Taylor Pond
Watershed Survey Report

Androscoggin Valley Soil and Water Conservation District
Taylor Pond Association
Maine Department of Environmental Protection

June 2006

Acknowledgments

The following people and organizations were instrumental in the Taylor Pond Watershed Survey Project and deserve special recognition for their efforts:

Watershed Survey Volunteers

Michael Dixon
Anne Goorhuis
Ralph Gould
Mike Keaney
Kelly Large
Joe Lee
Dana Little
Robbie Little
David Lowe
Cathleen McAnneny
TL Mikesell
Jim Melloh
JWally Meuse
Pat Phillips
Steve Phillips
Tim Priestly
Steve Sawyer
John Seylon
George Stevens
Marc Tardif
Susan Trask
Woody Trask
Wendy Williams
Jack Zinke

Steering Committee

Jim DePalma, City of Auburn
Michael Dixon, TPA Treasurer
Wendy Garland, Maine DEP
Anne Goorhuis, TPA Board
Phoebe Hardesty, AVSWCD
Mike Keaney, TPA Board
Dana Little, TPA President
Jim Melloh, TPA Board
TL Mikesell, TPA Board
Tim Priestly, TPA Board
Susan Trask, TPA Secretary

Technical Staff

Jim DePalma	City of Auburn
Jami Fitch	Cumberland County Soil & Water Conservation District
Wendy Garland	Maine Department of Environmental Protection
Phoebe Hardesty	Androscoggin Valley Soil & Water Conservation District
Jess Hunter	Maine Department of Environmental Protection
Tamara Lee Pinard	Cumberland County Soil & Water Conservation District

Sponsors

Androscoggin Valley Soil & Water Conservation District
Maine Department of Environmental Protection

This project was funded in part by a grant from the Maine Department of Environmental Protection. Funds were provided from the U.S. Environmental Protection Agency through the Clean Water Act, Section 319.

Cover Photo Credit: Dana Little

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When combined with many other similar sites throughout a watershed, even erosion from small sources such as this can have a significant impact on lake water quality.

Introduction

This report is specifically designed for citizens living in the Taylor Pond Watershed. It provides the results and analysis of a soil erosion survey conducted in the Taylor Pond Watershed in 2005. The survey was conducted in response to concerns about Taylor Pond's water quality and a desire to preserve the pond's pristine quality for future generations to enjoy.

Taylor Pond's Water Quality

Volunteers have tested water quality in Taylor Pond for more than 30 years. According to this data, Taylor Pond's water quality is considered to be average, and the potential for nuisance algae blooms is moderate. The long-time average water clarity is about 15 feet—about the same as the average Maine lake.

However, the bottom waters of the lake experience high oxygen depletion in late summer months creating a high potential for phosphorus to leave the bottom sediments and feed algae in the water column (internal loading). This oxygen depletion indicates that the pond is under stress, and if this worsens over time, the pond's coldwater fish habitat would also be impaired.

As a result of this monitoring data and the area's development trends, Taylor has been placed on the State's *NPS Priority Watersheds* list, which means that the lake is threatened or impaired by polluted runoff. It is also on the list of lakes *Most at Risk from New Development* under the Maine Stormwater Law.

POLLUTED RUNOFF

Also called NPS or nonpoint source pollution. Soil, fertilizers, septic waste, pet waste and other pollutants from diffuse sources across the landscape that are carried into the pond by rainfall.

Why is the Water Quality at Risk?

The biggest pollution culprit in Taylor Pond and other Maine lakes is **polluted runoff** or nonpoint source (NPS) pollution. Storm water runoff from rain and snowmelt picks up soil, nutrients and other pollutants as it flows across the land, and washes into the lake.

In an undeveloped, forested watershed, storm water runoff is slowed and filtered by tree and shrub roots, grasses, leaves, and other natural debris on the forest floor. It then soaks into the uneven forest floor and filters through the soil.

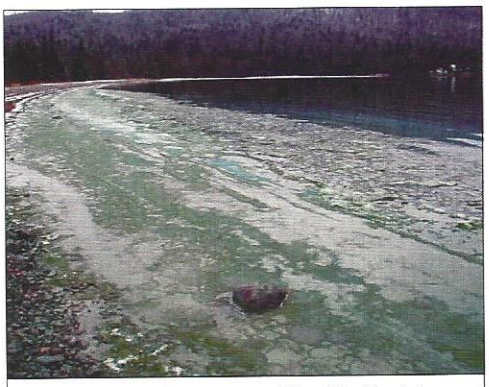
Runoff erodes sediment and carries it into Taylor Pond.

In a developed watershed, however, storm water does not always receive the filtering treatment the forest once provided. Rain water picks up speed as it flows across impervious surfaces like rooftops, compacted soil, gravel camp roads and pavement, and it becomes a destructive erosive force.

Although much of Taylor Pond's watershed is still forested, the shoreline has been developed with two and three tiers of seasonal camps and year-round homes, an extensive network of gravel roads and a commercial campground. The watershed also includes two active farms, several small logging operations and a ski area. Runoff from these developed areas often washes directly into the lake or its feeder streams.

Why is Runoff a Problem?

The problem is not necessarily the water itself. It's the sediment and nutrients in the runoff that can be bad news for Maine lakes. Studies have shown that runoff from developed areas has 5 to 10 times the amount of **phosphorus** compared to runoff from forested areas.



Excess **phosphorus** can "fertilize" a lake and lead to nuisance **algal blooms**.

The nutrient, phosphorus, is food for algae and other plants and is found in soils, septic waste, pet waste and fertilizers. In natural conditions, the scarcity of phosphorus in a lake limits algae growth. However, when a lake receives extra phosphorus, algae growth increases dramatically. Sometimes this growth causes choking blooms, but more often it results in small changes in water quality that, over time, damage the ecology, aesthetics and economy of lakes.

Soil is the biggest source of phosphorus to Maine lakes. As every gardener knows, phosphorus and other nutrients are naturally present in the soil. So, we are essentially "fertilizing" Taylor Pond with the soil that erodes from our driveways, roads, ditches, pathways and beaches.

Taylor Pond's Watershed

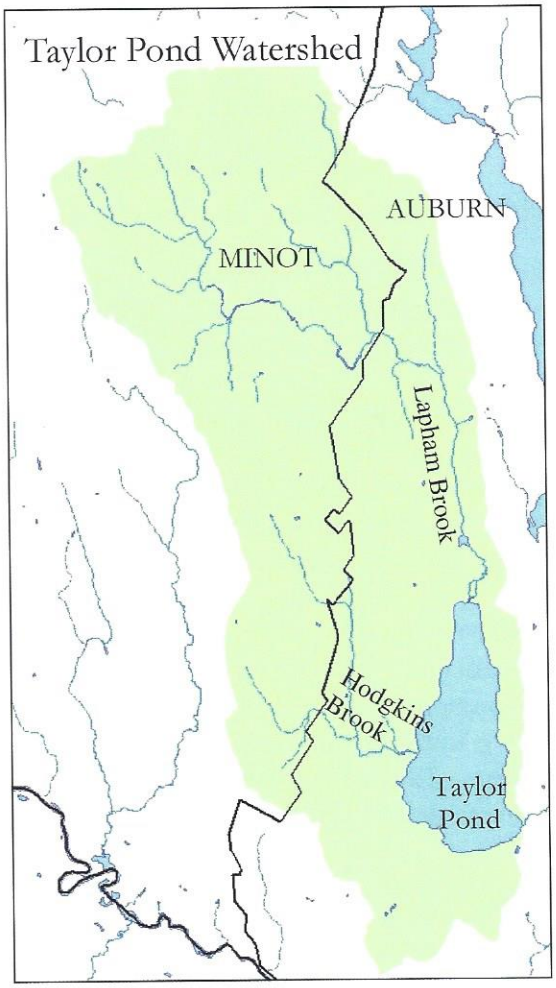
The Taylor Pond watershed (right) covers 14.6 square miles in Auburn and Minot. All of the land within the shaded area drains directly into the pond through a network of streams, ditches and overland flow.

All of Taylor Pond's waterfront is located in the City of Auburn. However, over half of its watershed is located in the Town of Minot. Lapham Brook and Hodgkins Brook are the largest streams that flow into the pond.

WATERSHED

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

Activities in this entire area—not just the shoreline areas—affect Taylor Pond's water quality. Long-term protection of Taylor Pond will require coordinated stewardship in the entire watershed.



Why should we protect Taylor Pond from polluted runoff?

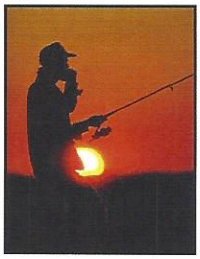
- Once a lake has declined, it can be difficult or impossible to restore. Prevention is the key.

- The lake contains valuable habitat for fish, birds and other wildlife. Taylor Pond is a well known fishing spot for smallmouth bass, perch and pickerel. The Maine Department of Marine Resources also stocks the pond annually with anadromous alewives in an effort to restore runs of these fish to the Androscoggin River.

- Taylor Pond provides excellent recreational opportunities to local residents and to visitors. It is an important contributor to the local economy.

- A 1996 University of Maine study found that lake water quality affects property values. For every 3-foot decline in water clarity, shorefront property values can decline as much as 10 to 20%! Declining property values affect individual landowners as well as the entire community.

- Sediment deposited into the pond from erosion creates the ideal environment for invasive aquatic plants to thrive.




What is being done to protect Taylor Pond?

The Taylor Pond Association (TPA) and its members work with agencies, municipal officials and watershed residents to promote lake protection. Their volunteers have tested water quality in the pond for over 30 years as part of the Maine Volunteer Lake Monitoring Program .

In 1991, the TPA, Androscoggin Valley Soil and Water Conservation District (SWCD) and local volunteers collaborated to conduct a watershed survey. Of the 115 identified erosion sites, 50% were associated with roads and 40% were associated with residential areas. Two DEP-funded grant projects were then carried out from 1992 to 1995. to start fixing these problems. In total, 63 conservation practices were installed in 14 priority areas throughout the watershed.

Since that time, TPA has continued to encourage landowners to protect the pond. In 1998, TPA and students at USM's Lewiston-Auburn campus assessed the effectiveness of previous construction projects and planted a lakefront buffer. In 2003, TPA hosted a DEP LakeSmart training and sponsored an educational presentation and lake tour for city officials and watershed residents. Taylor Pond continues to be one of the DEP's focus areas for its LakeSmart program, which recognizes lake-friendly properties around the pond.

Since watershed surveys are only a snapshot in time, the TPA and Androscoggin Valley SWCD agreed that it was time to reassess their watershed to identify and prioritize current threats to the pond's water quality. The Androscoggin Valley SWCD was awarded a DEP grant for this project and was approved for startup in April 2005.

The 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 Taylor Pond Watershed.
- Raise public awareness about the connection between land use and water quality, and the impact of soil on Taylor Pond. Inspire people to become active watershed stewards.
- Provide the basis to obtain additional funds to assist in fixing identified erosion sites.
- Use the information gathered as one component of a long term lake protection strategy.
- Make general recommendations to landowners for fixing erosion problems on their properties.

The purpose of the survey was NOT to point fingers at landowners with problem spots, nor was it to seek enforcement action against landowners not in compliance with ordinances. It is the hope that through future projects, the TPA can work together with landowners to solve erosion problems on their property, or help them learn how best to accomplish solutions on their own.

Local citizen participation was essential in completing the watershed survey and will be even more important in upcoming years. With the leadership of the TPA and assistance from agencies concerned with lake water quality, the opportunities for stewardship are limitless.

The TPA hopes that you will think about your own property as you read this report, and then try some of the recommended conservation measures. Everyone has a role to play in lake protection!

The Survey Method

The survey was conducted by volunteers with the help of trained technical staff from the DEP and AVSWCD. 23 volunteers were trained in survey techniques during a two hour classroom workshop in May 2005. Following the classroom training, the volunteers and technical staff spent the remainder of the day documenting erosion on the roads, properties, driveways, and trails in their assigned sectors using cameras and standardized forms. The teams worked together throughout the spring to complete their sectors. Technical staff conducted follow-up examinations of sites in the summer and fall of 2005 to verify data accuracy. Engineering staff from AVSWCD also visited nine of the more complex sites to make professional recommendations.

The collected data was entered into a computer database to create a spreadsheet, and the documented erosion sites were plotted on maps. The sites were broken out into categories (driveways, roads, private residences) and ranked based on their impact on the lake, the technical ability needed to fix the problem, and the estimated cost of fixing the problem.

A description of sites and associated rankings are discussed in the next section of this report. Maps of the erosion sites are located in Appendix A, and a spreadsheet with data from the documented sites is located in Appendix B. Contact TPA or AVSWCD more additional site information.

Summary of Watershed Survey Findings

Volunteers and technical staff identified 134 sites in the Taylor Pond Watershed that are impacting or have the potential to impact water quality. Some key conclusions include:

- 67 of the identified sites (50%) were found on residential areas. These sites tend to have less severe erosion and can be fixed easily with low cost. Individual landowners can play a big role in helping address these problems.

- A significant percentage of the remaining erosion sites (40%) were associated with roads (town and private roads and driveways). These sites tend to be larger erosion problems with a greater lake impacts. Several road sites identified in the survey have already been fixed by the Town of Minot.

- Most sites can be fixed with low to moderate labor and materials cost. In fact, only 8 of the 134 sites were rated with a high cost of materials and labor (over $2500).

- Erosion sites were identified all around the watershed and on ten different types of land uses. As such, everyone has a role to play in lake protection. The Town of Minot, City of Auburn, shorefront property owners, business owners, road associations, lakefront landowners and even people living far from the lake can all take measures to reduce lake pollution.

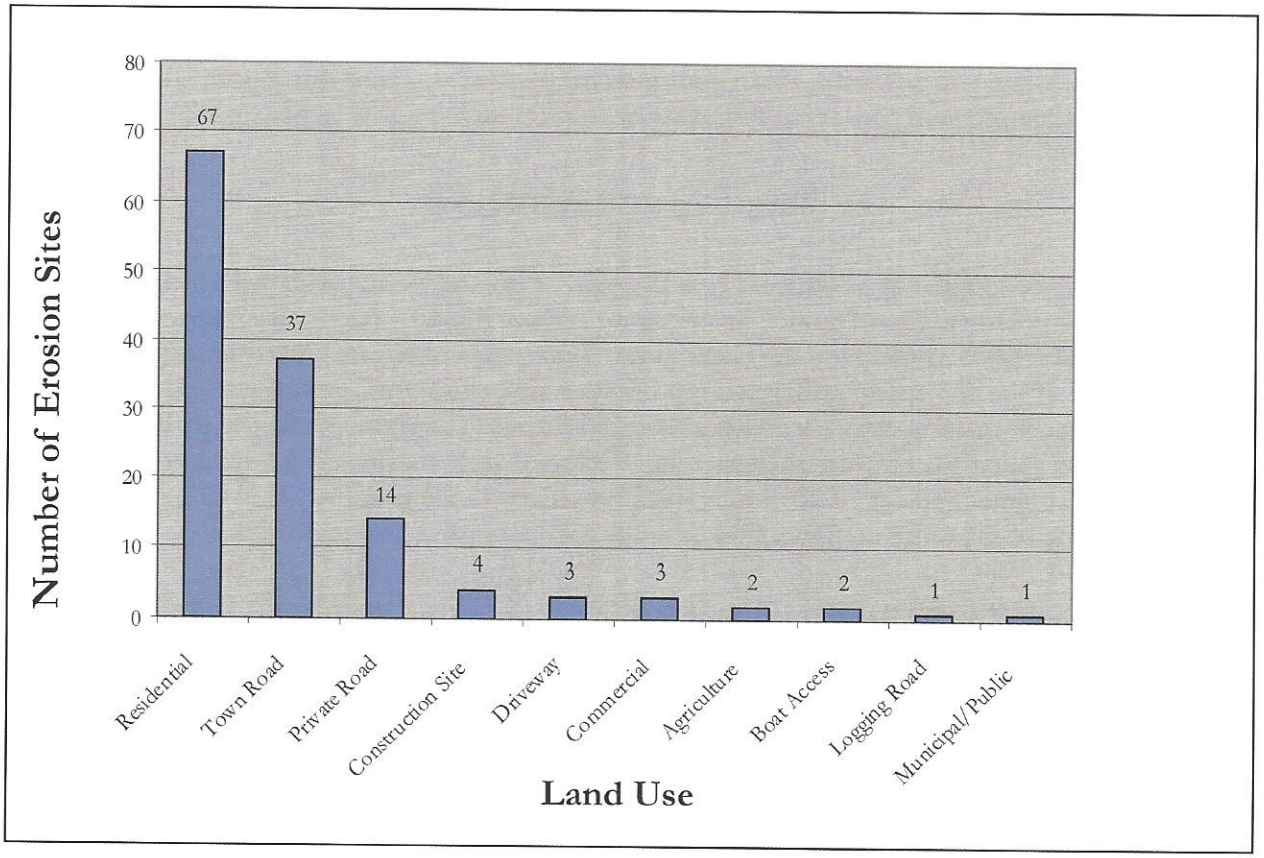


Figure 1. Erosion Sites by Land Use

Figure 2. Taylor Pond Watershed Erosion Sites

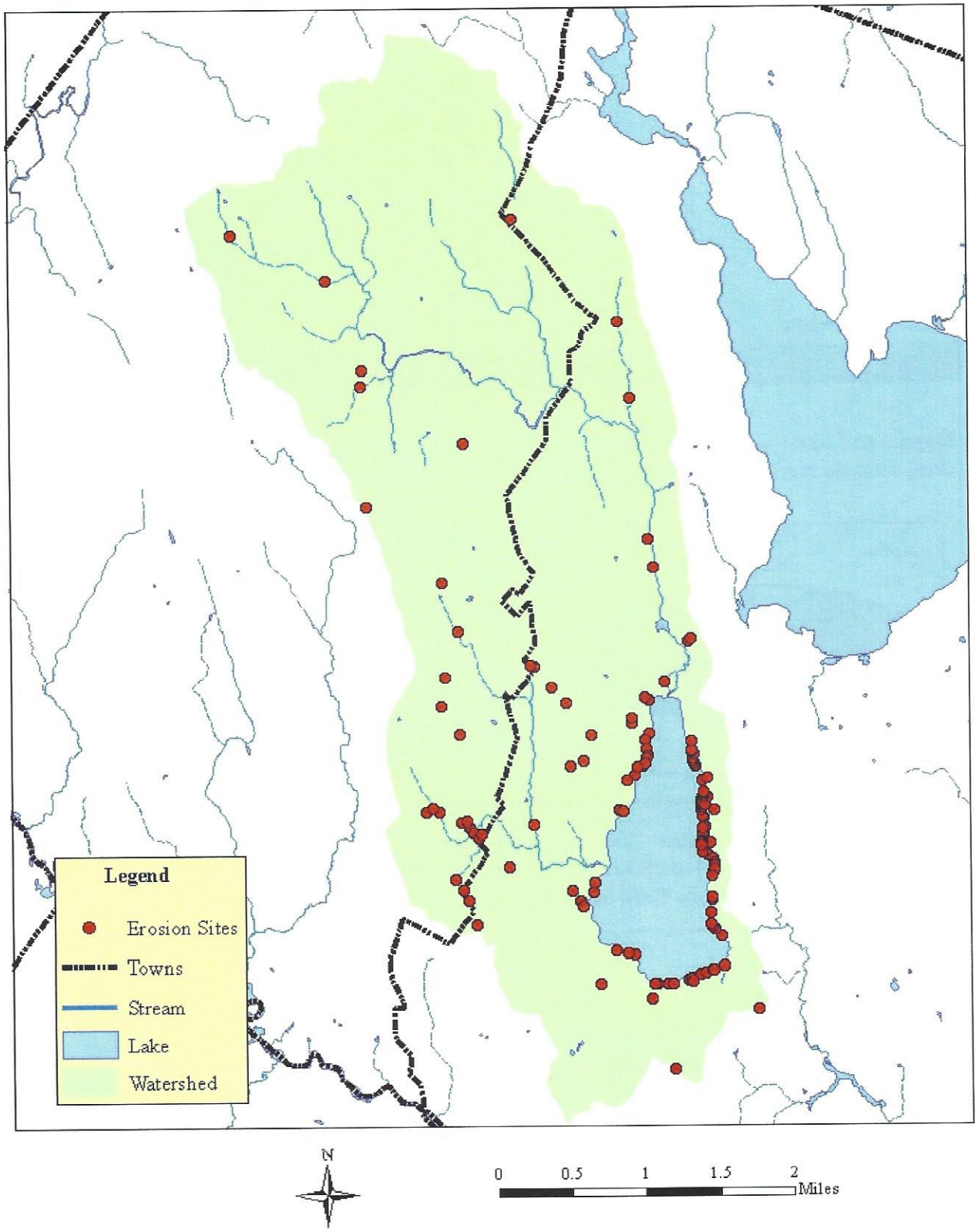
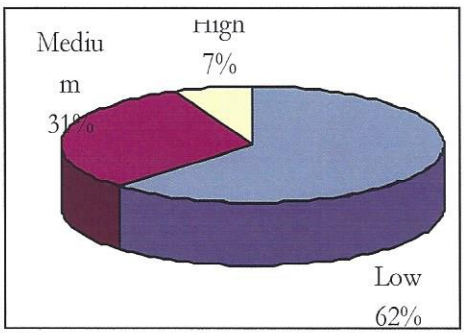


Table 1. Breakdown of site by land use categories and impact to lake.

Category	High Impact	Medium Impact	Low Impact	Total
Residential	2	12	53	**67**
Town Road	2	14	21	**37**
Private Road	4	6	4	**14**
Construction Site	0	3	1	**4**
Driveway	0	1	2	**3**
Commercial	0	3	0	**3**
Agriculture	0	0	2	**2**
Logging Road	0	1	0	**1**
Boat Access	0	1	1	**2**
Municipal/Public	1	0	0	**1**
Total	**9**	**41**	**84**	**134**

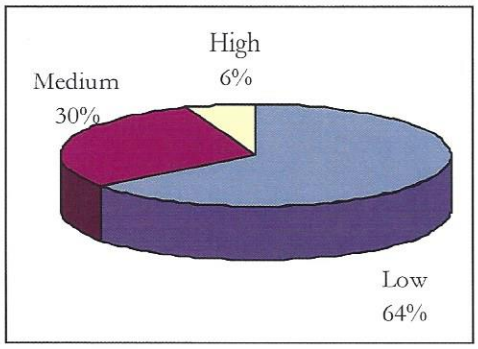
Impact to Lake—Each site was rated for its potential impact to the lake. Only 7% (9 of 134 sites) were deemed to have a high impact.



Impact was based on slope, soil type, amount of soil eroding, proximity to water or buffer, and buffer size.

- "Low" impact sites are those with limited soil transport off-site.
- At "medium" impact sites, sediment is transported off-site, but the erosion doesn't reach a high magnitude.
- "High" impact sites are large sites with significant erosion that flows directly into a stream or the lake.

Cost of Materials to Fix Sites—Recommendations were made for fixing each site, and the associated cost of labor and materials were estimated. Only 6% (or 8 sites) entail a high cost. As shown below, most can be fixed inexpensively with low-cost materials like mulch and stone.



Cost is an important factor in planning for restoration. The cost of labor and materials to fix each site was rated as follows.

- "Low" cost sites were estimated to cost less than $500.
- 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.

Residential Areas

Of the 67 sites associated with residential areas, 53 were low impact, 12 were medium impact, and 2 were high impact. 55 of the 67 sites can be fixed with low cost. Some of the most common problems and recommended conservation practices are pictured below.

Roof Runoff—Install stone-filled trenches along the roof dripline to help infiltrate runoff.

Before

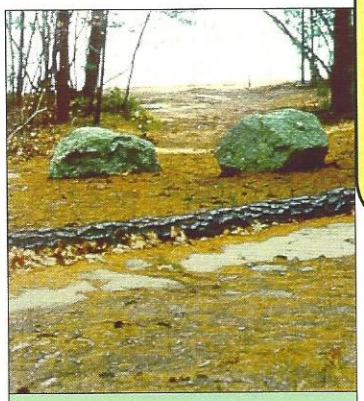
Loose, bare soil washed down hill directly into lake.

After

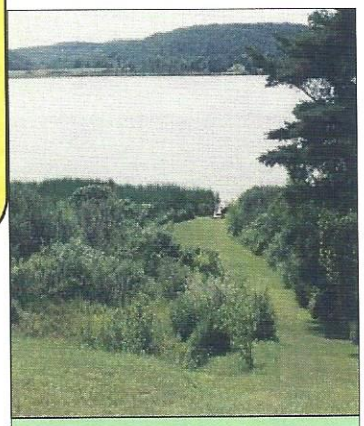
A winding path was created and covered with crushed stone.

Sides of the path were covered with bark mulch and planted with attractive shrubs and flowers.

Mulch—Place mulch such as P&K Gravel's "fine erosion control mix" on bare soil.



Waterbars—Place timbers or log "speed bumps" across paths to slow runoff and trap soil.

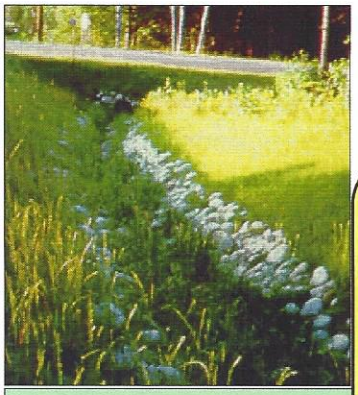


Buffers—Plant trees and shrubs along the shoreline or let them grow back naturally.

Residential areas were associated with half (50%) of the identified sources of polluted runoff. These problems pose a significant threat to lake water quality. Fortunately, most of these sites can be corrected with easy, low cost fixes.

Town Roads

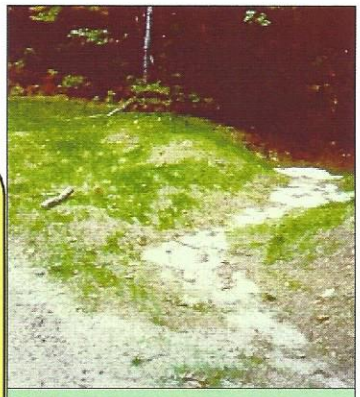
37 town road sites were identified during the survey. Only 2 sites were high impact, 14 were medium impact and 21 were low impact. 18 of the sites can be fixed with low cost, 18 are medium cost sites and only 1 is high cost. Many of the sites have already been brought to the attention of the Town of Minot and several have already been fixed. Some of the most common problems and recommended conservation practices are pictured below.



Ditching—Create U-shaped ditches and armor them with rocks and/or grass.

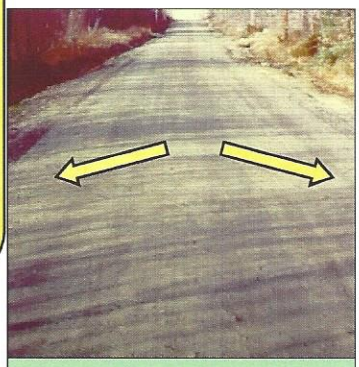
Problem— Unstable road shoulder and culvert erode sediment into stream
Solution— Armor with stone riprap

Problem— Shoulder erosion and inadequate ditching delivers sediment directly into stream
Solution— Reshape and vegetate ditch; Install check dams to trap sediment



Turnouts—Create openings along roads or ditches to direct water into vegetated areas.

Culverts—Armor culvert inlets and outlets with rock riprap. Create 'plunge pools' to protect the outlet and trap sediment.

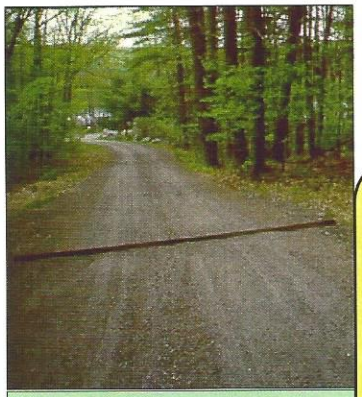


Crown—Grade the road so that water runs off the sides. Remove sand and grader berms from the edges of the road.

Roads are one of the biggest sources of pollution to Maine lakes. Regular maintenance by road associations and town and state road departments is critical.

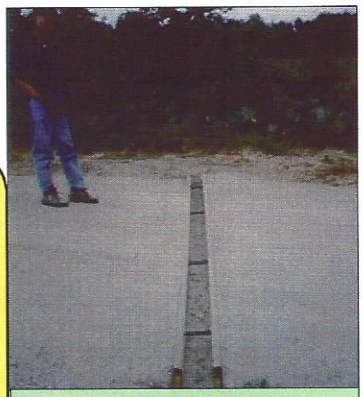
Private Roads

14 private road sites had documented erosion problems. 4 of these had a high impact, 6 had medium impact and 4 had low impact. 10 of the 14 sites can be fixed at a medium cost ($500-$2500) or low cost (under $500). Some of the most common problems and recommended conservation practices are pictured below.

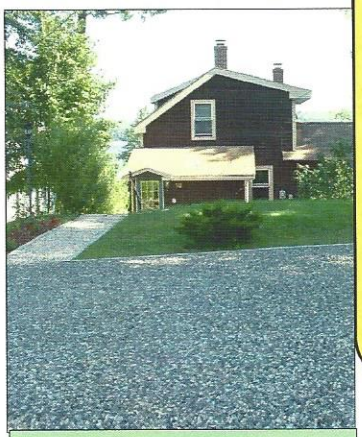


Rubber Razors—Direct water off the driveway and into vegetation with rubber razors.

Problem— Inadequate ditching with erosion and sediment accumulation
Solution— Reshape ditch, clean out sediment, vegetate, and install check dams

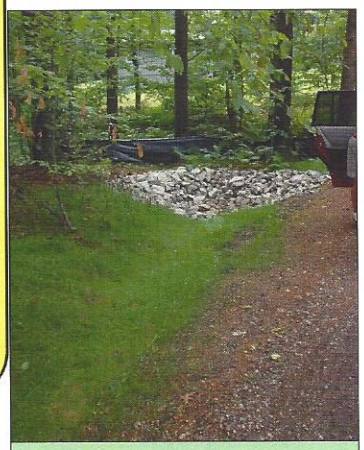


Open Top Culverts—Direct water off the driveway with open top culverts.



Road Material—Add hard-packing, cohesive surface material to the driveway.

Problem— Culvert clogged with debris
Solution— Remove debris and regularly inspect culverts to ensure proper functioning



Ponding Areas—Create small ponding areas to trap sediment and infiltrate driveway runoff.

Preserve water quality and save time, money and wear on your vehicle by having a lake-friendly camp road. Use adequate surface material, establish a crown, and add diversions to direct runoff into buffers.

Next Steps ~ Where Do We Go From Here?

Fixing the sites identified in this survey will require efforts by individuals, the Taylor Pond Association, road associations and municipal officials.

Taylor Pond Association

- Distribute copies of the survey report to property owners, road associations and towns with identified erosion problems and encourage them to make improvements.
- Apply for DEP and other grants to help fix erosion problems identified in the survey.
- Continue to promote the LakeSmart program by hosting workshops, encouraging landowners to have property evaluations and recognizing award recipients.
- Continue to increase and empower the association's membership, and provide educational materials and guidance to members of the Taylor Pond watershed community.
- Continue to partner with Androscoggin Valley SWCD, Maine DEP, City of Auburn, Town of Minot and others to seek funding and implement projects to protect lake water quality.
- Organize workshops and volunteer "work parties" to start fixing identified erosion problems and teach citizens how to fix similar problems on their own properties.
- Educate municipal officials about lake issues and work cooperatively to find solutions.

Individual Landowners

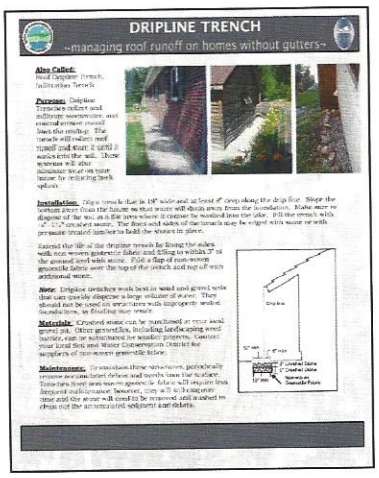
- Look in the report or contact the TPA to see if you have a identified erosion problem. If so, try to start fixing it. Call the AVSWCD or DEP for free advice about how to get started.
- Call Michael Dixon or Anne Goorhuis (see back cover) to set up a LakeSmart evaluation and then work towards getting LakeSmart certified.
- Stop mowing and raking your shoreline and parts of your property. Let lawn and raked areas revert back to natural plants. Deep shrub and tree roots help hold the soil.
- Avoid exposing bare soil. Seed and mulch bare areas.
- Read "Permitting ABCs" on page 13 and call the Town Code Enforcement Officer and DEP before starting doing any cutting or soil disturbance projects.
- Maintain septic systems properly. Pump septic tanks (every 2 to 3 years for year round residences; 4-5 years if seasonal) and upgrade marginal systems.
- Join the Taylor Pond Association and get involved with their activities.

Municipal Officials

- Enforce shoreland zoning and other ordinances to ensure protection of Taylor Pond.
- 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, boards, commissions, and other decision-makers.

Conservation Practices for Homeowners

After reading this report or having a LakeSmart evaluation, you probably have a general idea about how to make your property more lake-friendly. However, making the leap from concept to construction may be a challenge.


DRIPLINE TRENCH
~managing roof runoff on homes without gutters~

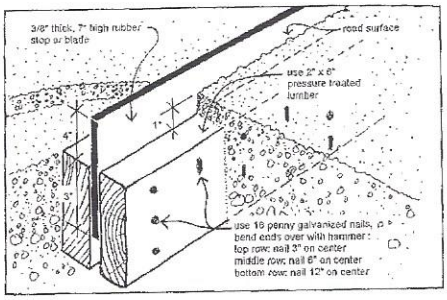
The Maine DEP and Portland Water District recently completed a series of fact sheets that answer many common how-to questions. The fact sheets profile 20 common conservation practices and include detailed instructions, diagrams and color photos about installation and maintenance. The series includes the following:

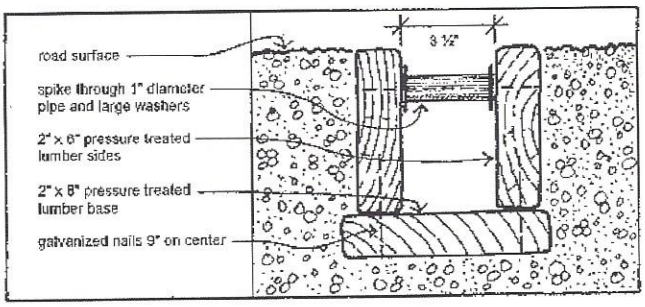
Construction BMPs	Infiltration Trench	Rain Barrels
Dripline Trench	Native Plant Lists (4)	Rain Gardens
Drywells	Open-Top Culverts	Rubber Razors
Erosion Control Mix	Paths and Walkways	Turnouts
Infiltration Steps (2)	Permitting	Waterbars

The series also includes four native plant lists. Each one is tailored to different site conditions (e.g., full sun and dry soils). The lists include plant descriptions from the DEP's *Buffer Handbook* and small color photos of each plant to make plant selection easier.

Fact sheets are available to help you install conservation practices on your property
Download at http://www.maine.gov/dep/blwq/docwatershed/materials.htm.

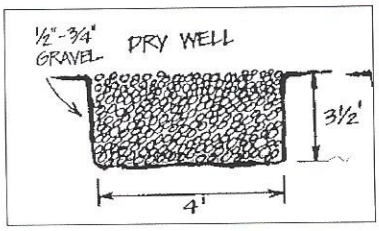
Rubber Razor Blade: Use this structure in a gravel driveway or camp road. It can be plowed over only if the plow operator is aware of its presence and lifts the plow blade slightly. Place it at a 30 degree angle to the road edge and direct the outlet toward a stable vegetated area.





Open Top Culvert: Use this structure in a gravel driveway or camp road that does not get plowed in the winter. Place it at a 30 degree angle to the road edge and point the outlet into stable vegetation. Remove leaves and debris as needed.

Drywell: Use a drywell to collect runoff from roof gutter downspouts. Drywells can be covered with sod, or left exposed for easy access and cleanout. Drywells and infiltration trenches work best in sandy or gravelly soils.



Permitting ABC's

Protection of Maine's watersheds is ensured through the goodwill of lake residents and through laws and ordinances created and enforced by the State of Maine and local municipalities. The following laws and ordinances require permits for activities adjacent to wetlands and waterbodies.

Shoreland Zoning Law—Construction, clearing of vegetation and soil movement within 250 feet of lakes, ponds, and many wetlands, and within 75 feet of most streams, falls under the Shoreland Zoning Act, which is administered by the Town through the Code Enforcement Officer and the Planning Board.

Natural Resources Protection Act (NRPA) - Soil disturbance & other activities within 75 feet of the lakeshore or stream also falls under the NRPA, which is administered by the DEP.

Contact the DEP and Town Code Enforcement Officer if you have any plans to construct, expand 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, contact the DEP and town to be sure.

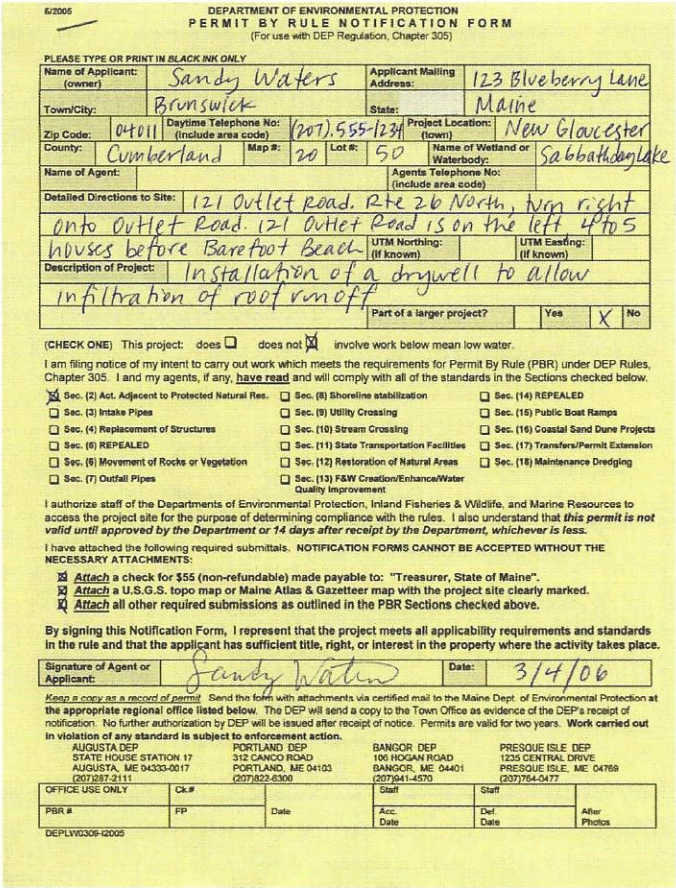
How to apply for a Permit by Rule with DEP:

To ensure that permits for small projects are processed swiftly, the DEP has established a streamlined permit process called **Permit by Rule**. These one page forms (shown here) are simple to fill out and allow the DEP to quickly review the project.

- Fill out a notification form before starting any work. Forms are available from your town code enforcement officer, Maine DEP offices, or online at http://www.state.me.us/dep/blwq/docstand/nrpa/pbrform.pdf

- The permit will be reviewed by DEP within 14 days. If you do not hear from DEP in 14 days, you can assume your permit is approved and you can proceed with work on the project.

- Follow all standards required for the specific permitted activities to keep soil erosion to a minimum. It is important that you obtain a copy of the standards so you will be familiar with the law's requirements.



6/2005

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

PLEASE TYPE OR PRINT IN *BLACK INK ONLY*

Name of Applicant: (owner)	Sandy Waters	Applicant Mailing Address:	123 Blueberry Lane
Town/City:	Brunswick	State:	Maine
Zip Code: 04011	Daytime Telephone No: (include area code) (207).555-1234	Project Location: (town)	New Gloucester
County: Cumberland	Map #: 20 Lot #: 50	Name of Wetland or Waterbody:	Sabbathday Lake
Name of Agent:		Agents Telephone No: (include area code)	
Detailed Directions to Site:	121 Outlet Road. Rte 26 North, turn right onto Outlet Road. 121 Outlet Road is on the left 4 to 5 houses before Barefoot Beach	UTM Northing: (If known)	UTM Easting: (If known)
Description of Project:	Installation of a drywell to allow infiltration of roof runoff		
		Part of a larger project?	Yes X 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 Rules, Chapter 305. I and my agents, if any, **have read** and will comply with all of the standards in the Sections checked below.

- ☒ Sec. (2) Act. Adjacent to Protected Natural Res.
- ☐ Sec. (3) Intake Pipes
- ☐ Sec. (4) Replacement of Structures
- ☐ Sec. (6) REPEALED
- ☐ Sec. (6) Movement of Rocks or Vegetation
- ☐ Sec. (7) Outfall Pipes
- ☐ Sec. (8) Shoreline stabilization
- ☐ Sec. (9) Utility Crossing
- ☐ Sec. (10) Stream Crossing
- ☐ Sec. (11) State Transportation Facilities
- ☐ Sec. (12) Restoration of Natural Areas
- ☐ Sec. (13) F&W Creation/Enhance/Water Quality Improvement
- ☐ Sec. (14) REPEALED
- ☐ Sec. (15) Public Boat Ramps
- ☐ Sec. (16) Coastal Sand Dune Projects
- ☐ Sec. (17) Transfers/Permit Extension
- ☐ Sec. (18) Maintenance Dredging

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 the following required submittals. **NOTIFICATION FORMS CANNOT BE ACCEPTED WITHOUT THE NECESSARY ATTACHMENTS:**

- ☒ ***Attach*** **a check for $55 (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*** **all other required submissions as outlined in the PBR Sections checked above.**

By signing this Notification Form, I represent that the project meets all applicability requirements and standards in the rule and that the applicant has sufficient title, right, or interest in the property where the activity takes place.

Signature of Agent or Applicant:	Sandy Waters	Date:	3/4/06

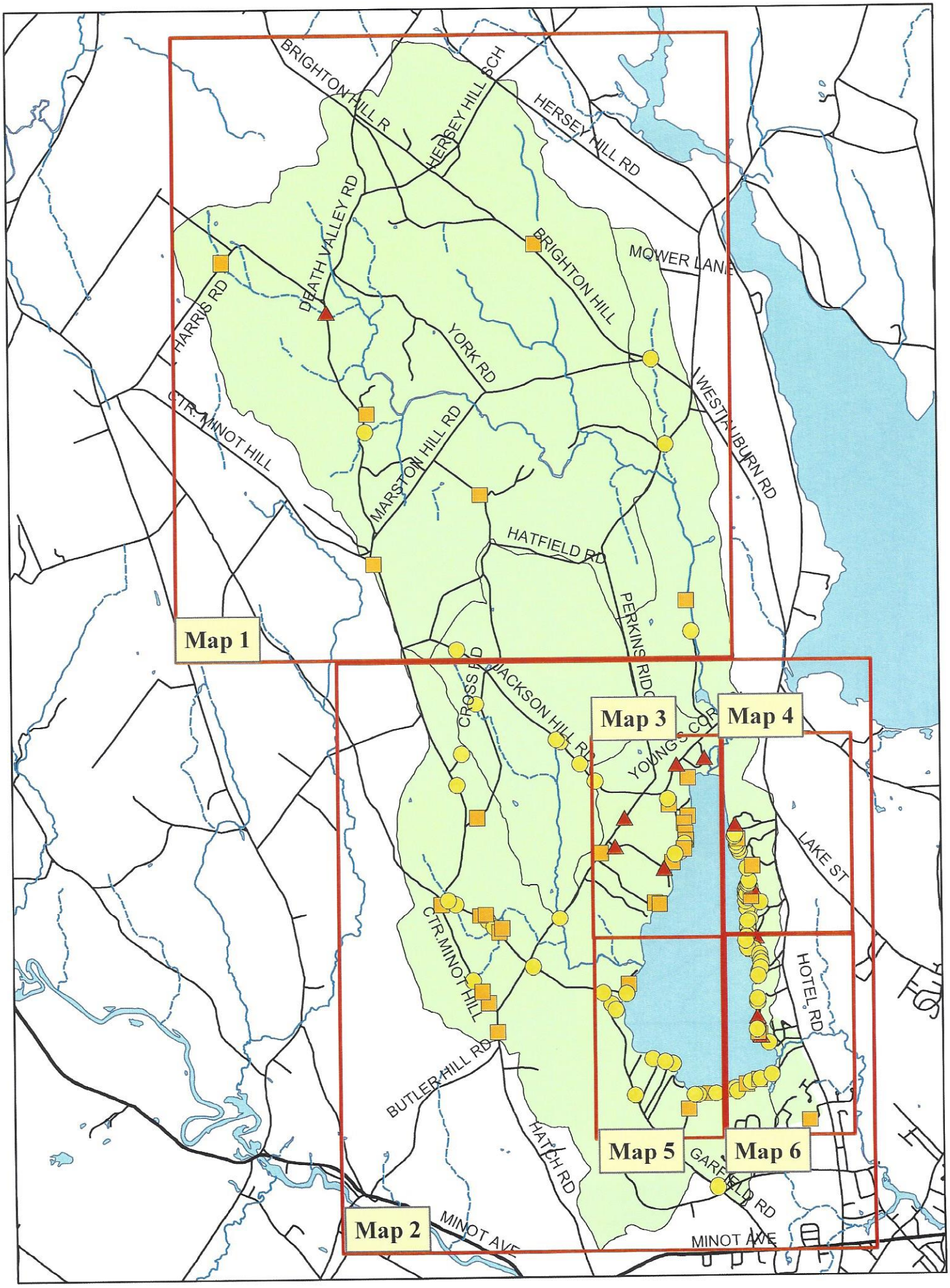
Keep a copy as a record of permit. Send the form with attachments via certified mail to the Maine Dept. of Environmental Protection at **the appropriate regional office listed below.** The DEP will send a copy to the Town Office as evidence of the DEP's receipt of notification. No further authorization 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	PORTLAND DEP	BANGOR DEP	PRESQUE ISLE DEP
STATE HOUSE STATION 17	312 CANCO ROAD	106 HOGAN ROAD	1235 CENTRAL DRIVE
AUGUSTA, ME 04333-0017	PORTLAND, ME 04103	BANGOR, ME 04401	PRESQUE ISLE, ME 04769
(207)287-2111	(207)822-6300	(207)941-4570	(207)764-0477

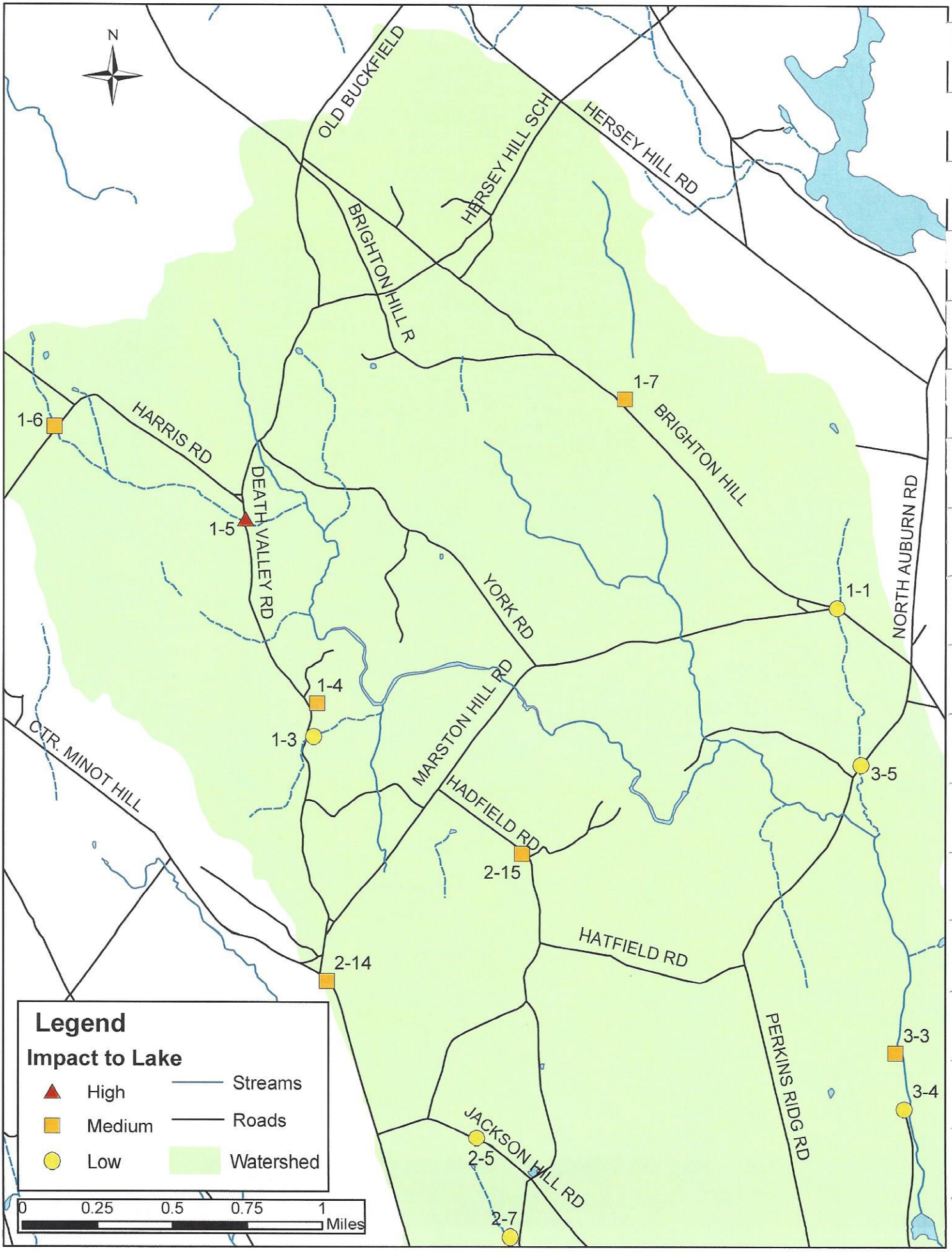
OFFICE USE ONLY	Ck.#		Staff	Staff	
PBR #	FP	Date	Acc. Date	Def. Date	After Photos

DEPLW0309-I2005

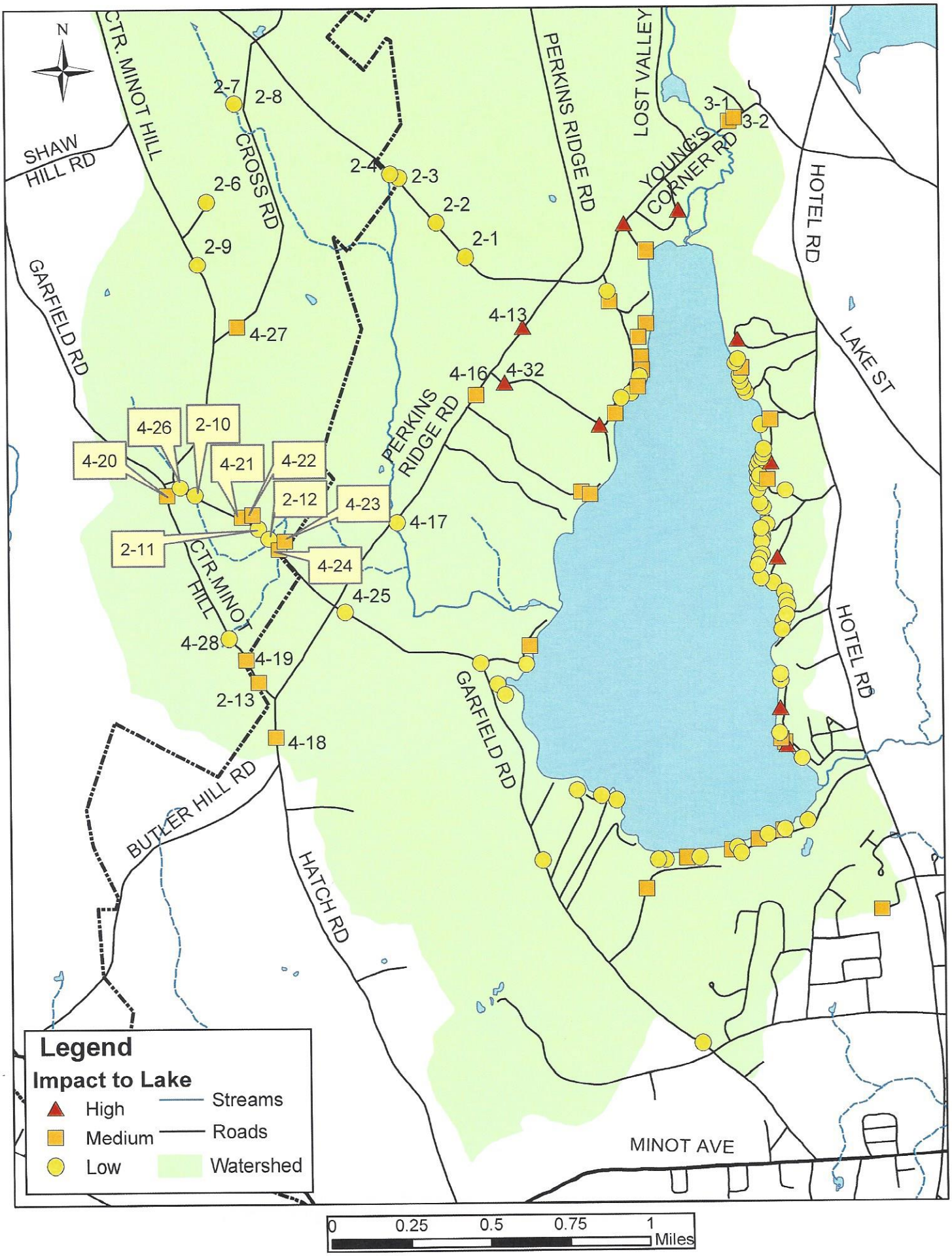
Key to Erosion Site Maps



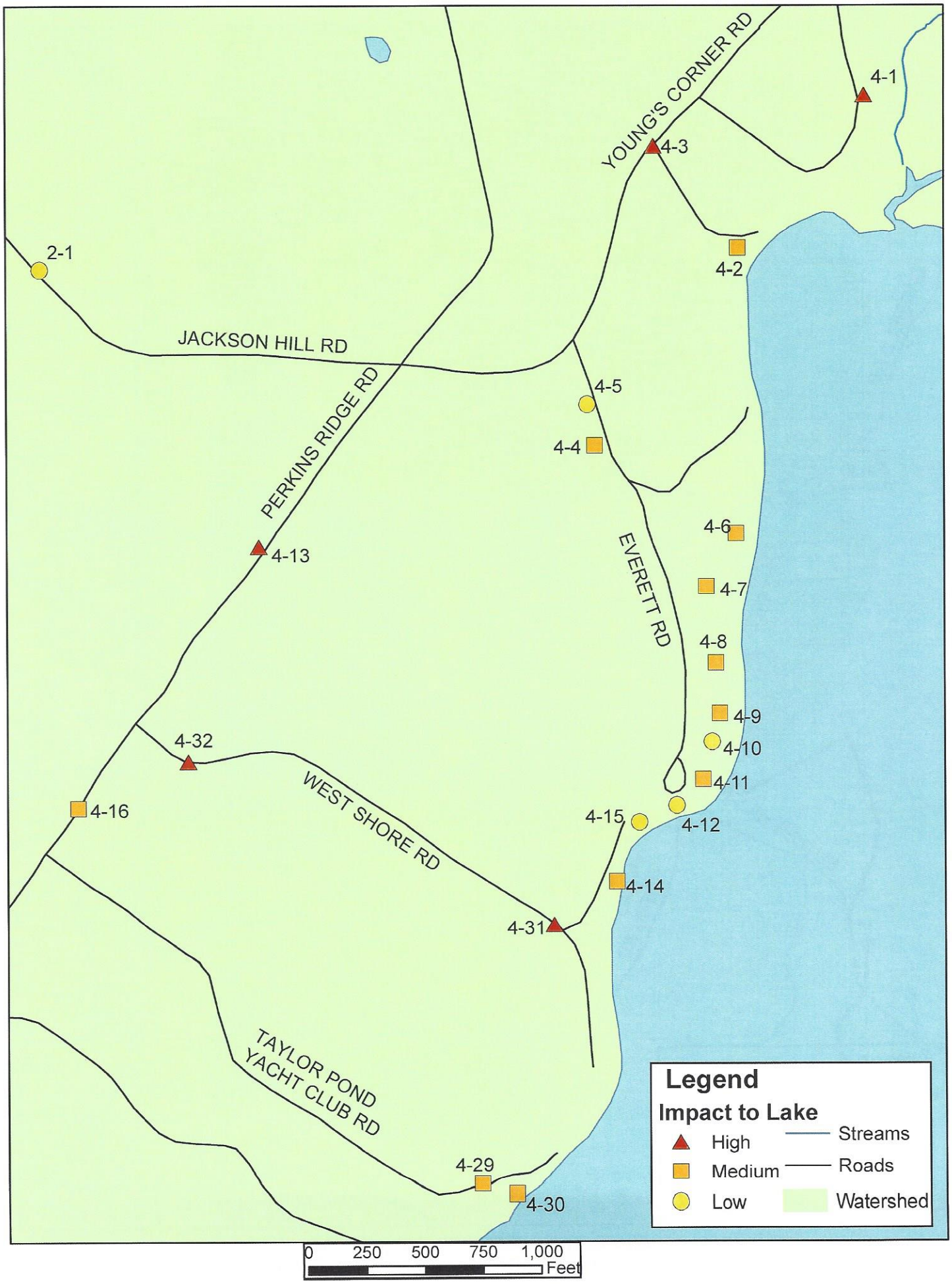
Map 1 Erosion Sites



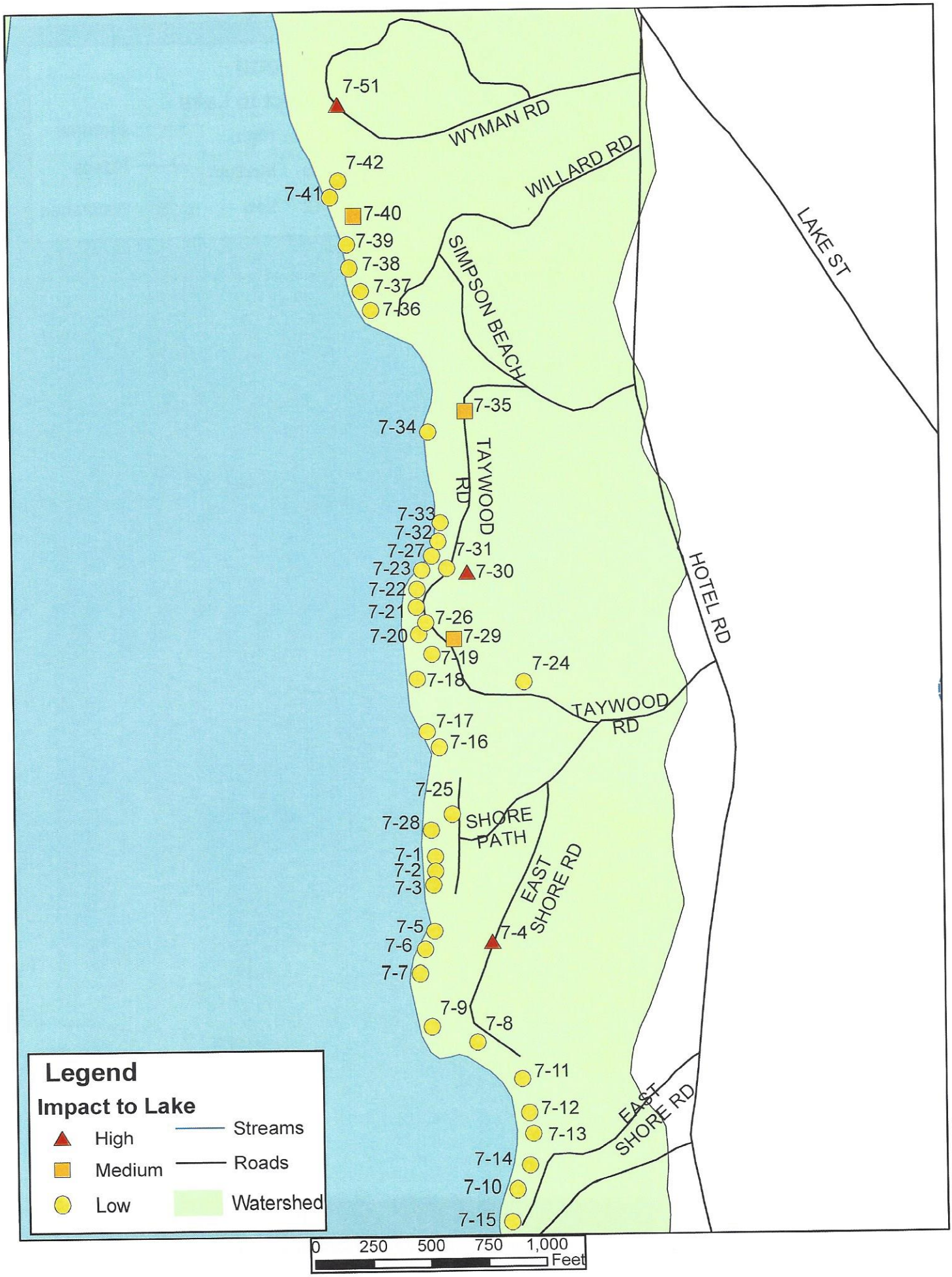
Map 2 Erosion Sites



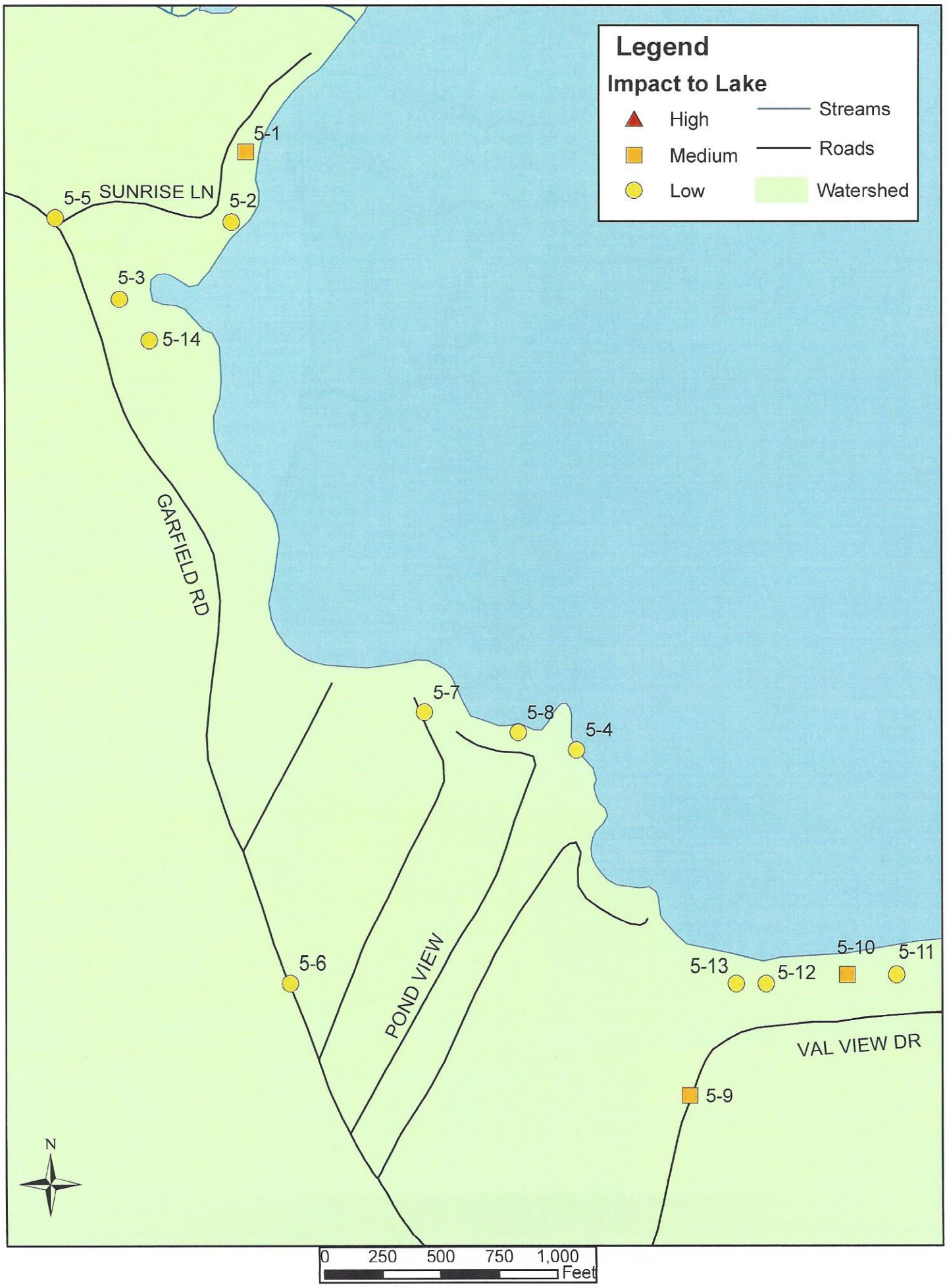
Map 3 Erosion Sites



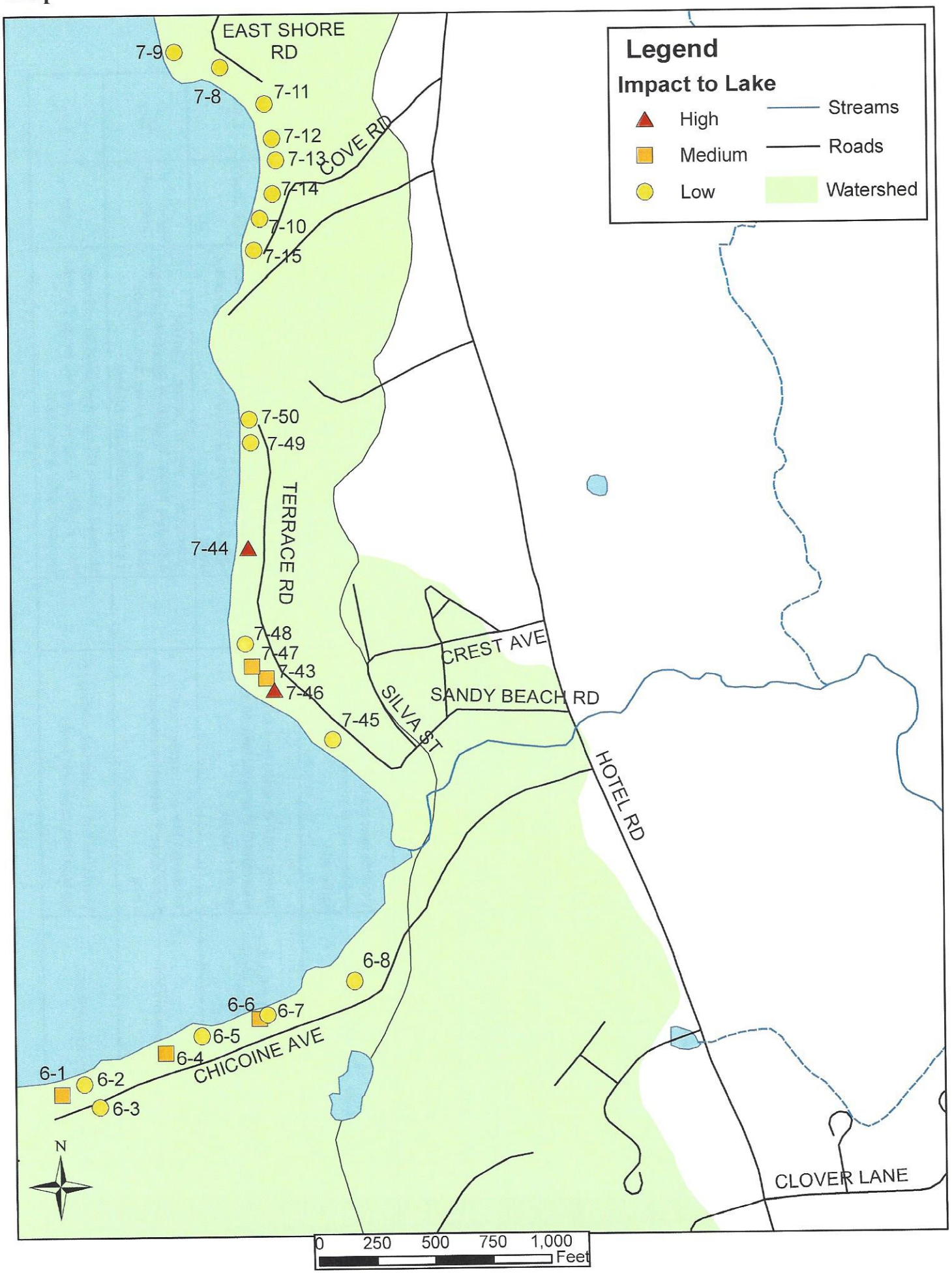
Map 4 Erosion Sites



Map 5 Erosion Sites



Map 6 Erosion Sites



Appendix B - Survey Data for Watershed Erosion Sites

Sector & Site	Land Use	Location	Description of Problem	Area Affected	Recommendations	Impact of Problems	Cost
1-1	Town Road	Marston Hill Rd. at CMP #506	Slight road shoulder erosion and bare soil near stream crossing	4' x 150'	Stabilize shoulder with recycled asphalt	Low	Low
1-2	Town Road	Death Valley Rd. at CMP #12	Slight ditch and shoulder erosion	4' x 120'	Install plunge pool at culvert outlet, armor ditch with stone, and install check dams	Low	Medium
1-3	Town Road	Death Valley Rd. at CMP #18	Moderate shoulder erosion with piping along wetland edge; stand of invasive plants blocking road drainage.	20' x 125'	Grade, shape, and reinforce shoulder at wetland edge; remove invasive plants to improve drainage	Low	Medium
1-4	Town Road	Death Valley Rd. at CMP #22	Inadequately sized ditch, bare soil	4' x 100'	Install settling basin at culvert inlet; improve ditch between CMP poles 22-24; grade shoulder	Medium	Medium
1-5	Town Road	Death Valley Rd. at CMP #43	Unstable culverts; moderate shoulder erosion. Stream undermining second pipe.		Lengthen pipe to allow room for inlet/outlet protection. Install i/o protection at second pipe. Culverts may need to be reset for adequate cover.	High	Medium
1-6	Town Road	Harris Rd. at stream crossing below #210	Unstable culvert inlet & outlet; unstable shoulder	3' x 12'	Armor inlet and outlet with stone. Regrade shoulder and stabilize with compacted, recycled asphalt	Medium	Medium
1-7	Construction site	Brighton Hill Rd. at CMP #78	Bare soil		Install rock apron at outlet from site	Medium	Medium
2-1	Town Road	Jackson Hill Rd., first culvert	Unstable inlet & outlet; slight erosion in ditch; bare soil	10' x 20'	Armor inlet & outlet. NOTE: New road work completed, but concrete culvert is partially occluded at outlet; needs cleaning	Low	Low
2-2	Town Road	Jackson Hill Rd.	Unstable inlet & outlet; erosion in ditch with bare soil & winter sand. Linked to earlier site.	700' x 10'	Armor i/o, enlarge ditch and stabilize. NOTE: Road work completed; driveway culvert armored with small stone on top; vegetated area may need some reseeding & pipe maintained	Low (now)	Low
2-3	Town Road	Jackson Hill Rd. at Minot-Auburn line	Unstable inlet & outlet; bank failure; severe shoulder erosion; bank erosion at stream crossing.	30' x 30'	Armor i/o; enlarge ditch & stabilize with stone. NOTE: Work completed by Minot to town line. Consider stone chute to prevent undercutting near stream, and raising grade above culvert with added stone.	Low (now)	Low
2-4	Town Road	Jackson Hill Rd.	Severe shoulder erosion; bare soil. Significant soil deposition on approx. ½-a. site		Vegetate areas with rill erosion. Remove sediments. NOTE: Road work completed; reshape areas of rill erosion and re-vegetate. Consider removal of accumulated sediment.	Low (now)	Low
2-5	Agriculture	Jackson Hill Rd.	Visible fertilizer pellets; soil washing off site at culvert under field road		Maintain culvert to keep clear; consider sediment basin at outlet to trap soil and sediments. Consider vegetated buffer at field edge.	Low	Low

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Appendix B - Survey Data for Watershed Erosion Sites

Sector & Site	Land Use	Location	Description of Problem	Area Affected	Recommendations	Impact of Problems	Cost
2-6	Town Road	Cross Rd.	Moderate ditch erosion; winter sand.	100' x 10'	Reshape and vegetate ditch. NOTE: Section of road has been graded, ditched, paved, and ditch vegetated. Woods road now needs driveway culvert to prevent washing.	Low (now)	Medium
2-7	Town Road	Cross Rd.	Moderate surface and shoulder erosion	5' x 20'	Shape and vegetate ditch; shape and stabilize road & shoulder. NOTE: Section of road has been treated, as above. Road shoulder repair needed above culvert	Low (now))	Low
2-8	Town Road	Cross Rd.	Road shoulder erosion (sinkholes), culvert rusted through on inlet end	5' x 10'	Replace damaged culvert, provide i/o protection; shape and vegetate shoulder	Low	Medium
2-9	Town Road	Center Minot Hill Rd.	Severe road shoulder erosion	10' x ¼-mi	Shape & vegetate ditch. NOTE: New road work completed w/ stone and grass-lined ditches with stone check dams. Some check dams may need to be re-configured so that centers are minimum 6" lower than sides.	Low (now)	Low
2-10	Town Road	Garfield Rd.	Unstable culvert inlet & outlet; moderate ditch and shoulder erosion	25' x 25' both sides	Armor inlet/outlet; vegetate ditch and improve shoulder. NOTE: Some maintenance done; culvert condition fair; shoulder still shows sinkholes.	Low (now)	Low
2-11	Town Road	Garfield Rd.	Moderate ditch and shoulder erosion	10' x 100'	Reshape and vegetate ditch. NOTE: Some maintenance done; remove tall vegetation at edges to allow better drainage.	Low (now)	Low
2-12	Town Road	Garfield Rd.	Culvert clogged	5' x 5'	Culvert capacity reduced by 50% because of sediment and material deposition. Should be part of annual maintenance program to prevent overtopping of road.	Low	Low
2-13	Town Road	Gravel section of Center Minot Hill Rd.	Severe shoulder erosion.	10' x 150' both sides of road	Improve ditch; grade and shape road, using additional material if necessary; vegetate shoulder. Remove hay bales from concentrated flow channel and replace with rock check dams; hay bales inappropriate for this use.	Medium	Medium
2-14	Town Road	Center Minot Hill Rd.	Culvert buried on one end; moderate shoulder erosion; ditch erosion	10' x 50' 25' x 25'	Clean culvert; re-shape and stabilize ditch with stone or grass; vegetate shoulder. Re-seed bare soil on abutting logging road to prevent erosion to ditch.	Medium	Medium
2-15	Town Road	Hatfield Rd.	Moderate erosion in ditch and on road shoulder	10' x 100' both sides	Shape and vegetate ditches; add rock check dams in upper ditch, and install turnouts in lower ditch topography allows. Driveway culvert needed at entrance of old dirt road.	Medium	Medium

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Appendix B - Survey Data for Watershed Erosion Sites

Sector & Site	Land Use	Location	Description of Problem	Area Affected	Recommendations	Impact of Problems	Cost
3-1	Logging Road	Off Young's Corner Rd	Severe surface and shoulder erosion	25' x 20'	Install culvert to marsh area below turnout; install ditch between driveway and turnout; vegetate shoulder and vegetate or mulch bare soil	Medium	Medium
3-2	Town Road	Young's Corner Rd	Moderate to severe shoulder erosion; linked to 3-1	3' x 250'	Stabilize ditch with grass, or grass with center-line of stone	Medium	Medium
3-3	Commercial	Squirt Ski Trail near Lapham Brook	Slight to moderate surface erosion; bare soil; delta in stream		Vegetate ditch & armor with stone; install turnouts, and add new surface material; vegetate areas of bare soil	Medium	Medium
3-4	Private Road	Lost Valley, adjacent to access road	Slight shoulder and surface erosion; bare soil; inadequate shoreline vegetation	15' x 65'	Vegetate shoulder with grass and steep streambank with willows or other wetfoot plants	Low	Low
3-5	Town Road	Across from 1660 Perkins Ridge Rd	Slight shoulder erosion; bare soil; delta in stream	15' x 15'	Remove winter sand from ditch, re-seed, and install turnouts	Low	Low
4-1	Boat Access	448 Young's Corner Rd.	Severe erosion and bank failure in ditch; severe surface erosion; bare soil; lack of vegetation at shoreline	60' x ?	Consider turnouts from road to vegetated area; reshape ditch and stabilize with stone or stone-center and grass; add vegetation at top of banking; stabilize concentrated flow channels in road with appropriately sized stone; consider woodwaste mulch to cover bare soil	Medium	Medium
4-2	Driveway	448 Young's Corner Rd.	Moderate grader berm; moderate surface erosion	12' x 75'	Install turnouts or waterbars to divert flows into woods prior to steep section; remove berms and regrade and shape road	Medium	Low
4-3	Town Road	Across street from 449 Young's Corner Road	Unstable culvert outlet; moderate shoulder erosion; severe bank failure; bare soil	35' x 75'	Clean culvert outlet and stabilize; install and armor ditch with stone or TRM; install sediment pools; maintain catch basin and stabilize basin outlet pipe with stone; consider stabilizing bank with bark mulch and angular stone chutes. Costs for mitigation depend upon treatment chosen	High	High
4-4	Private Road	Everett Rd.	Severe shoulder erosion and surface erosion; culvert partially blocked	280'	Enlarge culvert to 15" corrugated plastic with smooth interior, and armor outlet; install plunge pool; reshape ditch and maintain existing water bars; remove silt fence; linked to 4.3	Medium	Medium
4-5	Private Road	Everett Rd.	Unstable culvert inlet/outlet; moderate shoulder erosion	5' x 10'	Armor culvert outlet; shape road and stabilize shoulder with vegetation; linked to 4.4	Low	Low

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Appendix B - Survey Data for Watershed Erosion Sites

Sector & Site	Land Use	Location	Description of Problem	Area Affected	Recommendations	Impact of Problems	Cost
4-6	Residential	76 Everett Rd.	Moderate channelized surface erosion with direct flow to lake	25'	Shape rilled area and install diversion or check dams to direct water to wooded area; vegetate repaired area.	Low	Low
4-7	Residential	100 Everett Rd.	Slight to moderate surface erosion; bare soil	N/A	Add boulders or put in level lip spreader/check dams at corner of driveway; enhance vegetation along berm and on slope to lake.	Low	Low
4-8	Residential	138 Everett Rd.	Slight surface erosion ; bare soil and/or compacted soil; inadequate shoreline vegetation	N/A	Create stable outlet from waterbar, and add evergreen shrubs; used tiered vegetation on slope below road to break up runoff; install waterbars on old boat access; add junipers and woodbine to area of compacted soil; apply ESC mulch to area near stump; add vegetation to shoreline.	Medium	Medium
4-9	Residential	148 Everett Rd.	Slight surface erosion; bare soil; undercut shoreline with erosion and little vegetation		Above old boat access, create islands of vegetation around trees; add strips of mixed shrubs & perennials on the contour; cut slope of access with timbers or slab stone, cover interstices with ESC mulch and add low plants at sides; enlarge and expand existing shoreline plantings	Medium	Medium
4-10	Residential	154 Everett Rd.	Roof runoff erosion; bare soil; inadequate shoreline vegetation		Install roof dripline trenches; vegetate bare areas; establish buffer at shoreline.	Low	Low
4-11	Residential	160 Everett Rd.	Inadequate buffer		Install buffer at shoreline above steep bank, at least 10' in depth.	Medium	Low
4-12	Residential	166 Everett Rd.	Bare soil; shoreline undercut, with erosion and inadequate vegetation		Establish low-growing evergreens or similar material for at least 10' in depth	Medium	Low
4-13	Town Road	Perkins Ridge Rd.	Slight surface erosion; some rilling on backslopes; winter sand on road.		Increase road shoulder elevation in conjunction with installation of turnout to prevent pooling on road; reinforce rills with 2-4" stone, and stabilize slope with bark mulch; consider early removal of winter sand as part of annual maintenance.	Medium	Low
4-14	Residential	201 West Shore Rd.	Unstable culvert inlet and slope below culvert, from road to shoreline; bare soil		Armor trench below culvert with angular stone; remove sediments from inlet as part of regular maintenance	Medium	Low
4-15	Private Road	Before 205 West Shore Rd.	Slight ditch erosion; bare soil		Perform regular maintenance checks to ensure waterbars and open top culverts are effective; vegetate bare areas	Low	Low

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Appendix B - Survey Data for Watershed Erosion Sites

Sector & Site	Land Use	Location	Description of Problem	Area Affected	Recommendations	Impact of Problems	Cost
4-16	Town Road	Perkins Ridge Rd at Gun Club	Moderate shoulder erosion	40'	Stabilize shoulder with vegetation, stone dust, or recycled asphalt on upland side of Gun Club; deposition held in natural bowl, but remove periodically and re-seed.	Medium	Medium
4-17	Town Road	Perkins Ridge Rd. at pole #035	Unstable culvert inlet/outlet; moderate to severe ditch erosion; bank failure; moderate shoulder erosion	30' x 40'	Flat grade next to stream limits impact; new gravel on shoulder compacted and stable; could cover loose gravel on sloped area with woodwaste mulch.	Low	Low
4-18	Town Road	Hatch Rd. across from #788	Moderate shoulder erosion	>200'	Install diversions to vegetated areas; re-vegetate shoulder as needed.	Low	Low
4-19	Town Road	Center Minot Hill Rd	Severe ditch erosion and early bank failure; moderate shoulder erosion; slight surface erosion; sediment delta in private pond	1/16 to 1/8 mile	Reshape ditch and stabilize; install turnouts to outlet to stable areas or check dams to capture sediment on both ends of town road, and install diversions on private road; shape and regrade all three sections of road.	Medium	Medium
4-20	Town Road	Intersection of Center Minot Hill Rd. & Garfield Ext.	Unstable culvert inlet & outlet; moderate ditch and shoulder erosion; bare soil		Install plunge pool at culvert outlet; vegetate ditch and shoulder.	Medium	Medium
4-21	Town Road	Pole 508 to North, Garfield Rd. (?)	Moderate ditch and shoulder erosion; bare soil; winter sand	Along ~100' of road	Armor ditch and reinstall check dams. Evidence of sediment moving off road, deposited in wetland next to new home construction. Consider sediment catchment pool or turnout just prior to wetland.	Medium	Medium
4-22	Construction Site	Pole 508 Garfield Rd.	Moderate surface erosion; bare soil, with uncovered pile.		Install silt fence or ESC berms; cover piles of soil; seed and hay, or mulch, bare areas	Medium	Low
4-23	Construction site	Garfield Rd. at high tension line crossing	Bare soil and uncovered soil pile, brush burned next to stream and brush pushed into stream; ATV use through stream; Slight erosion on access driveway	100' x 100'	Install erosion control berm around bare soil; Build up and grade access driveway; Stop ATV across stream or build bridge; Stop burning next to stream and place brush away from stream	Medium	Medium
4-24	Town Road	Garfield Rd. at high tension line crossing	Unstable culvert inlet/outlet; Slight ditch erosion; Moderate road shoulder erosion	75' x 8'	Vegetate ditch and road shoulder; Armor culvert inlet and outlet; Install sediment pools @ culvert inlet	Medium	Medium
4-25	Town Road	Intersection of Perkins Ridge/Hatch and Garfield	Slight road shoulder erosion; Winter sand; Moderate erosion at snowmobile trail crossing; Unstable culvert inlet and outlet		Vegetate shoulder; Remove winter sand; Reestablish check dams in ditch; Armor culvert inlet and outlet	Low	Low

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Appendix B - Survey Data for Watershed Erosion Sites

Sector & Site	Land Use	Location	Description of Problem	Area Affected	Recommendations	Impact of Problems	Cost
4-26	Town Road	Garfield Road Pole 505	Unstable culvert inlet and outlet; Slight erosion on road shoulders		Add more mulch at culvert inlet and outlets; Grade shoulders to remove plow berm; Clean materials from ditches	Low	Low
4-27	Private Road	Cross Road about 500' from where it enters Center Minot Hill Road	Moderate to severe ditch erosion; Moderate road shoulder erosion		Reshape and armor ditch; Install check dams, turnouts and sediment pools in ditch	Medium	Medium
4-28	Town Road	Center Minot Hill Road. Pole #8 and up the hill	Unstable culvert inlet and outlet; Moderate ditch erosion and slight road shoulder erosion		Possibly replace culvert and armor culvert inlet and outlet; Armor ditch with stone and install check dams;	Medium	Medium
4-29	Private Road	Culvert near end of Taylor Pond Yacht Club Road (near Shore Rd)	Sediment in stream and large sediment delta in lake	75'	Repair plunge pool at culvert to trap sediment; Address erosion issues upstream on West Shore Road	Medium	Low
4-30	Commercial	Taylor Pond Yacht Club beach	Moderate surface erosion across beach; Lack of buffer	25' x 10'	Establish vegetation at edges of recreational area; Enlarge berm between rock and timbers	Medium	Low
4-31	Private Road	West Shore Road - Lower half above T-intersection	Moderate road surface, shoulder and ditch erosion; Roadside plow/grader berm	300' x 15'	Repair open box culverts; Reestablish and add new broad based dips	High	Medium
4-32	Private Road	West Shore Road - top portion in woods	Moderate road surface and shoulder erosion; Winter sand; Delta downstream	300' x 15'	Install plunge pool below culvert; Install turnouts; Remove grader/plow berms; Crown road; Install runoff diverters	High	High
5-1	Commercial	63 Sunrise Lane	Eroding boat ramp; unstable shoreline, inadequate vegetation; eroding access	700'+/- shoreline; 15'x20' ramp; 25'x20' access	Stabilize shoreline with riprap and vegetation; replace boat ramp with articulated concrete blocks or concrete logs; stabilize access with geogrid. NOTE: This site was visited by project engineer; prelim rpt submitted	Medium	High
5-2	Residential	59 Sunrise Lane	Shoreline undercut and eroding	4'x10'	Install rock at shoreline; add understory vegetation	Low	Low
5-3	Agriculture	795 Garfield Rd.	Bare soil	200'x200'	Request tech assistance from NRCS for soil management practices	Low	Low
5-4	Residential	21 Pond View Rd.	Inadequate shoreline vegetation; erosion at shoreline	4'x8'	Establish vegetation; stop raking	Low	Low
5-5	Town Road	Garfield Rd. Pole #685	Moderate ditch and shoulder erosion		Reshape ditch and stabilize with ESC mat and grass; establish maintenance plan for critical areas	Low	Medium

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Appendix B - Survey Data for Watershed Erosion Sites

Sector & Site	Land Use	Location	Description of Problem	Area Affected	Recommendations	Impact of Problems	Cost
5-6	Driveway	558 Garfield Rd.	Clogged or damaged culvert; moderate shoulder erosion; of greater concern as maintenance issue		Replace culvert and armor inlet/outlet; grade and reshape driveway; add broad-based drainage dip	Low	Medium
5-7	Residential	545 Garfield Rd.	Slight surface erosion; bare soil; shoreline erosion	6x10	Establish vegetation on bare ground and at shoreline; utilize ESC berms or silt fence for new construction	Low	Low
5-8	Residential	150 Pond View (B Street)	Slight erosion of rock wall at shoreline	25'	Reinforce wall at eroding areas with grouted stone, or as allowed by state and local regulations	Low	Low
5-9	Town Road	Valview Dr., across from #110	Slight surface erosion; bare soil; no erosion control in place (abandoned site?)		Use ESC berms or silt fence around construction site; mulch all bare soil; establish vegetation	Medium	Low
5-10	Residential	174 Valview Dr.	Shoreline undercutting; bare roots	10'x4'	Riprap shoreline with hand-placed stone; add understory plants	Medium	Low
5-11	Residential	198 Valview Dr.	Shoreline undercutting; inadequate shoreline vegetation on sections of shoreline	15'x30'	Repair existing riprapped areas with hand-placed stone; continue vegetating shoreline area with understory plants; mulch bare soil	Low	Medium
5-12	Residential	150 Valview Dr.	Slight surface erosion; Unstable lake access	15' x 15'	Stabilize access with stone and/or vegetation	Low	Low
5-13	Residential	140 Valview Dr.	Undercut shoreline with exposed roots; Inadequate shoreline vegetation	45' x 10'	Vegetate top of bank; Install stone into undercut areas	Low	Low
5-14	Driveway	701 Garfield Road	Unstable culvert inlet/outlet; Slight ditch erosion; Moderate road shoulder erosion	15' x 15'	Mulch and vegetate culvert inlet and outlet; Stabilize road shoulder with rock dust	Low	Low
6-1	Residential	225 Chicoine Ave.	Slight surface erosion; Undercut shoreline; Lack of shoreline vegetation; Unstable lack access	75' x 25'	Define footpath to lake; Establish rain garden in depression below driveway; Plant shrubs by parking area next to stream	Medium	Low
6-2	Residential	215 Chicoine Ave.	Slight surface erosion around deck from dog use; Pet waste		Place crushed stone around high use area by deck; Clean up pet waste	Low	Low
6-3	Residential	Across from 215 Chicoine Ave.	Tires and brush in wetland	N/A	Remove tires, and dispose of brush at city facility, or grind to make mulch; contact UMCE for invasive plant management	Low	Low
6-4	Residential	201 Chicoine Ave.	Some bare soil; lack of vegetation; slight surface erosion; new fill for parking	100' x 100'	Do soil test to determine proper amendments; mulch areas of bare soil and add shrubby vegetation in existing trench and below driveway.	Medium	Low
6-5	Residential	173 Chicoine Ave.	Inadequate shoreline vegetation	100' x 100'	Define footpath; add shrubs and perennials to shoreline to create buffer	Low	Low
6-6	Residential	161 Chicoine Ave.	Slight surface erosion; bare soil; erosion at shoreline with inadequate vegetation.	50'	Develop infiltration trench to capture roof runoff; use mulch to cover bare soil; add shrubs to shoreline and east of drip edge.	Medium	Low

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Appendix B - Survey Data for Watershed Erosion Sites

Sector & Site	Land Use	Location	Description of Problem	Area Affected	Recommendations	Impact of Problems	Cost
6-7	Residential	146 Chicoine Ave.	Slight surface erosion; Bare soil near beach; inadequate shoreline vegetation	15'x25'	Do soil test to determine rate of dolomitic lime and other amendments; stop raking; add shrubs	Low	Low
6-8	Residential	125 Chicoine Ave.	Bare soil near beach; inadequate shoreline vegetation	75'	Stop mowing berm at beach and enhance area with perennials or shrubs; add vegetation midpoint between house and shoreline area; define footpath	Low	Low
6-9	Private Road	Meadow Lane	Broken culvert; plow berm; slight surface erosion; bare soil used as fill in swale	75' circle	Remove culvert; vegetate around ditch; replace cul-de-sac with vegetation; grade road to remove plow berms	Medium	Medium
6-10	Town Road	Stevens Mills Rd.	Unstable culvert inlet/outlet	2'x6'	Cut back slope at culvert outlet and armor	Low	Low
7-1	Residential	29 Shore Path	Minimal erosion of shoreline area; lack of shoreline vegetation		Stabilize parking area with crushed stone; lime grassed area; establish vegetation behind garage	Low	Low
7-2	Residential	33 Shore Path	Limited erosion from roof runoff; inadequate shoreline vegetation		Stabilize areas with mulch; establish vegetation at shoreline	Low	Low
7-3	Residential	37 Shore Path	Surface erosion and lack of shoreline vegetation		Establish buffer vegetation at shoreline; consider terracing plantings	Low	Low
7-4	Municipal / Public	End of East Shore	Broken culvert at pumping station		Replace culvert. NOTE: to be addressed when pumping station is replaced	High*	Medium
7-5	Residential	123 East Shore Rd.	Shoreline undercutting with high water levels		Repair existing wall as regulations allow, or remove; add vegetation to stabilize shoreline	Low	Low
7-6	Residential	139 East Shore Rd.	Riprap failing in small area; lack of shoreline vegetation		Repair riprap by hand-placing stone; add vegetation at shoreline	Low	Low
7-7	Residential	147 East Shore Rd.	Bare soil/slight surface erosion; inadequate shoreline vegetation		Allow pine spills to accumulate or enhance with mulch cover; add shrubs at swale and shoreline	Low	Low
7-8	Residential	160 East Shore Rd.	Slight surface erosion; inadequate shoreline vegetation; some erosion at wall		Establish vegetation on water line and enhance with groundcover; repair wall; add vegetation at shoreline in two small areas	Low	Low
7-9	Residential	159 East Shore Rd.	Shoreline undercutting; inadequate shoreline vegetation		Establish rip-rap at the toe of slope and vegetate above; enhance vegetation to stabalize shoreline	Low	Medium
7-10	Residential	76 Cove Rd.	Bare soil; need shoreline vegetation; maintenance needed on French drain	N/A	Build up soil by adding compost and mulch or seed; maintain French drain to improve drainage, and add garden at edge of tarmac	Low	Low

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Sector & Site	Land Use	Location	Description of Problem	Area Affected	Recommendations	Impact of Problems	Cost
7-11	Residential	124 Cove Rd.	Shoreline undercut and limited vegetation; standing water on road	N/A	Stabilize shoreline with hand-placed rock where undercut; stop raking under trees add mulch and understory plants; create shallow swale downslope of road, add plants below, create path; limit parking.	Low	Medium
7-12	Residential	106 Cove Rd.	Inadequate shoreline vegetation	N/A	Add vegetated buffer	Low	Low
7-13	Residential	104 Cove Rd.	Bare soil; lack of shoreline vegetation	N/A	Add mulch to bare areas, and create vegetated buffer at shoreline.	Low	Low
7-14	Residential	88 Cove Rd.	Clogged culvert; bare soil near shoreline	10x6	Maintain culvert; add mulch pad to shoreline area for dock storage	Low	Low
7-15	Residential	66 Cove Rd.	Bare soil; inadequate shoreline vegetation; standing water	N/A	Add mulch under trees to protect roots and cover bare soil; add groundcover plants where possible; add shrubs below wet area	Low	Low
7-16	Residential	30 Waterview Dr.	Slight undercutting at shoreline; soil compacted in shoreline area with inadequate shoreline vegetation	N/A	Establish shoreline vegetation on crest of slope; lengthen grass; create stable pathway to dock	Low	Low
7-17	Residential	32 Waterview Dr.	Slight surface erosion; inadequate shoreline vegetation; soil compacted in shoreline area	N/A	Establish shoreline vegetation on crest of slope to tree line; low growing vegetation would not interfere with view	Low	Low
7-18	Residential	42 Waterview Dr.	Bare soil beneath deck; slight surface erosion; roof runoff erosion	N/A	Add mulch or crushed stone below deck; stabilize surface with stone to control roof runoff; add vegetation to shoreline area	Low	Low
7-19	Residential	48 Waterview Dr.	Exposed roots beneath trees; lack of shoreline vegetation	N/A	Add vegetation 'islands' on slope; define foot path to water and add mulch under trees; add vegetation at shoreline near wall	Low	Low
7-20	Residential	54 Waterview Dr.	Clogged diverter; slight erosion at base of driveway; lack of shoreline vegetation	N/A	Create swale at base of driveway to collect sand from driveway and road; maintain diverter and swale; add vegetation at shoreline above wall	Low	Low
7-21	Residential	64 Waterview Dr.	Bare soil beneath trees, exposed tree roots; lack of shoreline vegetation and bare soil in shoreline area	N/A	Add mulch beneath trees; establish shoreline vegetation above wall	Low	Low
7-22	Residential	70 Waterview Dr.	Inadequate shoreline vegetation	N/A	Add shoreline vegetation	Low	Low
7-23	Residential	74 Waterview Dr.	Slight erosion in parking area; spotty vegetation; inadequate shoreline vegetation	N/A	Improve lawn care, utilizing soil test to determine needs; add shrubs in bare area of shoreline; repair riprap	Low	Low

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Sector & Site	Land Use	Location	Description of Problem	Area Affected	Recommendations	Impact of Problems	Cost
7-24	Private Road	11 Waterview Dr.	Clogged culvert; moderate surface erosion of road beyond obc; bare area near drive	N/A	Clean culvert as part of regular maintenance plan; add material below culvert and reshape section to drain toward ditch; add rain garden near driveway entry, or rock pad, to capture surface runoff from slope	Low	Low
7-25	Residential	15 Shore Path Rd.	Slight surface erosion in parking area, with impact from road	40x40	Add crushed stone as parking pad	Low	Low
7-26	Residential	118 Taywood Rd.	Driveway erosion and moderate surface erosion	N/A	Improve driveway with new surface material and shaping; install diverter to vegetated area	Low	Low
7-27	Construction Site	Taywood Rd.	Silt fence collapsed and non-functioning; uncovered soil pile	N/A	Re-install silt fence and check regularly, or use ESC mulch berms; cover soil pile with tarp or hay	Low	Low
7-28	Residential	21 Shore Path Rd.	Some bare soil at north side of house due to roof runoff; inadequate shoreline vegetation	N/A	Control roof runoff with dry well, rain barrels, or small rain garden at downspout; enhance shoreline area with additional vegetation and mulch	Low	Low
7-29	Residential	across from 54 Waterview	Slight surface erosion; bare soil from construction; ditch erosion	100' x 100'	Vegetate ditch, perhaps centerline of stone; establish vegetation on slope	Medium	Low
7-30	Private Road	Taywood-Waterview Connector	Moderate ditch, shoulder, and surface erosion; poor maintenance	20'x150'	Replace collapsed culvert and re-install sediment pool at inlet, install long, shallow rock-lined plunge pool at outlet; grade and reshape road; clean, reshape, and stabilize ditch with ESC mat and seed. Develop annual maintenance plan. NOTE: this site was treated under a previous grant, but has not been adequately maintained.	High	Medium
7-31	Boat Access (tied to 7-29)	ROW below Taywood-Waterview Connector	Clogged culvert outlet; sediment delta; overland flow of water from 7.29; lack of shoreline vegetation	N/A	Maintain culvert outlet as proposed in 7.29; limit mowing of grassed area; consider installation of shallow grassed swale before shoreline, and vegetate shoreline area with shrubs and perennials; restrict access to waterfront with stable pathway.	Low	Medium
7-32	Residential	111 Taywood Rd.	Exposed roots; undercut shoreline with some erosion; lack of shoreline vegetation; moderate driveway erosion; compacted soil at shoreline	200'x200'	Add new, stable material to driveway; install stable parking area off driveway; add stone beneath deck, shoreline vegetation, and repair shoreline with riprap; add vegetation on contour to break up sloping lawn.	Low	Medium
7-33	Residential	105 Taywood Rd.	Slight surface erosion; lack of vegetation and erosion in shoreline area; some bare soil	N/A	Install mulch to create pad for storage of watercraft; install low shrubs on slope to lake, and at top of slope where possible	Low	Low

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Sector & Site	Land Use	Location	Description of Problem	Area Affected	Recommendations	Impact of Problems	Cost
7-34	Residential	75 Taywood Rd.	Inadequate shoreline vegetation	N/A	Continue to add native low-growing vegetation to complement existing junipers	Low	Low
7-35	Private Road	Taywood Rd.	Potholes & poor drainage; low to moderate surface erosion depending upon area; insufficient number of diversions and lack of stable outlets	Entire length	Reference comments by Balanced Engineering, 5-24-06. Install drainage structures and/or diversions as appropriate; strengthen road association and develop annual maintenance plan.	Medium	High
7-36	Residential	141 Willard Rd.	Slight surface erosion; shoreline undercut; inadequate shoreline vegetation	N/A	Repair undercut shoreline with hand-placed stone; add low-growing shrubs and perennials to shoreline area; consider vegetation on contour in upper areas of lot	Low	Medium
7-37	Residential	135 Willard Rd.	Slight surface erosion; roof runoff erosion	N/A	Add stone under deck, and develop infiltration trench to stabilize roof runoff	Low	Low
7-38	Residential	127 Willard	Moderate soil erosion and bare soil		Establish terraced steps down eroded area next to fenceline; Mulch or vegetate bare soil behind shed; Limit raking	Low	Low
7-39	Residential	119 Willard Rd.	Erosion from roof runoff	20' x 2'	Install infiltration trench along roof dripline	Low	Low
7-40	Residential	111 Wyman (Cyr Circle)	Moderate surface erosion and exposed roots; Erosion from roof runoff	100' x 100'	Add gravel or stone to parking area; Install infiltration trench along roof dripline; Vegetate and mulch bare soils	Medium	Medium
7-41	Residential	110 Wyman (Cyr Circle)	Inadequate shoreline vegetation; erosion from roof runoff		Install infiltration trench along roof dripline; enhance shoreline with additional vegetation	Low	Low
7-42	Residential	105 Wyman (Cyr Circle)	Inadequate shoreline vegetation; erosion from roof runoff		Install stone or vegetation at gutter downspout; enhance shoreline with additional vegetation	Low	Low
7-43	Private Road	54 Terrace Road	Moderate surface erosion from road washing sediment across property to lake	300' x 15'	Pave steep section of road; install detention basin at base of hill	Medium	High
7-44	Residential	104 Terrace Road	Severe erosion from road runoff across property and into lake	100' x 15'	Install plunge pool at culvert outlet; install check dams or terraces down slope to lake; plant vegetation or install erosion control berms across slope	High	High
7-45	Residential	18 Terrace Road	Bare soil at parking area and slight surface erosion		Add gravel or crushed stone to stabilize parking pad	Low	Low
7-46	Residential	50 Terrace Road	Severe surface erosion and bare soil	50' x 5'	Vegetate swale that drains road; plant additional vegetation along shoreline; establish swale and vegetation across property between hosue and lake	High	High
7-47	Residential	between 64 and 54 Terrace Road	Erosion, bare soil and exposed roots; inadequate shoreline vegetation	200' x 200'	Install swale and vegetation along edge of road; mulch and vegetation between road and lake	Medium	Medium

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7-48	Residential	64 Terrace Road	Bare soil; road washes out across property		Establish understory vegetation; mulch bare soil; install sediment basin to trap road sediment and slow flows	Low	Medium
7-49	Residential	132 Terrace Road	Slight surface erosion; bare soil and lack of vegetation		Install terraced steps to slow upland runoff; establish terraced plantings down slop	Low	Low
7-50	Residential	146 Terrace Road	Slight surface erosion; inadequate shoreline vegetation		Establish shoreline buffer	Low	Low
7-51	Private Road	126 Wyman Rd.	Severe surface erosion to lake		Build up road with gravel; reshape road; install open top culvert to divert runoff	High	High

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Where Do I Get More Information?

Contacts

Taylor Pond Association

Dana Little, President	danawl@adelphia.net, (207) 784-1908
Michael Dixon, treasurer	msdixon@adelphia.net (207) 783-7763
Susan Trask, secretary	susantrask@adelphia.net
Tim Priestly	Tpriestly@webtv.net
TL Mikesell	Tpriestly@webtv.net
Anne Goorhuis	goorhuis@adelphia.net
Mike Keaney	mike@mjkassociates.com
Jim Melloh	mellohj@cmhc.org
Marc Tardif	tardifml@teameastern.com

Carries out outreach and advocacy for Taylor Pond; provides educational materials to landowners; and directs individuals to appropriate agencies. Contact Michael Dixon or Anne Goorhuis about LakeSmart.

Androscoggin Valley Soil and Water Conservation District
P.O. Box 1938, Lewiston, ME 04241-1938
(207) 753-9400, ext. 400

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
28 Station House Station, Augusta, ME 04333
Toll Free in Maine (888) 452-1942 or (207) 287-7688

Provides permit applications and assistance, LakeSmart evaluations, numerous reference materials, environmental education, funding opportunities, and stewardship activities for lakes.

Publications

Camp Road Maintenance Manual: A Guide for Landowners. Kennebec County SWCD and Maine DEP. 2000. 54 pgs. www.state.me.us/dep/blwq/docwatersheds

Conservation Practices for Homeowners. Maine DEP and Portland Water District. 2006. 20 fact sheets. http://www.maine.gov/dep/blwq/docwatershed/materials.htm.

A Homeowner's Guide to Environmental Laws Affecting Shorefront Property in Maine's Organized Towns. Maine DEP. 2003. DEPLW0320-D2003. Booklet. 42 pgs. www.state.me.us/dep/blwq/docwatershed/materials

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

A Guide to Forming Road Associations. York County SWCD. 2004. 57 pgs. & CD ROM. http://www.maine.gov/dep/blwq/docwatershed/roadassociation.htm

Remember—the long term health of Taylor Pond depends on you.