
Cape Neddick River Watershed – Department Work Plan

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On November 19, 2010, I prepared a Work Plan for initial field work in the Cape Neddick River Watershed, and that document has been guiding Department work to date. Now that many of the tasks listed in that initial plan have been completed, it is necessary to expand the scope of work. This document is intended to fill that purpose. It is simply my attempt to describe the approach which my Department will use to help find and reverse pollution in the Cape Neddick, and to initiate a watershed plan.

The approach to our work must be phased. We can't do everything all at once, so I have established the following relative geographic priorities to get our work started:

- First Priority Area: those areas which drain into the drinking water supply reservoirs for York and Kittery. The only task planned here is septic tank pumping enforcement, which is already well under way.
- Second Priority Area: the 3 priority sub-watersheds, above water quality test sites CNR-6, CNR-11, and CNR-15. These 3 sites were identified by the Maine Healthy Beaches staff as a top priority because they each exhibited a pattern of combined bacteria and optical brightener pollution. This combination indicates they are the most likely areas with human-source fecal contamination.
- Third Priority Area: the area within 500' of tidal waters. We use this measure because it is the standard used by the Maine Division of Marine Resources (DMR) for their shoreline surveys around shellfish beds, targeting development nearest the resource to be conserved.
- Fourth Priority Area: the rest of the watershed. There is water quality information to help divide this area further, but the primary focus will be dependent on bracket testing to refine the search for pollution sources. The specific list should be refined with ongoing testing this year, but is likely to include portions of CNR-4, CNR-8, CNR-9, CNR-10, CNR-12 and CNR-14.

TASKS

1. Water Quality Testing

The York Parks and Recreation Department participates in the Maine Healthy Beaches Program for each of the public beaches in York, and has tested at Cape Neddick Beach for many years. Testing at this beach showed a pattern of recurring water pollution which wasn't happening at the other public beaches in York. As a result, in the summer of 2007 the Community Development Department was first asked to track down pollution sources upstream from Cape Neddick Beach. For the following 4 summers, the Department has engaged in testing for bacteria pollution, collecting a total of 294 samples. Volunteers have been critical to this testing, as they have collected the vast majority of samples through the years. Testing results for each of these 4 summers are available on the web page. It is now time to take this testing program to the next level to help narrow the search for pollution sources.

- Testing Program Coordinator. To make this program most effective, Barrie Munro has agreed to coordinate the data collection process and supervise the volunteers. Staff will work with Barrie to develop an overall approach to sampling so we can bracket upstream from sites with poor water quality in hopes we can narrow down our search for pollution sources.
- Water Quality Measures. At this point our testing will remain focused on bacteria and optical brighteners. People get it - the presence of these two indicators, in tandem, points to human-source fecal contamination.
 - Bacteria. Testing in the tributaries will be E. coli rather than enterococci because the literature shows it to be the preferred indicator in fresh water, and all but a couple of our test sites are in fresh water. The Parks & Recreation Department staff, which collects beach samples, will collect water samples at our other salt/brackish sites and report their findings to Maine Healthy Beaches. Because we will be testing for E. coli, we will not be able to report our bacteria testing results through the Maine Healthy Beaches web site.
 - Optical brighteners. Maine Healthy Beaches will help us with analysis for the presence of optical brighteners. We will need to collect double samples to accomplish this.
 - Partners. I have discussed with Tim Haskell the opportunity to partner with the York Sewer District regarding our testing program and lab work. We have agreed in concept about working together, but there are still details to be worked out. We may need to help pay for lab supplies and so forth. There is also an issue of the pace of sample collection because the lab has a limited capacity and has a workload of its own relating to treatment plant operation. Once we get Barrie started we'll have to work

out the details. Maine Healthy Beaches has generously offered their support in terms of training, quality control and optical brightener lab work.

- People. We have a list of about 2 dozen people who have volunteered to help sample water in the past. When we get Barrie on board we need to contact these folks, convey our plans, and find out who is interested. We will also reach out to see if we can find some new volunteers. With the extensive monitoring we anticipate for the coming season, more volunteers will probably be needed. In addition, all Department staff will be trained this time around. Once we get our volunteers on board, we'll arrange for training from the Maine Healthy Beaches staff again this year.
- Data Reporting. Assuming we shift to E. coli testing, our data won't be compatible with the database needs of the Maine Healthy Beaches system. We will need to be able to report our own data ourselves. We will be looking for a map-based data reporting system to make all data available publicly on the web page as soon as we get the results. Traditional reporting takes the form of data tables, but something more intuitive and map-based would be most helpful. Perhaps a system where the watershed that feeds a test point could be color coded based on the testing on a user-selected date. Perhaps another option would be to color code every area with a test point and indicate the percentage of time the tests passed or failed. Not sure where this is going yet, but we need a better communication tool to share our information with the public.
- Property Owner Permission. It is important to get property owner permission for access to the test sites where these are on private property. As we look at expanding the number of test sites to bracket upstream from bad test sites, we need to be cognizant of this issue, and to seek permission from owners for new test sites on private property.

2. Shoreline Survey Work

The Town's initial efforts have been limited to water quality testing and responding to specific leads about possible problems. The next step in finding and fixing pollution problems is to get staff out in the field looking around and talking to people. This work will initially be limited to the 3 priority sub-watersheds and the area within 500' of tidal waters. When shoreline survey work in that area is completed, further work will be planned based on water quality testing results.

- Second Priority Area.
 - On March 17th Leslie Hinz and Steve Burns completed a reconnaissance tour of the 3 priority sub-watersheds. A report of their action is posted on the web page.

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- In late April or early May, Department staff will be going door-to-door to speak with property owners. The focus here will be to share our information about pollution with people, and to ask them if they can help us figure out the source(s). We will also attempt to locate any septic systems missing from our data layer. The goal is to keep this positive and non-threatening while trying to find the pollution sources.
 - Subsequent steps will depend on results of the prior tasks.
 - Third Priority Area. We'll repeat the same process used in the 3 priority sub-watersheds. If time permits, we'll work on this area in the fall of 2011, or if not then in 2012.
 - Inter-Tidal Zone Walk. Sometime around Earth Day the Department staff will walk or kayak around the entire intertidal zone along the River to look for possible sources of pollution.

3. **Septic Pumping Encouragement and Enforcement**

The Town's Supplemental Plumbing Ordinance requires septic tanks to be pumped periodically. With respect to the Cape Neddick River, active enforcement is being initiated in 3 stages based on the area within the watershed, as follows:

- First Priority Area. In process. In the Cape Neddick River watershed, this means the area which drains into Chases Pond. On October 15, 2010, letters were mailed to over 50 property owners with septic systems in the Watershed Protection Overlay District. About half complied with the request to either pump or to provide documentation of pumping within the past 3 years. On March 22nd a second letter was sent to 24 non-respondent property owners requesting documentation of compliance by the end of June. A few more properties have demonstrated compliance as a result of this second mailing. Any failure to comply with this second request will result in a notice of violation (NOV) in July. I currently expect about a dozen to fall into this category.
- Second and Third Priority Areas. In late April, the Department will initiate contact with the owners of all septic systems located east of Route One, which includes most of these priority areas. (It's simpler to administer using a widely recognized, fixed boundary.) We will provide 90 days to comply, and a follow-up round of letters will probably be needed in mid-July. If needed, NOVs will be sent out in or after September 2011.
- Fourth Priority Area. In late May, the Department will initiate contact with owners of all septic systems in the remainder of the watershed. We will provide 90 days to comply, and a follow-up round of letters will probably be needed in mid-August. If needed, NOVs will be sent out in or after October 2011.

4. **Improved GIS Data and Mapping**

The Department's efforts to improve water quality in the Cape Neddick are dependent, in part, on the availability and use of detailed maps. Some existing data needs to be improved, and other data is being developed.

- Fix mapping errors identified during field work. This will be an on-going effort of Department staff. The Department has been engaged for several years in a project to prepare detailed maps of surface water flows, storm water infrastructure, and watershed boundaries for all watersheds in York. Work in the Cape Neddick River watershed has been completed, along with general field verification. However, errors have been found and these are being corrected as identified.
- Expand the GIS data layer of septic systems. Several years ago the Department created a data layer for septic systems in order to assist Maine DMR as they assessed the lower York River in order to re-open the shellfish beds. One part of that work involved locating each septic system within 500' of the tidal waters. The logic in applying this standard is that the closest pollution sources are the most likely to impact the resource. This same effort will be made in the Second and Third Priority Areas of the Cape Neddick River Watershed. Septic permits are currently being reviewed and that data entered into the GIS at this time. During the door-to-door field work, we will attempt to locate all other septic systems. When this is all completed, the enhanced GIS data will be available to assist in future field work.

5. **Municipal Policy Work**

Town policies relating to the Cape Neddick are contained in the Comprehensive Plan and Town ordinances. These need to be refined, and a watershed plan should be created.

- Comp Plan. Department staff and the Planning Board have proposed an amended policy regarding improved buffers along the Cape Neddick. This will be Question 12 on the ballot for voter consideration at the May 2011 Special General Referendum. This part of the task is relatively simple because it doesn't need to reconcile in detail all the varying points of view.
- Zoning Ordinance. Assuming the Comp Plan buffer amendment passes, work will begin on an amendment of the Shoreland Overlay District to increase the buffers along the Cape Neddick. Protection of existing buffers and restoration of lost buffers both need to be addressed. This portion of the task could be difficult because there are many ways for this policy to be developed, and stakeholder involvement will be essential. It will probably be controversial. This could be proposed and put before the voters as early as November 2011, but it will probably take more time to do a good job because an open dialogue with

riverfront property owners is needed. It wouldn't be unreasonable to delay this task into 2012 as long as progress is being made to develop a workable, realistic policy.

- Watershed Plan. At their meeting of February 28, 2011, the Board of Selectmen directed the Department to prepare a request for proposals (RFP) to have a watershed plan prepared for the Cape Neddick River watershed. This was in response to a funding request from the Cape Neddick River Association. The Board asked to have a response to the RFP sometime around May so they could consider allocating some of their contingency funds for the work. They asked that the RFP break the overall task into distinct phases so the work could be accomplished over multiple years. This RFP has been released and distributed. Proposals are to be provided to the Town by May 6th. At this point there is no assurance of funding, but the wheels are in motion.