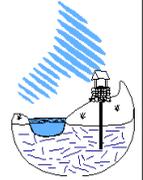




THE SOURCE



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Winter 2014

Wakefield Adopts New Water Quality Protection Language

By Forrest Bell, Principal & Senior Scientist, FB Environmental Associates

In 2010 FB Environmental Associates (FBE) was hired through a Piscataqua Region Estuaries Partnership (PREP) community grant to develop a stormwater ordinance for the towns of Wakefield, New Hampshire and Acton, Maine. This project was a recommended "action item" from the Upper Salmon Falls Headwater Lakes Watershed Plan completed for the Acton Wakefield Watersheds Alliance (AWWA) in 2009. The project involved educating both communities on the importance of placing stormwater controls on new development in a rapidly growing area of New England. Common themes for the initial project presentations to the planning boards were that "the lakes are their industry" and that there is a documented declining trend in water quality in their lakes. Lakes in the Acton-Wakefield area, such as Great East Lake, Horn Pond, Lake Ivanhoe, and Wilson Lake form the headwaters of the Salmon Falls River, a primary source of drinking water for Somersworth, NH and Berwick, Maine, so maintaining water quality in this river is vital.

It became clear early on that the two towns were going to be on different tracks. Acton had several planning board members that embraced the concept of treating polluted runoff and incorporating low impact development practices at the local level. Wakefield did not. Acknowledging this difference, project partners from FBE, AWWA, and NHDES held a forum in the winter of 2011 to bring the planning board members from both towns into one room to discuss the advantages and potential barriers for the development of a stormwater ordinance.

Fast forward to the summer of 2011, and the introduction of funding for additional work in Wakefield through a 2011 Local Source Water Protection Grant from NHDES. This grant provided for more education of the planning board and focused efforts on the adoption of new language in the existing site plan and subdivision regulations in Wakefield. These are documents that the planning board works with regularly and the prospect of making changes to the existing language seemed more realistic than attempting to adopt a new stormwater ordinance. The project was aided by a new planning board member, Dick DesRoches, who is also a board member of AWWA. He helped his colleagues to understand the need for some changes that would help protect water quality in the community. In the fall of 2013, the new language was adopted by the planning board by a vote of 5-0. Some of the changes to the site and subdivision regulations include:

- A 20 foot no-disturbance vegetated buffer on all existing surface waters.
- Maintaining the natural hydrologic features of the site to the maximum extent possible
- Compliance with the NH Stormwater Manual Post-Construction Best Management Practices Selection and Design criteria.
- Providing for peak stormwater discharge control at pre-development rates.



The success of this project was ultimately to acknowledge the barriers that the planning board members articulated early on to the project team and understanding that working with the existing regulations would likely be more effective than developing a new ordinance that would have to go to a town vote.

Viewpoints expressed in contributed articles are those of the author and not necessarily those of NHDES. Furthermore, NHDES has not necessarily verified the accuracy of all statements in the article.



NHDES Teams Up with Lakes Region Planning Commission and the City of Laconia to Protect Paugus Bay

By Dari Sassan, Regional Planner, Lakes Region Planning Commission



Photo provided by the City of Laconia

The City of Laconia through the leadership of the Department of Public Works and Planning Departments has made a concerted effort over the last five years to improve stormwater management and further protect Lake Winnepesaukee, including Paugus Bay, the City's primary source of drinking water. As part of a Comprehensive Drainage Study completed in 2009, the City identified areas to improve stormwater management and has been steadily making improvements that will undoubtedly improve water quality and protect Paugus Bay as a source of clean drinking water.

The most recent improvement the City completed involved the installation of a "bioretention" area now located at the intersection of White Oaks Road and Weirs Boulevard. Prior to the installation of the bioretention area, stormwater from a 22 acre area would flow through a series of catch basins and then discharge to an outlet located on the lawn of a private residential property adjacent to Paugus Bay. Erosive discharges from this outlet compelled the property owner to install a paved swale from the pipe outlet to the lake to limit erosion associated with the discharges. The new 850 square-foot bioretention area will capture, filter and treat most stormwater prior to infiltration into the ground or discharge into the lake. Stormwater generated upgradient of the new bioretention area enters Paugus Bay near the City's drinking water intake, which makes this project even more important.

The bioretention area was designed by Michael Redding of Loureiro Engineering Associates and uses a compost media and plants as part of the treatment process. Compost is very effective in removing stormwater pollutants such as petroleum, bacteria, nutrients, and metals. According to the US Environmental Protection Agency, bioretention areas are capable of removing

between 80 to 90 percent of petroleum hydrocarbons, sediment, and bacteria and 70 to 80 percent of nutrients like nitrogen and metals like copper and zinc.

As the rain enters the basin it will infiltrate through the open rock surface and pass through a two and a half foot layer of compost. The compost will absorb the stormwater like a sponge and begin to remove the pollutants from the water. Some of the treated stormwater will slowly drain into the surrounding soils making its way into the groundwater, reducing the over-land discharges to the lake. When storms are larger and stormwater begins to pond in the basin, plants and soils located on the slopes will begin absorbing the water and removing the pollutants. The plantings within the bioretention area include silky Dogwood shrubs, and perennial plants including Bee Balm, Meadow Sweet, Caesar's Brother Iris, Black Eyed Susan, and Feather Reed Grass. These plantings will

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also support habitat for birds and insects and will serve a great reminder as visitors enter Weirs Boulevard that Laconia is the City of the Lakes.

Improving water quality in the Lakes Region is a community effort. For this project, collaboration between the City and an adjacent condominium complex was an essential ingredient. The Paugus View Condo Association recognizes the importance of protecting the Lake, and when approached by Luke Powell (Laconia Dept. of Public Works) was very willing to allow a drainage easement on their property for the bioretention area. The Association's environmental stewardship is a great example of how working partners in the watershed can make a difference. This project was made possible by a grant from the NHDES Local Source Water Protection Grant Program and was secured and administered by the Lakes Regional Planning Commission. If you'd like to know more about this project you can contact Dari Sassan, Lakes Region Planning Commission, (603) 279-8171 or dsassan@lakesrpc.org.

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Municipal Household Hazardous Waste Collection Grants Available

The New Hampshire Department of Environmental Services is currently accepting Household Hazardous Waste Collection grant applications for fiscal year 2015 (July 1, 2014 through June 30, 2015.) The application deadline is February 1, 2014.

The NHDES Household Hazardous Waste Program hopes to reach as many residents as possible through their municipalities to reduce the health and environmental risks posed by household wastes and unwanted chemical products. For the fiscal year 2015, \$200,000 will be available for municipalities to collect, transport, and dispose of household hazardous waste. Cities, towns, solid waste management districts and planning commissions are all eligible to apply. The grant will cover up to 50 percent of the total cost of the project (based on total population.) A matching contribution of at least 50 percent is required. Funds will be disbursed as reimbursement for expenses incurred.

A copy of the Grant Application and its corresponding Cover Letter can be downloaded from the DES website at: <http://des.nh.gov/organization/commissioner/p2au/pps/hhwp/documents/hhw-collection-app.doc>. Applications can also be requested by e-mail (hhw@des.nh.gov) or by sending a written request to: New Hampshire Department of Environmental Services, Attention HHW Coordinator, 29 Hazen Drive, PO Box 95, Concord, NH 03302-0095. Any questions or concerns may be directed to the Household Hazardous Waste Program at (603) 271-2047.

Clarifying Potable Water In Municipal Building Codes

It may come as a surprise that most NH municipalities do not clearly define what "potable water" means in their local codes. Most NH communities adopt building codes that refer to the State Building Code that in turn references the International Plumbing Code (IPC). The IPC definition states that "only potable water shall be supplied to plumbing fixtures that provide water for drinking" and that potable water must be "free from impurities present in amounts sufficient to cause disease or harmful physiological effects." This ambiguity makes it difficult for municipalities to ensure potable water is being provided from a private well when, for example, a new home is constructed. While public water supply sources must be regularly tested for contaminants, NH has no water quality testing requirements for private wells. With nearly 1 in 5 private wells in NH estimated to exceed the maximum contaminant level for arsenic, clarifying the potable water definition to include specific contaminants (like arsenic) will facilitate testing that will help to reduce human exposure and disease. NHDES already recommends private well users test their wells every three to five years for the suite of 16 tests referred to as the "Standard Analysis."

The NH Planners Association, NH Building Officials Association and the NH Health Officers Association, with assistance from NHDES will publish guidance regarding how to clarify the local definition of potable water this winter. If you have an interest in this issue, contact Pierce Rigrod at Pierce.Rigrod@des.nh.gov or (603) 271-0688.

Nearly \$1 Million Preserves 218 Acres Along Pennichuck Brook

By David Brooks, Staff Writer for Nashua Telegraph

Nearly \$1 million paid to make up for wetland damage from the expansion of Nashua airport and construction of the Broad Street Parkway has been used to preserve 218 acres of wetland and woods owned by Pennichuck Corporation in Merrimack near the Nashua border. Pennichuck Brook is part of the city's public water system managed by Pennichuck to provide drinking water for residents in Nashua and the surrounding communities.

The land is located off Continental Boulevard and lies on the north side of Pennichuck Brook, which forms part of the city's northern border. A conservation easement for the property was bought by the Society for the Protection of New Hampshire Forests using \$960,000 from Department of Environmental Services' Aquatic Resources Mitigation (ARM) Fund. Mitigation funds are collected for wetland impacts that occur through development when restoration or upland preservation cannot be achieved and are overseen by the NH Department of Environmental Services.

It is the largest ARM grant in the history of the NHDES program, a reflection of the property's value for the environment and local water supply. Pennichuck Corp. CEO John Patenaude said the preservation has been in the works since before the water company was acquired by the city of Nashua in 2012, with an eye toward using some of the wetlands



Photo by Don Himsel of Nashua Telegraph, of Harris Pond off of Manchester Street, Nashua, December 4, 2012.

mitigation money paid by Nashua developments.

"The airport authority had to put some money in the ARM Fund and there was no way to get it back to Nashua. We worked with the city and with DES and the Forest Society to get a portion of that money to come back here," he said.

Roughly \$700,000 came from the payments into the ARM Fund by the airport, which filled some wetlands when it expanded its runway last year, \$220,000 from Broad Street Parkway work, and \$40,000 from a Manchester Street bridge project.

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