

Chapter 2

Message for Municipalities



New Hampshire's Queen City,
Manchester, New Hampshire

The majority of land use decisions are made at the local level. New Hampshire Revised Statutes Annotated (RSA) 672 – 677, describe the authority given to municipal governments to develop, implement, and enforce planning, zoning, and related regulations. Although there are state and federal regulatory requirements for development activities, they typically apply to larger projects with over 1 acre of disturbance. Smaller, one- or two-lot residential developments scattered throughout the state are often not subject to these requirements because of their limited size of disturbance¹. The cumulative impact of these small disturbances is large, however; and can have a substantial impact on water quality. For these small-scale developments, the local municipality is the regulatory authority.

The New Hampshire Alteration of Terrain (AoT) Regulations (Env-Wq 1500), the Antidegradation Provisions of the New Hampshire Surface Water Quality Regulations (Env-Wq 1708), and the federal regulatory requirements under EPA's NPDES Stormwater Program (40 CFR (Code of Federal Regulations) 122) require

the management of the quantity and quality of stormwater runoff to protect our water resources. These regulatory programs affect local governments as they undertake municipal projects that need to comply with the regulations. The requirements of these state and federal programs can be adopted by municipalities to regulate the smaller-scale projects under their authority.

To help direct municipal officials to information that may be of particular relevance to local government, this chapter provides a summary of the issues of concern, where these issues are discussed in this volume of the New Hampshire Stormwater Manual, and information that the municipality should expect to receive when developers present projects subject to the AoT Regulations and the Antidegradation Provisions. This chapter also discusses some additional management techniques particularly appropriate for municipalities to employ to address stormwater controls, including watershed management planning, municipal ordinances, and easements and deed restrictions.

¹ Small scale development projects in New Hampshire are subject to the Alteration of Terrain (AoT) Program Permit by Rule. The Alteration of Terrain permit is discussed in greater detail in Section 4-2.

To include the pertinent information in one document, Volume 1 has been written with a diverse audience in mind. Because of this, some of the information contained in the chapters may be more technical in nature than necessary for the purposes of municipal planning boards, town planners, conservation commissions, and other groups involved in development review at the local level. It is anticipated that municipalities will refer developers and project engineers to each chapter for more detailed information on the methods that should be used to meet the state Antidegradation Provisions.

2-1. Municipal Issues of Concern

The following is a brief introduction to municipal stormwater issues, together with a reference to the Chapter of this Volume where the concern is discussed in greater detail:

Alternatives to Conventional Stormwater Management Methods

Municipalities have historically been, and will continue to be, concerned with stormwater management, including flooding and the reasons for more frequent flooding, as well as the impacts of stormwater pollutants. To address evolving requirements for stormwater control, conventional measures such as “end-of-pipe” control facilities for handling stormwater may no longer suffice, and alternative strategies may be required to minimize the generation of increased runoff, prevent pollution, and manage the runoff that does occur from land development activities. Chapter 3 discusses concerns with conventional stormwater management methods and recommends that municipalities consider changes in zoning and other municipal regulations to allow for alternatives to conventional stormwater management.

The alternative stormwater measures include not only structural practices, but a number of non-structural practices. Chapter 6 provides an overview of these practices. Municipalities are encouraged to consider and require these practices in the overall process of review and approval of projects at the local level, including:

- Methods that either preserve or mimic the natural condition of a site (e.g., stream buffers, etc.) to potentially reduce the number and size of structural management practices (i.e., stormwater ponds, infiltration basins, sand filters) that are needed to treat stormwater. Although these non-structural site design techniques promote infiltration, reduce the amount of stormwater generated, and can reduce costs by reducing the need for structural practices, many municipal ordinances and codes do not allow for them to be used. Section 6-1 can be used as a starting point for municipalities to determine if they would be able to implement these site design techniques and determine the zoning modifications or exceptions that need to be considered to allow for them.

- Methods whereby rooftop and non-rooftop (i.e., driveways, walkways, patios) impervious surface runoff can be “disconnected” from the drainage network of a site (see Section 6-2) and how this factors into the calculation for Effective Impervious Cover (Section 5-2). Municipalities can adopt these disconnection measures or can refer engineers or consultants to this section for projects that require state or federal stormwater permits.

State & Federal Permitting Programs

Several federal and state programs relate to stormwater management in New Hampshire. Chapter 4 serves as primer on stormwater permitting and can be used to help determine if the regulations at the municipal level are consistent with those at the state and federal levels.

Antidegradation Notice

In 2009, NHDES staff will be convening a workgroup of interested stakeholders to review the proposed antidegradation requirements described in Section 5-2. The workgroup will finalize the requirements for meeting the antidegradation provisions and the procedure for NHDES review of proposed activities. This manual will be updated to incorporate the requirements at the completion of the workgroup.

Antidegradation Provisions

At the core of this Volume of the New Hampshire Stormwater Manual is the introduction and explanation of the Antidegradation Provisions. The Antidegradation Provisions are part of the New Hampshire Surface Water Quality Regulations (Env-Wq 1700). The purpose of the Antidegradation Provisions is to prevent degradation of surface waters. In order to determine whether a proposed project would degrade water quality NHDES must conduct an antidegradation review. Municipalities should be familiar with important basic concepts about these requirements and be able to direct project applicants to the more technical aspects that project designers and regulators must consider. Chapter 5 covers this material in detail, including the following concepts:

- *Proposed project thresholds* that trigger review under the Antidegradation Provisions, summarized in a decision flowchart that should be useful for municipalities and project applicants, as well as for regulatory review personnel. See Section 5-1.
- *Water Quality Categories* that are applicable under the Antidegradation Provisions, how these water quality determinations are made, and how to find information about individual waterbodies to determine their category. Understanding water quality categories is important for later discussions on Antidegradation Provisions to know when and to what waterbodies they apply. See Section 5-1.
- *The concepts of Effective Impervious Cover (EIC) and Undisturbed Cover (UDC)* as they relate to the total impervious cover of a site. The Impervious Cover Model, used to establish impervious cover

targets, is also discussed. Understanding the concepts of impervious cover is important in understanding the proposed EIC and UDC targets set under the Antidegradation Provisions and can also be used in reviewing development plans at the local level if similar municipal targets are set. See Section 5-2.

- *NHDES targets* to protect water quality by proposing pollutant loading requirements for each Water Quality Category and proposed targets for EIC and UDC under the Antidegradation Provisions (Section 5-2). This information is important in reviewing development plans if similar municipal targets are set, or to provide guidance to engineers and consultants on projects that will require state or federal stormwater permits.
- *The difference between insignificant and significant pollutant loading*, how it is determined, and what it means in terms of additional information that may need to be submitted with permit applications (Section 5-2). Municipalities can apply this information to their own permitting programs, or provide it as guidance to engineers and consultants on projects that will require state or federal stormwater permits.
- *Proposed information with permit applications* to satisfy the Antidegradation Provisions (Section 5-2). Municipalities may want to adopt these proposed submittal requirements, or refer engineers and consultants to this section for projects that will require state or federal stormwater permits.
- *Guidance to performing calculations* proposed to document compliance with Antidegradation Provisions. This includes calculations of EIC and UDC (Section 5-2), as well as a detailed discussion of pollutant loading calculations (Chapter 8). The latter chapter describes the estimation of pollutant loading using the Simple Method, including a spreadsheet developed by NHDES. In addition, this chapter includes the event mean concentrations for stormwater pollutants and the pollutant removal efficiencies of BMPs to determine if a project will meet the pollutant loading requirements described in Section 5-2. Municipalities may refer engineers and consultants to this chapter for guidance on conducting calculations. Municipalities may also want to consider adopting similar requirements for applicants to show how their projects will impact water quality.

Selection and Design of Best Management Practices (BMPs)

There are numerous structural best management practices that can be used to treat stormwater runoff. These include both temporary and permanent BMPs, as well as BMPs that should be used for pre-treatment. Chapter 7 provides an introduction to the various BMP options available.

Chapter 7 also introduces various criteria that can be used to select a structural stormwater best management practice, such as land use factors, physical feasibility, watershed resources, the capability of the BMP, maintenance considerations, and community and environmental factors.

Volume 2 of the New Hampshire Stormwater Manual discusses the selection and design of these BMPs in further detail, and will provide guidance to engineers, consultants, reviewers, and others on the detailed criteria for siting and sizing of these measures. Volume 3 of the Manual discusses construction phase measures in greater detail, and will provide guidance to engineers, contractors, and reviewers in the application of these practices during site development.

2-2. Municipal Stormwater Management Tools

Municipalities have several management tools available to assist in implementing stormwater quantity and quality control objectives. These tools include (but are not necessarily limited to) the ability to plan for stormwater management on a watershed basis, to adopt and apply municipal ordinances that govern stormwater management, and to require and enforce easements and deed restrictions pertaining to stormwater management. These tools are further discussed below.

Watershed Management Planning

A watershed is a geographic area in which all water drains to a given stream, lake, wetland, estuary, or ocean. Our landscape is made up of many interconnected watersheds. The boundary between each is defined by the line that connects the highest elevations around the waterbodies. Watersheds in New Hampshire often cross political boundaries, spanning multiple towns and crossing county and even state lines. This often requires municipalities to work together to address water quantity and quality concerns².

Within each watershed, water runs to the lowest point on the landscape, either a stream, river, lake, estuary, or the ocean. Along its path, water travels over and through fields, farms, forests, backyards, parking lots, and roads and highways. Any pollutant in its path is picked up and carried to the receiving water. It is important, then, to look at land use activities and potential sources of pollution across the entire watershed when trying to determine the cause of pollutants in downstream receiving waters. It is also important, when planning new development, to recognize that impacts could be far reaching. Even if there isn't a stream or river running through the site, stormwater runoff and the pollutants it can carry, eventually end up in downstream

² To help facilitate municipalities working together, nine Regional Planning Commissions were established to, among other things, increase communication between municipalities, promote intergovernmental cooperation and coordinate development of the various regions. More information on the Regional Planning Commissions is available from the New Hampshire Association of Regional Planning Commissions website at: <http://www.nharpc.org>.

surface waters. Because of this, stormwater management is most effective when addressed at a watershed scale, through a watershed management plan.

Unfortunately, at the state level the opportunity for watershed management planning is limited. Permit applications for development projects are submitted for individual projects statewide. Because the state only sees the larger development projects, the small projects that fall below the state permitting threshold are not easily factored into state planning. Municipal governments, however, have the benefit of reviewing even the small projects in their town. This makes watershed management planning much more feasible at the local and regional level.

A watershed management plan is a management tool intended to identify and implement activities in the watershed with the intention of protecting and restoring water quality. A watershed management plan should include the following nine elements, as determined by the United States Environmental Protection Agency (EPA) (EPA, 2003):

- The causes and sources of pollutants in the watershed.
- An estimate of the load reductions expected for the Nonpoint Source Pollution (NPS) management measures to be implemented under the plan.
- A description of the type and location of the NPS management measures that will be implemented to achieve the expected load reductions.
- An estimate of the technical and financial assistance necessary to implement the plan, including costs and sources of assistance.
- An informational/educational outreach component to improve public understanding and involvement with stormwater management projects and plan implementation.
- A schedule for implementing the watershed management plan.

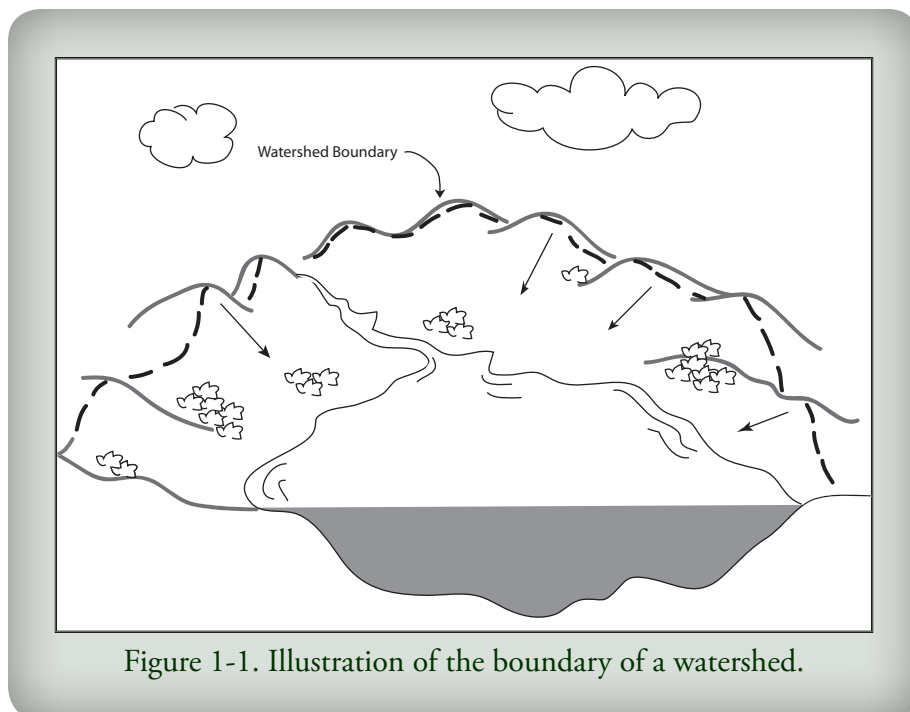


Figure 1-1. Illustration of the boundary of a watershed.

- A description of interim, measurable milestones to determine if the management measures described in the plan are being implemented.
- A set of criteria to determine if loading reductions are being achieved and if progress is being made toward meeting water quality standards and, if not, the criteria for determining if the watershed management plan should be revised.
- A monitoring component to evaluate the effectiveness of implementation efforts over time.

NHDES offers grants to develop and implement Watershed Management Plans. These grants are made available through the 319 Watershed Assistance Grants Program, which is administered by the NHDES Watershed Assistance Section with funding provided by EPA under Section 319 of the Clean Water Act.

Municipal Ordinances

The Regional Environmental Planning Program (REPP) has recently developed guidance for model ordinances and regulations on a number of innovative land use techniques, for municipalities to use to develop their own local ordinances. The Innovative Land Use Planning Techniques: A Handbook for Sustainable Development contains chapters on:

- Multi-density zoning
- Environmental characteristics zoning
- Site level design

It specifically includes a model ordinance for stormwater management that is consistent with state stormwater and water quality regulations described in this manual.

The Innovative Land Use Planning Techniques: A Handbook for Sustainable Development is available on the NHDES website at: http://des.nh.gov/organization/divisions/water/wmb/repp/innovative_land_use.htm

Easements and Deed Restrictions

Easements and deed restrictions are legal tools that municipalities can employ to assure the attainment of stormwater management objectives. These tools can be used to impose permanent restrictions on the use of property or facilities, or to facilitate the performance of necessary activities such as operation and maintenance.

An easement is an agreement between a land owner and an easement holder (e.g., a local government agency or a utility company), which gives the holder a right to use a defined part of the property for a specific purpose (Byers and Marchetti Ponte, 2005). Common examples of easements are ones established

for a utility company to install and maintain power lines on a property, or established for a driveway extending over a neighboring property to access a landlocked property. Easements are typically documented in the deed to the property. They are described in terms of the resource they are designed to protect and explain the restriction on the uses of the property.

Easements may be used to help control stormwater quantity and protect water quality by providing for such elements as:

- Access for construction and grading activities, where a project depends on off-site improvements;
- Access for the construction and maintenance of conveyance and stormwater management facilities when there are or will be multiple property owners served by these facilities;
- Permanent access by parties responsible for stormwater system operation and maintenance to the facilities that must be maintained to ensure the long-term performance of the stormwater system.
- Such easements may include provisions for municipal access where appropriate, either because the municipality will be the responsible operator or the municipality will need to have access on an emergency or contingency basis.

A deed restriction is a clause in a deed that limits the use of a property. Deed restrictions are usually initiated by the developer, possibly as a permit condition, and transfer with the property. They typically cannot be changed or removed by subsequent owners. Deed restrictions are filed with the New Hampshire Registry of Deeds for each county and the deed restriction language is included in all future real estate transactions.

Deed restrictions may be used to protect water quality by imposing limitations in order to require or maintain:

- Buffers to wetlands, streams or other sensitive natural areas;
- Limitations on fertilizer application
- Limitations on clearing or removing vegetation

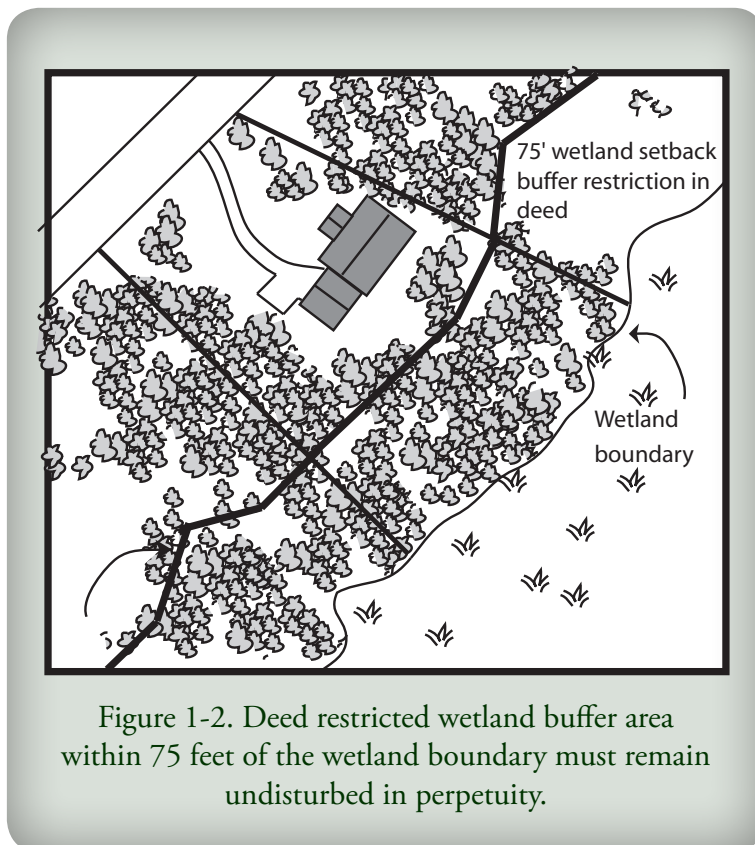


Figure 1-2. Deed restricted wetland buffer area within 75 feet of the wetland boundary must remain undisturbed in perpetuity.

- Maintenance of privately owned best management practices

A template for deed restrictions can be found in Appendix A and example language for easements are included in Appendix B.

Stormwater Utilities

Many communities across the state and throughout the country are exploring options for funding stormwater management activities. As the challenges and costs of improving stormwater management programs and meeting increasing regulatory requirements grow, municipalities are looking at stormwater utilities as a way to fund stormwater improvements. The funding from stormwater utilities can be used for catch basin cleaning, street sweeping, and stormwater infrastructure upgrades required by the Clean Water Act National Pollutant Discharge Elimination System (NPDES), Phase II. It can be used by non-Phase II communities to reduce local problems such as flooding, erosion, and beach closures, and to protect the quality of the land and water resources for residents through capital improvements and proper operation and maintenance of stormwater facilities.

In the 2008 New Hampshire legislative session, House Bill (HB) 1581 passed, enabling municipalities to construct and maintain stormwater systems, and to establish special assessment districts (i.e., stormwater utility districts) to generate funding specifically for stormwater management. Users within the district pay a stormwater fee, often based on the percentage of impervious surfaces on their property, which directly supports maintenance and upgrades of existing storm drain systems, development of drainage plans, flood control measures, and water quality programs that service the users. This is similar to the dedicated municipal funds that manage water and sewer utilities.

For additional information on House Bill 1581 and stormwater utilities, go to the New Hampshire General Court website at <http://www.gencourt.state.nh.us/legislation/2008/HB1581.html> or contact Eric Williams of the NHDES Watershed Assistance Section at (603) 271-2358.

Chapter 2 References

Byers, E. and K. Marchetti Ponte. *The Conservation Easement Handbook, Second Edition, revised and expanded*. 2005. Washington, D.C.: Land Trust Alliance and The Trust for Public Land.

New Hampshire Department of Environmental Services. *Best Management Practices to Control Nonpoint Source Pollution A Guide for Citizens and Town Officials*. January 2004.

United States Environmental Protection Agency. *Supplemental Guidelines for the Award of Section 319 Nonpoint Source Grants to States and Territories in FY 2003*. 2003.

University of New Hampshire Stormwater Center. *2007 Annual Report: Resources for Land and Water Management, Stormwater Utilities*. 2008.