stormwater Management Control Ordinance, the Metedeconk River Watershed Model Ordinance). Additional resources can be found on the NJDEP and other websites.

### BACKGROUND

For more than two decades, State of the Bay Reports (*e.g.*, BBP 2011, 2016) have identified eutrophication due to high nutrient loading as Barnegat Bay's most serious challenge. Eutrophication, an increase in the rate of supply of organic matter to an ecosystem, manifests itself as a cascade of negative environmental conditions, including blooms of drift algae or phytoplankton, increased turbidity, hypoxia or anoxia (low or no dissolved oxygen, respectively) and loss of shellfishes, eelgrass, and other submerged aquatic vegetation. Addressing eutrophication requires an overall reduction in the total nutrient loading to the bay and its tributaries throughout the watershed.

ONE OF 28 NATIONAL ESTUARY PROGRAMS ADMINISTERED BY THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY.

Streams throughout most of the Barnegat Bay watershed have elevated levels of nitrogen and phosphorus (Baker *et al.* 2014), nutrients frequently linked to eutrophication of freshwater and estuarine waterbodies. In its latest Integrated Water Quality Assessment, the NJDEP (2019) reported that parts of the bay and some tributaries do not meet assigned designated uses; in addition, the report identified waterbodies throughout the watershed that are impaired by nutrients and other pollutants (e.g., suspended solids, sediments) delivered in stormwater runoff.

Additionally, the climate is changing and New Jersey will experience increases in the amount of precipitation in coming years (Horton *et al.* 2015). Heavy precipitation events, including nor'easters and named storms, will occur more often and increase in intensity (Walsh *et al.* 2014). Thus, we will see increased nuisance and major flooding in many areas. These increases in precipitation and flooding cause more stormwater runoff and resulting pollution in the bay.

#### **ADDRESSING POLLUTION AND FLOODING: ENHANCED MEASURES FOR STORMWATER MANAGEMENT**

In recognition of these changing conditions, the NJDEP recently revised its Stormwater Regulations (2020) and Stormwater Best Management Practices (BMPs) Manual (2004) to now allow municipalities to take “additional actions including ordinances with standards stronger than the statewide minimum requirements”, and provides the ability for municipalities to adopt “stronger or additional measures in order to address local water quality and flooding conditions as well as other environmental or community needs.”

The 2020 NJDEP Stormwater Regulations include BMPs that offer a new, preferred, and “more effective approach to manage stormwater ...close to the source generating the runoff.” This source-reduction approach often requires the implementation of nonstructural strategies, low-impact development, or green infrastructure on-site, at a location close to the impervious surface that generates the runoff before the pollutants become concentrated. This approach of managing and retaining the stormwater from a development site minimizes the potential flow of stormwater and any pollutant loading into the Tier A Municipality’s MS4 and the surface waters within the municipality’s watershed” (Tier A Municipal Stormwater: Guidance Document, NJDEP 2018).

Because urban and suburban development has created extensive areas of impervious surfaces which cause localized flooding and significant stormwater runoff and pollution throughout the watershed, municipalities which employ additional and optional measures (e.g., pervious pavement, stormwater swales, stormwater basin retrofits) to address stormwater runoff from impervious surfaces can eliminate localized flooding in many areas and reduce pollutant loads and eutrophication throughout the Barnegat Bay watershed.

## **REDUCE NPS POLLUTION, NUISANCE FLOODING, AND STORMWATER COSTS**

Currently, one watershed management plan (WMP) exists for the Metedeconk River subbasin within the Barnegat Bay Watershed. With funding from the NJDEP, three more WMPs are being developed that will include all other mainland communities within the Barnegat Bay Watershed. The completed WMPs will include strategies and project recommendations that municipalities can employ to reduce stormwater issues within their jurisdictions. Inclusion of additional measures and optional measures in these planning documents potentially makes federal and state funds available for their implementation. See the BBP website for additional information about these plans and to learn how to get involved in their development

(<https://www.barnegatbaypartnership.org/protect/restoration/watershed-plans/>).

The NJDEP has also provided funding to various organizations throughout the watershed to work with municipalities to implement stormwater management programs that align with the “Optional” and “Additional” Measures. These include “in-the ground” projects in the Metedeconk River watershed (Grant WM20-007 to Brick MUA, Grant WM20-008 to South Jersey RC&D) and education and outreach watershed wide (Grant WM20-017 to BBP and Grant WM20-018 to Save Barnegat Bay). For more information about these grants, and how you can participate, please see the project descriptions and contact information on the NJDEP’s website

([https://www.state.nj.us/dep/wms/bears/docs/SFY2018\\_Funding\\_Opp\\_Project\\_Descript-FINAL.pdf](https://www.state.nj.us/dep/wms/bears/docs/SFY2018_Funding_Opp_Project_Descript-FINAL.pdf)).

## **THE BARNEGAT BAY PARTNERSHIP**

The Barnegat Bay was recognized in 1997 as an “estuary of national significance” in accordance with Section 320 of the Clean Water Act (33 U.S.C. 1330; as amended by P.L. 100-4 *et seq.*); the Barnegat Bay Partnership was established as a National Estuary Program to provide a unique, consensus-based mechanism of local stakeholders (*i.e.*, a management conference) to protect Barnegat Bay for its economic, environmental, and cultural resources. The BBP’s management conference brings together federal, state, and local government agencies, academic institutions, nongovernmental organizations, businesses, and other stakeholders to develop a Comprehensive Conservation and Management Plan (CCMP), which identifies priority goals, objective, and actions to protect and restore the bay, its surrounding watershed, and living resources, and thereby assure “that the designated uses of the estuary are protected; ...”.

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