# Chapter 1
# Introduction

Pemigewasset River, New Hampshire

New Hampshire's surface waters are a valuable natural resource. Through their function and beauty, they power industry, provide vital habitat, supply drinking water, and offer recreational opportunities to residents and visitors throughout the state. However, as the population grows and development pressures increase to provide needed housing and services, it is becoming increasingly difficult to protect and maintain the quality of our surface waters for the fishing, swimming, and recreational activities that we are so used to enjoying in New Hampshire.

The responsibility falls on us all - federal, state, and local governments, developers, and private citizens - to plan and act responsibly and in a manner that protects and works with the landscape to meet both water quality and land use goals. Development and natural resource protection do not need to be at odds. Existing scientific knowledge and technology in the field of stormwater management provide us with tools that can minimize the impacts of development and balance the needs of a healthy environment with those of social and economic growth.

The New Hampshire Department of Environmental Services (NHDES) has developed this New Hampshire Stormwater Manual to provide communities, developers, designers, and regulatory personnel with a reference guide for the selection, design, and application of measures to manage stormwater from newly developed and redeveloped properties, while

meeting environmental objectives in the New Hampshire regulatory setting. These measures include source controls, design techniques (including low impact development (LID) design approaches), structural practices, and construction practices designed to minimize adverse hydrologic and water quality impacts, protecting and enhancing the functions of our natural wetlands and waterways.

Odiorne State Park, Rye, New Hampshire

The remainder of this Chapter presents an overview of the three-volume New Hampshire Stormwater Manual, and summarizes the contents and organization of information presented in Volume 1.

## 1-1. About the New Hampshire Stormwater Manual

The New Hampshire Stormwater Manual is intended as a planning tool for the communities, developers, designers, and members of regulatory boards, commissions, and agencies involved in stormwater programs in New Hampshire. The Manual addresses measures to manage stormwater runoff through site design, pollutant source controls, structural Best Management Practices (including associated operation and maintenance measures), and construction-phase practices. These practices are expected to be applied to meet specific objectives under current state and federal regulatory programs. However, if any discrepancies are found between this manual and the New Hampshire Code of Administrative Rules for the programs discussed here, the Rules should be followed.

The Manual is issued in three volumes:

*Volume 1: Stormwater and Antidegradation* presents an overview of New Hampshire's stormwater program together with related federal program requirements, describes New Hampshire's "Antidegradation Provisions" with respect to controlling water quality impacts due to stormwater discharges, and provides an introduction to the non-structural and structural measures for managing stormwater.

*Volume 2: Post-Construction Best Management Practices Selection and Design* presents a detailed description of the structural Best Management Practices (BMPs) applicable for use in New Hampshire for the prevention, control, and treatment of stormwater. Volume 2 describes information applicable to the screening, selection, design, and application of particular post-construction BMPs.

*Volume 3: Erosion and Sediment Controls During Construction* provides a selection of practices applicable during the construction of projects, to prevent adverse impacts to water resources as a result of the land-disturbance activities typically associated with development and redevelopment projects.

NHDES intends the New Hampshire Stormwater Manual to serve as:

- A living document with the ability to be updated as needed to accommodate the changes in stormwater management as the wealth of information in this area grows, and as technology and research broaden its scope and our perspective.
- A resource for developers and engineers in site planning, source control, and pollution prevention measures, as well as the selection and application of stormwater Best Management Practices (BMPs) to protect the surface waters of the state from potential adverse impacts of construction and post-construction stormwater runoff.
- A resource to local and state government officials, such as planning and zoning boards, town engineers,

planners, conservation commissions, and New Hampshire state agencies involved in project review or approval to ensure that state and federal stormwater requirements are met, and that projects are reviewed in a consistent manner.

- A source of information on state and federal stormwater programs and their requirements that apply to development projects in New Hampshire, and a resource for selecting management measures to meet those requirements, including:
    - Stormwater management techniques commonly used, including BMPs and better site design techniques. Using better site design techniques in combination with traditional BMPs will result in more effective stormwater management systems to more easily meet the runoff volume and pollutant removal requirements of federal and state stormwater programs.
    - Selection criteria to assist in the selection of appropriate management techniques for a site and in the preparation of Stormwater Pollution Prevention Plans (SWPPPs) and other stormwater management planning documents.
    - Summaries of stormwater management techniques including the target pollutants, general site requirements, removal mechanisms, and pollutant removal efficiencies.
    - An explanation of various modeling tools that can be used as a surrogate to water quality monitoring to verify that pollutant loading requirements will be met in the post-development condition.

## 1-2. About Volume 3

Within this context, Volume 3 presents information to assist in the selection and implementation of Best Management

Practices (BMPs) for Erosion and Sediment Controls. during Construction. This volume discusses regulatory requirements applicable to erosion and sediment controls during the construction phase, development of erosion and sediment control plans, implementation criteria for erosion and sediment control practices, and inspection and monitoring of construction phase practices applicable to land disturbance activities.

This Volume does not cover work within intermittent or perennial streams or other water bodies. Stream crossings and work within lakes, ponds, and other water bodies must meet strict regulatory standards. The design of temporary works for such projects will vary depending on the type of construction, area disturbed, and the affected water body's quality and habitat features. Measures to isolate the work area, control turbidity, control water levels, and remove water from excavations in these areas are generally designed and permitted on a case-by-case basis. Temporary measures associated with such work should be implemented in accordance with approved construction drawings and specifications, as well as applicable permit conditions.

The remaining chapters are organized as follows:

*Chapter 2: Regulation and Permitting* discusses New Hampshire permits (Alteration of Terrain, NH Fill and Dredge in Wetlands) that require implementation of erosion and sediment controls, and also the U.S. EPA National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP) and the U.S. Army Corps of Engineers (ACOE) Programmatic General Permit for New Hampshire (PGP).

*Chapter 3: Planning and Selecting Erosion and Sediment Controls* provides guidance on the basic strategies for erosion and sediment control, and the basic elements of an Erosion and Sediment Control Plan. The chapter also provides a selection matrix for erosion and sediment controls.

*Chapter 4: Construction Phase Erosion and Sediment Controls* presents a selection of Best Management Practices, including

practices consistent with the requirements of the AoT Regulations. It provides a brief description of each BMP, listing key information for the application of the BMP. The chapter presents practices under the categories of "erosion controls" and "sediment controls." A separate discussion of "Winter Weather Stabilization and Construction Practices" is also provided. The chapter also discusses monitoring of erosion and sediment controls and addressing construction contingencies.

The practices presented focus on temporary measures typically implemented during construction. Land disturbance projects also include other stormwater management practices that address long-term site stability, to prevent erosion and associated sedimentation impacts. Please refer to Volume 2 of the Stormwater Manual for information on the design of permanent stormwater management practices.

*Appendices* include selected references for more detailed discussion of the topics covered in this manual and a Sample Erosion and Sediment Control Inspection Log.