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New Meadows River Lower Watershed Survey Report

Mary Gilbertson

Cumberland County Soil and Water Conservation District

Sarah Fick

Cumberland County Soil and Water Conservation District

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New Meadows River Lower Watershed Survey Report



**Prepared by
Cumberland County Soil and Water Conservation District
Maine Department of Environmental Protection
New Meadows River Watershed Project**

March 2003

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Watershed Survey Volunteers

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Jody Watson	Sarah Fick	Mary Ann Nahf	Peter Watson

Steering Committee

Ed Benedikt, *New Meadows Lake Assn; Conservation Commission, Brunswick*; Eric Butler, *Brunswick*; David Chipman, *Harpswell*; Robert Cummings, *Shellfish Committee, Phippsburg*; Mike Doan, *Friends of Casco Bay*; Arthur Dodge, *Marine Resource Committee, Harpswell*; Lee Doggett, *Maine DEP*; Michael Feldman, *Brunswick*; Cathryn Field, *Service Learning Coordinator, Bowdoin College*; Diane Gould, *US EPA*; Sherry Hanson, *Maine DMR*; Chris Heinig, *Marine Resource Committee, Harpswell*; MER Assessment Corporation; John Hentz, *Marine Warden, Phippsburg/West Bath/Georgetown*; Jim Hennessey, *Marine Resource Committee, West Bath*; Theo Holtwijk, *Director of Planning & Development, Town of Brunswick*; Todd Janeski, *Coastal Program, State Planning Office*; Don Kale, *Maine DEP*; Jim Knight, *Selectman, Harpswell*; Ed Laine, *Professor, Bowdoin College*; Elsa Martz, *Harpswell*; Roger McNelly, *Marine Resources Committee, West Bath*; Ralph Merry, *Selectman, West Bath*; Peter Milholland, *Friends of Casco Bay*; Noel Musson, *Planner, Town of Harpswell*; Water Rosen, *Conservation Commission, Brunswick*; Jim Upham, *Planning Director, City of Bath*; Steve Walker, *Natural Resources Planner, Town of Brunswick*; Dana Wallace, *Marine Resources Commission, Brunswick*; David Watson, *Councilor District 1, Brunswick*; Karen Young, *Director, Casco Bay Estuary Project*

Technical Staff

Mary Ellen Dennis, *Maine Department of Environmental Protection*
Wendy Garland, *Maine Department of Environmental Protection*
Mary Gilbertson, *Cumberland County Soil & Water Conservation District*
Diane Gould, *US Environmental Protection Agency*
Sherry Hanson, *Maine Department of Marine Resources*
Phoebe Hardesty, *Androscoggin Valley Soil & Water Conservation District*
Marylee Haughwout, *AmeriCorps*
Don Kale, *Maine Department of Environmental Protection*
Tamara Lee Pinard, *Cumberland County Soil & Water Conservation District*
Noralee Raymond, *AmeriCorps*
Christine Smith, *Maine Department of Environmental Protection*
Betty Williams, *Cumberland County Soil & Water Conservation District*

Report Prepared by

Mary Gilbertson and Sarah Fick (maps)

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Summary

The New Meadows River watershed covers 23 square miles in Cumberland and Sagadahoc counties, and is located in portions of the towns of Bath, Brunswick, Harpswell, Phippsburg, and West Bath. The New Meadows River drains south into Casco Bay. The New Meadows is a significant recreational and economical resource to the region.

In 2000, the New Meadows River Watershed Project conducted a survey of nonpoint sources of pollution in the upper portion of the watershed, located in Bath, Brunswick, and West Bath. In October 2002, the survey of the entire New Meadows River Watershed was completed. The lower watershed survey covered an approximately 12.15 square mile area in portions of Harpswell and Phippsburg. Volunteers from the watershed, Cumberland County Soil and Water Conservation District staff, the Maine Department of Environmental Protection, Maine Department of Marine Resources, and the Environmental Protection Agency documented sites where soil and sediment erosion was occurring.

Surveyors identified 72 sites that were impacting or have the potential to impact water quality of the New Meadows River. Twenty-five sites were located in Harpswell, while 47 were located in Phippsburg. When categorized by land use, identified sites were associated with residential areas (12), driveways (10), private roads (22), town and state roads (14), water access points (9), and commercial sites (5). Survey sites were evaluated according to impact on the New Meadows River, the technical level of planning and cost necessary to correct the problems.

The goal of the survey was to identify, prioritize, and raise awareness of existing sources of polluted runoff in the New Meadows River Watershed. Ideally, this information will be used to spur the watershed community to take future actions that will protect the quality of the New Meadows River for future generations to enjoy.



Introduction

The New Meadows River **watershed** is located in Cumberland and Sagadahoc counties, and covers the towns of Bath, Brunswick, Harpswell, Phippsburg, and West Bath. The 23 square mile watershed is covered by a variety of land uses including forested, developed, agricultural, and wetland. The New Meadows River drains south into Casco Bay.

Surprisingly, the New Meadows River is not a river at all. In fact, it has very little fresh water. Rather, the New Meadows River is a long, narrow embayment; an off-shoot of Casco Bay.

The New Meadows River is a significant recreational and economical resource to the region. A public boat launch and a marina are two examples of public access to the River, and locations such as the Basin in Phippsburg are considered havens for boaters. The River supports an extensive finfish, shellfish, and lobster fisheries. This high productivity is evident in the production from the New Meadows River flats over the past four years, which accounted for 7.5% of the total soft-shell clam production for Maine.

The New Meadows River is listed as a priority coastal water by the Maine Department of Environmental Protection (DEP). Additionally, Casco Bay Estuary, and therefore the New Meadows River, has been designated an estuary of national significance by the U.S. Environmental Protection Agency, as a nationally significant estuary threatened by pollution, development, or overuse.

WATERSHED

All the land that surrounds a lake that drains or sheds its water into the lake through streams, ditches, directly over the ground surface or through groundwater.

Does the New Meadows River have a water quality problem?

One of the biggest pollution culprits in Maine's water is polluted stormwater runoff from rain and snowmelt. Runoff occurs during and after storm events when soil with attached nutrients (such as phosphorus and nitrogen) and debris are washed into rivers and streams. Since it cannot be traced back to one particular source, this type of pollution is also called **nonpoint source pollution** or **NPS**.

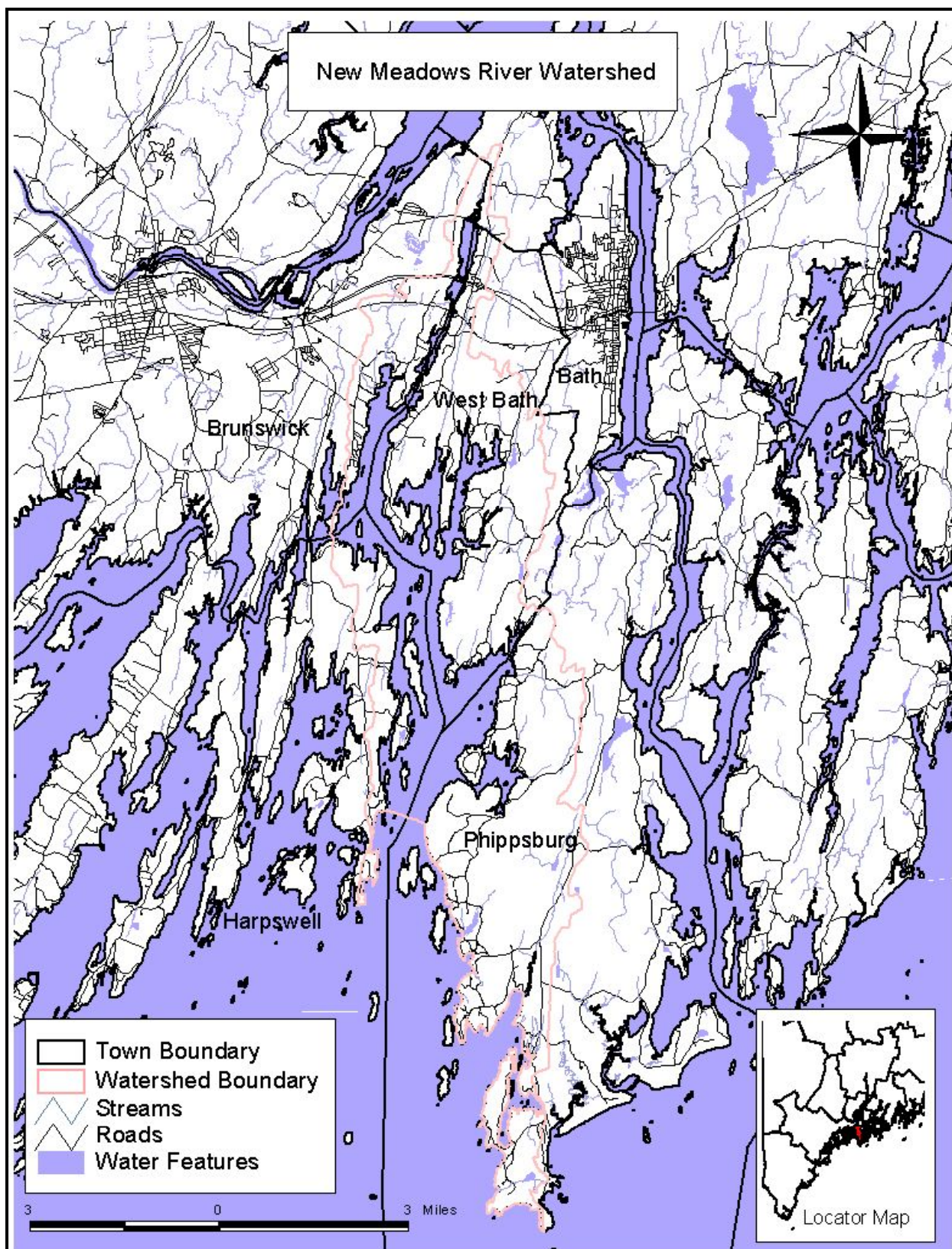
NONPOINT SOURCE POLLUTION

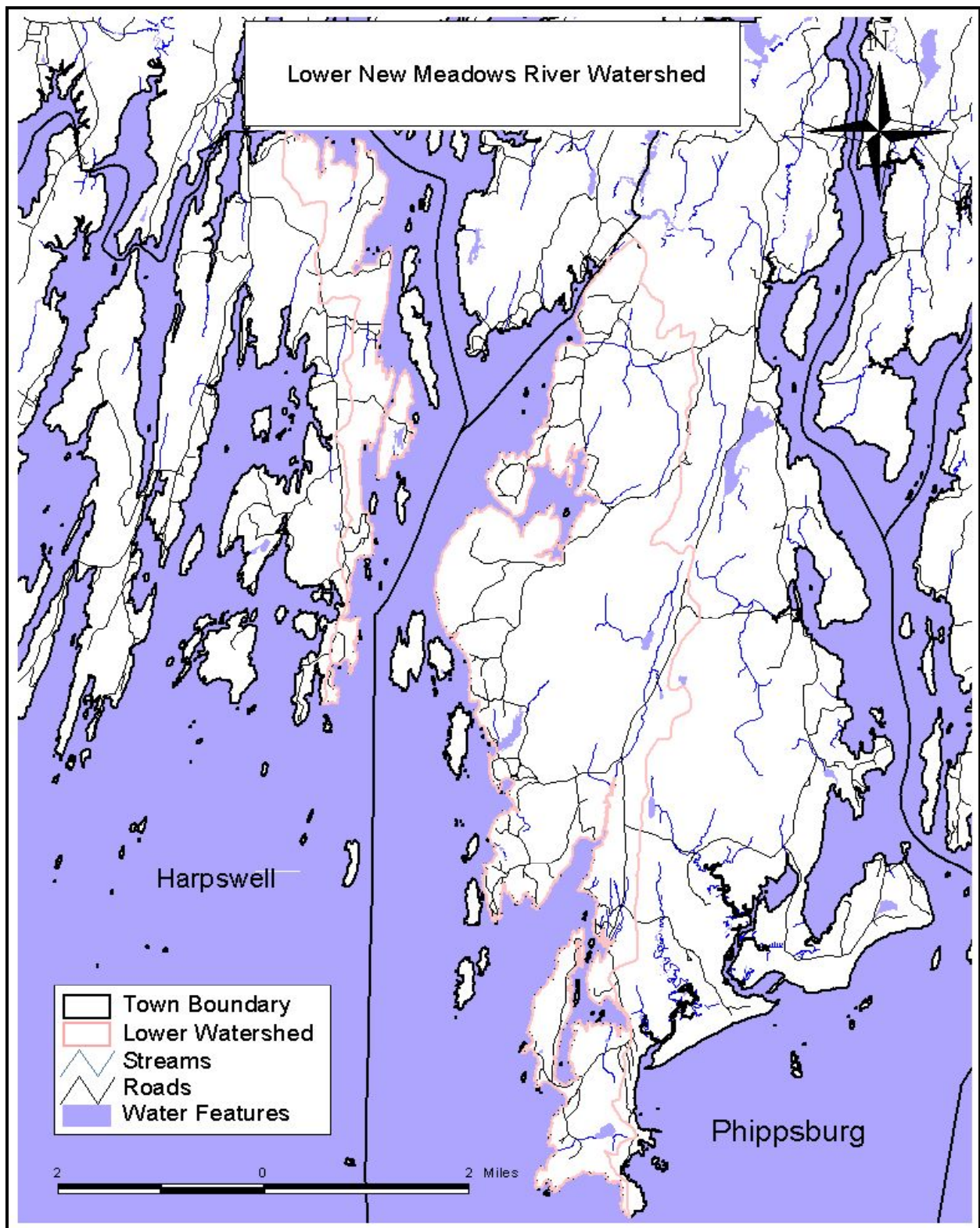


Also called NPS. Pollution that can not be traced back to a discharge from a particular direct source (e.g., an industrial outfall pipe).

One way to visualize NPS pollution is to think of rain and snow melt as a giant broom that sweeps over the watershed, moving debris and soil into the river from the surrounding land and streams.

In an undeveloped, forested watershed, storm water runoff is slowed and filtered by trees, shrubs, and other vegetation. The forest canopy decreases the impact of the rain, while the forest floor slows and filters runoff with its uneven ground and leafy debris. In a developed watershed, there is less tree canopy to protect the ground from raindrop impact. The uneven ground, its vegetation, and leaf litter have been altered or removed as well. In addition, storm water velocity and volume increase on impervious surfaces like rooftops, compacted soil, gravel camp roads and pavement, and does not always receive the filtering treatment the forest once





provided. Remember, fast water is hungry water. The faster water travels, the greater its potential to erode and carry away soil material and debris.

In the New Meadows River, the nutrient of concern is nitrogen. In marine waters, nitrogen acts like a fertilizer. Excess nitrogen leads to a rapid increase in algal production and possibly an algae bloom. As the algae dies it decomposes, which utilizes oxygen in the water. The resulting oxygen depletion may eventually lead to fish and shellfish death. Such an event ultimately results in habitat damage and an ecological imbalance. Microbial activity in the “deep hole” also appears to be releasing large quantities of nitrogen that may be indirectly affecting not only the “lakes,” but a portion of the upper river. In addition to a loss in aesthetic and recreational value, the stressed environment creates favorable condition for invasive plants.

Many of the issues that have occurred in the New Meadows River have been located in the upper portion of the river, and particularly in the “lake”, north of Route 1. Once fully tidal, this area has experienced periodic low levels of oxygen, and occasional algal blooms due to limited tidal flushing. These times of low oxygen may be tied to the sporadic fish kills, such as the pogie kill of the early 1990s. The “lake” also experiences clam flat closures due to rain, and the resulting runoff. Other flats are closed in portions of the river due to high bacterial counts or nearby faulty/failing septic systems.

While localized problems do exist, the New Meadows River remains a generally healthy waterbody. Still, development in the watershed, and along the coast of Maine in general, continues at a high rate. The population in the watershed has roughly doubled in the past 50 years! In order to maintain the health of this unique waterbody, it is vital that existing problems be located and addressed, and that potential problems be recognized and prevented from becoming an issue in the future. Remember, a healthy watershed yields good water quality.

What is being done to protect the New Meadows River?

Water quality data in the New Meadows River has been monitored since 1973. The Department of Marine Resources (DMR) regularly monitors stations along the river as part of its Shellfish Sanitation Program.

The Casco Bay Estuary Project (CBEP) has received a grant to establish a sustainable shellfisheries program. This project works to prioritize clam flats, remove or correct sources of bacterial contamination, and has developed a shellfish resource management plan. Additionally, the CBEP recently completed a five year project that examined the existence of toxic metals and chemicals in lobsters, mussels, and sediments.

Individual towns have remained actively involved in water quality sampling to assist DMR in ensuring compliance of open shellfish areas with national requirements. Towns have also worked to replace failing septic systems and overboard discharge systems, which are possible sources of bacterial contamination to the River and its clam flats.

Recognizing the fact that the New Meadows River does not conform to political boundaries, the New Meadows River Watershed Project was formed to address issues faced by the communities bordering the New Meadows River.

Two years ago, the New Meadows River Watershed Project, the DEP and DMR took the next step in protecting the river by conducting a watershed survey. That watershed survey was conducted in the upper portion of the watershed, in the Towns of Bath, Brunswick, and West Bath. Volunteers from the watershed documented sites where soil and sediment erosion occurred. Volunteer watershed surveys have been found to be one of the most effective ways to protect water quality by getting local residents involved in identifying existing and potential sources of polluted runoff.

This year's survey focused on the lower watershed; an approximately 12.15 square mile area covering portions of Phippsburg and Harpswell. This survey completes the entire New Meadows River Watershed survey that began in 2000. This report contains a summary of the survey findings and recommendations for the lower watershed.

Local citizen participation was essential in completing the watershed survey. Ideally, this involvement will only increase. Through the leadership of the New Meadows River Project Steering Committee and assistance from groups and agencies concerned with the health of the New Meadows, the opportunities for watershed advocacy and education are numerous. Hopefully, this information will spur the watershed community to take further action that will protect the quality of the New Meadows River for future generations to enjoy.

Purpose of the Watershed Survey

The primary purpose of the watershed survey was to identify and prioritize existing sources of polluted runoff, particularly soil erosion sites, in the New Meadows River watershed. However, it was equally important to:

- ◆ Inform watershed residents that bare eroding soil is a primary source of water pollution. Nitrogen carried by this soil can cause over-fertilization of coastal embayments.
- ◆ Raise awareness about the connection between land use and water quality, and the impacts of polluted runoff.
- ◆ Make general recommendations to landowners for fixing erosion problems.
- ◆ Inspire people to become active stewards of land and water resources.
- ◆ Use the information gathered as one component of a long term river protection strategy.

Local citizen participation was essential in completing the watershed survey and will be even more important in upcoming years. Through the leadership of the New Meadows River Watershed Project Steering Committee and assistance from groups and agencies concerned with water quality, the opportunities for watershed stewardship and education are numerous.

Watershed Survey Methods

As with other watershed surveys in Maine, the New Meadows River survey used volunteers to identify erosion sites in the watersheds. Town leaders from Phippsburg and Harpswell and the Education Subcommittee of the NMR steering committee coordinated and publicized the project with help from the DEP and Cumberland County Soil & Water Conservation District (CCSWCD).

In October 2002, twelve volunteers attended a half-day training to learn about polluted runoff issues and how to identify and document problem areas. After the morning classroom session, volunteers divided into nine teams. Technical staff served as sector leaders, and provided guidance in the field.

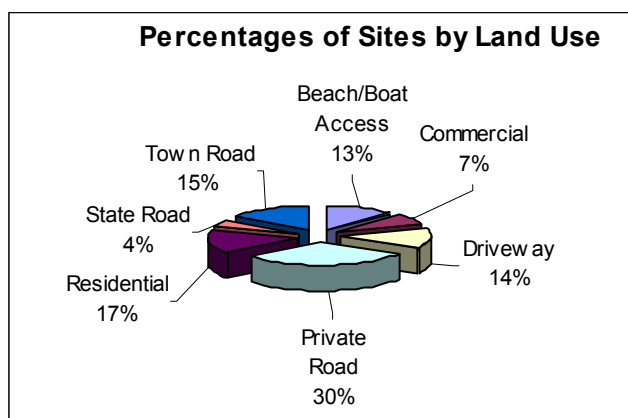
Volunteers documented each erosion site by completing survey forms and site sketches, taking photographs and marking site numbers on tax maps. The majority of the survey was completed during the training, and teams surveyed the remaining areas over the following weeks.

Throughout the fall, a student from Bowdoin College and the CCSWCD organized the survey data, entered information into MS Excel spreadsheets and created the maps for the report, which was prepared by the CCSWCD.



Volunteers documented areas of active soil erosion. Signs of soil erosion include bare soil, rills or gullies (channels carved in the soil), exposed roots, road ruts and sediment deltas.

Summary of Watershed Survey Findings



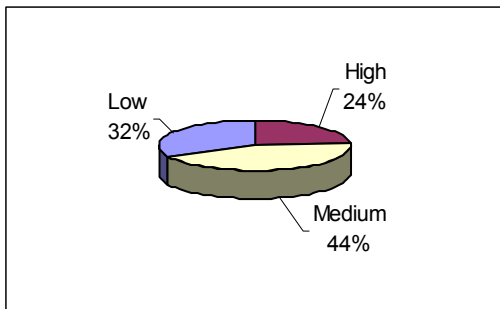
Volunteers and technical staff identified 72 sites that were impacting or have the potential to impact water quality of the New Meadows River. Sites were rated according to their relative impact to water quality, and their costs and technical level to fix based on the guidelines below. Identified sites were associated with residential areas, driveways, roads, water access, and commercial sites. Descriptions of these sites are on the following pages.

Key Findings from the Survey

- There is a manageable number of problems—most can be fixed with low to medium technical experience and cost.
- Most of the problems were found on residential properties, driveways, and private roads.
- In addition to the surveyed sites, numerous waterfront properties were observed to have little or no vegetated buffer at the water's edge. It is important to note that buffers of shrubs and trees do a much more effective job than bare ground or grass to keep polluted runoff from entering the New Meadows River!

Potential Impact of Problems

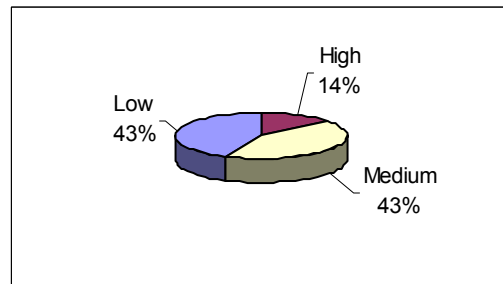
There were similar numbers of sites with low, medium and high impacts. Attention should be paid to all of the sites, since it's the cumulative impact of **all** the sites that causes water quality to decline.



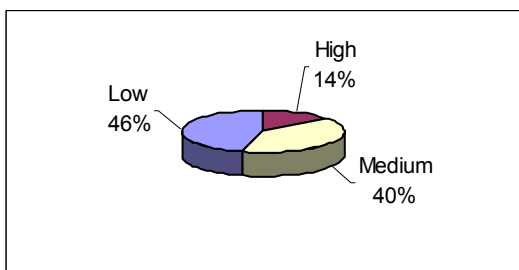
- Low—eroding site with limited transport off site, or small site with no evidence of rills or gullies
- Medium—sediment transported off site but does not reach high magnitude
- High—large area with significant erosion and direct flow to stream, ditch or river

Technical Level Needed to Correct Problem

- Low—property owner can accomplish the fix with or without proper reference materials
- Medium—technical person should visit the site & make recommendations
- High—site requires an engineered design



Cost to Implement Recommendations



- Low—less than \$500
- Medium—\$500 to \$2,500
- High—more than \$2,500

Residential Sites

Of the 12 sites associated with residential areas, 6 were low impact, 2 were medium impact, and 4 were high impact. Six of the sites can be fixed with little technical expertise and low cost.

Common Problems Identified:

- Slight or moderate surface erosion
- Bare and sparsely vegetated soil
- Lack of vegetated buffer along shoreline
- Direct flow of runoff to river
- Unstable construction site

Recommended Solutions:

- Seed and mulch bare soil
- Establish or enhance vegetated buffer
- Limit foot traffic in eroding areas
- Stop mowing the buffer
- Install silt fence around construction sites
- Install open-top culvert, waterbar, or other diverter



Problems:

- Runoff from roof causing moderate surface erosion
- Patchy bare soil with direct flow to River
- Lack of vegetated buffer on shoreline

Solutions:

- Install drywell at gutter spout
- Vegetate and mulch bare soil next to house
- Establish vegetated buffer

Residential sites make up a large portion of problem sites with sources of polluted runoff to the New Meadows River. These seemingly small problems can pose a significant threat to water quality. Fortunately, almost all of these sites can be corrected with easy, low cost fixes.

It's the cumulative impact of all the sites that causes water quality to decline.

Driveway Sites

The 10 driveway sites ranged from 50 to 400 feet in length. Three were low impact, and 7 were medium impact. There were no high impact sites. All of the sites could be fixed with low to medium cost and technical expertise.

Common Problems Identified:

- Slight to moderate erosion in ditch
- Unstable culvert inlet/outlet
- Poor shaping
- Moderate surface erosion
- Direct flow to a stream or the New Meadows River

Recommended Solutions:

- Reshape ditch and stabilize with grass or stone
- Reshape or crown driveway so that water flows to either side
- Install runoff diverters such as waterbars, open top culverts, broad-based dip, or rubber razors to get water off driveway
- Stabilize culvert, add plunge pool



Problems

- Moderate surface erosion
- Poor driveway shaping and ruts cause water to concentrate and erode the surface
- Direct flow of sediment to New Meadows River

Solutions

- Build up driveway with new surface material
- Reshape and crown driveway so water moves quickly from the surface to either side
- Install diverters such as waterbars, open top culverts or rubber razors to get water off driveway

Preserve water quality and save time, money, and wear and tear on your vehicle by having a well crowned driveway. Use adequate surface material and add diversions to direct runoff into vegetated buffers.

It's great for watershed residents and it's great for the water!

Private Roads

Of the 22 private road sites, 8 were high impact, 9 were medium impact and 5 were low impact. Proper construction and maintenance of private roads can help eliminate severe erosion problems and avoid the need for costly solutions.

Common Problems Identified:

- Slight to severe surface erosion
- Shoulder and ditch erosion
- Poor shaping
- Bare soil
- Unstable culvert inlet and outlet
- Direct flow to New Meadows River

Recommended Solutions:

- Install diverters such as waterbars, open top culverts or rubber razors to get water off road
- Crown road so that water flows to either side
- Install new culverts and armor inlets/outlets with stone
- Remove grader berms to allow proper drainage
- Install plunge pool or detention basin to trap sediment



Problems:

- Moderate road shoulder and surface erosion
- Clogged culvert
- Lack of ditch
- Direct stormwater flow to New Meadows River

Solutions:

- Clean out/maintain culvert
- Buildup and crown road surface
- Install ditches to collect road surface runoff
- Use turnout to redirect stormwater to wooded areas

Private Roads are the highest source (by number of sites) of NPS pollution to the New Meadows River.

While a one time fix may cost more up front, it will reduce overall maintenance costs on your road, ditches and vehicle.

Town and State Roads

Eleven town road problems and 3 state road problems were identified. Of these, 3 were high impact, 8 were medium impact and 3 were low impact.

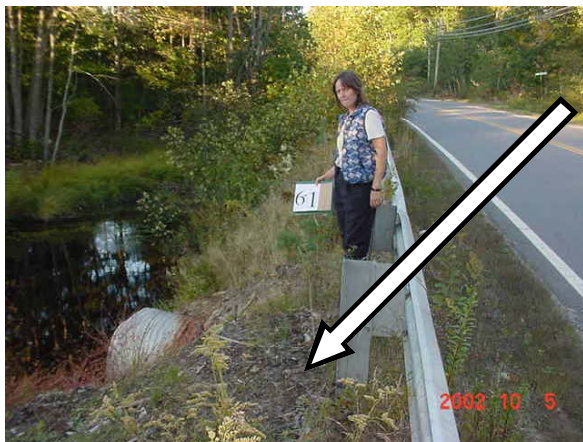
Common Problems Identified:

- Direct flow of runoff to New Meadows River or tributaries
- Unstable culverts
- Eroding road shoulder
- Winter road sand build up
- Lack of/eroding/ improperly shaped ditch

Recommended Solutions:

- Install a catch basin/plunge pool at outlet of culvert to catch sediments
- Stabilize inlet/outlet of culvert with stone
- Establish vegetated buffer
- Proper shaping of ditches and backslopes
- Install turnouts to divert runoff to vegetated areas
- Remove grader berms, and crown/reshape road surface

Problems:



- Unstable and eroding culvert
- Eroding road shoulder
- Stormwater from road runs directly to tributary

Solutions:

- Vegetate road shoulder
- Stabilize and maintain culvert inlet/outlet
- Reroute stormwater from road shoulder to buffer on either side of culvert with ditching

Town and state roads sites identified in this watershed survey tended to discharge sediment directly to the New Meadows River or tributaries.

Working with the Towns of Phippsburg and Harpswell and Maine Department of Transportation to fix and maintain priority road sites will save money and improve water quality.

Water Access Sites

Nine water access sites (beach and boat access) were identified. Four sites were low impact, three were medium impact, and two were high impact sites.

Common Problems Identified:

- Moderate surface erosion
- Moderate to severe road shoulder and ditch erosion
- Bare soil
- Unstable access point
- Direct flow to a stream or the New Meadows River

Recommended Solutions:

- Build up road surface and crown
- Reshape ditch/shoulder and seed or riprap
- Install runoff diverters such as open-top culverts and waterbars
- Use infiltration pavers (tri-lock blocks) to stabilize access point
- Extend or establish vegetative buffer



Problems:

- Severe surface erosion on road
- Severe ditch erosion
- Direct flow of runoff and sediment to New Meadows River



Solutions:

- Use a more cohesive/less erodable surface material
- Install waterbars to divert runoff into wooded areas
- Regrade the road away from the water to encourage infiltration in established buffer.

Remember... It is the cumulative impact of all small, medium, and large sites that causes problems in the watershed!

Commercial Sites

Five commercial sites were identified in the watershed survey; three were medium impact sites, and two were low impact.

Common Problems Identified:

- Slight to moderate erosion in ditch
- Unstable culvert inlet/outlet
- Poor shaping
- Moderate surface erosion
- Direct flow to a stream or the New Meadows River

Recommended Solutions:

- Reshape ditch and stabilize with grass or stone
- Reshape or crown road so that water flows to either side
- Install runoff diverters such as waterbars, open top culverts, broad-based dip, or rubber razors to get water off road
- Stabilize culvert, add plunge pool



Problems:

- Moderate road surface erosion
- Runoff and sediment travel directly into cove
- Erosion occurring around culvert outlet

Solutions:

- Add new surface material and grade away from the cove
- Install runoff diverters, such as waterbars or open top culvert
- Stabilize culvert inlet/outlet
- Add vegetation with strong/extensive root system to hold soil in place



Protecting the quality of the New Meadows River makes good business sense!

Site Rankings

Sites in the spreadsheet were ranked according to three criteria:

- ◆ **Technical level to install** describes the degree of technical expertise needed to address a problem. A “low” tech level requires little or no specific technical assistance. For example, seeding and mulching an area that is relatively stable, but which requires vegetative cover to prevent additional soil loss from occurring. Sites with a “medium” tech level need to be visited by a technical expert who can make recommendations. A “high” tech level requires an engineered design.
- ◆ **Impact** was assigned by considering factors such as the size of disturbed area, slope, soil type, amount of soil that’s eroding, proximity to water or vegetated buffer, and size of vegetated buffer. “Low” impact eroding sites are those with limited transport off-site even if the site is large or a small site with no evidence of rills or gullies (channels cut into the soil). At “medium” impact sites, sediment is transported off-site, but the erosion does not reach a high magnitude. Large sites where there is significant erosion that flows directly into a stream, lake or ditch, were rated “high” impact.
- ◆ **Cost** is an important factor in planning for restoration. “Low” cost sites were estimated to cost less than \$500 to fix. An estimate of \$500 to \$2,500 was rated “medium”. If the estimated cost to fix a site exceeded \$2,500, a “high” rating was assigned.

Important Points!

Summaries of the NPS sites identified in the survey are listed in the Appendix. Sites are grouped in alphabetical order by land use or type. Each listing shows the map site number, the type of problem(s) encountered, location, and size or area, and recommended fix.

In addition to the surveyed sites, numerous waterfront properties were observed to have little or no vegetated buffer at the water’s edge. Not all of these sites were included in the survey results, but it is important to note that buffers of shrubs and trees do a much more effective job than bare ground or grass to keep NPS pollution from entering the New Meadows River.

This watershed survey was conducted from a land-based perspective. To fully round out an examination of the health of the watershed, this information should be used in conjunction with a water-based survey. A buffer tour or shoreline survey conducted from a boat would complement the information obtained from the watershed survey by gathering information about the health/existence of vegetated buffers, existence of gray water discharges, and/or septic system failures that would not be detected from the shore.



VEGETATED BUFFER

Areas of vegetation, left undisturbed or planted between a developed area and a waterbody that are used to capture pollutants being transported in surface water. Buffer vegetation can include trees, shrubs, and ground cover plants that are planted, transplanted, or growing naturally.

Where Do We Go From Here?

With the completion of the watershed survey, a big hurdle has been crossed in gaining control over the polluted runoff that is impacting the new Meadows River. This survey, in combination with survey for the upper portion of the watershed, can now be used for planning and implementation purposes.

Education should remain a priority in the watershed. Only when residents of the watershed understand and take ownership of their actions, both positively and negatively, will they take personal responsibility of protecting the health of the river.

Fixing the erosion sites identified in this survey will require efforts by individuals, MDOT, road associations, municipal officials in Phippsburg and Harpswell and the New Meadows River Watershed Project. To successfully protect the health of the entire New Meadows River, proactive steps need to be taken by all five communities in the watershed.

Individual Citizens

- Prevent runoff from washing sediment into the river. Detain runoff in depressions or divert flow to vegetated areas. Call the Cumberland County SWCD, Androscoggin Valley SWCD, or DEP for free technical assistance.
- Minimize the amount of cleared land and road surfaces on your property.
- Stop mowing and let lawn revert back to natural plants. Deep shrub and tree roots help hold the shoreline.
- Avoid exposing bare soil. Seed and mulch bare areas.
- Call your local Code Enforcement Officer before cutting vegetation within 250' of the shore.
- Maintain septic systems properly. Pump septic tanks (every 2-3 years for year round residences and 4-5 years for seasonal residences) and upgrade marginal systems.
- Assist the DMR in conducting shoreline surveys to open clam flats and maintain those that are currently open.
- Visit http://academic.bowdoin.edu/new_meadows/ to learn more about what is going on in the watershed to protect the river, and how to get involved.

New Meadows River Watershed Project Steering Committee/Interested Parties

- Continue to utilize groups and contacts within and outside of the steering committee to bolster public support for watershed projects.
- Participate in the planning and implementation of a long-term watershed management plan for the watershed.
- Provide educational materials and guidance to residents of the watershed. Most of the identified erosion sites in this survey require minimal to moderate time, money, and expertise to fix. Holding a workshop has proven to be a positive way to share this knowledge. Workshops are an effective way to broaden citizens' understanding of their impact to the river. Additionally, by involving local citizens, participants can take home the knowledge and confidence to implement erosion control methods at home.

- Develop long term educational outreach program, both in schools and the communities.
- Develop implementation projects to install conservation measures (BMPs) and apply for federal funds to complete the projects.

Road Associations (or private roads without associations)

- Minimize road runoff by doing regular, comprehensive maintenance. Form a road association if one does not already exist.
- Get a copy of “Camp Road Maintenance Manual – A Guide for Landowners.” It is a must for anyone managing a gravel road. (Call the DEP to order a free copy.)
- For more extensive problems, seek free technical help. Contact the Cumberland County SWCD, Androscoggin Valley SWCD or DEP to request technical assistance.

Municipal Officials

- Enforce shoreland zoning ordinance to assure full protection of the New Meadows River.
- Conduct regular maintenance on town roads in the watershed, and fix town road problems identified in this survey.
- Participate in and support long-term watershed management projects.
- Promote training for road crews, planning boards and conservation commissions.
- Work with DMR and DEP to remove sources of bacterial contamination along the shore.
- Request a workshop from the Nonpoint Education for Municipal Officials (NEMO) program.

With a few exceptions, virtually all of the sites identified in the survey are significant to one degree or another. The cumulative effect of many “low” and “medium” impact sites can exceed that of any one “high” impact site. This should be considered when a strategy is developed to address problems in the watershed.

Remember, the long term health of the watershed depends on you!

Permitting ABC's

The protection of the New Meadows River is ensured through the good will of residents along the shore and through laws and ordinances created and enforced by the State and Town. In some cases, landowners will need to obtain permits prior to implementing some of the BMP's suggested in this report.

How do you know when you need a permit?

- As a general rule of thumb, a permit is required from the Maine Department of Environmental Protection when soil is disturbed or vegetation is cut within **75 feet** of a protected natural resource (i.e. lake, stream, or river) in an area where dirt or soil can wash into the water.

To ensure that permits for projects that will not result in significant disturbance are processed swiftly, the DEP has established a streamlined permit process called **Permit by Rule**. These one page forms (shown below) are simple to fill out and allow the DEP to quickly review the project.

The Natural Resources Protection Act seeks to establish reasonable regulation in order to assure responsible development that does not harm Maine's precious natural systems.

~from Protecting Maine's Natural Resources~Volume 1, DEP 1996

The project partners encourage you to contact the DEP and Town Code Enforcement Officer if you have any plans to construct or relocate a structure, clear vegetation, create a new path or driveway, stabilize a shoreline or otherwise disturb the soil on your property. Even if projects are planned with the intent of enhancing the environment—such as installing some of the practices mentioned in this report—contact the DEP and Town to be sure.

6/99

DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP)
PERMIT BY RULE NOTIFICATION FORM
(For use with DEP Regulation, Chapter 305)

PLEASE TYPE OR PRINT IN BLACK INK ONLY (2 COPIES, PLEASE BEAR DOWN)

Name of Applicant: <u>Lumberland Gentry SWICD</u>	Name of Owner: <u>Norm & Michelle Grolen</u>
Mailing Address: <u>381 Main St Suite 3</u>	Town/City: <u>Gorham</u>
State: <u>Maine</u> Zip Code: <u>04038</u>	Daytime Telephone No: <u>201 839-7839</u>

Name of Wetland, Water Body or Stream: Subbitow Lake

Detailed Directions to Site: 12' Outlet Road, Rte. 26 North turn right onto Outlet Road, 12' Outlet Road is on the left 440 5 houses before you reach Barefoot Beach

Town/City: New Gloucester Map #: _____ Lot #: _____ County: _____

Description of Project: Installation of a drywell to allow infiltration of roof runoff

Part of a larger project? Yes ☐ No ☒

(CHECK ONE) This project: does ☐ does not ☒ involve work below mean low water.

I am filing notice of my intent to carry out work which meets the requirements for Permit By Rule (PBR) under DEP Regulation, Chapter 305. I have a copy of PBR Sections checked below. I have read and will comply with all of the standards.

<input checked="" type="checkbox"/> Sec. (2) Soil Disturbance	<input type="checkbox"/> Sec. (8) Shoreline Stabilization	<input type="checkbox"/> Sec. (14) Piers, Wharves & Pilings
<input type="checkbox"/> Sec. (3) Mobile Piers	<input type="checkbox"/> Sec. (9) Utility Crossing	<input type="checkbox"/> Sec. (15) Public Boat Ramp
<input type="checkbox"/> Sec. (4) Improvement of Structures	<input type="checkbox"/> Sec. (10) Stream Crossing	<input type="checkbox"/> Sec. (16) Coastal Sand Dune Projects
<input type="checkbox"/> Sec. (5) REPAIRED	<input type="checkbox"/> Sec. (11) State Transportation Facilities	<input type="checkbox"/> Sec. (17) Transients/Parade Extension
<input type="checkbox"/> Sec. (6) Movement of Rocks or Vegetation	<input type="checkbox"/> Sec. (12) Restoration of Natural Areas	<input type="checkbox"/> Sec. (18) Maintenance Dredging
<input type="checkbox"/> Sec. (7) Channel Pipes	<input type="checkbox"/> Sec. (13) Filler Construction/Improvement	<input type="checkbox"/> Sec. (19) Filler Construction/Improvement

I authorize staff of the Departments of Environmental Protection, Inland Fisheries & Wildlife, and Marine Resources to access the project site for the purpose of determining compliance with the rules. I also understand that this permit is not valid until approved by the Department or 14 days after receipt by the Department, whichever is less.

I have attached all of the following required submittals. NOTIFICATION FORMS CANNOT BE ACCEPTED WITHOUT THE NECESSARY ATTACHMENTS:

☐ Attach a check for \$50 (non-refundable) made payable to: "Treasurer, State of Maine".

☐ Attach a U.S.G.S. topo map or Maine Atlas & Gazetteer map with the project site clearly marked.

☐ Attach photographs showing existing site conditions (unless not required under standards).

Signature of Applicant: Michael G. Grolen Date: 7/28/00

Send the bottom copy as a record of permit. Send the form with attachments via certified mail to the Maine Dept. of Environmental Protection at the appropriate regional office listed below. The DEP will send a copy to the Town Office as evidence of the DEP's receipt of notification. No further authorization by DEP will be issued after receipt of notice. Permits are valid for two years. Work carried out in violation of any standard is subject to enforcement action.

AUGUSTA DEP STATE HOUSE STATION 17 AUGUSTA, ME 04333-0017 (207)287-2111	PORTLAND DEP 312 GARGO ROAD PORTLAND, ME 04103 (207)822-6300	BANGOR DEP 108 HOGAN ROAD BANGOR, ME 04401 (207)841-4570	PRESCQUE ISLE DEP 1205 CENTRAL DRIVE PRESCQUE ISLE, ME 04959 (207)764-0477
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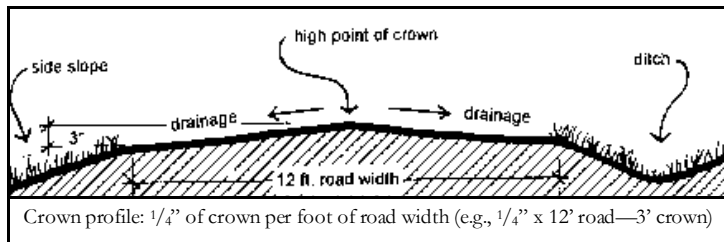
OFFICE USE ONLY	CU#	Date	Staff	Staff	Staff
PBR #	FF	Date	Acc.	Def.	Alter

DEPLM-27-B99

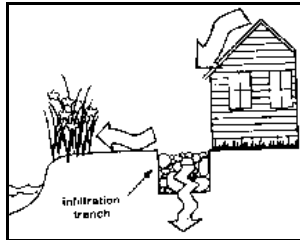
How to apply for Permit by Rule with DEP:

- Fill out a notification form. Forms are available from your town code enforcement officer or the Maine DEP office in Portland or Augusta.
- Permit by Rule requires that you follow certain standards such as installing silt fence. It is important that you obtain a copy of the standards so you will be familiar with the law's requirements.
- The permit will be reviewed within 14 days. If you do not hear from DEP within 14 days, you can assume your permit is valid. If you bring the permit directly to a DEP office, you may be able to get your permit approved immediately.

Glossary of Common Conservation Measures

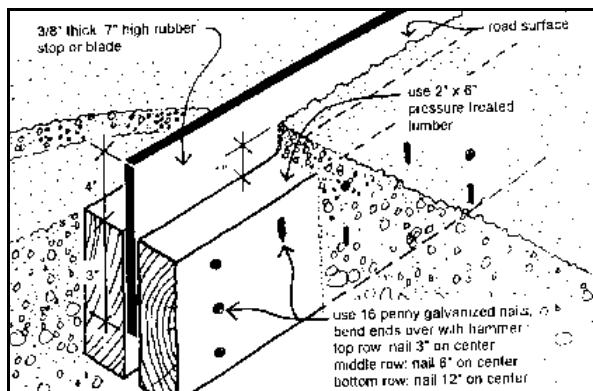
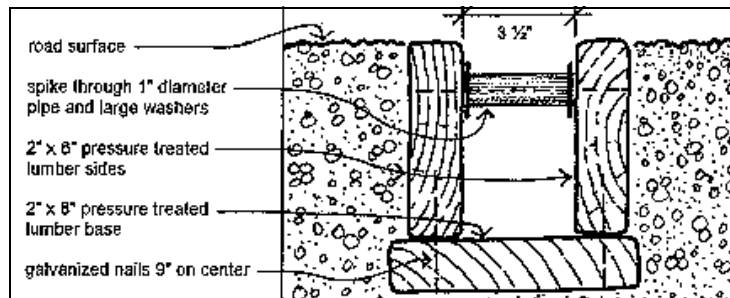


Crown—High point that runs lengthwise along the center of a camp road or driveway. The high point slopes gently away from the center toward the outer edge of the road, allowing water to drain off the road and preventing erosion of the road surface.



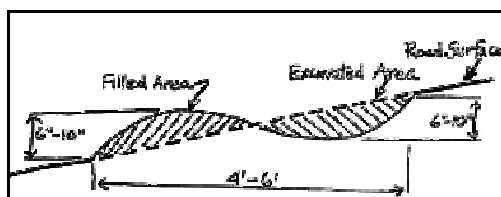
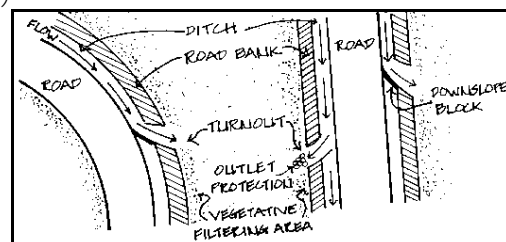
Dripline Trench—Rock-filled trench beneath the roof edge drip line that collects and stores roof runoff until it soaks into the ground. Helps control erosion and reduce wear on the house by preventing backsplash. A typical trench is 6-8" deep and 12-18" wide and filled with 3/4" stone. Can also be used along the edges of driveways to encourage infiltration of runoff.

Open Top Culvert—Box-like structure that collects and diverts road surface runoff away from a sloped driveway or camp road. They are seldom recommended for year-round roads due to the likelihood of plow damage. Install at a 30° angle to the road and direct the outlet into a stable buffer. Clean out leaves and debris periodically.



Rubber Bar or Razor Blade—Structure that protrudes above the road surface high enough to intercept and collect water, while allowing traffic to pass over it. It is generally used on seasonal roads and driveways because of the likelihood of plow damage. Install at a 30° angle to the road and direct the outlet into a stable buffer. The rubber conveyor belt can be purchased at some hardware stores or Augusta Rubber (582-6200).

Turnout—A conservation practice used to direct runoff from a ditch (or road ruts) into a vegetated buffer. The turnout should have a flared end section that is level and lined with rock to spread out the flow.



Waterbar—Ridge (like a speed bump) that runs diagonally across a camp road, driveway or path, typically at a 30° angle. Stops water from running down the road and diverts it to the side. Easy to construct and most appropriate for roads with low traffic volume. Needs to be rebuilt periodically.

Where Do I Get More Information?

Contacts

New Meadows River Watershed Project

c/o Planning & Development Department

Town of Brunswick

28 Federal Street

Brunswick, ME 04011

(207) 725-6660

http://academic.bowdoin.edu/new_meadows/

Provides educational materials and directs individuals with specific concerns related to the New Meadows River to appropriate agencies.

Androscoggin Valley Soil and Water Conservation District

PO Box 1938

Lewiston, ME 04241

(207) 753-9400

Offers assistance with watershed planning and surveys, environmental education, engineering support, seminars and training sessions, and education on the use of conservation practices.

Cumberland County Soil and Water Conservation District

381 Main Street, Suite 3, Gorham, ME 04086

(207) 839-7839

Offers assistance with watershed planning and surveys, environmental education, engineering support, seminars and training sessions, and education on the use of conservation practices.

Maine Department of Environmental Protection

312 Canco Road

Portland, ME 04103

Toll Free (888) 769-1036 or (207) 822-6300

17 State House Station

Augusta, ME 04333

Toll Free (800) 452-1942 or (207) 287-7688

Provides permit applications and assistance, numerous reference materials, technical assistance, environmental education, project funding opportunities, and stewardship activities for lakes, streams, and rivers.

Maine Department of Marine Resources

PO Box 8

West Boothbay Harbor, ME 04575

(207) 633-9500

Provides information on the clam flat closures and general shellfish information; also impacts of septic systems and overboard discharges.

Town of Phippsburg

1042 Main Road

Phippsburg, ME 04562
(207) 389-2653

Phippsburg's Code Enforcement Officer provides information on Shoreland Zoning regulations.

Town of Harpswell

Mountain Road
PO Box 39
Harpswell, ME 04079
(207) 833-5771

Harpswell's Code Enforcement Officer provides information on Shoreland Zoning regulations.

Publications

Androscoggin Valley SWCD and Lake and Watershed Resources Management Associates. 1998. *The Buffer Handbook: A Guide to Creating Vegetated Buffers for Lakefront Properties*. 20 pgs. plus inserts.

Kennebec County SWCD and Maine DEP. June, 2000. *Camp Road Maintenance Manual: A Guide for Landowners*. 54 pgs.

Maine DEP. December, 1997. *A Homeowner's Guide to Environmental Laws Affecting Shorefront Property in Maine's Organized Towns*. DEPLW-38-B98. 28 pgs.

Maine DEP. 1999. *Maine Shoreland Zoning—A Handbook for Shoreland Owners*. DEPLW 1999-2. 34 pgs.

University of Maine Cooperative Extension. *Gardening to Conserve Maine's Native Landscape: Plants to Use and to Avoid*. Bulletin #2500. June, 1999. Folded leaflet.

New Meadows River Lower Watershed Sites

Map ID	Survey Site	Tax Map Code	Land Use	Location	Site Description	Area	Recommendations	Tech Level	Impact	Cost
WA-1	9-1	Phippsburg-27-5	Beach Access, Private Road	Bailey Beach @ Flat Point Road	Direct flow to New Meadows River, moderate road shoulder erosion	6'x6'	Build up road, reshape shoulder, add rip rap (minimal amount may be needed)	Low	Low	Low
WA-2	1-3	Harpwell-51-150	Boat Access	Eggemoggin-Long Island North Assoc.	Direct flow to New Meadows River, Moderate Surface erosion	50'x25'	Install waterbar on path, add rip rap	Low	Low	Low
WA-3	3-3	Harpwell-61-1	Boat Access	End of Rand Road (at water)	Direct flow to New Meadows River, moderate surface erosion, unstable boat access	30'x10'	Install runoff diverters (open top culvert)	Low	Low	Low
WA-4	3-6	Harpwell-62-146	Boat Access	End of Sailor Way	Road material deposited too near shore, covering rip rap	22'x15'	Infiltration pavers (tri-lock blocks)	Medium	Low	Low
WA-5	6-5	Phippsburg-34-1	Boat Access	Basic Road primitive boat launch site	Direct flow to New Meadows River, bare soil, shoreline erosion, slight surface erosion, unstable boat access	20'x10'	Establish vegetative buffer, seed and mulch	Low	Medium	Low
WA-6	8-4	Phippsburg-27-43	Boat Access, Beach Access	Wallace Circle Public Beach Access	Direct flow to New Meadows River, moderate road shoulder erosion, moderate surface erosion	100'x25'	Install ditch, waterbar	Medium	Medium	Medium
WA-7	2-7	Harpwell-58-74	Boat Access, Commercial, Driveway	Dingley Island Road	Direct flow to New Meadows River, moderate to severe road shoulder erosion, dirt road deeply eroded, eroded soil flows to small cove	50'x10'	Add new surface material, build up road, install runoff diverters	High	High	High
WA-8	7-1	Phippsburg-31-62	Boat Access, Commercial, Driveway	Black Landing Road #75	Direct flow to New Meadows River, Moderate Surface erosion	50'x10'	Add new surface material, Install runoff diverter (broad-based dip)	Medium	Medium	Medium
WA-9	7-2	Phippsburg-31-60	Boat Access, Town Road	Baker's Wharf Road	Direct flow to New Meadows River, Severe Surface erosion, Severe Ditch erosion	300'x15'	Different type of surface material, Install Waterbar	Medium	High	Medium
C-1	8-3	Phippsburg-27-?	Commercial	General Store, Wallace Circle	Direct flow to New Meadows River, slight surface erosion	6'x50'	Extend buffer, plant trees and shrubs, terrace back yard to catch sediment	Low	Low	Low
C-2	10-1	Phippsburg-24-31	Commercial, Private Road	Hermit Island Road	Moderate surface erosion, direct flow to small cove	150'x3' + 210'x2'	Add new surface material (shape and regrade to create monoclone), Reshape road, Install runoff diverters (low maintenance option), Detention basin	Medium	Medium	Medium
C-3	10-2	Phippsburg-24-31	Commercial, Private Road	Hermit Island Road	Direct flow to wetland area, slight and moderate surface erosion	54'x6'	Add rubber razor or rock crossing	Medium	Medium	Medium

Map ID	Survey Site	Tax Map Code	Land Use	Location	Site Description	Area	Recommendations	Tech Level	Impact	Cost
C-4	10-3	Phippsburg-24-31	Commercial, Private Road	Hermit Island Road	Direct flow to Cape Small Harbor	Unk.	Stabilize inlet and/or outlet	Medium	Medium	Medium
C-5	7-4	Phippsburg-29-11	Commercial, Private Road	Fairway Dr near intersect w/ Round Cove Rd	Bare spots in soil, slight surface erosion	50'x15'	Seed and mulch	Low	Low	Low
D-1	3-1	Harpwell-59-59	Driveway	Cundy's Harbor Road	Unstable culvert, moderate ditch erosion, moderate road shoulder erosion, bare soil, moderate surface erosion, unstable construction site	180'x15'	Install plunge pool, stabilize culvert, armor ditch with grass, reshape ditch, install runoff diverters, seed and mulch ditch	Medium	Low	Medium
D-2	4-1	Phippsburg-38-5(?)	Driveway	End of Perry Cove Drive	Direct flow to New Meadows River, has buffer but close to river, slight erosion in ditch	150' Ditch	Armor with stone or grass	Medium	Low	Low
D-3	4-2	Phippsburg-38-30	Driveway	Fred Brigham Rd, just past Rhodes Rd	Direct flow to New Meadows River, Moderate erosion in ditch	200'x12'	Reshape or crown road, install runoff diverters	Medium	Medium	Low
D-4	4-6	Phippsburg-41-41	Driveway	Stoney Brook Road	Unstable culvert, direct flow to stream, moderate erosion in ditch, stockpiled soil	?	Stabilize culvert, armor ditch with stone or grass	Medium	Medium	Low
D-5	5-7	Phippsburg-35-13	Driveway	Off Pasture Road	Direct flow to ditch that goes to river, moderate surface erosion	25'x50'	Add new surface material to road, pave (?)	Low	Medium	Medium
D-6	5-9	Phippsburg-35-1	Driveway	Meadowbrook Road near Basin Road	Unstable culvert inlet/outlet, direct flow to stream, slight surface erosion, culverts all over property, suspect that landowner is trying to control stream away from driveway, large areas of standing water in driveway	20'x20'	Clean out culvert, stabilize inlet and/or outlet, add new surface material to road/driveway	Low	Medium	Low
D-7	6-13	Phippsburg-33-2	Driveway, Beach Access	Harrington Road and Home (end of road)	Direct flow to New Meadows River, slight ditch erosion, bare soil, stockpile soil, lack of buffer, moderate surface erosion, sand delta at shore	400'x12'	Rubber razor, extend buffer by shore and house, seed and mulch gravel pit	Medium	Medium	Medium
D-8	6-14	Phippsburg-32-7.02	Driveway, Residential	Last house on Bartlett Drive	Direct flow to New Meadows River, moderate surface erosion, rills and gullies in driveway	150'x10'	Reshape or crown road, broad-based dip, establish buffer along shore	Low	Medium	Medium
D-9	2-2	Harpwell-52-78 (new house)	Driveway, Town Road	Perry Lane	Direct flow to ditch, moderate road shoulder erosion, driveway eroding flows to road 100' of eroding gullies in road	100'x15'	Add new surface material to road and driveway, reshape or crown road, pave driveway, install runoff diverters	Low	Low	Low
D-10	2-4	Harpwell-52-156(?)	Driveway, Town Road	#88 Laurel Cove Road	Direct flow to New Meadows River, moderate erosion in ditch, moderate road shoulder erosion, shoreline erosion, moderate surface erosion	100'x250'	Add new road surface material, install runoff diverters	Medium	Medium	Medium

Map ID	Survey Site	Tax Map Code	Land Use	Location	Site Description	Area	Recommendations	Tech Level	Impact	Cost
PR-1	1-4	Harpwell-51-73	Private Road	Sebascodegan	Unstable culvert inlet, direct flow to stream, moderate to severe road shoulder erosion	500'x6'	needs to be engineered: high ground on both sides and large wetland area to stream	High	High	High
PR-2	1-5	Harpwell-51-29	Private Road	Hidden Pond Road	Unstable culvert outlet, direct flow to stream, severe road shoulder erosion	20'x4'	Stabilize culvert outlet, seems like snow plow leaves piles at this low spot in road- need to find a better place	Medium	Medium	Medium
PR-3	2-3	Harpwell-52-104	Private Road	Laurel Point Circle	Direct flow to New Meadows River, moderate road shoulder erosion, lack of buffer on shoreline, shoreline erosion, moderate surface erosion, road not crowned, gullies in road, sediment washing into cove	12'x100'	Reshape crown, install runoff diverters	Medium	Medium	Medium
PR-4	2-5	Harpwell-53-43	Private Road	Wallace Shore Road	Direct flow to stream, narrow road with unstable culvert, localized severe ditch erosion overall moderate ditch erosion, moderate road shoulder erosion	10'x15'	Enlarge culvert, reshape shoulder, reshape crown, pave widen and stabilize road surface	High	Medium	High
PR-5	2-6	Harpwell-56-1	Private Road	Dirt road off Winding Way	Direct flow to New Meadows River, shoreline erosion, gravel turnaround with low log berm, stormwater flows down steep slope to river	15'x30'	Reshape/veg shoulder, install runoff diverters	Medium	Medium	Medium
PR-6	3-11	Harpwell-63-117	Private Road	Watson's General Store, Watson Road	Direct flow to New Meadows River, severe road shoulder erosion, lack of shoreline buffer, severe surface erosion, ledge with little space to work with and steep paved slope	190'x15'	Pave road, establish buffer, needs a solution from an engineer	High	High	High
PR-7	3-5	Harpwell-62-138	Private Road	Intersection of Hoskins Island Road, Sailor Way, and Prosper Road	Direct flow to New Meadows River, moderate road shoulder erosion, moderate surface erosion	320'x8'	Clean out culvert, install ditch, install turnout	High	High	High
PR-8	4-3	Phippsburg-37-26	Private Road	Near Libby Lane, on Cutting Road	Direct flow to New Meadows River, Moderate road and road shoulder erosion	100'	Add new surface material, Reshape or crown road, Pave, Install runoff diverters	Medium	High	Medium
PR-9	5-2	Phippsburg-37-19	Private Road	Hutchins Ice Pond Lane	Direct flow to stream, severe surface erosion	10'x3'	Install turnout in driveway, reshape or crown driveway, plant trees and shrubs, add rip rap on bank of stream if can't hold vegetation	Low	Medium	Low
PR-10	5-4	Phippsburg-36-24	Private Road	Uncle Sam Road at sharp turn near end	Direct flow to New Meadows River, lack of shoreline buffer, slight surface erosion	50'x12'	Add new surface material to road, reshape or crown road, rubber razor, establish vegetative buffer	Low	Low	Low

Map ID	Survey Site	Tax Map Code	Land Use	Location	Site Description	Area	Recommendations	Tech Level	Impact	Cost
PR-11	5-5	Phippsburg-36-28	Private Road	Uncle Sam Road	Slight road shoulder erosion, moderate surface erosion	15'x3'	Add new road surface material, build up road, reshape or crown road, add rubber razor, stabilize bank (Note: erosion may worsen when 4 large trees, that are dead, are removed from area)	Low	Low	Medium
PR-12	5-6	Phippsburg-35-13	Private Road	Off Pasture Road	Direct flow to New Meadows River, severe ditch erosion, severe road shoulder erosion	150'x3'	Armor ditch with stone or grass, install ditch, install turnout, add new road surface material, build up road, reshape or crown road	Medium	High	Medium
PR-13	5-8	Phippsburg-35-1	Private Road	Meadowbrook Road near Basin Road	Unstable culvert inlet/outlet, severe ditch erosion, moderate road shoulder erosion, bare soil, long steep hill with unstable ditching	400'x4' + 220'x3' + 10'x2'	Install plunge pool, stabilize inlet and/or outlet, armor ditch with stone or grass	Low	Medium	Low
PR-14	6-11	Phippsburg-32-13	Private Road	Pigtail Trail off Henry Loop	Direct flow to New Meadows River, moderate surface erosion, bare soil where road meets ocean	325'x12'	Install ditch, reshape or crown road, open top culvert, establish buffer	Medium	High	Medium
PR-15	6-2	Phippsburg-45-19	Private Road	Pride Rock Road Northeast side of Road pole#1642	Direct flow to stream (uphill of stream), moderate erosion, and sever road shoulder erosion on bank, unstable culvert outlet	1/8 mile	Install plunge pool at culvert, install ditch, reshape or crown road, and plant trees and shrubs on eroding banks	Medium	Low	Medium
PR-16	6-4	Phippsburg-34-1	Private Road	Basin Road near boat ramp	Direct flow to New Meadows River, Slight road shoulder erosion, slight surface erosion	100'xwidth of road	Broad-based dip run-off diverter	Low	Medium	Low
PR-17	6-7	Phippsburg-34-1	Private Road	Basin Road	Direct flow to New Meadows River, erosion around culvert outlet	8'x20'	Install plunge pool	Low	Low	Low
PR-18	6-8	Phippsburg-34-1	Private Road	Basin Road corner	Unstable culvert inlet and outlet	8'x4' + 6'x4'	Lengthen culvert, stabilize inlet and outlet	Low	Medium	Medium
PR-19	2-1	Harpwell-52-84	Private Road (new, dirt)	End of Perry Land	clogged culvert, direct flow to New Meadows River, sever erosion in ditches on both sides, moderate road shoulder erosion, unstable construction road, collapsed silt fence	200'x30+'	Clean out culvert, stabilize inlet and outlet, erosion control (silt fence), stabilize road surface (divert runoff), runoff diverters	Medium	High	Medium
PR-20	6-6	Phippsburg-34-1	Private Road, Beach Access	near boat ramp	Direct flow to New Meadows river, bare soil, shoreline erosion, at least 3 locations where vehicles and ATVs drive to water's edge	3x(10'x20')	Establish vegetative buffer, seed and mulch	Low	Low	Low
PR-21	2-8	Harpwell-58-66	Private Road, Town Road	Spruce Cove Road, Dingley Island Road	Direct flow to New Meadows River, moderate ditch erosion, moderate road surface erosion, Spruce Cove Road runoff flowing down Dingley Island Road (Note: Dingley Island Road to be rebuilt summer 2003)	150'x5'	Repair/Add New Surface Material to road, install runoff diverters	Low	Medium	Low

Map ID	Survey Site	Tax Map Code	Land Use	Location	Site Description	Area	Recommendations	Tech Level	Impact	Cost
PR-22	5-3	Phippsburg-37-18	Private Road, Town Road	Meadowbrook Road	Direct flow to ditch, severe ditch erosion, bare soil	60'x20' + 20'x20'	Stabilize inlet and or outlet, armor ditch with stone or grass, reshape ditch, seed and mulch, add rip rap to stabilize bank	Medium	High	Medium
R-1	3-2	Harpwell-61-1	Residential	End of Rand Road	Roof runoff, bare soil, slight surface erosion	24'x2'	Install stone filled dripline trench, mulch	Low	Low	Low
R-2	3-4	Harpwell-62-136	Residential	136 Haskins Island Road	Direct flow to New Meadows River, roof runoff, soil bare spots, lack of buffer on shoreline, slight surface erosion	35'x15'	Install dry well at gutter spout, establish buffer, seed and mulch	Low	Medium	Low
R-3	3-9	Harpwell-63-71	Residential	48 Field Road	Direct flow to New Meadows River, Bare soil (unstable fill)	6'x4'	Seed and mulch	Low	Low	Low
R-4	8-1	Phippsburg-27-18	Residential	Newbery Pt Road	Direct flow to stream, unstable culvert inlet/outlet, slight road shoulder erosion, slight surface erosion, construction site	30'x50'	Stabilize inlet and/or outlet, fix silt fence to make it effective, add new surface material, waterbar in driveway, plant trees and shrubs, rip-rap	Medium	Low	Medium
R-5	8-2	Phippsburg-27-18	Residential	Newbery Pt Road	Roof runoff, bare soil, moderate surface erosion, unstable construction site, some runoff from driveway	100'x100'	Add erosion controls, waterbar, new surface materials, plant trees and shrubs, seed and mulch, infiltration trench	Medium	Low	Medium
R-6	8-6	Phippsburg-27-86	Residential	Green house to the right of the Seahorse Lobster Pound, along beach	Direct flow to New Meadows River, moderate ditch erosion, bare soil, shoreline erosion, moderate surface erosion, beach access	30'x30'	Establish vegetative buffer, plant trees and shrubs	Low	Low	Low
R-7	8-8	Phippsburg-28-20	Residential	Water Cove Road	Culvert draining wetland goes under house water flowing around culvert not through the culvert, unstable culvert inlet/outlet, direct flow to New Meadows River, bare soil, moderate surface erosion	30'x30'	Stabilize inlet and or outlet, add rip rap to stabilize bare soil under house	Low	Medium	Low
R-8	9-2	Phippsburg-24-12	Residential	between Club Road and Hyde Road on Rt 216	No soil leaving site, but open soil with no ESC	50'x150'	Erosion Control and mulch where possible	Low	Low	Low
R-9	4-4	Phippsburg-37-27	Residential, Construction Site	Cutting Road, just after Libby's Lane	Bare Soil	perimeter: 10' wide around house And waterfront: 100'x50'	Erosion control (silt fence)	Low	High	Medium
R-10	4-5	Phippsburg-41-41	Residential, Construction Site	Stoney Brook Road	Direct flow to stream, Bare Soil	100'x100'	Erosion control	Medium	High	Low

Map ID	Survey Site	Tax Map Code	Land Use	Location	Site Description	Area	Recommendations	Tech Level	Impact	Cost
R-11	6-12	Phippsburg-33-4	Residential, Construction Site, Driveway	Harrington Rd 2nd house (grey with white trim)	Bare soil, stockpiled soil, shoreline erosion, lack of shoreline buffer, severe surface erosion	250'x10' +cleared areas + piles of soil	Silt fence, open top culvert and rubber razor on driveway, establish buffer, extend buffer, plant trees and shrubs, and seed and mulch, shoreline rip rap, cover soil piles	High	High	High
R-12	8-9	Phippsburg-27-29	Residential, with trail or path on it	268 West Point Road	Direct flow to New Meadows River, bare soil, shoreline erosion, lack of shoreline buffer, severe surface erosion	20'x20'	Establish buffer, establish new slope, add rip rap	Medium	High	Low
SR-1	6-1	Phippsburg-45-15	State Road	Rt 209 culvert, opposite Pride Rock Way	Bare soil above and to side of unstable culvert inlet, direct flow to stream and to marsh	25'x10'	Vegetate nearby, armor top, and stabilize inlet, plant trees and shrubs	Medium	Low	Medium
SR-2	7-3	Phippsburg-30-1	State Road, Town Road	Sebasco Rd next to Wat-tuh Lake	Direct Flow from lake to New Meadows River, Moderate Road Shoulder erosion	6'x15' (x2)	Install check dam	Low	Low	Low
SR-3	1-1	Harpwell-52-N/A	State Road, Trail or path	Rt 24 Bridge (Gurnet Bridge)	Direct flow to New Meadows River, Severe Surface erosion	30'x3'	Define path for foot traffic and install stairs	High	Medium	Medium
TR-1	1-2	Harpwell-50-116	Town Road	Indian Rest Road - just after bus turnaround	Direct flow to New Meadows River, Moderate to Severe road shoulder erosion	100'x6'	Reshape veg shoulder, seed and mulch veg, install waterbar, add rip rap	Medium	Medium	Low
TR-2	3-10	Harpwell-63-65	Town Road	Field Street	Direct flow to New Meadows River, severe road shoulder erosion, bare soil, road sand build up	45'x2' And 25'x20'	Install ditch, plant trees and shrubs, level spreader at deposit area	Medium	High	Medium
TR-3	3-12	Harpwell-64-48	Town Road	Cundy's Harbor Road	Direct flow to New Meadows River, Severe road shoulder erosion	210'x5'	Enhance existing turnout, plant trees and shrubs	Low	Medium	Low
TR-4	3-7	Harpwell-62-155	Town Road	Holbrook town landing	Direct flow to New Meadows River, clogged culvert, moderate ditch erosion, moderate road shoulder erosion, moderate surface erosion	200'x9'	Install plunge pool, replace culvert, additional culvert, armor ditch with stone, reshape/veg road shoulder	High	High	High
TR-5	3-8	Harpwell-62-208	Town Road	next to: 12 Holbrook Street	Direct flow to stream, moderate road shoulder erosion, severe surface erosion, winter sand build-up	125'x4' And 15'x6'	Install road turnouts, remove grader berms, remove winter sand, add rip rap to shoulder above culvert outlet	Low	Medium	Low
TR-6	5-1	Phippsburg-37-18	Town Road	Meadow Brook Road	Direct flow to stream, moderate ditch erosion, slight road shoulder erosion, moderate surface erosion, sediment being transported to stream along road on both sides and ditches	400'x4' + 220'x3' + 10'x2'	Armor ditch with stone or grass, install turnout, reshape ditch, remove winter sand, check dams on ditch on left side headed east	Medium	Medium	High
TR-7	6-10	Phippsburg-34-1	Town Road	intersection of Hatch and Basin Road	Direct flow to stream, moderate ditch erosion	80'x4'	Armor with stone or grass, reshape/veg shoulder	Low	Medium	Medium

Map ID	Survey Site	Tax Map Code	Land Use	Location	Site Description	Area	Recommendations	Tech Level	Impact	Cost
TR-8	6-3	Phippsburg-34-1	Town Road	Meadow Brook Road by Falls Brook	Direct flow to stream, 2 unstable culvert outlets (large one rusted out on bottom), bare soil on shoulder, severe road shoulder erosion, shoulder too steep	20'x50+' (goes into sector 5)	Install plunge pool on large culvert, replace large culvert, armor with stone, install ditch, install turnout, reshape or crown road	High	High	High
TR-9	6-9	Phippsburg-34-1	Town Road	on Basin Road near intersection with Hatch Road	Unstable culvert outlet, direct flow to stream, slight ditch erosion, slight road shoulder erosion	100'xroad and steep bank by culvert	stabilize culvert outlet, remove grader berm, reshape/veg shoulder	Medium	Medium	Low
TR-10	8-5	Phippsburg-27-road (near 49)	Town Road	Wallace Circle next to West Point General Store	Direct flow to New Meadows River, unstable culvert inlet/outlet	100'x25'	Install plunge pool, establish buffer	High	Medium	High
TR-11	8-7	Phippsburg-27-road near 29+30	Town Road	West Point Road near mailbox 268	Direct flow to stream, moderate road shoulder erosion, bare soil, large amount of unstable loose soil (along length of entire road, freshly paved road with loose soil left behind on shoulders)	100'x12'	Install turnaround, reshape/veg shoulder, seed and mulch, rip-rap	Low	Low	Low

