

Indicator: Stormwater Management EffortQuestion

How many communities in the Piscataqua Region watershed have adopted the Southeast Watershed Alliance Model Stormwater Standards for Coastal Communities and how many communities have other regulations in place? Additionally, how many communities in the watershed have a stormwater utility?

Short Answer

As of July 2017, in the 42 New Hampshire municipalities, 8 communities have adopted the complete set of stormwater standards; 7 communities are in the process of adoption; 5 communities have partial or a different set of standards, and 22 communities have not adopted standards. The 10 Maine communities are required to adhere to state-level stormwater management regulations. Zero communities have adopted a stormwater utility.

PREP Goal

No goal at this time.

Why This Matters

Stormwater runoff is a main driver of declining water quality in local waterways and leads to increased flooding. One way communities can reduce pollution and alleviate flooding is adopting up-to-date stormwater management standards. This action will increase the resilience of each community and the region as a whole in the face of climate change and increasingly severe storm events and flooding.

Explanation (from 2018 State of Our Estuaries Report)

Adopting local stormwater management standards allows a community to grow in a resilient manner, while improving existing conditions and preventing future water quality impairments. In New Hampshire, state statute enables municipalities to adopt regulatory standards for stormwater management for projects not captured under state Alteration of Terrain regulations: projects smaller than 100,000 sq. ft. of terrain or 50,000 sq. ft. of protected shoreland (NH DES Alteration of Terrain Bureau 2017). In Maine, the state Stormwater Management Law provides stormwater management standards for development that municipalities must adhere to (if projects exceed one acre of disturbance).

Communities in New Hampshire have already achieved many stormwater management successes through partnerships with the Southeast Watershed Alliance (SWA), the University of New Hampshire Stormwater Center (UNHSC), Soak Up the Rain, and other regional resources. Adopting enhanced standards allows communities to build on the great progress they have already made and continue to strengthen the culture of stormwater management leadership throughout the Piscataqua Region.

Local stormwater standards empower communities to guide development and protect natural resources while providing developers with consistent, equitable guidelines for managing impervious cover. These standards can be adopted in the zoning ordinance or as land development regulations. While any improvement to existing stormwater standards is a beneficial first step, the SWA model represents a comprehensive approach. Below is a summarized version of what is contained in the SWA Model Stormwater Standards for Coastal Watershed Communities: Elements B-D (SWA et al. 2012). Stormwater experts encourage municipalities to include the following four components to minimize further water quality impairment and improve present conditions.

- **Threshold for Applicability:** Creates a minimum threshold area of disturbance for new development projects that requires full compliance with stormwater standards.
- **Performance Measures:** Improves water quality by requiring the removal of an established percentage of Total Suspended Solids, Total Nitrogen, and Total Phosphorous.

- **Groundwater Recharge:** Promotes use of infiltration practices (groundwater recharge) to reduce runoff caused by a project and replenish groundwater supply.
- **Redevelopment Criteria:** Requires improvements in stormwater management and treatment for redevelopment projects on existing properties. By capturing redevelopment projects this addresses existing stormwater runoff.

A 2015 UNHSC study of the Oyster River watershed found early adoption of enhanced stormwater standards could reduce average annual pollutant loads by up to 70% and save towns an estimated \$14 million in avoided costs over the next 30 years (UNHSC and VHB 2015). If other municipalities in the Piscataqua Region watershed adopt such regulations, future cost savings could increase dramatically. To track stormwater management progress across the watershed, PREP and its partners monitor which municipalities have adopted enhanced stormwater standards. Figure SM-1 reflects which communities have adopted the SWA model stormwater standards or something similar (8), which communities have adopted a partial set of the recommended regulations without redevelopment standards (5), and which communities have regulations pending (7). Overall, 30 out of 52 communities in the Piscataqua Region watershed have adopted some level of stormwater standards; this includes the 10 Maine communities that adhere to Maine state standards.

In addition to adopting new regulations, communities are exploring creative options for funding sustainable stormwater management. One option is adoption of a stormwater utility designed to generate funding through user fees that are often based on a property's collective amount of impervious cover within the utility district. A stormwater utility provides a stable revenue source to support long-term operation and implementation of a municipal stormwater program that addresses flooding, water quality, and aging infrastructure. These utilities require equitable cost distributions (charging owners with the most impervious cover their fair share), incentivize reduction of stormwater volumes through lower fees, and help communities comply with federal regulations. Many communities in Maine, Vermont, and Massachusetts have successfully adopted stormwater utilities. While no such utilities currently exist in New Hampshire, the cities of Dover and Portsmouth have conducted feasibility studies (Peschel 2011; Allen 2011).

For More Information

Model Standards

https://www.unh.edu/unhsc/sites/unh.edu.unhsc/files/Final_SWA_SWStandards_Dec_20121_0.pdf

Durham Study Fact Sheet

https://www.unh.edu/unhsc/sites/unh.edu.unhsc/files/FactSheet%20-%20P2%20ModelingRV_WEB.pdf

Stormwater Manual

<https://www.des.nh.gov/organization/divisions/water/stormwater/manual.htm>

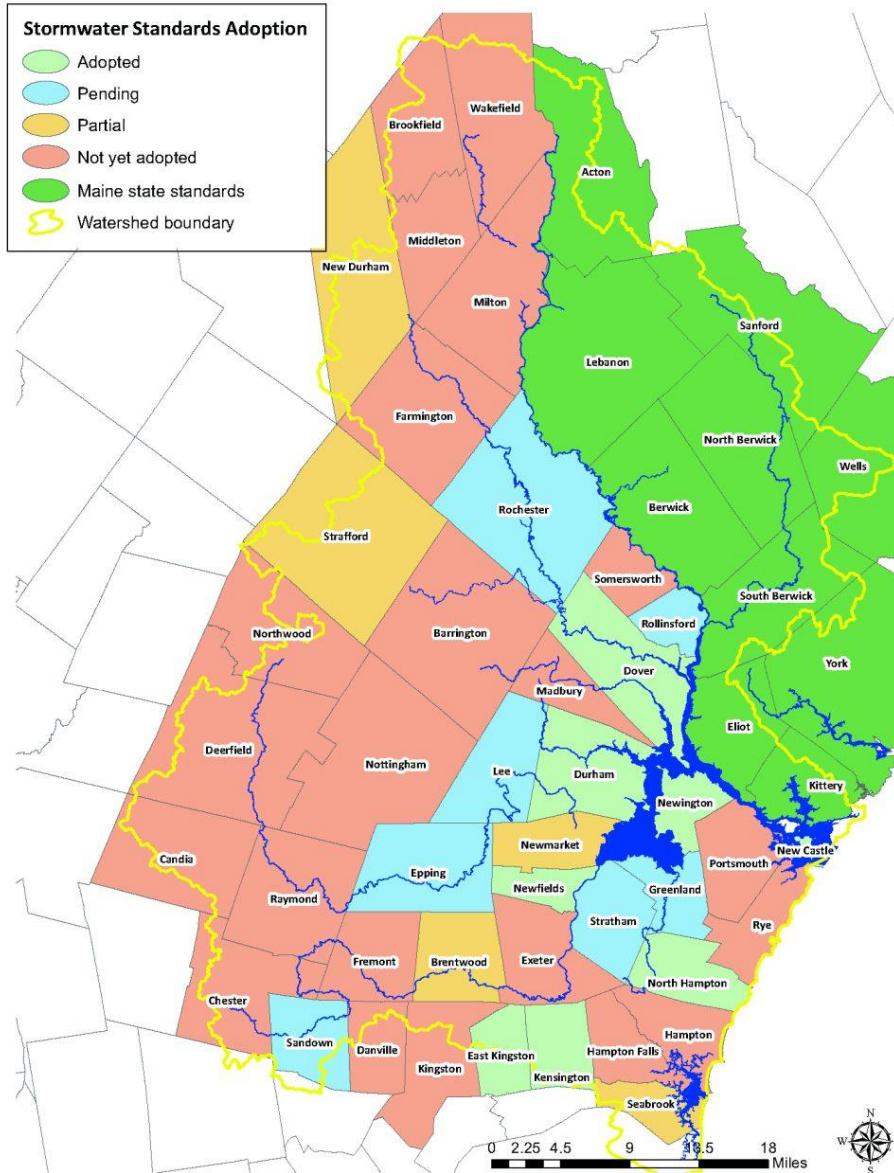


Figure SM-1. Map depicting adoption status of SWA model stormwater standards across 42 New Hampshire communities and 10 Maine communities. Data Source: Rockingham Planning Commission and Strafford Regional Planning Commission. Mapping and GIS technical assistance provided by the University of New Hampshire Cooperative Extension.

Methods and Data Sources

The borders of each municipality in the Piscataqua Region watershed were mapped using spatial data from NH GRANIT. The area of each municipality was then filled with a color corresponding to its status in adopting the recommended standards outlined in the SWA *Model Stormwater Standards for Coastal Watershed Communities*. Communities were assigned one of five status categories: Adopted, Pending, Partial, Not Yet Adopted, and Maine State Standards (Table SM-1). “Adopted” communities have adopted the recommended standards in their entirety and the changes have been incorporated into the municipality’s regulations. Municipalities classified as “Adopted” may not have the same or any specific threshold for applicability standard outlined in their regulations, though a threshold of 5000 square feet is recommended by stormwater experts in New Hampshire. “Pending” communities are those who are still in the process of changing their local regulations (as of July 2017) to reflect the recommended standards and will be assigned either “Partial” or “Adopted” once the changes are finalized and approved. “Partial” is assigned to those communities who have successfully adopted some of the regulatory changes recommended in the model stormwater standards, but those changes did not include important criteria such as Redevelopment Standards or other performance measures. “Not Yet Adopted” communities have not changed their local stormwater regulations to reflect the recommended standards.

The 10 Maine communities in the Piscataqua Region watershed are required to adhere to Maine Stormwater Management Law (38 MRSA § 420-D) and its associated Chapter 500 Rules, as well as the Maine State General Permit requirements (Maine Legislature 2017; Maine Dept. of Environmental Protection 2017). Maine guidance provides stormwater standards required for projects located in organized areas that include one acre or more of disturbed area. This one-acre threshold, equal to approximately 43,560 square feet, is significantly smaller, and thus, more restrictive, than the Alteration of Terrain permit threshold for non-protected land in New Hampshire, and it captures a larger portion of development projects in Maine communities. As a result, many Maine municipalities rely solely on the State’s stormwater management standards and have not adopted more restrictive stormwater management regulations. Additionally, many development projects in Maine communities that are less than 1 acre are required to comply with stormwater standards found in the Maine Construction General Permit or in Chapter 500 Rules if they are subdivision, redevelopment, or shoreland projects. Given these additional restrictions and requirements at the state level in Maine, the 10 Maine communities in the Piscataqua Region watershed were assigned their own category.

It is important to note that because the Maine Stormwater Management Law and its associate rules and resources provide more restrictive standards than state level stormwater regulations in New Hampshire, the lack of enhanced stormwater standards at the local level in Maine does not necessarily reflect a lack of recommended stormwater management. For more information on the Maine Stormwater Management Law and Rules, visit the Stormwater Program webpage on the Maine Department of Environmental Protection website.

For more information on recommended performance standards and best management practices for stormwater management in Maine, Maine DEP provides publically accessible guides and manuals online, including the *Maine Stormwater Management Design Manual* and the *Maine Erosion and Sediment Control Practices Field Guide for Contractors* (Maine Dept. of Environmental Protection 2016, 2017).

Data Sources

For NH, the data source for this indicator was information from the Rockingham Planning Commission and the Strafford Regional Planning Commission regarding the adoption of model stormwater standards recommended for New Hampshire municipalities in the coastal watershed by the SWA, the UNHSC, and The Rockingham Planning Commission. The Rockingham Planning Commission and the Strafford Regional Planning Commission assisted with data collection and provided details on which New Hampshire municipalities have adopted all the recommended components of the SWA’s *Model Stormwater Standards* as well as which communities have adopted only a portion of the recommended components.

The data source for Maine stormwater management regulations and statistics was the Maine Department of Environmental Protection website.

References Cited

- Allen D. 2011. Portsmouth NH Stormwater Utility Feasibility Study: Final Report. A Final Report to The New Hampshire Department of Environmental Services.
<https://www.des.nh.gov/organization/divisions/water/stormwater/documents/portsmouth-swu-final-report.pdf>
- Maine Legislature. 2017. Maine Revised Statutes. *Title 38: Waters and Navigation. Chapter 3: Protection and Improvement of Waters. Subchapter 1: Environmental Protection Board. Article 2: Pollution Control.*
<http://legislature.maine.gov/statutes/38/title38sec420-D.html>
- Maine Department of Environmental Protection. 2016. *Maine Stormwater Management Design Manual*. March 2016. <http://www.maine.gov/dep/land/stormwater/stormwaterbmmps/index.html>
- Maine Department of Environmental Protection. 2017. Maine Erosion and Sediment Control Practices Field Guide for Contractors. <http://www.maine.gov/dep/land/erosion/escbmpps/>
- Maine Department of Environmental Protection. 2017. *Chapter 500: STORMWATER MANAGEMENT*.
<http://www.maine.gov/dep/land/stormwater/storm.html>
- NH DES Alteration of Terrain Bureau. 2017. Stormwater and antidegradation. State and Federal Permitting Programs. https://www.des.nh.gov/organization/divisions/water/stormwater/documents/wd-08-20a_ch4.pdf
- Peschel D. 2011. Dover New Hampshire Stormwater Utility Feasibility Study Final Report. A Final Report to The New Hampshire Department of Environmental Services.
<https://www.des.nh.gov/organization/divisions/water/stormwater/documents/dover-final-report.pdf>
- Southeast Watershed Alliance, The University of New Hampshire Stormwater Center, and The Rockingham Planning Commission. 2012. *Model Stormwater Standards for Coastal Watershed Communities*.
https://www.unh.edu/unhsc/sites/unh.edu.unhsc/files/Final_SWA_SWStandards_Dec_20121_0.pdf
- University of New Hampshire Stormwater Center, Vanasse Hangen Brustlin (VHB), Inc. 2015. Minimizing Environmental Impacts Through Stormwater Ordinance and Site Plan Regulation.
https://www.unh.edu/unhsc/sites/unh.edu.unhsc/files/FactSheet%20-%20P2%20ModelingRV_WEB.pdf

Table SM-1. Status of enhanced stormwater standards for Piscataqua Region watershed communities.

Municipality	Stormwater Status	MS4 Status	Stormwater Utility
Dover	Adopted	Yes	No
Durham	Adopted	Yes	No
East Kingston	Adopted	Waiver	No
Kensington	Adopted	No	No
New Castle	Adopted	Yes	No
Newfields	Adopted	Waiver	No
Newington	Adopted	Waiver	No
North Hampton	Adopted	Yes	No
Barrington	Not yet adopted	Waiver	No
Brookfield	Not yet adopted	No	No
Candia	Not yet adopted	Waiver	No
Chester	Not yet adopted	Waiver	No
Danville	Not yet adopted	Yes	No
Deerfield	Not yet adopted	No	No
Exeter	Not yet adopted	Yes	No
Farmington	Not yet adopted	No	No
Fremont	Not yet adopted	Waiver	No
Hampton	Not yet adopted	Yes	No
Hampton Falls	Not yet adopted	Waiver	No
Kingston	Not yet adopted	Yes	No
Madbury	Not yet adopted	Waiver	No
Middleton	Not yet adopted	No	No
Milton	Not yet adopted	Yes	No
Northwood	Not yet adopted	No	No
Nottingham	Not yet adopted	No	No
Portsmouth	Not yet adopted	Yes	No
Raymond	Not yet adopted	Yes	No
Rye	Not yet adopted	Yes	No
Somersworth	Not yet adopted	Yes	No
Wakefield	Not yet adopted	No	No
Strafford	Partial	No	No
New Durham	Partial	No	No
Brentwood	Partial	Waiver	No
Newmarket	Partial	Yes	No

Municipality	Stormwater Status	MS4 Status	Stormwater Utility
Seabrook	Partial	Yes	No
Epping	Pending	Waiver	No
Lee	Pending	Waiver	No
Rochester	Pending	Yes	No
Rollinsford	Pending	Yes	No
Sandown	Pending	Yes	No
Stratham	Pending	Yes	No
Greenland	Pending	Yes	No
Acton, ME	ME State Standards	No	No
Berwick, ME	ME State Standards	Yes	No
Eliot, ME	ME State Standards	Yes	No
Kittery, ME	ME State Standards	Yes	No
Lebanon, ME	ME State Standards	No	No
North Berwick, ME	ME State Standards	No	No
Sanford, ME	ME State Standards	No	No
South Berwick, ME	ME State Standards	Yes	No
Wells, ME	ME State Standards	No	No
York, ME	ME State Standards	Yes	No