



STATE WATER PLAN PROCESS:

**MUNICIPALITIES HAVE
A CRUCIAL STAKE**

By Paul Susca

Lake Massabesic has served as the water supply for Manchester and neighboring communities for more than 130 years.

PHOTO BY SCOTT GAGNE

Water has shaped the history of New Hampshire's communities, in many ways defines their unique character today and will continue to influence their future. The state boasts more than 1,000 lakes and large ponds, 17,000 miles of mapped rivers and streams, 238 miles of ocean and estuarine coastline, and hundreds of thousands of acres of wetlands. Stratified-drift aquifer deposits cover 14 percent of the state and groundwater in bedrock fractures provides water supply via public and private wells to most rural New Hampshire communities. We rely on these water resources for water supply, hydroelectric generation, recreation, tourism, fish and wildlife habitat, scenic beauty and the state's exceptional quality of life.

If taken for granted, however, our water resources will decline in quality, in availability and in value. Fortunately, a broad array of state and federal agencies, local governments, nonprofit organizations and other stakeholders realize the need for thoughtful management and protection of our water resources and have worked toward that end. However, it is becoming increasingly clear that a number of challenges—some long-standing and some new—must be recognized and addressed in order to secure the future sustainability of our water resources.

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Four Major Challenges

A recent report by the New Hampshire Department of Environmental Services (DES) identified four such challenges. First, the ways in which land is developed and water is used as New Hampshire's economy and population continue to grow can have profound impacts on water quality, water availability and water-based recreational opportunities.

Second, climate change, which is already bringing increasingly frequent extreme weather events to New Hampshire, is expected to exacerbate water quality problems, to test our readiness to deal with flooding and ice storms, and to overwhelm the existing stormwater infrastructure in many places.

Third, as is the case nationwide, New Hampshire's infrastructure for water supply, wastewater treatment, stormwater and water storage is severely in need of maintenance, upgrade or replacement, but no funding mechanism is in place to provide all of the needed money.

Fourth, in order to inform the effective management of our water resources, we need to address critical data needs by expanding our efforts to gauge stream flows, monitor groundwater levels, gather water quality data, monitor the occurrence and spread of invasive species, and map flood-prone areas. All of these also require additional funding to accomplish.

The State Water Plan Process

The new report, *New Hampshire Water Resources Primer*, identifies these underlying challenges to effective management of the state's water resources. The *Primer* was developed by DES, with the involvement of various stakeholders, to begin a discussion with legislators, town officials and the public about the future of our state's water resources. It is the first document that covers all of the water related topics of importance to policy makers in New Hampshire. The

Primer contains pertinent facts and statistics about the state's water resources, water use, water infrastructure and water law. Individual chapters cover rivers and streams; lakes and ponds; groundwater; wetlands; coastal and estuarine waters; water use and conservation; drinking water; wastewater; stormwater;

dams; and floods and droughts. Each of these chapters provides information on the topic, discusses issues related to it and examines current management efforts. More importantly, each chapter also presents some preliminary recommendations formulated by experts and stakeholders.

DES developed the *Primer* as a key element of Phase I of the State Water Resources Plan process. This process began with legislature's formation of a Water Resources Committee in 2003. Last fall, DES, the University of New Hampshire Survey Center and the consulting firm of Weston and Sampson conducted a survey of legislators and local officials to add their perspective to the emerging picture of water resources and issues. With the completion of the *Primer* and the survey, DES is currently taking the Water Plan process on the road, seeking the involvement of local officials, private groups and individuals. DES will later report back to the Water Resources Committee, which will determine the next steps to be taken to develop a state water resources plan. This process presents opportunities for municipalities and other stakeholders to help identify the issues of greatest concern and to move toward a plan that will ensure a sustainable water resources future for New Hampshire communities. Along the way, the water plan process is likely to

consider and shape future municipal roles in water resources management.

The Role of Municipalities

While numerous state and federal programs and nonprofit organizations play important roles in understanding and addressing the state's water resources challenges, municipalities also play a crucial role in managing and protecting

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water resources, primarily through subdivision and site plan review regulations and ordinances related to wetlands, shoreland, stormwater and groundwater. DES and its partner organizations have published a number of model ordinances and guidance documents over the years to aid municipalities interested in addressing these issues. The most recent of these is *Innovative Land Use Planning Techniques: A Handbook for Sustainable Development* (October 2008), prepared by DES in partnership with the New Hampshire Association of Regional Planning Commissions, the New Hampshire Office of Energy and Planning and the New Hampshire Local Government Center.

While municipalities can help manage and protect water resources, municipal land use regulations can also encourage—or fail to discourage—patterns of development that threaten the quality of water resources and exacerbate problems such as flooding, dam safety, the loss of riparian habitat, high seasonal water demand and low stream flows during dry periods.

Stormwater management is an excellent example of the municipal role.

While DES's Alteration of Terrain Program regulates projects that disturb 100,000 square feet or more (50,000 square feet is the threshold in protected shorelands), smaller projects are not effectively regulated unless a municipality takes on this role. As described in detail in Chapter 10 of the *Primer*, conventional approaches to stormwater management like detention ponds have caused significant degradation of surface water quality while reducing

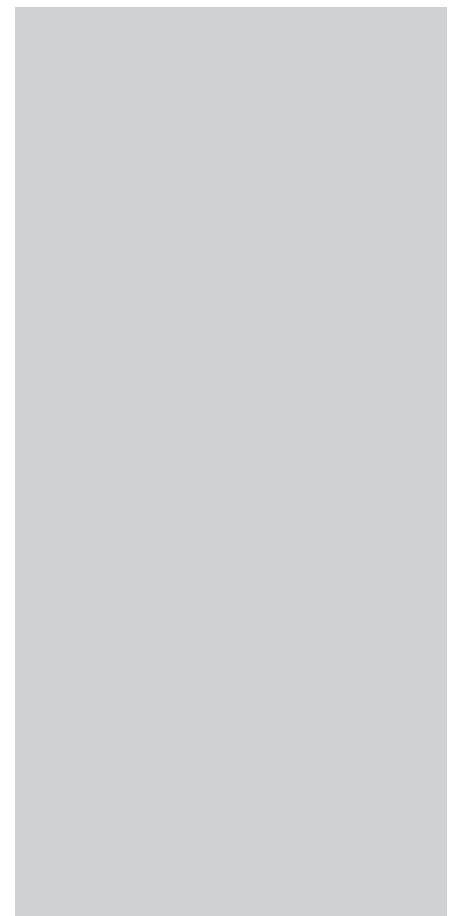
recharge to groundwater. While DES's new Alteration of Terrain regulations incorporate the latest understanding of effective stormwater management techniques, local land use regulations that require only conventional management practices fall short of what is needed to protect our water resources into the future. The *Handbook* contains a model ordinance that municipalities can use to implement state-of-the-art stormwater management practices, along with a broad array of other model ordinances and related information.

Stormwater management is also an example of how municipal actions cut across many water resources issues. Proper stormwater management contributes to water quality and, consequently, recreational value, replenishment of groundwater and preservation of natural streamflow while limiting the impact of development on flooding potential and on stormwater infrastructure.

Another example of the municipal role is in the protection of groundwater. While state laws and programs do address the location and

management of land uses that pose the greatest hazard to groundwater, it is left to municipalities to restrict many other land uses that potentially threaten groundwater. Many municipalities recognize the importance of this hidden resource, which supplies 60 percent of New Hampshire residents with their drinking water, and have adopted aquifer protection or groundwater protection ordinances. Some have also worked with adjoining communities to protect shared groundwater resources.

In many ways, the role of municipalities extends into areas where the Legislature has been reluctant to extend the regulatory arm of state government. An example of this is the quality of water supplied by private wells. These wells supply water to 36 percent of the state's residents, but DES estimates that approximately 20 percent of the state's private wells supply water that



contains levels of naturally-occurring arsenic that poses a public health risk. So far, there is no state requirement dealing with the testing of water from private wells, but a handful of municipalities have adopted regulations to address the issue.

The *Primer* points out again and again the need for improved cooperation between municipalities to protect shared water resources. Although the legal mechanisms exist for watershed-based or other regional approaches to land use regulation, and the experts agree that effective management must include this approach, it has not been widely embraced. Municipalities are clearly in the driver's seat in terms of improved water resource protection through coordinated actions.

What Do Municipal Officials Think About Water Issues?

As noted previously, DES and its partner organizations conducted a survey of legislators and local officials during October and November of 2008. The purpose of the survey was to gain perspectives in addition to those provided by the DES staff and reviewers involved in preparing the *Water Resources Primer*. Respondents to the survey included 114 state legislators; 175 members of local governing bodies; and 131 municipal planners, chairs of planning boards or conservation commissions, and their designees. The survey, whose results

can be viewed and/or downloaded on the State Water Resources Plan Process website (see Resources, page 15), contains a wealth of information about issues of importance, water-related capital investment plans and opinions regarding policy questions. The survey revealed the following.

Asked in an open-ended format about the top three water resources issues respondents would like to discuss with the governor, respondents most often mentioned the following:

- Water quality and protection (groundwater and aquifers being mentioned twice as often as either rivers and streams or lakes and ponds)
- DES enforcement and funding
- Water withdrawals, usually groundwater
- Wetlands

Of the 32 water resource issues that respondents were asked about in a multiple-choice format, the issues that more than 70 percent of respondents were very or somewhat concerned about were:

- Impact of development on water quality (82 percent)
- Potential contamination of existing wells and aquifers (77 percent)
- Loss of wetlands (75 percent)
- Water quality of streams and rivers (74 percent)
- Increased flooding (73 percent)

- Shoreland development (73 percent)
- Climate change (71 percent)

Percentages of respondents who indicated that their communities have plans to make major capital investments in each of the following categories in the next five years:

- Land conservation (33 percent)
- Wastewater treatment (25 percent)
- Water supply (23 percent)
- Stormwater system (18 percent)
- Wetlands mitigation (14 percent)
- Dam construction/maintenance (13 percent)

More than 50 percent of respondents answered "yes" to the following policy questions:

- Should the state direct more funds toward collecting and analyzing data necessary to determine water resource conditions in order to adequately develop water policy? (65 percent)
- Would you support raising additional money through user fees to protect land around vital water resources? (60 percent)
- Should additional state regulatory controls be enacted to minimize the impacts of new development on rivers, wetlands and groundwater? (59 percent)
- Should homeowners be required to test private wells when homes are sold? (57 percent)

STATE WATER RESOURCES PLAN PROCESS

Public Meetings in April and May

April 1 - Manchester

April 2 - Ossipee

April 6 - Keene

April 14 - Lebanon

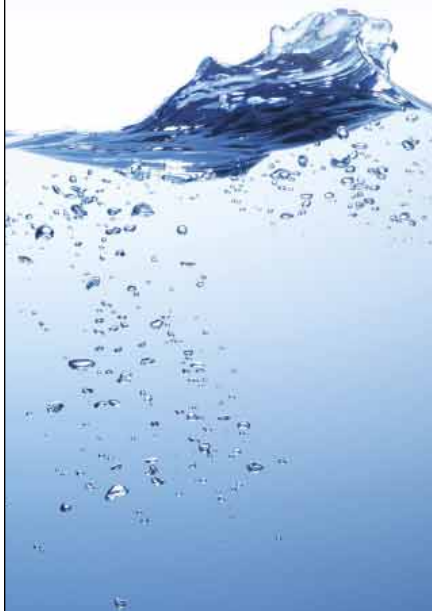
April 28 - Durham

May 4 - Bristol

May 27 - Bethlehem



For more information,
please call 603.271.0657 or visit:
[http://des.nh.gov/organization/
divisions/water/dwgb/wrpp/sessions.htm](http://des.nh.gov/organization/divisions/water/dwgb/wrpp/sessions.htm)



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- Should new developments be required to implement standards for lawn irrigation conservation? (56 percent)

More than 50 percent of respondents agreed (strongly or somewhat) with the following policy statements:

- Water resource protection is worth the investment. Eighty percent of respondents *disagreed* with the statement, “Sometimes it is okay to reduce water quality to promote economic development.” Eighty-eight percent *agreed* that, “It is important to protect water resources even though it costs money.”
- Cluster subdivisions with open space should be encouraged (79 percent agreed).
- [The respondent] knows enough about water resources in New

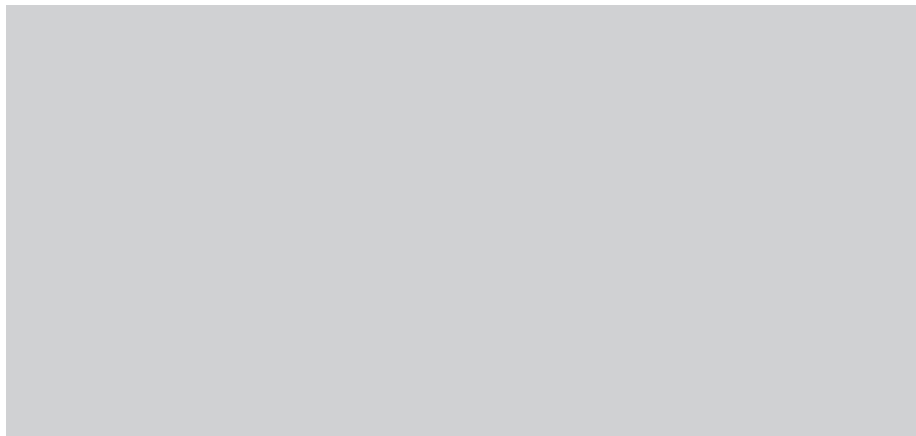
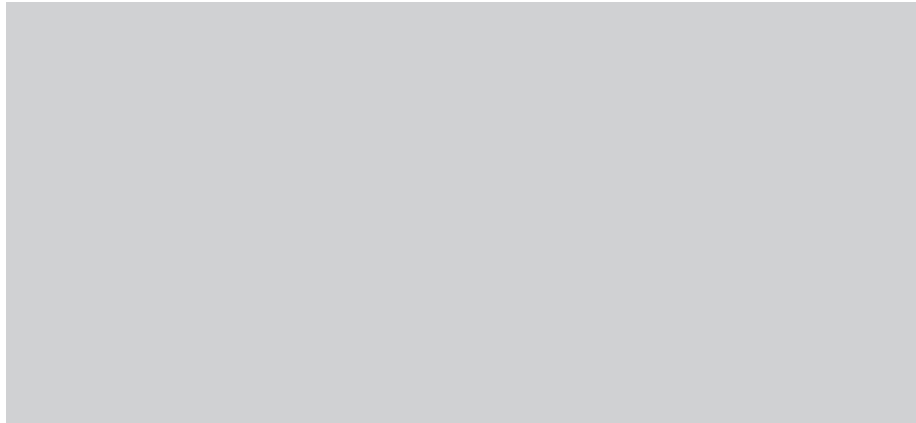
Hampshire to make informed policy decisions (60 percent agreed).

- Local aquifer and groundwater protection programs/ordinances are inadequate (55 percent disagreed with the statement that they are adequate).

Of note is the significant alignment between the concerns of policy makers surveyed and the issues and key recommendations identified by experts and stakeholders in the *Primer*. New Hampshire is fortunate to have well informed policy makers at all levels of government.

Next Steps and the Municipal Role

Fortunately, New Hampshire has a tradition of constructive involvement by dedicated volunteers—as local officials and as members and directors of regional planning commissions, lake associations,



local river advisory committees, volunteer river and lake monitoring groups, sporting groups, and the like. DES solicited the contributions of many of these groups when drafting the *Water Resources Primer* and plans to tap into this vein of citizen involvement as it holds a series of “road show” meetings throughout the state. (See sidebar, page 14.) DES’s hope is that between the *Primer*, the survey and the public meetings, the Water Resources Plan process will benefit from a wide range of perspectives and result in an informed public discussion about the challenges New Hampshire faces and what needs to be done to address them.

While the public meetings do not represent the first or the last opportunity for the involvement of municipal officials, the meetings present a great opportunity to begin a discussion that can continue on several levels. First, reviewing the *Primer* and participating in the State Water Resources Plan discussions

can help inform local water resources planning. Second, municipalities have a tremendous stake in the outcome of the State Water Resources Plan process. The issues with the most direct impact on municipalities include infrastructure funding needs and the respective roles of state and local governments in various aspects of land use management such as stormwater management and shoreland protection. However, the most important issue for all concerned is how to ensure the protection and enhancement of the high quality environment that makes New Hampshire a

desirable and economically vital place to live and work.

This article draws heavily upon the New Hampshire Water Resources Primer, (N.H. Department of Environmental Services, December 2008), edited by Sarah Pillsbury, Paul Currier and Paul Susca. Paul Susca is Planning, Protection & Assistance Supervisor of the New Hampshire Department of Environmental Services’ Drinking Water and Groundwater Bureau. He can be contacted by phone at 603.271.7061 or by e-mail at Paul.Susca@des.nh.gov.

Resources

State Water Resources Plan Process website (view and/or download the *Water Resources Primer*, reports on the Water Resources Survey and an up-to-date schedule of public meetings)

<http://des.nh.gov/organization/divisions/water/dwgb/wrpp/index.htm>

Innovative Land Use Planning Techniques: A Handbook for Sustainable Development
http://des.nh.gov/organization/divisions/water/wmb/repp/innovative_land_use.htm