



Job Announcement

Development Officer

The Development Officer leads NepRWA's efforts to acquire, maintain, cultivate and solicit individual donors, members and local businesses. S/he also assists with other fundraising activities. The successful candidate has a Bachelor's degree and 3-5 years of development experience, among other qualifications. The Development Officer reports to the Executive Director and works in close cooperation with other staff and Board Members. This is a permanent, part-time position. EEO/AA employer. Please see the detailed job description at www.neponset.org. For more information, contact Ian Cooke, Executive Director, 781-575-0354, cooke@neponset.org.

wat • er • shed (n): 1. the area of land draining into a particular body of water

Neponset River Watershed Association

NepRWA is a nonprofit conservation group founded in 1967 to protect and restore the Neponset River, its tributaries and their watershed lands. *News from the Neponset* is published six times each year. Printing by Blue Hill Press, Canton.

2173 Washington St., Canton, MA 02021
p 781-575-0354, f 781-575-9971
staff@neponset.org, www.neponset.org

Staff

Ian Cooke, Executive Director
Peter Chandonait, Env. Scientist
Laura Hollowell, CWMN Assist.,
Willett Pond Mgr.
Kristina LaFrance, Admin. Assist.
Andy Leahy, Project Manager
Steve Peartman,
Water Resource Analyst
Laura Raymond, Develop. Dir.
Carly Rocklen, Outreach Coord.

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2. a crucial turning point, 3. communities connected by water

NepRWA to Develop Municipal "I/I Banking" Handbook

In the Neponset Watershed, transfer of local groundwater to Boston Harbor via the Massachusetts Water Resources Authority (MWRA) sewer system is one of the leading causes of the water supply shortages and low streamflows that plague the Neponset River Watershed.

Did you know that, on average, only about one-third of the water in Neponset Valley sewer pipes is actually sewage? Most of the water in our sewers comes from Neponset stormwater and groundwater that inadvertently or illegally gets into sewer pipes. This is called "infiltration and inflow" (also know as "I/I"). The resulting impacts on streams and rivers include loss of recreational opportunities, increased concentrations of bacteria and nutrients, increased risk of human exposure to contaminated sediments and a major reduction in the area and quality of aquatic habitats.

Inflow is stormwater from gutter downspouts and catch basins that is illegally piped into sewers, or water from basement sump pumps illegally discharged to basement sinks. Inflow makes up about 12% of MWRA's annual sewer flow in the Neponset Valley. In addition

to the water loss, inflow is a major contributor to the overflow of sanitary sewers onto the streets—an occasional occurrence during heavy rainstorms.

Infiltration is groundwater that slowly leaks into sewer systems through cracks and poorly sealed pipe joints. Unlike inflow, infiltration occurs at a lower but much steadier rate. Roughly 52% of MWRA's annual sewer flow in the Neponset Watershed is from infiltration. That's about seven billion gallons of water each year!

I/I in the Neponset Valley is largely due to the advanced age of our sewer pipes. Because the problem is so large, it is very expensive for towns to address.

A number of Massachusetts cities and towns have begun "Water Banking," which requires all new developments to either pay for, or themselves undertake, sewer repairs to reduce I/I water loss by at least as many gallons as the development will be adding to the

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Just What the Doctor Recommended: Salt Marsh Restoration

If you find yourself thinking about the Neponset's salt marshes, you just might end up concluding that they could use a little help. Land use along the Neponset River *has* had a lengthy and colorful history—from industrial to residential land use, commerce to quarrying, a variety of activities have taken place here.

Now, if you were to expand your view to include all of Boston, you'd see that the salt marshes have dwindled since the arrival of European colonists more than 350 years ago. In fact, much of Boston's marshes and the surrounding mud and sand flats were dredged or filled in the early 1800s to increase Boston's acreage.



The conversion of Boston's marshlands to upland destroyed wildlife habitat and decreased the area's natural ability to process pollutants and tolerate storms. Young commercial fish species such as winter flounder, herring, clams, bay scallop, conch, dogfish shark, spiny shark and skate, dependent on salt marsh as a nursery, also suffered

from the marsh destruction, as did the bluefish and striped bass that use marsh as a hunting ground. Along the Neponset River, salt marshes were also altered by the deposition of dredge spoils from channel dredging.

Fortunately, the revitalization of the Neponset Estuary salt marsh has begun. This past summer, the Great Meadows Farms contracting company, under the direction of the Massachusetts Department of Conservation and Recreation (DCR), began to restore 15 acres of salt marsh in the estuary of the Neponset River Reservation, bringing five years of wetland restoration planning to fruition.

Great Meadows Farms excavated tens of thousands of cubic yards of old dredge spoil deposits from the Neponset marsh, moving them elsewhere on-site. Years of dredge spoil deposition had raised the height of the marsh so much that salt water could no longer regularly flush the area. As a result, the salt marsh environment had slowly come to be dominated by plants less tolerant of salt water, such as the invasive Common reed

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Salt Marsh Restoration, from Page 1



(*Phragmites australis*), while native salt marsh plants like Smooth cordgrass (*Spartina alterniflora*) and Saltmeadow cordgrass (*Spartina patens*) had declined.

By repositioning much of the dredge spoils, the contractor was able to lower the wetland's elevation and add to an adjacent wooded upland. The lowered marsh elevation exposes the area to salt water, thereby encouraging the return of a healthy salt marsh ecosystem.

The contractor also breached dikes in the Neponset marsh, dug a new creek channel and planted Saltmeadow cordgrass along the new creek's banks.

For the best view of the marsh restoration,

visit Hutchinson's Field in Milton, across from the Forbes House Museum on Adams Street. It may also be possible to view the project from the highway or from the Neponset Greenway. As the salt marsh restoration progresses, you'll notice a shift from a yellow to a green hue in the marsh.

The Neponset salt marsh restoration project will take place in phases over the next several years. During that time, 20-25 more acres of marsh could be restored.

The Neponset salt marsh restoration project is being led by the Massachusetts Department of Conservation & Recreation, with assistance from the USDA Natural Resources Conservation Service and the Office of Coastal Zone Management's Wetland Restoration Program. Project funding has come from the US Fish & Wildlife Service and the Corporate Wetlands Restoration Project (CWRP). CWRP is a collaborative project between

the MA Executive Office of Environmental Affairs, the Gillette Company, and the US Environmental Protection Agency.

To learn more about the Neponset salt marsh restoration project, contact Cathy Garnett, Neponset Planner with the DCR's Planning & Engineering Department, at 617-626-1443 or catherine.garnett@state.ma.us.



For more information, you can also visit the website of the Office of Coastal Zone Management, www.mass.gov/czm/wrp/education/currentupdate.htm.

Neponset Dam Discoveries

Results continue to roll in from the more than 20 volunteers who have been working hard to document dams and culverts on streams in the Neponset Watershed, from Foxboro to Milton. Since October, volunteers have located more than two-dozen dams, some fairly inaccessible and previously unknown to the State. NepRWA extends a big thank you to all those volunteers who have braved brambles, swamps, cold and snow to help with the project.

NepRWA plans to analyze the dam and culvert data and submit the information to the Massachusetts Riverways Program for further review. To learn more about this project, or to help find more dams as a volunteer, contact Andy Leahy at 781-575-0354 or leahy@neponset.org.

Waterfront Revival: Phase II DCR Master Plan

The Massachusetts Department of Conservation and Recreation (DCR) is examining how best to enhance more of the Neponset River Corridor.

The agency aims to improve the river corridor's ecological quality while also improving local recreation opportunities, all as part of the second phase of work on the Neponset River Master Plan.

During Phase I of the *Master Plan for the Lower Estuary of the Neponset River*, several new parks were built, in addition to the Lower Neponset River Trail, vastly improving local recreation opportunities. The parks include: Pope John Paul II Park (Dorchester), Squantum Point Park (Quincy), Kennedy Playground (Mattapan), and Neponset II Park (Dorchester).

In Phase II, work is focusing on the segment of river extending from Central Avenue in East Milton to Paul's Bridge in Hyde Park. DCR will examine the area's natural systems and current and prospective recreation opportunities to determine the best use of the area—for example, preservation, education, and/or recreation. The DCR may ultimately create parks, restore the river's banks and channels, expand natural areas, and/or extend the Neponset Greenway trail.

There are three public transit sites, including the Central Avenue and Mattapan Square trolley stops and the Fairmount Commuter Rail Station, along the section of the Neponset currently under study. Thus, any improvements to the river corridor would benefit residents from a wide geographic area.

All adjacent residential neighbors, neighborhood groups, civic groups, businesses, park-users, local officials, the Boston Natural Areas Network (BNAN), and all who are interested in the project are invited to participate in the planning process. Contact Cathy Garnett, Neponset Planner, DCR Planning & Engineering Department, for more information: 617-626-1443 or catherine.garnett@state.ma.us.



Get Active with NepRWA

Volunteer with CWMN

NepRWA's stream sampling program, "Citizen Water Monitoring Network" (CWMN), needs volunteers to sample at two, possibly three locations: Pine Tree Brook in Milton; Mine Brook on Nebo St. in Medfield; and possibly a site in Canton. Volunteers sample on the fourth Wednesday, every other month, between 6 and 8 A.M. NepRWA provides all necessary equipment and training. Contact Laura Hallowell for more information: hallowell@neponset.org, 781-575-0354, or Peter Chandonait at 781-575-0354, chandonait@neponset.org. *It's beautiful out at the streams, early in the morning.*

A Night Out!

Join us for an inspiring and informative presentation by Ian Cooke, Executive Director of the Neponset River Watershed Association. We'll discuss NepRWA's current projects and how you can help clean-up and protect our local environment. 7:00PM, Tuesday, January 31, Canton Library, 786 Washington St., Canton. Please RSVP to Carly: 781-575-0354, rocklen@neponset.org. *Join us.*

NepRWA and Town of Milton to Try New Tack on Stormwater in Spring 2006



One version of a tree filter box.

Across the Neponset Watershed, falling rain literally "washes" the streets—rinsing animal waste, garbage, litter, oil and toxic heavy metals into the drain collection system, which then takes it right to the nearest stream. In neighborhoods built more than 10 to 15 years ago, this polluted runoff—known as "stormwater" runoff—discharges directly to nearby streams with *little or no treatment*.

Since the vast majority of neighborhoods in the Neponset Watershed are more than 15 years old, the watershed has a very serious "wet weather" water quality problem, with most streams carrying unsafe levels of pollution whenever it rains.

Last year, to begin combating this problem, NepRWA, the Town of Milton and the Mass. Department of Environmental

Protection completed a first-of-its-kind collaboration to build devices known as "Bioretention Cells" along a stretch of Pine Tree Brook between Thacher Street and Blue Hills Parkway. The bioretention cells intercept and clean polluted road runoff before it can enter the brook.

That was a very exciting project for NepRWA—the first time the organization built something. The project has been a success, not only eliminating the pollution from a half-dozen streets, but simultaneously improving recreational access to a pleasant stretch of the Brook.

However, this first effort was a learning experience, and one of the lessons was that if we want to replicate this kind of project across the watershed, we will need more of an "off the shelf," or "cookie cutter" approach. The solution, to be implemented this spring in the Central Avenue Commercial District in Milton, is known as a "tree-filter-box."

A tree-filter-box actually uses the same technology as a bioretention cell, but instead of being custom engineered, patiently permitted and painstakingly installed, the tree-filter-box is

prefabricated and easy to install with little or no permitting.

Each tree-filter-box consists of a precast concrete box filled with a specialized mix of soil and an appropriate tree or shrub. The box is installed at the curb-line, right along the gutter, just uphill of an existing catch basin.

To the passerby, the tree-filter-box looks just like a typical sidewalk tree or shrub. But in fact the box is intercepting and cleaning-up the most heavily polluted "first flush" of runoff.

The installation of the tree-filter-boxes will be undertaken this spring, at the same time that the Town of Milton is making improvements to the intersection and the sidewalks, making the whole project more cost effective. In fact this is the primary appeal of the tree-filter-boxes; they are so simple to design and install that it could become standard practice to install the units whenever a town is doing street or sidewalk work.

To find out more about this tree-filter-box project or to make sure you are invited to the tour of the finished project, contact Ian Cooke at cooke@neponset.org.

I/I Banking, from Page 1

sewer system. For example, under a DEP enforcement order, the City of Waltham requires 4 gallons of I/I removal for each gallon of wastewater discharged into the sewer system.

A number of Massachusetts cities and towns have similar programs, but it is unclear how effective they are in conserving groundwater. For example, a new connection of 100 gallons per day or 36,500 gallons per year may be considered "mitigated" by removing 100 gallons per day of peak day inflow. But because inflow only occurs during heavy rainstorms, this may amount to as little as 5,000 gallons per year of actual water conservation, compared to 36,500 gallons that the new development will be taking from the public water supply. In other cases, the municipal mitigation requirement is translated into a fee that may bear very little relationship to the actual cost of achieving the required water conservation from elimination of infiltration or inflow.

To study these problems and to identify solutions, the Massachusetts Executive Office of Environmental Affairs (EOEA) has given NepRWA a grant to inventory I/I remediation in Neponset Valley communities, identify best practices, develop and promote municipal adoption of a model I/I bylaw, and increase public education on water loss caused by I/I. Work on the grant will begin in January 2005. For more information about this project, contact Steve Pearlman at 781-575-0354 or pearlman@neponset.org.

Keep Current

Visit NepRWA's website, www.neponset.org, for information about NepRWA projects, volunteer opportunities, and upcoming environmental events around the Watershed and beyond.