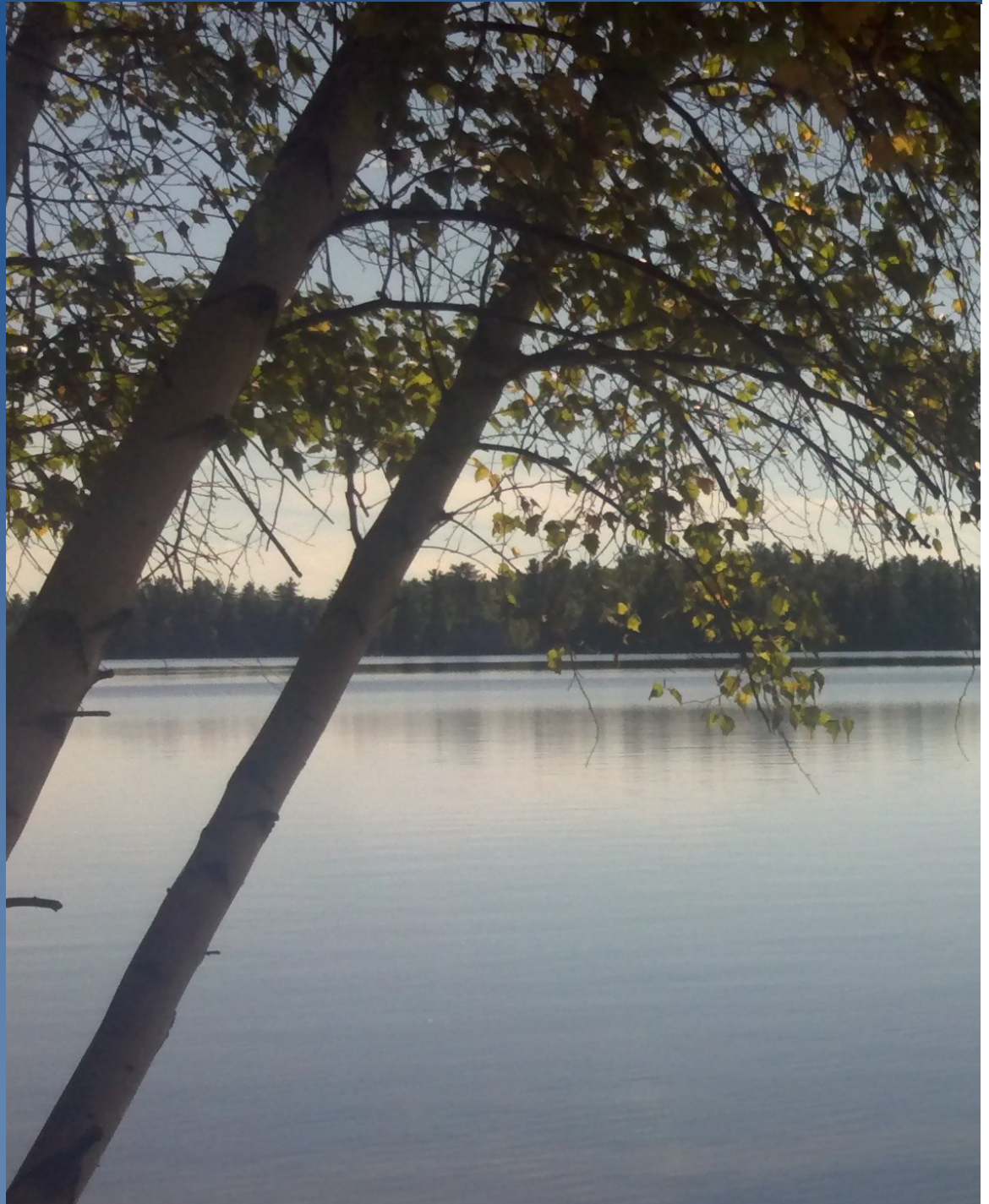


LITTLE SEBAGO LAKE WATERSHED

PROTECTION PLAN



Cumberland County Soil & Water Conservation District

Prepared by Heather True, CCSWCD
June 2013

1. Watershed Background Information

A. Document Purpose and Scope

The purpose of this watershed-based plan, hereafter referred to as the “Plan”, is to lay out a strategy and schedule for non-point source (NPS) mitigation and water quality protection efforts over the next five years (2013 to 2018). Cumberland County Soil and Water Conservation District (CCSWCD) has prepared this Plan on behalf of the Little Sebago Lake Association (LSLA) with support from the Maine Department of Environmental Protection (MDEP).

This Plan was developed to satisfy national watershed planning guidelines provided by the U.S. Environmental Protection Agency (EPA). MDEP accepts alternative plans for unimpaired lakes that have completed a recent watershed survey provided that the plans follow EPA and MDEP guidance and include minimum planning elements. EPA requires nine-element plans for impaired watersheds but allows alternative plans for unimpaired lakes threatened by NPS that have recent watershed survey data and reference a geographically-appropriate scale. The Little Sebago Lake watershed meets these requirements, since NPS survey data have been both frequently and recently updated. In addition, given the size of the Little Sebago Lake watershed, it is likely that water quality improvement will be achieved when documented NPS sites are remediated.

B. Watershed Information

The Little Sebago Lake watershed is located in the Towns of Gray, Windham, and Raymond in Cumberland County, Maine (See Figure 1. Map of Little Sebago Lake Watershed). The Lake has a surface area of 1,898 acres (3 square miles), numerous perennial tributaries and four distinct basins. The Lake’s immediate watershed covers 13.3 square miles and is part of the larger the Presumpscot River and Casco Bay Watersheds. The Lake’s near-shore area has been heavily developed with over 1,200 seasonal camps and year-round homes and an extensive network of private roads. For the most part, development in the upper watershed has been limited to scattered homes. However, the towns of Windham and Gray are both experiencing rapid growth at approximately 14% each over the past two decades and there continues to be new development throughout the watershed.

The Maine Department of Inland Fisheries and Wildlife manages the Lake for both cold and warm-water fisheries, and Little Sebago Lake is known for its excellent bass fishing. An annual fishing tournament is held on the Lake each summer. Little Sebago Lake is currently infested with a hybrid species of variable milfoil (*Myriophyllum heterophyllum x laxum*), and LSLA has been working diligently to control this infestation and prevent spread of this plant to other lakes and limit spreading within Little Sebago Lake. Control efforts include conducting a plant patrol program to identify new areas of infestation, writing grants to acquire funding to mark and remove milfoil, managing a milfoil removal program (hiring divers and staff and maintaining equipment including a designated milfoil removal pontoon boat), and hiring seasonal courtesy boat inspectors to monitor boats coming in and going out of the Lake’s heavily used public boat launch. In addition to variable milfoil management, LSLA is highly active in promoting lake water quality protection through its website, Facebook page, forum, newsletters, and annual meetings.

C. Summary of Prior NPS Watershed Work

LSLA, CCSWCD, and MDEP have been working to address soil erosion throughout watershed since 2002. In 2002 and 2003, the entire watershed was surveyed for sites that contribute NPS pollution to the Lake. These surveys were funded through section 319 of the Clean Water Act. To address the 312 NPS sites identified, the following projects have been implemented with partial funding from EPA’s Section 319 of the Clean Water Act funding administrated through MDEP with the exception of the *Little Sebago Lake Conservation Project: BMP Design and Implementation* which was partially funded through Maine Department of Agriculture’s Watershed Improvement Financial Assistance Partnership:

- *Little Sebago Lake Conservation Project: BMP Design and Implementation* - completed in November 2007
- *Little Sebago Lake Conservation Project, Phase I* - completed in January 2008
- *Little Sebago Lake Conservation Project, Phase II* – completed in March 2009
- *Little Sebago Lake Conservation Project, Phase III* – completed in September 2012

Little Sebago Lake Watershed

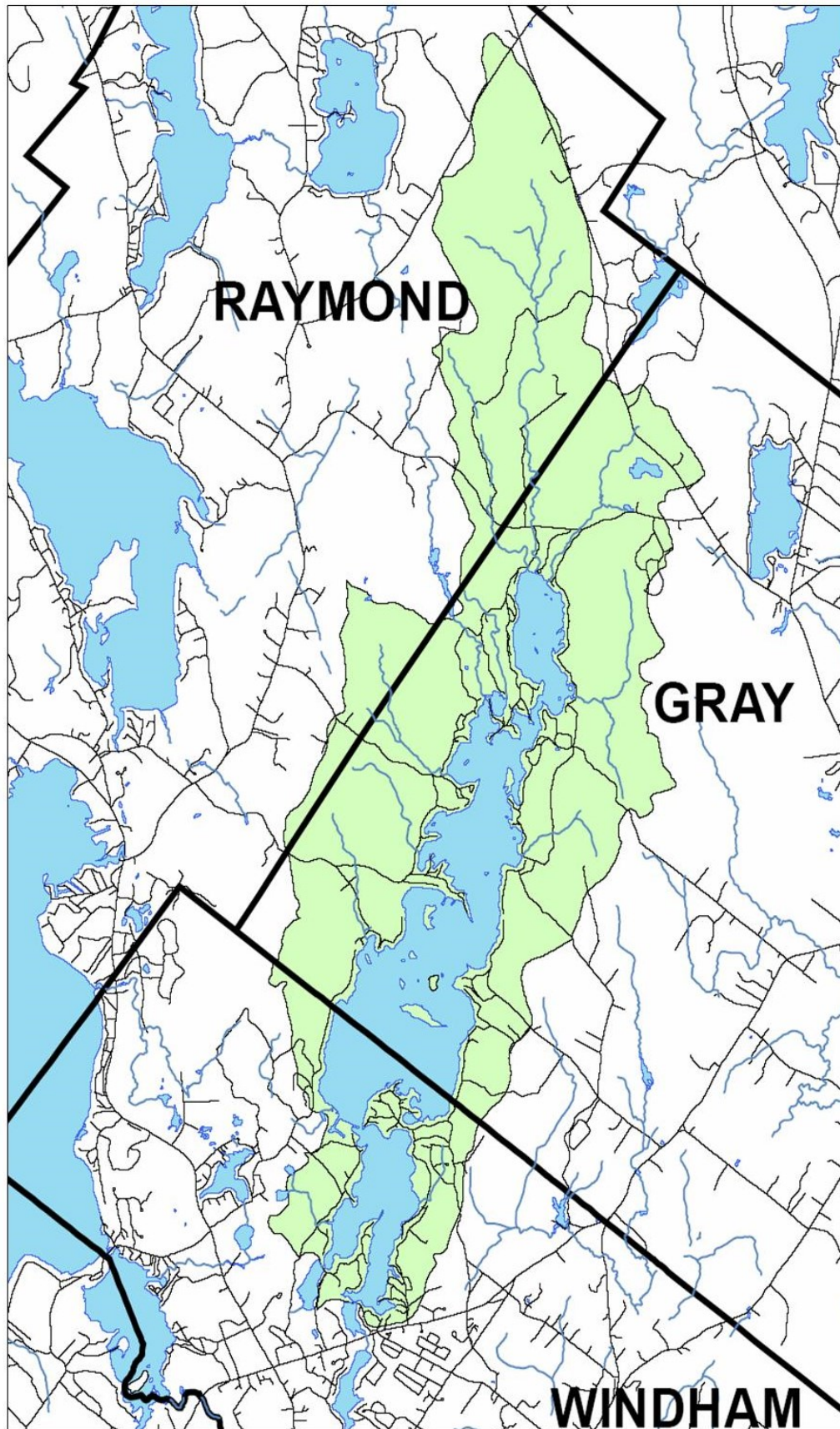


Figure 1: Little Sebago Lake Watershed



To date, these projects have addressed 146 water quality impact sites which have helped prevent over 100 tons of sediment from entering Little Sebago Lake each year. In addition, there has been an overwhelming response to the services of the Little Sebago Lake Youth Conservation Corps (YCC), which was established under the *Little Sebago Lake Conservation Project - Phase II*. This program employed local high school seniors to install conservation practices on residential and private road sites during the summer. The program offered free technical assistance by trained staff, and a crew leader and crew provided free labor to install recommended conservation practices to improve water quality.

Through the Little Sebago Lake Conservation Project, Phase III, a follow-up survey of the sites identified in the 2002 and 2003 surveys was conducted in 2012 (see Appendix A: 2012 Survey Summary and Site List). This survey found that out of the original 312 sites identified, most of the high and medium priority sites had been addressed. A total of 165 sites remain. Based on these findings, CCSWCD will work with LSLA to seek 319 implementation grant funds in 2013 to address about 25 of the remaining highest priority sites.

2. Identification of the Causes or Sources of NPS Threats

A. Water Quality Summary

Water quality monitoring has occurred on Little Sebago Lake at three sample stations on the Lake (north, middle, and deep hole) since 1975 and since 1977 at a fourth station in the southern part of the Lake. Water quality at the northern station, Sample Station #1, is considered average based on Secchi Disk Transparencies (SDT), total phosphorus (TP), and Chlorophyll-a (Chla). The potential for nuisance algal blooms on the Lake is low to moderate. Recent dissolved oxygen (DO) profiles show moderate DO depletions in deep areas at Sample Station #1. The potential for phosphorus to leave the bottom sediments and become available to algae in the water column is moderate.

Water quality in the middle section of the lake, Sample Station #2, is considered to be slightly above average based on measures of SDT, TP, and Chla, and the potential for nuisance algal blooms on the Lake is low. Recent DO profiles show a slight DO depletion in deep areas of the Lake. The potential for TP to leave the bottom sediments and become available to algae in the water column is low.

In the deep hole of the Lake, Sample Station #3, water quality is also considered to be above average based on measures of SDT, TP, and Chla with a low potential for nuisance algal blooms. DO profiles show low to moderate DO depletion in deep areas of the Lake, and the potential of TP leaving the bottom sediments and becoming available to algae in the water column is low.

The fourth station, Sample Station #4 located at southern portion of the Lake, shows water quality at slightly above average based on measures of SDT, TP, and Chla. The potential for nuisance algal blooms is low to moderate. Recent DO profiles show low to moderate DO depletion in deep areas and the potential for phosphorous to leave the bottom sediments is low.

In August of 2012, a mild winter and hot summer caused the Lake to reach a record high temperature of 82 degrees Fahrenheit. Warm water holds less dissolved oxygen than cold water, thereby decreasing the DO readings and threatening the survival of more advanced aquatic organisms.

B. Threatened Status

The Little Sebago Lake watershed is currently on MDEP's list of *Nonpoint Source Priority Watersheds*. This list was formed to establish priorities in directing federal and state resources to the management of water bodies based on the following:

- i. "An assessment of their value;
- ii. The degree of threat or impairment to water quality and aquatic habitat due to nonpoint source pollution;
- iii. The likelihood of meeting watershed management objectives; and,
- iv. The degree of public support in the watershed for watershed management."

The Little Sebago Lake Watershed was specifically added to this list based on marginal water quality, sensitivity to change, and proximity to large populations.

In addition to being listed as a *Nonpoint Source Priority Watershed*, Little Sebago Lake is also on the State of Maine Chapter 502 Stormwater Law's list of *Lakes Most at Risk from New Development*. Criteria for being on this list include at least one of the following conditions:

- i. " A public water supply; or,
- ii. Identified by the Department as being in violation of class GPA water quality standards or as particularly sensitive to eutrophication based on
 - a. Current water quality;
 - b. Potential for internal recycling of phosphorus;
 - c. Potential as a cold water fishery;
 - d. Volume and flushing rate; or,
 - e. Projected growth rate in the watershed.

Little Sebago Lake Watershed was specifically listed due to rapid increases in watershed development and existing water quality data indicate that it is sensitive to pollution.

C. Watershed NPS Threats

The biggest water quality threat to Little Sebago Lake is that of NPS pollution (i.e., polluted runoff), particularly that of soil erosion. Soil particles themselves can cause pollution by decreasing water clarity, covering fish beds, and clogging fish gills. However, it is the ability of soil particles to easily bind to other pollutants, particularly that of phosphorus, that can significantly affect lake water quality. Phosphorus is a nutrient that in excess can cause algal blooms. When algae die off, the water becomes depleted of oxygen through the breakdown process and more advanced aquatic organisms such as fish are unable to survive. Algae itself can turn a lake green making it undesirable and potentially unusable for fishing, boating, swimming and wildlife.

In 2002 and 2003, the entire watershed was surveyed for sources of NPS pollution / polluted runoff into Little Sebago Lake (Table 1). A total of 312 NPS sites were identified. The greatest number of sites were identified on residential properties (160) which accounted for about 51% of sites documented. The next most documented land uses were private road sites, which accounted for 19% of all sites identified (60) and driveway, which accounted for 13% of all sites identified (39). The remaining 17% of sites identified were associated with town roads (13), construction sites (11), beach access sites (9), right-of-ways (8), boat access (7), trails/paths (3), agriculture (1) and logging (1).

Land Use	High	Medium	Low	Total	Percentage
Agriculture	0	1	0	1	0%
Beach Access	2	2	5	9	3%
Boat Access	2	2	3	7	2%
Construction	4	3	4	11	4%
Driveway	4	16	19	39	13%
Logging Road	1	0	0	1	0%
Private Road	12	17	31	60	19%
Residential	7	51	102	160	51%
Right-of-Way	3	4	1	8	3%
Town Road	2	3	8	13	4%
Trail/Path	0	2	1	3	1%
	37	101	174	312	100%

Table 1. Summary of survey sites by land use and their impact on water quality.



NPS sites identified in these surveys were ranked as having a low, medium, or high impact to water quality based on size of disturbed area, slope, soil type, amount of soil eroding, proximity to water, and size of buffer. Low impact sites are those with limited transport of NPS/soil off-site. Medium impact sites have sediment transported off-site yet not reaching a high magnitude, and high impact sites consist of significant erosion that flows directly into a stream, lake or ditch. Out of the 312 sites identified, 174 were ranked as having a low impact to water quality, 101 as medium impact and 37 as high impact. The majority of high impact sites were related to private roads.

Through the *Little Sebago Lake Conservation Project – Phase III*, all of the sites identified in the 2002 and 2003 survey were re-surveyed in 2012 (See Appendix A: 2012 Survey Summary and Site List). All of the original data and updated survey results were entered into an MDEP NPS Site Tracker database. This database includes information on sites that have been addressed over the past ten years (what was done, approximate cost, method in which addressed, such as a YCC project or a 319 grant implementation project), and current site condition.

The 2012 survey showed that a large number of the sites documented in the original surveys have been addressed through grant projects and/or landowner initiative, yet there are still 165 sites remaining. Most of these sites were identified in the original surveys, but several new sites were also documented. Out of these problem sites, 20 were ranked as having a high impact to water quality, 61 as medium, and 84 as low (Figure 2).

Residential properties (57%), private roads (19%), and driveways (16%) accounted for most of the sites in the 2012 survey (Figure 3). This breakdown of sites by land use was surprisingly similar compared to the original surveys, especially in regards to sites associated with private roads, driveways, and residential areas. The greatest change from the 2002 and 2003 surveys are the sites associated with town roads. Twelve town road sites were identified in the original surveys and only one town road site was identified in 2012.

2012 Little Sebago Lake Watershed Site Impact

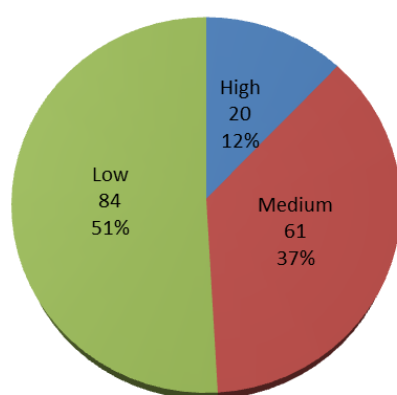


Figure 2. Impact of sites identified in 2012

2012 Little Sebago Lake Watershed Sites Land Use of Problem Sites

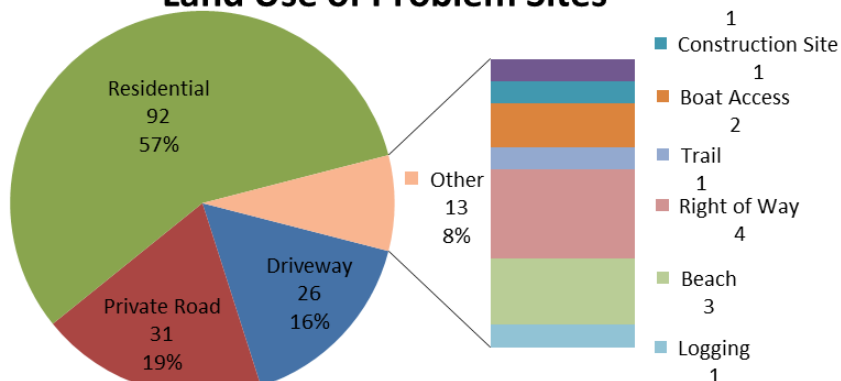


Figure 3. 2012 impact sites per residential land uses

3. Watershed Plan Goals and Objectives

Overall Goal: The overall goal of the Plan is to maintain Class A water quality standards in Little Sebago Lake by reducing phosphorus and sediment loading to the lake by approximately 60 tons of sediment per year. This will be achieved through the following actions over the next five years (2013-2018):

- **Reduce current sources of phosphorus loading** by addressing 25 of the highest water quality impact sites identified in 2012 watershed survey. This will be achieved by providing targeted outreach, technical assistance and cost-sharing assistance to install conservation practices at NPS sites.
- **Prevent new sources of phosphorus loading** by facilitating improved land use practices and ongoing maintenance activities. This objective will be met by conducting outreach and providing technical assistance to residents, road associations, and municipal officials.
- **Build local capacity** for watershed stewardship by establishing an NPS sub-committee, conducting outreach to local community to recruit new members and membership donations and supporting lake protection education programs.

- **Conduct ongoing assessment of lake and watershed conditions** by monitoring lake water quality and maintaining the NPS Site Tracker.

4. Schedule and Milestones to Guide Plan Implementation

Actions to meet this Plan's Goal and Objectives are listed in Appendix D (attached). This table includes a description of milestones, schedule, approximate cost estimates, potential funding sources and an organization responsible for the application of each specific action item. This Plan is designed to be implemented over the next five years. The Plan will be carried out with a combination of local, state and federal resources. An overview of the implementation schedule is given in Table 3 below.

2013	<ul style="list-style-type: none"> • Apply for EPA Section 319 Clean Water Act implementation grant through MDEP • Provide mini grant funds to address targeted erosion sites within the watershed • Contact landowners and provide educational material about NPS pollution prevention and remediation • Distribute LSLA newsletter • Recruit LSLA membership • Establish NPS sub-committee to form steering committee for NPS remediation efforts • Hold LSLA Annual Meeting • Update NPS Site Tracker with sites addressed in 2013 • Conduct water quality monitoring
2014	<ul style="list-style-type: none"> • Address six NPS abatement sites • Conduct a Youth Conservation Corps (YCC) program or similar program that educates and offers on-the-ground assistance in fixing residential NPS sites • Distribute LSLA newsletter • Recruit LSLA membership • Hold LSLA Annual Meeting and conduct lake protection presentation • Submit articles to local papers promoting lake protection • Continue to update NPS Site Tracker as new sites are addressed • Conduct yearly water quality monitoring
2015	<ul style="list-style-type: none"> • Address six NPS abatement sites • Conduct a Youth Conservation Corps (YCC) program or similar program that educates and offers on-the-ground assistance in fixing residential NPS sites • Distribute LSLA newsletter • Recruit LSLA membership • Hold LSLA Annual Meeting and conduct lake protection presentation • Submit articles to local papers promoting lake protection • Continue to update NPS Site Tracker as new sites are addressed • Conduct yearly water quality monitoring
2016	<ul style="list-style-type: none"> • Create summary of sites addressed through potential implementation grant funds • Provide mini grant funds to address targeted erosion sites within the watershed • Contact landowners and provide educational material about NPS pollution prevention and remediation • Distribute LSLA newsletter • Recruit LSLA membership • Hold LSLA Annual Meeting • Continue to update NPS Site Tracker as new sites are addressed • Conduct yearly water quality monitoring

(Continued)



2017	<ul style="list-style-type: none"> • Provide mini grant funds to address targeted erosion sites within the watershed • Contact landowners and provide educational material about NPS pollution prevention and remediation • Distribute LSLA newsletter • Recruit LSLA membership • Establish NPS sub-committee to form steering committee for NPS remediation efforts • Hold LSLA Annual Meeting • Update NPS Site Tracker as new sites are addressed
2018	<ul style="list-style-type: none"> • Provide mini grant funds to address targeted erosion sites within the watershed • Contact landowners and provide educational material about NPS pollution prevention and remediation • Distribute LSLA newsletter • Recruit LSLA membership • Establish NPS sub-committee to form steering committee for NPS remediation efforts • Hold LSLA Annual Meeting • Update NPS Site Tracker as new sites are addressed

Table 2. Implementation schedule

5. Proposed Management Measures

Efforts to address NPS pollution at the highest priority sites from the 2002 and 2003 surveys have been implemented through the four implementation and conservation projects listed in Section 1. Specific management measures to address remaining sites identified in the 2012 survey are listed in Little Sebago Lake's NPS Site Tracker database (Refer to Appendix A: 2012 Survey Summary and Site List). Typical problems and management measures for the most common land uses identified in the survey are described in the sections below. Recommendations follow guidelines commonly used by Soil and Water Conservation Districts and found in MDEP publications including the *Gravel Road Maintenance Manual*, *Conservation Practices for Homeowners Factsheet Series*, and the *State of Maine Erosion and Sediment Control Manual*. The recommended Best Management Practices (BMPs) or conservation practices accomplish this Plan's goal of reducing phosphorus and sediment loading to the Lake by stabilizing bare soil and erosion and diverting, infiltrating, or filtering polluted runoff before it reaches the lake and its tributaries.

In addition to structural BMP recommendations, public education and outreach efforts will also be needed to promote responsible stewardship and ongoing maintenance activities. Many of these efforts will be led by the LSLA.

A. Residential Sites

More than half of the NPS sites documented in the 2012 survey were on residential properties. A total 92 residential sites (57% of the total sites identified) were identified in the 2012 survey. Of these, 8 were rated as having a high impact to water quality, 28 as medium impact, and 56 as low impact.

Common problems identified included:

- Moderate surface erosion
- Bare soil
- Inadequate vegetation along the shoreline
- Direct flow of sediment into Little Sebago Lake
- Roof runoff erosion
- Shoreline erosion

Recommended solutions include:

- Seed and mulch bare soil
- Establish or enhance shoreline buffer with native plants
- Limit foot traffic in eroding areas, place erosion control mulch or stone on heavily used paths
- Install runoff diverters such as rubber razor blade water bars or “speed bump” water diverters
- Use dripline trench to catch roof runoff
- Stabilize shoreline with woody shrubs and hand-placed riprap if appropriate (permitting required)

Maintenance for recommended solutions includes:

- Reseeding/over-seeding and replenishing erosion control mulch every two years and when area has been scraped or damaged (often common from snow plowing and high traffic use)
- Water plants frequently during first year of installation, water during summer months and times of drought; Replace dead and dying buffer plants
- Replace decomposed erosion control mulch in walking paths (about every two years), clean out stone every two to five years to ensure proper infiltration
- Clean out accumulated debris from behind waterbars, re-establish diverters if damaged or no longer functioning as intended
- Clean out stone of dripline trenches every five years to ensure proper infiltration
- Repair shoreline stabilization efforts following proper permitting requirements

This Plan aims to address residential sites in the following manner based on the availability of federal, state, and local funding and resources. All maintenance recommendations will be the sole responsibility of the landowner to perform:

Free technical assistance will be provided by qualified staff to residential landowners through an anticipated 319 implementation grant project. Funded implementation projects and LSLA will focus programs specifically towards educating and remediating residential sites through education and assistance opportunities. Outreach to promote improvements will be provided by LSLA through their website, newsletters, and annual meetings.

B. Private Road Sites

Private road sites were the second most common land use associated with NPS pollution. A total of 31 sites on private roads were identified, which comprises 19% of the total sites identified. Of these, 3 were rated as having a high impact to water quality, 15 as medium impact, and 13 as low impact.

Common problems identified included:

- Road shoulder and surface erosion
- Severe ditch erosion
- Direct flow of sediment to streams or Little Sebago Lake
- Unstable culvert inlet and outlet
- Winter sand build-up
- Poor shaping and inappropriate surface material
- Plow or grader berm

Recommended solutions include:

- Grade and reshape gravel roads to create a “crown” and install appropriate surface material
- Stabilize road shoulders with riprap or grass seed
- Clean, reshape and armor ditches with stone or plant grass
- Armor culvert inlets and outlets
- Remove winter sand and built up grader berms
- Install plunge pools below culverts to hold runoff and catch sediment before it enters streams or Little Sebago Lake
- Properly size and align culverts



Maintenance for recommended solutions includes:

- Re-grade gravel roads twice a year when damp to properly re-establish road crown
- Re-establish and repair ditches and road shoulders were needed each spring from snow plow damage; Check ditches after heaving storm events to ensure they are functioning as intended
- Replace fallen riprap at culvert inlets and outlets
- Remove accumulated sediment from plunge pools and properly dispose of away from water resources
- Ensure culvert inlets and outlets are free accumulated debris and sediment, check to make sure damage has not occurred to culvert itself

This Plan aims to address private road sites in the following manner based on the availability of federal, state, and local funding and resources. All maintenance recommendations will be the sole responsibility of the road associations and landowners to perform:

Up to 50% cost sharing and free technical recommendations and engineered designs will be provided to the highest priority private road sites through an anticipated final 319 implementation grant project. Private road associations will receive notification of priority sites on their roads via survey reports, LSLA outreach, and information listed in the NPS site tracker.

C. Driveway Sites

NPS sites associated with driveways totaled 16% (26 sites) of the water quality impact sites identified. Of these sites, 5 were rated as high impact, 8 as medium, and 13 as low.

Common problems identified include:

- Poor shaping
- Surface erosion
- Sediment flowing directly to stream or lake
- Lack of vegetated buffer between driveway and lake

Recommended solutions include:

- Grade and reshape gravel driveways to create a “crown” and install appropriate surface material
- Install gravel or asphalt water bars or rubber razor blade water diverters to divert flow off road
- Install native plant buffers between driveways and the lake to infiltrate and filter stormwater runoff

Maintenance for recommended solutions includes:

- Re-grade gravel driveways yearly when damp to properly re-establish crown
- Remove accumulated sediment and debris from behind water diverters, re-establish diverters if damaged or no longer functioning as intended
- Water plants frequently during first year of installation, water during summer months and times of drought; Replace dead and dying buffer plants

This Plan aims to address driveway sites in the following manner based on the availability of federal, state, and local funding and resources. All maintenance recommendations will be the sole responsibility of the landowner to perform:

Up to 50% cost sharing and free technical recommendations and engineered designs will be provided for the highest impact driveway sites through an anticipated final 319 implementation grant project. Less extensive driveway fixes will be able to be addressed through residential cost sharing programs and landowner outreach through LSLA.

D. Other Sites

The remaining 8% of water quality impact sites documented consisted of four right-of-way sites, three beach access sites, two boat access sites, and one site documented at each of the following: town road site, logging site,

construction site, and trail. Four of these sites were listed as high impact, seven as medium and two as low. Common problems identified with the right-of-way sites, beach access sites and boat access sites include:

Bare soil and surface erosion

- Direct flow of sediment to Little Sebago Lake
- Shoreline erosion
- Minimal vegetated buffer along shoreline

Recommended solutions include:

- Establish or enhance buffer
- Seed and mulch bare soil
- Minimize bare areas
- Create defined pathway
- Stabilize shoreline with vegetation and riprap if appropriate (permitting required)

Maintenance for recommended solutions includes:

- Water plants frequently during first year of installation, water during summer months and times of drought; Replace dead and dying buffer plants
- Reseeding/over-seeding and replenishing erosion control mulch every two years and when area has been scraped or damaged (often common from snow plowing and high traffic use)
- Re-establishing winding paths if damaged, replace mulch used to define path every two years
- Repair shoreline stabilization if damaged

Recommendations for the four remaining individual sites are listed in the NPS Site Tracker and Appendix A.

6. Plan Oversight and Partner Roles

LSLA will take the lead to implement this Plan according to schedule and taking the initiative to update the action items over time. Key partners assisting in the Plan's implementation are listed below with their general roles responsibilities. Specific action items that these partners will implement are listed in Appendix D.

Little Sebago Lake Association (LSLA) will serve as the designated entity to implement this Plan and ensuring it is updated as appropriate. LSLA will both provide funding and help to seek additional funding from to conduct landowner outreach, encourage LSLA membership and activity volunteering, and establish an NPS subcommittee to oversee remediation of NPS sites and keep the NPS Site Tracker up-to-date.

Cumberland County Soil and Water Conservation District (CCSWCD) will assist with the Plan's implementation by applying for state and federal funding and serving as the lead Project Coordinator for the 2014-2016 implementation project. Tasks through this project include managing and reporting of activities, providing technical recommendations and engineering for high priority sites, and educating the community on the importance of water quality protection and conservation practices that can be implemented.

Maine Department of Environmental Protection (MDEP) will collaborate with Maine's Volunteer Lake Monitoring Program to conduct water quality monitoring and technical assistance and provide the opportunity for financial assistance through the NPS Grants Program.

US Environmental Protection Agency (EPA) may provide Clean Water Act Section 319 funds and guidance. The **Towns of Windham and Gray** will provide funding support for the Plan and their respective town-owned and maintained water quality impact sites. Based on guidance from LSLA and CCSWCD, they will work to address NPS problems and conduct regular maintenance on town road sites.

Private road associations, Maine Department of Transportation, and landowners will address NPS issues on their properties and conduct ongoing maintenance of BMPs.



7. Water Quality Monitoring

Throughout the 5-year duration of this Plan, water quality testing will be performed by Volunteer Lake Monitors under the guidance and collaboration of Maine's Volunteer Lake Monitoring Program (MVLMP) and MDEP. Readings on water clarity and dissolved oxygen will be taken by LSLA volunteers at two-week intervals through the spring, summer, and fall months.

8. Pollutant Load Reductions

Pollutant load reductions will be estimated for all high priority sites addressed through EPA and MDEP 319 watershed implementation projects. These estimates will estimate sediment and phosphorus load reductions expected upon the installation of prescribed BMPs. Pollutant load reduction estimates will be made using methods approved and recommended by MDEP and EPA.

9. Watershed Survey Reports

Watershed survey reports for Little Sebago Lake can be found in the following appendices attached:

- Appendix A – 2012 Survey Summary and Site List
- Appendix B – 2002 Survey
- Appendix C – 2003 Survey

2012 Little Sebago Lake Watershed Survey Update

Background

The entire Little Sebago Lake Watershed was surveyed in 2002 and 2003. A total of 258 erosion sites were originally identified through these surveys. In the years since the survey, four different 319 grant projects have been completed in the watershed. These grant projects installed hundreds of conservation practices through larger NPS Site Projects and smaller Youth Conservation Corps projects.

Project staff and volunteers visited the original survey sites and most of the sites fixed through the 319 grant sites during the summer of 2012. The primary focus of the survey was to look for problem sites; although previously fixed sites were also visited where possible to assess maintenance needs and BMP performance. 34 problem sites were not able to be visited, either because they could not be located or the landowners asked to be excluded from the survey.

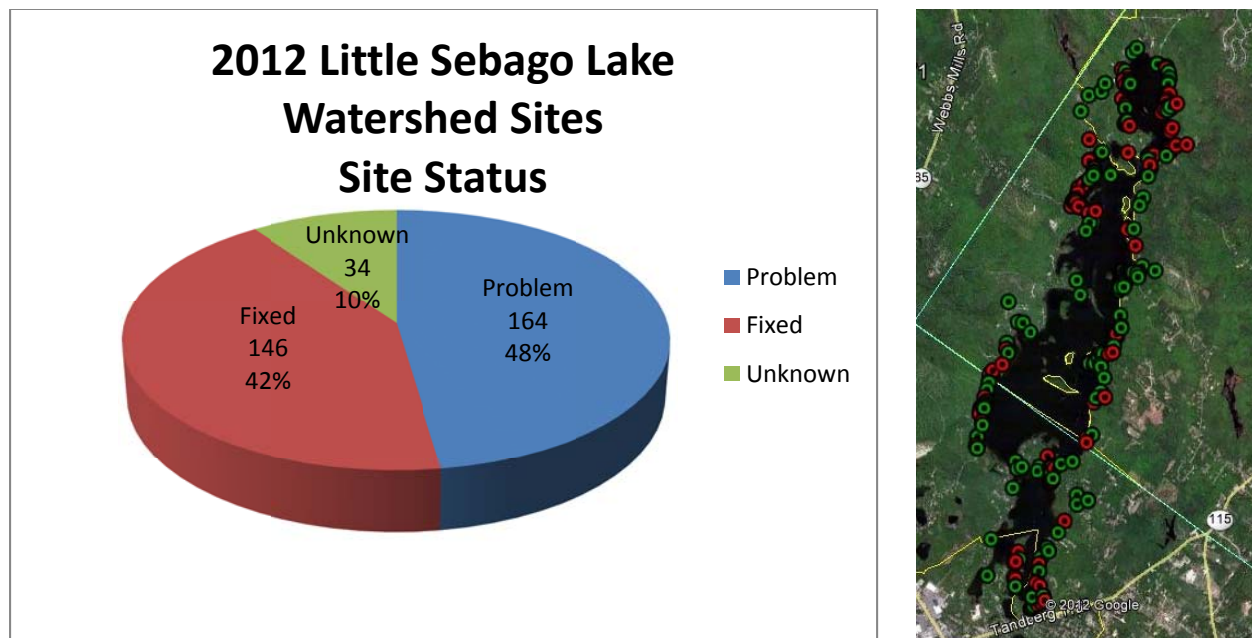
Information from the original survey and the 2012 update was then entered into the DEP's NPS Site Tracker tool. (See below for excerpt of the Site Tracker spreadsheet.) The Little Sebago Lake Association also set up a Picasa web account to house site photos from the 2012 survey. The Site Tracker was then used to create maps showing locations of fixed and problem sites.

Phase-Sector-Site	Location	Land Use	Site Status	Original Problem Description	Original Recommendations	Original Impact	Date Fixed	2012 Follow-Up Survey Date	2012 Follow-Up Status	2012 Follow-Up Current Impact	2012 Follow-Up Additional Information
YCC-2011	343 Mount Hunger Shore Road	Driveway	Fixed	NA	NA	NA	2011	7/25/2012	Fixed	NA	
YCC-2011	185 Mount Hunger Shore Road	Residential	Fixed	NA	NA	NA	2011	7/26/2012	Fixed	NA	
YCC-2011	166 Mount Hunger Shore Road	Residential	Fixed	NA	NA	NA	2011	7/24/2012	Fixed	NA	driveway paved-
YCC-2011	161 Lyons Point Road	Residential	Fixed	NA	NA	NA	2011		Fixed	NA	
YCC-2011	115 Mount Hunger Shores	Residential	Fixed	NA	NA	NA	2011	7/25/2012	Fixed	NA	
YCC-2011	19 Brass Lane	Residential	Fixed	Runoff from steep gravel	NA	NA	2008 &	8/13/2012	Fixed	NA	
A1-1	24 Qualey Rd. - Policeman's Cove	Residential	Problem	Direct flow of sediment to	Establish buffer. Seed and	Low		6/15/2012	Problem	Low	some bare soil in gr
A1-11	Across from pole #83 Qualey Road	Residential	Problem	Moderate surface erosion	Close off 2nd driveway. I	Low		6/15/2012	Problem	Low	
A1-18	Ramsdell Rd. across from Camp S	Residential	Problem	Direct flow of sediment to	Establish buffer.	Low		6/15/2012	Problem	NA	#381 across street
A1-19	(11) Grape Island Trail	Residential	Problem	Bare soil. Lack of shoreline	Install landscape timbers a	Low		6/15/2012	Problem	Low	lots of sand (unsur
A1-20	(15) Grape Island Trail	Residential	Problem	Direct flow of sediment to	Install stone-filled dripline t	Low		6/15/2012	Problem	Low	bare soil, could use
A1-4	7 Qualey Rd	Driveway	Problem	Direct flow of sediment to	Install rubber blade.	Low		6/15/2012	Problem	Low	could use ECM and/
A1-7	Mountain View & Qualey Rd. inters	Private Road	Fixed	Unstable culvert inlet/outlet	Clean out culvert. Stabiliz	Medium	2007	6/15/2012	Problem	Medium	need to clean out di
A1-7b	(29) Qualey Rd.	Driveway	Problem	Severe surface erosion.	Pave.	Low		6/15/2012	Problem	Low	could use driveway
A1-9b	50 Qualey Rd. near sharp bend	Driveway	Problem	Moderate surface erosion	Extend timbers to trap sed	Low		6/15/2012	Problem	Low	silt fence needs to
A1-9c	Qualey Rd. Between L4-23, L4-24	Beach Access	Problem	Direct flow of sediment to	Install waterbar. Establ	Medium		6/15/2012	Problem	Medium	gully adjacent to ste
A1-9d	62 Qualey Rd.	Residential	Problem	Direct flow of sediment to	Shore up retaining wall. Ir	Low		6/15/2012	Problem	Low	more grass area no
A2-04	"chase Project" Mt. Hunger shore	Private Road	problem	erosion in ditch and plunge	clean out sediment stabiliz	high		7/23/2012	Problem	High	New Site
A2-15	(80) Lake Grove Springs	Residential	Problem	Direct flow of sediment to	Install waterbar. Mulch.	Medium		6/15/2012	Problem	Medium	same recommendat
A2-16	Lake Grove Springs - Narrows	Residential	Problem	Direct flow of sediment to	Some of plants given awa	Medium		6/15/2012	Problem	Medium	same recs, some o
A2-17	Lake Grove Springs - Narrows	Residential	Problem	Direct flow of sediment to	Establish buffer. Seed	Medium		6/15/2012	Problem	Low	not addressd yet ve
A2-18	Lake Grove Springs - Narrows	Residential	Problem	Bare soil. Shoreline erosio	Establish buffer. Seed	Medium		6/15/2012	Problem	Low	
A2-19	Lake Grove Springs - Narrows	Residential	Problem	Direct flow of sediment to	Establish buffer. Seed	Medium		6/15/2012	Problem	Medium	bare soil, tire ruts in
A2-21	Lake Grove Springs - Narrows	Residential	Problem	Direct flow of sediment to	Install stone-filled dripline t	Medium		6/15/2012	Problem	Low	vegetation has grov
A2-22	Lake Grove Springs - Narrows	Residential	Problem	Direct flow of sediment to	Establish buffer. Seed an	Low		6/15/2012	Problem	Low	
A2-23	Lake Grove Springs	Residential	Problem	Beach enhancement with	Remove of supplemented	Medium		6/15/2012	Problem	Low	slope has been stal
A3-10	Logging Road off Birchwood	Logging	Problem	Direct flow of sediment to	Install culvert or stone for	High		9/10/2012	Problem	High	New driveway erod
A3-11	168 Birchwood Rd. - Birchwood S	Private Road	Problem	Unstable culvert inlet/outlet	Install earthen berm and vi	Low		9/10/2012	Problem	Medium	Under construction.
A3-11a	168 Birchwood Rd.	Residential	Problem	Shoreline erosion. Lack o	Establish buffer. Mulch. N	Low		9/10/2012	Problem	Low	Lot is stable. Not m
A3-12	(162 or 164) Birchwood Rd.	Residential	Problem	Shoreline erosion. Lack o	Install stone-filled dripline t	Low		9/10/2012	Problem	Low	Good tier system.
A3-13	162 Birchwood Rd.	Residential	Problem	Lack of shoreline buffer.	Terrace more. Install ston	Medium		9/10/2012	Problem	Medium	Terracing installed z

2012 Survey Findings

Numbers of Problem and Fixed Sites

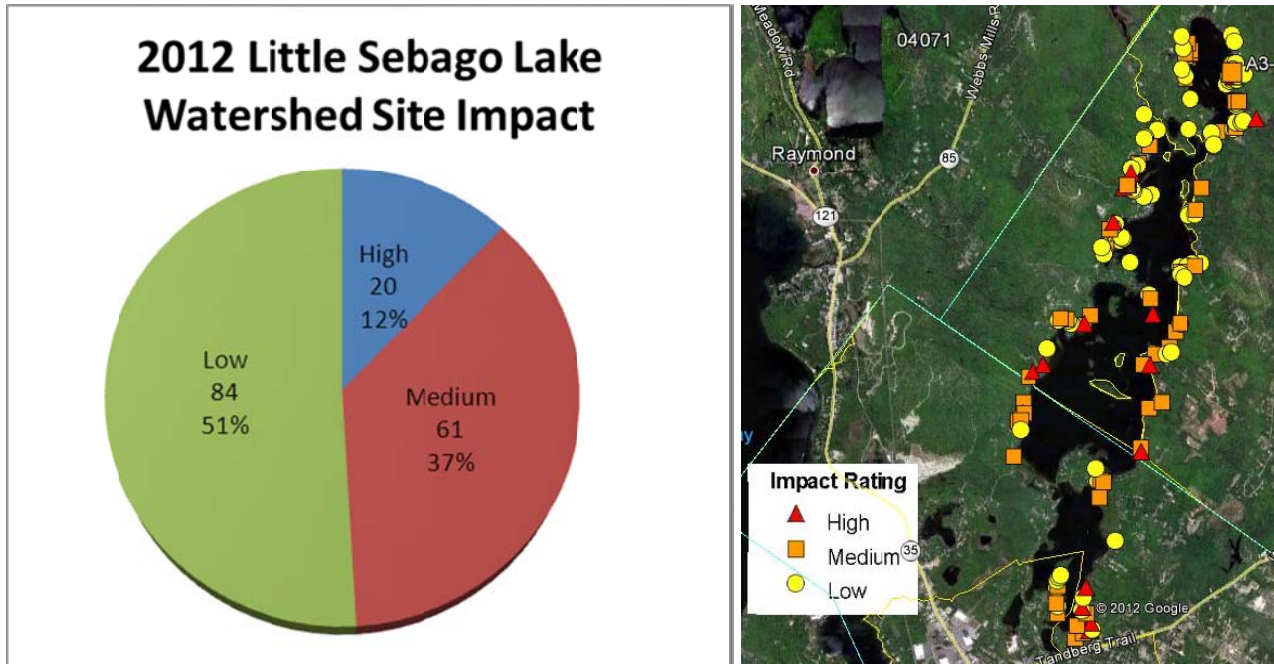
As expected, a large number of the sites documented in the original survey have been addressed through grant projects and/or landowner initiative. A total of 146 sites were documented as ‘fixed’ (shown in green on the map). However, there were still 164 problem sites identified in the watershed (shown in red on the map). Most of these problems were identified from the original surveys, but several new sites were also documented.



¹Unknown – Sites that were not visited in 2012 b/c they were excluded, couldn't be located etc.

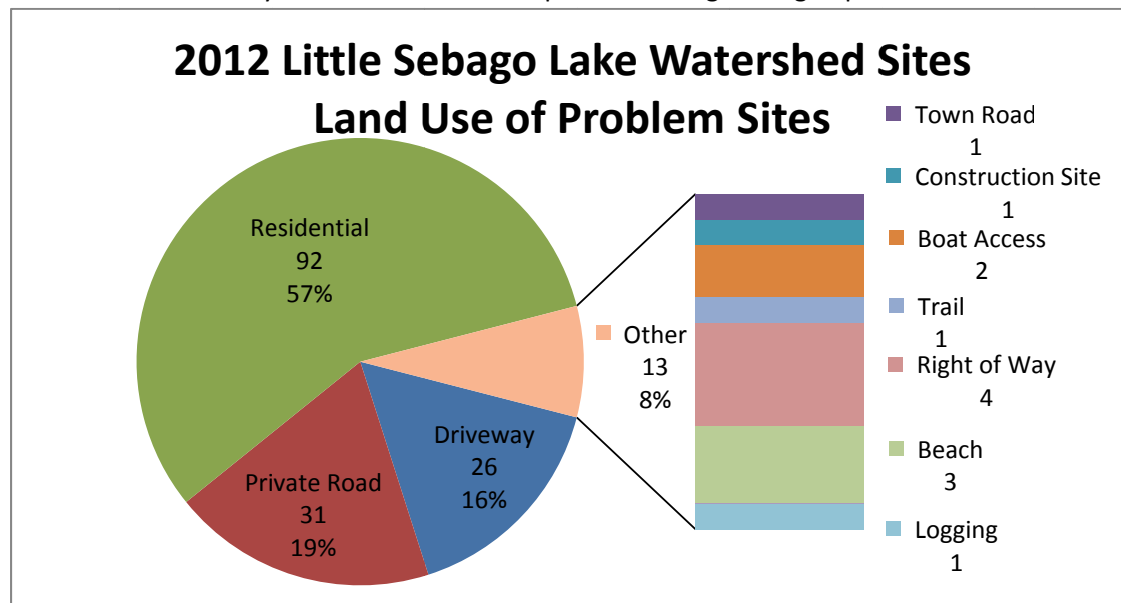
Impact of Problem Sites

Most of the high and medium impact sites were fixed through the grants, but there are still numerous sites that require attention. Specifically, there are 20 high impact sites and 41 medium impact sites documented during the survey. Several of these sites were identified in the original surveys, but they are now much larger problems.



Land Use

Residential properties (57%), private roads (19%) and driveways (16%) accounted for most of the problem sites in the 2012 survey. This breakdown of sites by land use was surprisingly similar compared to the original survey. The percentage of private road sites was exactly the same in both surveys (19%). The percentages of driveway and residential sites were also very similar (less than 3% difference). The Town Road land use is the one category where significant progress was made between 2002 and 2012. In the original surveys, there were 13 town road sites (4% of sites), and there was only one town road site in the 2012 survey.



Next Steps

Project staff presented preliminary findings to the LSLA Board of Directors at their September 2012 meeting and discussed possible ways for LSLA to continue with stewardship efforts. The LSLA Board plans to further discuss the following options at their next Board meeting so they can make a decision and move ahead. Options include:

- **LSLA Stewardship Committee** – The LSLA previously expressed interest in forming a standing committee to focus on ongoing watershed stewardship. One or more people on this committee would keep the NPS Site Tracker updated, and the larger committee would pursue avenues to fix erosion problems.
- **319 Grant** – Numerous high and medium impact sites (61 combined) were identified in the 2012 survey update, and several landowners expressed interest in getting the sites fixed. Unfortunately, there was not enough time or funding left to address them during the Phase III project. These sites are excellent candidates for 319 projects since they are typically more expensive and technically challenging to fix.
- **Targeted Outreach to Problem Sites** – After the initial watershed surveys, LSLA took the initiative to mail individualized letters to all landowners and road associations with identified erosion sites. LSLA could undertake this again to encourage people to fix problems. The existing NPS Site Tracker database would make this a relatively easy, low cost way to get out information to watershed residents
- **Youth Conservation Corps** – The YCC program was enthusiastically embraced by watershed residents, and there is still a waiting list of projects. YCC would be a very good way to continue working on the 92 residential sites remaining in the watershed.

2012 Survey				
Land Use	High	Medium	Low	Total
Driveway	5	8	13	26
Private Road	3	15	13	31
Residential	8	28	56	92
Town Road	1	0	0	1
Construction Site	0	0	0	0
Boat Access	0	2	0	2
Trail	0	1	0	1
Right of Way	1	3	0	4
Beach	0	1	2	3
Agriculture	0	0	0	0
Logging	1	0	0	1
	19	58	84	161

2012 Little Sebago Lake Watershed Survey Update

Phase-Sector-Site	Location	Land Use	Original Problem Description	Appendix A		2012 Follow-Up Survey Date	2012 Follow-Up Status	2012 Follow-Up Current Impact	2012 Follow-Up Additional Information
				Original Recommendations					
A2-04	"chase Project" Mt. Hunger shore Rd	Private Road	erosion in ditch and plunge pool	clean out sediment stablizing ditch		7/23/2012	Problem	High	New Site
A3-10	Logging Road off Birchwood	Logging	Direct flow of sediment to stream. Severe surface erosion.	Install culvert or stone ford over stream crossing. Install rubber blade. Install waterbar. Install detention basin.		9/10/2012	Problem	High	New driveway eroding to Birchwood and washing to adjacent lake frontage. Also stream crossing with no culvert.
A3-20	(118) Birchwood Rd. at road bend	Residential	Direct flow of sediment to lake. Moderate surface erosion.	Install dry well. Extend buffer. Seed and mulch. No raking.		9/10/2012	Problem	High	Runoff down driveway. Eliminate 2nd driveway. Install sediment basins and rain garden.
A3-40	Between Sewall and blue house, Birch	Residential				9/10/2012	Problem	High	Install terraces, water diverters and mulch.
A5-21	Junction Aquila & Arundel Rds	Town Road	Clogged culvert. Unstable culvert inlet/outlet. Direct flow of sediment to stream. Moderate road shoulder erosion.	Clean out culvert. Enlarge culvert. Install plunge pool. Replace culvert. Stabilize culvert inlet and/or outlet. Armor ditch with stone or grass. Install ditch. Reshape ditch. Install turnout. Install turnout(s). Remove winter sand. Extend bu		7/23/2012	Problem	High	same recommendations as before
A5-26	ROW on Arundel Rd.	Driveway	Direct flow of sediment to lake. Moderate road shoulder erosion.	Install turnout(s). Install waterbar. Extend buffer.		7/25/2012	Problem	High	Same recommendations as before
A5-36	Arundel Rd. near corner w/ Gore Rd./a	Residential	Water flow from the road goes right into their property and floods their land. Because of this it has destroyed the foundation of their house and the only thing that holds it up is mortar and posts from the basement. The concrete from the foundation has turned into hard mud. Area goes along with A5-24.	Direct water from road to a different location. Maybe send it into the culvert down the road. Install ditch?		7/23/2012	Problem	High	New Site
B10-3	83 Northern Oaks Dr	Driveway	Moderate surface erosion	Establish buffer, plant		9/21/2012	Problem	High	steep lot, gravel drive leading to beach, drive has erosion gullies, lack of shoreline vegetation
B10-4	lot across road from 75 N. Oaks Dr	Construction Si	Severe surface erosion, unstable construction site	install erosion controlls (silt fence)		9/21/2012	Problem	High	exposed soil on uphill lot - washes down Northern Oaks Drive and down ROW (Site B10-5) into lake, no ditches nor sediment basins

2012 Little Sebago Lake Watershed Survey Update

Phase-Sector-Site	Location	Land Use	Original Problem Description	Appendix A	2012 Follow-Up Survey Date	2012 Follow-Up Status	2012 Follow-Up Current Impact	2012 Follow-Up Additional Information
				Original Recommendations				
B1-25	Right of Way off Edgewater	Right of way	severe road shoulder erosion, roof runoff, bare soil, road sand, shoreline erosion, lack of buffer, moderate surface erosion	Install stone filled dripline trench, add better surface material, reshaped begetated shoulder, crown road, install runoff diverters, establish shoreline buffer, seed and mulch *Tech should review*	9/21/2012	Problem	High	Same issues
B2-8	9 Abrahamson Rd	Driveway	Moderate surface erosion	install drywell at base of cement stairs	9/21/2012	Problem	High	Needs runoff diverter and new material on driveway.
B4-28	60 Brown Cove Rd	Driveway	Moderate surface erosion	Extend buffer, plant, seed and mulch. Add better surface material, install turnouts, reshape/veg shoulder	8/13/2012	Problem	High	Problem much worse with severe gully direction flow to lake. Could install diverter and better material.
B4-36	39 Phill Hunt Road	Residential	Bare soil, lack of buffer	Establish buffer, plant, seed and mulch	8/13/2012	Problem	High	Severe erosion on driveway and at lake.
B5-12	Island Dr and Brass Lane intersection	Private Road	plow or grader berm, moderate surface erosion	Install turnouts, remove grader berms, reshape or crown road	8/13/2012	Problem	High	Runoff from paved Brass Lane causes erosion on gravel road and into lake. Install better surface material/reclaim. Grade top of road to drain into woods.
B5-7	23 Grassington Rd	Residential	Bare soil, moderate surface erosion	Plant trees, shrubs, groundcovers, install waterbar, install stone-filled dripline trench, install drywell at gutter spout	8/13/2012	Problem	High	Driveway runoff reaches lake. Place reclaim on driveway and settling basin at base.
B9-26	Roadway near pole 52	Private Road	Moderate road shoulder erosion, plow or grader berm	Install turnout into plunge pool, seed basin with level lip spreader	7/25/2012	Problem	High	road erosion; sediment deposits in woods and stream
B9-57	169 Mt Hunger Shore	Driveway	Bare soil, slight surface erosion	Install runoff diverters, turnouts, establish shoreline buffer, plant, mulch, no raking, fix retaining wall before failure!	7/25/2012	Problem	High	Lots of bare soil; driveway erosion; possible paring area failure; seasonal coversion
	36 Deer Acres Road	Residential			9/22/2012	Problem	High	Recently seal-coated steep driveway leading to beach on lake, no shoreline vegetation, exposed soil. Stabilize end of driveway, ECM areas of bare soil.
A1-1	24 Qualey Rd. - Policeman's Cove	Residential	Direct flow of sediment to lake. Bare soil. Lack of shoreline buffer. Slight surface erosion.	Establish buffer. Seed and mulch.	6/15/2012	Problem	Low	some bare soil in grass
A1-11	Across from pole #63 Qualey Road	Residential	Moderate surface erosion.	Close off 2nd driveway. Install landscape timbers along edge of trailer platform and crushed stone along edge of platform. Establish buffer. Seed and mulch. No raking.	6/15/2012	Problem	Low	

2012 Little Sebago Lake Watershed Survey Update

Phase-Sector-Site	Location	Land Use	Original Problem Description	Appendix A	2012 Follow-Up Survey Date	2012 Follow-Up Status	2012 Follow-Up Current Impact	2012 Follow-Up Additional Information
				Original Recommendations				
A1-19	(11) Grape Island Trail	Residential	Bare soil. Lack of shoreline buffer.	Install landscape timbers along edge of sand to retain sand, then plant buffer between timbers and lake. Establish buffer.	6/15/2012	Problem	Low	lots of sand (unsure if it was brought in) need ECM
A1-20	(15) Grape Island Trail	Residential	Direct flow of sediment to lake. Slight roof runoff. Lack of shoreline buffer.	Install stone-filled dripline trench. Install dry well. Establish buffer. Seed and mulch.	6/15/2012	Problem	Low	bare soil, could use ECM
A1-4	7 Qualey Rd	Driveway	Direct flow of sediment to lake. Slight surface erosion.	Install rubber blade.	6/15/2012	Problem	Low	could use ECM and/or water bars on driveway and property on both sides of road
A1-7b	(29) Qualey Rd.	Driveway	Severe surface erosion.	Pave.	6/15/2012	Problem	Low	could use driveway diverters
A1-9b	50 Qualey Rd. near sharp bend	Driveway	Moderate surface erosion.	Extend timbers to trap sediment. Close off gravel driveway. Create footpath. Remove winter sand. Install rubber blade.	6/15/2012	Problem	Low	silt fence needs to go along entire shoreline (missing about 10 feet)
A1-9d	62 Qualey Rd.	Residential	Direct flow of sediment to lake. Slight roof runoff. Lack of shoreline buffer. Moderate surface erosion.	Shore up retaining wall. Install dry well. Install waterbar. Establish buffer. Seed and mulch. Install steps.	6/15/2012	Problem	Low	more grass area now; driveway retaining wall stable; some bare soil below retaining wall that could use ECM and plants
A2-17	Lake Grove Springs - Narrows	Residential	Direct flow of sediment to lake. Bare soil. Shoreline erosion. Lack of shoreline buffer. Moderate surface erosion.	Establish buffer. Seed and mulch. Terrace.	6/15/2012	Problem	Low	not addressd yet vegetation has naturally grown up along banks, areas of bare soil, could use roof dripline trench and ECM
A2-18	Lake Grove Springs - Narrows	Residential	Bare soil. Shoreline erosion. Lack of shoreline buffer. Moderate surface erosion.	Establish buffer. Seed and mulch. No raking.	6/15/2012	Problem	Low	
A2-2	near pole #85	Private Road	Unstable culvert inlet/outlet. Slight road shoulder erosion. Road shoulder erosion.	Stabilize culvert inlet and/or outlet. Armor ditch with stone or grass. Install ditch. Remove grader berms. Reshape or crown.	7/10/2012	Problem	Low	water still pooling in road, needs established ditch and larger culvert to get water off road quicker
A2-21	Lake Grove Springs - Narrows	Residential	Direct flow of sediment to lake. Bare soil. Shoreline erosion. Lack of shoreline buffer. Moderate surface erosion.	Install stone-filled dripline trench. Install waterbar. Establish buffer. Seed and mulch. Mulch. Install steps. Terrace.	6/15/2012	Problem	Low	vegetation has grown and stabilized area
A2-22	Lake Grove Springs - Narrows	Residential	Direct flow of sediment to lake. Bare soil. Slight surface erosion.	Establish buffer. Seed and mulch.	6/15/2012	Problem	Low	
A2-23	Lake Grove Springs	Residential	Beach enhancement with sand. Bare soil. Lack of shoreline buffer. Slight surface erosion. Unstable beach access.	Remove of supplemented beach material. Establish buffer. Seed and mulch.	6/15/2012	Problem	Low	slope has been stabilized with small rock grave and is vegetating

2012 Little Sebago Lake Watershed Survey Update

Phase-Sector-Site	Location	Land Use	Original Problem Description	Appendix A	2012 Follow-Up Survey Date	2012 Follow-Up Status	2012 Follow-Up Current Impact	2012 Follow-Up Additional Information
				Original Recommendations				
A3-11a	168 Birchwood Rd.	Residential	Shoreline erosion. Lack of shoreline buffer. Unstable beach access.	Establish buffer. Mulch. No raking.	9/10/2012	Problem	Low	Lot is stable. Not much to be done.
A3-12	(162 or 164) Birchwood Rd.	Residential	Shoreline erosion. Lack of shoreline buffer. Slight surface erosion. Unstable beach access.	Install stone-filled dripline trench. Establish buffer.	9/10/2012	Problem	Low	Good tier system.
A3-15a	(132) Birchwood Rd.	Residential	Shoreline erosion. Lack of shoreline buffer.	Establish buffer. Seed and mulch.	9/10/2012	Problem	Low	Very stable with lots of vegetation. Created ditch for drainage.
A3-16a	130 Birchwood Rd.	Private Road	Direct flow of sediment to lake. Slight roof runoff. Severe surface erosion.	Waterbar on path to beach. Install stone-filled dripline trench. Install waterbar.	9/10/2012	Problem	Low	Pitch road to left going sout. Road runoff issue.
A3-17	(124) Birchwood Rd.	Residential	Direct flow of sediment to lake. Slight surface erosion.	Send copy of Camp Road Maintenance Manual. Install stone-filled dripline trench. No raking.	9/10/2012	Problem	Low	Rubber razors to prevent erosion on left. Turn out between #130 and Hayes.
A3-18a	122 Birchwood Rd.	Driveway	Direct flow of sediment to stream. Moderate surface erosion.	Install ditch. Install detention basin.	9/10/2012	Problem	Low	Install sediment basin
A3-19a	111 Birchwood Rd. east side of road	Driveway	Direct flow of sediment to ditch. Severe road shoulder erosion.	Clean out culvert. Armor ditch with stone or grass. Install ditch. Reshape ditch. Install turnout. Install detention basin.	9/10/2012	Problem	Low	Recently addressed. See A3-19.
A3-2	(200 or 202)) Birchwood Road near end	Residential	Direct flow of sediment to lake. Slight roof runoff. Road material transported to lake	Install stone-filled dripline trench. Remove winter sand.	9/10/2012	Problem	Low	Same
A3-21	CMP Pole #133 1/2 (109 Birchwood)	Driveway	Stockpiled soil. Moderate surface erosion.	Install ditch. Reshape or crown. Install open top culvert. Install waterbar.	9/10/2012	Problem	Low	Same.
A3-23	(106 - 100) Birchwood Rd.	Residential	Shoreline erosion. Severe surface erosion.	Extend buffer. Mulch.	9/10/2012	Problem	Low	Bare shoreline, but no evidence of erosion.
A3-25	88 Birchwood Rd.	Residential	Shoreline erosion. Moderate surface erosion.	Continue with large red pavers. Seed and mulch.	9/10/2012	Problem	Low	New house with driveway paved. Evidence of erosion. Add crushed stone to fix.
A3-26	88 Birchwood Rd. near island, culvert at driveway	Driveway	Unstable culvert inlet/outlet. Direct flow of sediment to stream. Moderate surface erosion.	Replace culvert. Stabilize culvert inlet and/or outlet. Install dry well. Reshape or crown. Install waterbar. Seed and mulch. Rip rap.	9/10/2012	Problem	Low	Paved driveway.

2012 Little Sebago Lake Watershed Survey Update

Phase-Sector-Site	Location	Land Use	Original Problem Description	Appendix A	2012 Follow-Up Survey Date	2012 Follow-Up Status	2012 Follow-Up Current Impact	2012 Follow-Up Additional Information
				Original Recommendations				
A3-27	near 88 Birchwood	Private Road	Unstable culvert inlet/outlet. Bank failure.	Clean out culvert. Install plunge pool. Stabilize culvert inlet and/or outlet. Reshape ditch. Install turnout. Remove grader berms.	9/10/2012	Problem	Low	Road built up and ditching establish. Seed ditches, open sediment basin at culvert inlet and riprap.
A3-31	Birchwood Road pole #41, uphill side of	Driveway	Severe surface erosion.	Install waterbar. Define pathways.	9/10/2012	Problem	Low	Driveway erosion flows into road.
A3-34	66 Birchwood	Driveway	Severe surface erosion.	Install culvert and install plunge pool at culvert outlet.	9/10/2012	Problem	Low	Erosion gullies on lower of 2 driveways due to road runoff. Install waterbars, create sediment basins for road runoff, and create road ditch.
A3-41	#68 Birchwood Drive	Driveway			9/10/2012	Problem	Low	Erosion at driveway from road drainage. Create sediment basins for road runoff; Create road ditches.
A3-5	Birchwood Road	Private Road	Moderate road shoulder erosion.	Armor ditch with stone or grass. Install ditch. Install detention basin.	9/10/2012	Problem	Low	Swale on left going north and checkdams in swale.
A3-6	Birchwood Rd. (194)	Residential	Direct flow of sediment to lake. Slight roof runoff. Bare soil. Lack of shoreline buffer. Unstable boat access.	Install stone-filled dripline trench. Establish buffer. Seed and mulch. Mulch.	9/10/2012	Problem	Low	Bare soil on beach still. Suggest vegetation.
A3-8	Birchwood Rd. May Meadow Cove	Residential	Moderate surface erosion. unstable foot trail out of house	Install gutter downspout. Install dry well. Install steps.	9/10/2012	Problem	Low	Same recommendations. More natural vegetation conditions.
A3-9	186 Birchwood Rd. May Meadow Cove	Residential	Direct flow of sediment to stream. Severe roof runoff. Severe surface erosion.	Install rip rap or gabions. Install dry well. Establish buffer. Rip rap.	9/10/2012	Problem	Low	
A4-2	178 Lyons Pt Rd	Residential	Direct flow of sediment to lake. Bare soil. Lack of shoreline buffer. Slight surface erosion.	Establish buffer.	9/20/2012	Problem	Low	very small area of lake access, could use steps and plantings
A4-4b	End of Steele Rd (9)	Residential	Direct flow of sediment to lake. Lack of shoreline buffer. Slight surface erosion.	Establish buffer. Mulch.	9/20/2012	Problem	Low	lack of vegetation buffer - water bars down paved driveway are great!
A4-6b	(62) Deer Acres Rd.	Residential	Direct flow of sediment to lake. Stockpiled soil.	Remove stockpiled soil	9/21/2012	Problem	Low	stock piles removed, spoke with landowner, velocity in stream is increasing causing scouring
A5-1	Deer Acres Rd.	Residential	Direct flow of sediment to lake. Slight road shoulder erosion. Severe roof runoff. Lack of shoreline buffer. Slight surface erosion.	Stabilize culvert inlet and/or outlet. Install rubber razor. Install waterbar. Extend buffer.	9/21/2012	Problem	Low	fairly stable, need to check during rain event

2012 Little Sebago Lake Watershed Survey Update

Phase-Sector-Site	Location	Land Use	Original Problem Description	Appendix A	2012 Follow-Up Survey Date	2012 Follow-Up Status	2012 Follow-Up Current Impact	2012 Follow-Up Additional Information
				Original Recommendations				
A5-10	(16) Evergreen Rd.	Residential	Direct flow of sediment to lake. Bare soil. Lack of shoreline buffer. Slight surface erosion.	Establish buffer. Mulch. No raking.	9/20/2012	Problem	Low	need shoreline vegetation and ECM for exposed soil, area is quite flat however
A5-15	Deer Acres Rd. near Sand Island	Residential	Direct flow of sediment to lake. Shoreline erosion. Lack of shoreline buffer. Unstable beach access.	Armor ditch with stone or grass. Install turnout. Establish buffer. Seed and mulch. No raking.	9/20/2012	Problem	Low	lack of shoreline vegetation
A5-16	Deer Acres Rd. near Sand Island	Residential	Direct flow of sediment to lake. Slight road shoulder erosion. Unstable beach access.	Establish buffer. Seed and mulch. No raking.	9/20/2012	Problem	Low	large sandy beach, no vegetated shoreline; however, flat, rest of property stabilized by leaving pine needles on the ground
A5-18	Kram's Point near Gansmere Point	Residential	Bare soil. Shoreline erosion. Slight surface erosion. Unstable beach access.	Install stone-filled dripline trench. Install dry well. Establish buffer. Seed and mulch. No raking.	7/23/2012	Problem	Low	Installed buffers near house, put in stone steps
A5-19	Kram's Point	Residential	Direct flow of sediment to lake. Lack of shoreline buffer. Slight surface erosion.	Establish buffer. Seed and mulch. No raking.	7/23/2012	Problem	Low	same recommendations as before
A5-2	(60) Deer Acres Rd	Residential	Direct flow of sediment to lake. Bare soil. Lack of shoreline buffer. Slight surface erosion.	Install stone-filled dripline trench. Establish buffer. Seed and mulch. Mulch. Define pathways. No raking.	9/21/2012	Problem	Low	lack of shoreline vegetation yet most of bare soil has grassed over
A5-20	(6)Aquila Rd. near corner w/ Gore Rd.	Residential	Lack of shoreline buffer. Slight surface erosion.	Establish buffer. Seed and mulch. No raking.	7/23/2012	Problem	Low	buffer and stone steps placed near house but no buffer close to shore
A5-21	Aquila Rd. near corner w/ Gore Rd.	Residential	Lack of shoreline buffer. Slight surface erosion.	Establish buffer. Seed and mulch. No raking.	7/23/2012	Problem	Low	same recommendations as before
A5-27	Arundel Road Pole #9	Private Road	Clogged culvert. Unstable culvert inlet/outlet. Direct flow of sediment to ditch. Moderate road shoulder erosion.	Clean out culvert. Install plunge pool. Stabilize culvert inlet and/or outlet. Install ditch.	7/25/2012	Problem	Low	The culvert could need a cleanup. If not cleaned up water will just run onto the road. Besides that it looks great.
A5-28	ROW near corner of Arundel Rd, Hayd	Driveway	Direct flow of sediment to lake. Moderate road shoulder erosion. Moderate surface erosion.	Add new surface material. Install turnout(s). Install waterbar. Extend buffer.	7/25/2012	Problem	Low	It looks like they tried to fix it by adding new surface material and a turn out in front of the driveway but it has just washed away.
A5-34	Kentwood Rd	Private Road	Direct flow of sediment to ditch. Slight surface erosion. Unstable construction site. New gravel road - unstable surface and ditches.	Install ditch. Install turnout.	7/25/2012	Problem	Low	There is some new pavement but still same recommendations as before
A5-35	(50) Kentwood Rd & Arundel	Driveway	Direct flow of sediment to ditch. Moderate roof runoff. Moderate surface erosion.	Install dry well. Add new surface material. Reshape or crown.	7/25/2012	Problem	Low	same recommendations as before

2012 Little Sebago Lake Watershed Survey Update

Phase-Sector-Site	Location	Land Use	Original Problem Description	Appendix A	2012 Follow-Up Survey Date	2012 Follow-Up Status	2012 Follow-Up Current Impact	2012 Follow-Up Additional Information
				Original Recommendations				
A5-4	Deer Acres Rd. Tele #7	Driveway	Direct flow of sediment to lake. Moderate surface erosion.	Add new surface material. Build up road. Reshape or crown. Install rubber blade. Establish buffer. Seed and mulch.	9/21/2012	Problem	Low	driveway has reduced in size slightly, Deer Acres is now paved and therefore not affected by driveway's runoff as much
A5-7	(11, 13) Evergreen Rd.	Residential	Direct flow of sediment to lake. Bare soil. Lack of shoreline buffer. Slight surface erosion.	Establish buffer. Seed and mulch. No raking.	9/20/2012	Problem	Low	huge house has replaced camp, very green grass, lack of shoreline vegetation, some areas of exposed soil
A5-8	(15) Evergreen Rd.	Residential	Direct flow of sediment to lake. Bare soil. Lack of shoreline buffer. Slight surface erosion.	Establish buffer. Mulch. No raking.	9/20/2012	Problem	Low	lack of shoreline shrubs yet lot is wooded and shaded and pine needles are left despite lack of live vegetated groundcover
A5-9	(18) Evergreen Rd.	Residential	Direct flow of sediment to lake. Bare soil. Lack of shoreline buffer. Slight surface erosion.	Establish buffer. Mulch. No raking.	9/20/2012	Problem	Low	lack of live vegetated groundcover yet wooded/shaded with pine needles left, could use roof dripline trenches
A6-2	127 Johnson Rd	Residential	Direct flow of sediment to lake. Slight surface erosion. Unstable beach access.	Install rubber blade. Install waterbar. Establish buffer.	7/23/2012	Problem	Low	same recommendations as before
A6-6	Westwood Rd 30ft north of Pickerel Po	Private Road	Clogged culvert. Direct flow of sediment to lake. Slight road shoulder erosion. road shoulder erosion.	Clean out culvert. Install plunge pool. Stabilize culvert inlet and/or outlet. Armor ditch with stone or grass. Reshape ditch.	7/25/2012	Problem	Low	Same problem as before but culvert should be replaced now because it is rusted through.
A6-8	Near #116 pole #20.4	Private Road	Unstable culvert inlet/outlet. Direct flow of sediment to ditch.	Install plunge pool. Stabilize culvert inlet and/or outlet. Armor ditch with stone or grass. Rip rap.	7/23/2012	Problem	Low	Ditch was added but sediment from the ditch needs to be cleaned out. Already full. Culvert across the road is buried.
A7-1	Hunnewell	Private Road	Moderate surface erosion.	Add new surface material. Build up road. Install turnout(s). Install waterbar.	6/29/2012	Problem	Low	related to loop road issue. Site A7-5
A7-10	(191) Westwood Rd steps to lake. End	Residential	Bare soil. Lack of shoreline buffer.	Plant trees and shrubsInstall waterbar. Establish buffer. Seed and mulch.	6/29/2012	Problem	Low	bare soil. No buffer. Pant/seed along side of house
A7-12	Top of Swett Dr pole # 176 Caracass R	Private Road	Moderate road shoulder erosion. Moderate surface erosion.	Install culvert, reshape veg shoulder. Install ditch. Install turnout(s). Remove winter sand. Reshape or crown. Rip rap.	6/29/2012	Problem	Low	sever erosion issue on road but does not apper to get to lake
A7-13	17 Swett Rd (or adjacent)	Residential	Beach enhancement with sand. Lack of shoreline buffer.	Plant trees and shrubs. Enhance retaining wall.	6/29/2012	Problem	Low	good buffer between house and beach. Could stablize drainage ditch to lake
A7-20	(273) Westwood Rd	Residential	Lack of shoreline buffer. Moderate surface erosion.	Runoff diverters. Install stone-filled dripline trench. Install rubber blade. Extend buffer. Install steps.	6/29/2012	Problem	Low	put in shrubs on shore, put in timber to prevent bank going in, planted some plants

2012 Little Sebago Lake Watershed Survey Update

Phase-Sector-Site	Location	Land Use	Original Problem Description	Appendix A	2012 Follow-Up Survey Date	2012 Follow-Up Status	2012 Follow-Up Current Impact	2012 Follow-Up Additional Information
				Original Recommendations				
A7-21	Cobb Rd from beginning w/ Westwood	Private Road	Direct flow of sediment to stream. Moderate road shoulder erosion. Moderate surface erosion.	Install culvert under driveway, Inhance turnout. Install ditch. Remove grader berms. Reshape or crown. Install detention basin.	6/29/2012	Problem	Low	road now diverts water awayt from stream but it now goes down to lake. Could install _____
A7-9	Westwood Rd - steps down to lake	Residential	Bare soil. Lack of shoreline buffer. Slight surface erosion.	Plant trees and shrubs. Install stone-filled dripline trench. Extend buffer. No raking.	6/29/2012	Problem	Low	slight erosion. Bare soil. No buffer. Plant/see along side of house
B10-12	57 N. Oaks Dr	Beach	Shoreline erosion, severe surface erosion	Establish buffer, plant, define path for foot traffic	9/21/2012	Problem	Low	areas of bare soil, gravel driveway, shows signs of erosion, most is washing into adjacent vegetation
B10-13	2 Worcester Dr	Residential	Slight surface erosion	Plant trees, shrubs, groundcovers	9/21/2012	Problem	Low	lack of shoreline vegetation / small area of beach - grassed and fairly flat
B10-7	1 Poole Dr	Residential	Slight surface erosion	Plant, define path for foot traffic	9/21/2012	Problem	Low	
B1-13	3 Lake Ave	Residential	roof runoff, bare soil, slight surface erosion	install stone filled dripline trench, establish shoreline buffer, mulch, stop raking, terrace	9/21/2012	Problem	Low	Install timbers @ base of driveway to retain runoff and sediment
B1-14	192 Cambell Shore Road	Beach	bare soil, lack of buffer, slight road shoulder erosion, slight surface erosion	extend buffer, plant trees/shrubs/groundcover	9/21/2012	Problem	Low	Extensive sand
B1-3	63 Lake Avenue	Residential	Slight ditch erosion, roof runoff, bare soil, slight surface erosion	armor ditch with stone, install stone filled dirpline trench	9/21/2012	Problem	Low	Could reshape and vegetate or armor ditch to lake.
B3-1	7 Humingbird	Residential	Slight surface erosion	Establish shoreline buffer, plant trees, shrubs and groundcover, seed and mulch	8/13/2012	Problem	Low	Buffer has grown in. Should still add diverter on path down hill.
B3-7	253 Smith Rd	Residential	Bare soil	Establish shoreline buffer, seed and mulch	8/13/2012	Problem	Low	Still all bare sand sloping to lake.
B4-2	Brown Cove Rd	Private Road	Unstable culvert inlet/outlet, culvert too short, road sand	Lengthen and stablize inlet/outlet of culvert, remove winter sand	8/13/2012	Problem	Low	Road shoulder still eroding to stream. Could install turnout above.
B4-30	8 Sunnyside Dr	Residential	Bare soil, lack of buffer, slight surface erosion	Extend buffer, plant, seed and mulch, no raking	8/13/2012	Problem	Low	Still bare and sloping to lake.
B4-35	35 Phil Hunt Rd	Residential	Bare soil, slight surface erosion	Extend buffer, seed and mulch, no raking	8/13/2012	Problem	Low	
B5-10	Last 200' of Brig Island Cove Rd	Private Road	Moderate surface erosion	Establish shoreline buffer, install ditch, catch basin, remove grader berms, reshape or crown road	8/13/2012	Problem	Low	Erosion on edge of road and no buffer, but grass and flat area at base of hill seems to stop runoff. Could use reclaim on hill.
B6-1	Sabbady Point Rd	Residential	Bare soil	Plant trees, shrubs, and groundcovers	7/25/2012	Problem	Low	same recommendation as before

2012 Little Sebago Lake Watershed Survey Update

Phase-Sector-Site	Location	Land Use	Original Problem Description	Appendix A	2012 Follow-Up Survey Date	2012 Follow-Up Status	2012 Follow-Up Current Impact	2012 Follow-Up Additional Information
				Original Recommendations				
B6-11	34 Outlet Cove Rd	Residential	Bare soil, moderate surface erosion	Install runoff diverters, plant trees shrubs, and groundcovers, add infiltration trench after pavement, restrict boat access	7/25/2012	Problem	Low	Erosion; ECM and stones need to be maintained; plowing here in winter?
B6-2	122 Sabbady Point Rd	Residential	Bare soil	Plant trees, shrubs, and groundcovers	7/25/2012	Problem	Low	same recommendation as before
B6-3	116 Sabbady Point Rd	Residential	Bare soil	Extend buffer, plant	7/25/2012	Problem	Low	same recommendation as before
B6-7	108 Sabbady Point Rd	Residential	Bare soil, shoreline erosion, slight surface erosion, unstable beach	Establish shoreline buffer, plant trees, shrubs, groundcovers, install veg filled dripline trench, open top culvert	7/25/2012	Problem	Low	same recommendation as before
B9-24	347 Mount Hunger Shore Road	Residential	Bare soil, moderate surface erosion and lack of buffer	Establish shoreline vegetation; Add better surface material and waterbar on driveway.	7/24/2012	Problem	Low	yes 2-02
B9-59	161 Mt Hunger Shore	Residential	Slight erosion of ditch	armor ditch with stone, enhance rock lining at edge of driveway	7/25/2012	Problem	Low	still lots of sediment by wall, drains any erosion
B9-70	141 Mt Hunger Shore	Residential	Bare soil, slight surface erosion	Install runoff diverter, extend buffer, plant	7/25/2012	Problem	Low	erosion along side of house
A1-7	Mountain View & Qualey Rd. intersection	Private Road	Unstable culvert inlet/outlet. Direct flow of sediment to stream. Slight road shoulder erosion. Road shoulder erosion.	Clean out culvert. Stabilize culvert inlet and/or outlet. Reshape ditch. Remove grader berms.	6/15/2012	Problem	Medium	need to clean out ditch and address runoff coming from Cameron property (new site 2-25)
A1-9c	Qualey Rd. Between L4-23, L4-24	Beach Access	Direct flow of sediment to lake. Moderate surface erosion.	Install waterbar. Establish buffer.	6/15/2012	Problem	Medium	gully adjacent to steps needs riprap
A2-15	(80) Lake Grove Springs	Residential	Direct flow of sediment to lake. Slight road shoulder erosion. Road shoulder erosion. Bare soil. Moderate surface erosion. Unstable beach access.	Install waterbar. Mulch. No raking. Terrace.	6/15/2012	Problem	Medium	same recommendations
A2-16	Lake Grove Springs - Narrows	Residential	Direct flow of sediment to lake. Bare soil. Lack of shoreline buffer. Severe surface erosion.	Some of plants given away at LSLA meeting were planted where alders were cut. Install waterbar. Establish buffer. Seed and mulch. Mulch. No raking.	6/15/2012	Problem	Medium	same recs, some of the bare soil has been grassed in
A2-19	Lake Grove Springs - Narrows	Residential	Direct flow of sediment to lake. Bare soil. Shoreline erosion. Lack of shoreline buffer. Moderate surface erosion.	Establish buffer. Seed and mulch. No raking.	6/15/2012	Problem	Medium	bare soil, tire ruts in drive on bank towards lake

2012 Little Sebago Lake Watershed Survey Update

Phase-Sector-Site	Location	Land Use	Original Problem Description	Appendix A		2012 Follow-Up Survey Date	2012 Follow-Up Status	2012 Follow-Up Current Impact	2012 Follow-Up Additional Information
				Original Recommendations					
A2-25	Pole #91 1/2 Ramsdell Rd.	Private Road	Direct flow of sediment to lake. Moderate road shoulder erosion. Moderate surface erosion.	Complex road problem. Many fixes needed here. Install plunge pool. Install ditch. Build up road.		7/10/2012	Problem	Medium	road has a lot of pot holes, needs proper road ditching and drainage
A2-3	Ramsdell Rd. near Grape Island Trail	Residential	Moderate road shoulder erosion. Bare soil. Moderate surface erosion. Exposed roots. Trash. Junk car. Broken car battery.	Add new surface material. Reshape or crown. Install waterbar. Establish buffer. Seed and mulch.		7/10/2012	Problem	Medium	trash appears to have been removed, driveway erosion and large sand piles washing down driveway towards lake, road erosion washing down driveway, house currently for sale (Power Real Estate - Patrick Powers)
A3-11	168 Birchwood Rd. - Birchwood Shores	Private Road	Unstable culvert inlet/outlet. Direct flow of sediment to lake. Moderate road shoulder erosion. Stockpiled soil. Slight surface erosion.	Install earthen berm and vegetate along stream edge where snow is plowed. Stabilize culvert inlet and/or outlet. Install turnout(s).		9/10/2012	Problem	Medium	Under construction. Develop deeper catch basin, remove sediment from stream edge and stabilize with mulch.
A3-13	162 Birchwood Rd.	Residential	Lack of shoreline buffer. Moderate surface erosion.	Terrace more. Install stone-filled dripline trench. Establish buffer. Seed and mulch. Terrace.		9/10/2012	Problem	Medium	Terracing installed and grass planted, but rest is same.
A3-14	160 Birchwood near pole #125 1/2	Residential	Direct flow of sediment to lake. Shoreline erosion. Lack of shoreline buffer. Moderate surface erosion.	Install waterbar. Extend buffer. Seed and mulch.		9/10/2012	Problem	Medium	Terracing and mulch, but erosion still present. Needs water bar and plantings on tiers.
A3-22	110 Birchwood Rd.	Driveway	Direct flow of sediment to lake. Severe surface erosion.	Install turnout(s). Pave. Install waterbar.		9/10/2012	Problem	Medium	Same.
A3-3	End of Birchwood Road	Private Road		Install turnout. Install detention basin.		9/10/2012	Problem	Medium	Narrow ditch and turnout created, but ditch erosion occurring. Need well shaped ditch, narrow road.
A3-4	198 Birchwood Rd. near end	Driveway	Direct flow of sediment to lake. Moderate surface erosion.	Cut back slopes and vegetate or rock. Install stone-filled dripline trench. Install open top culvert.		9/10/2012	Problem	Medium	Install waterbars, cut back slope and vegetate shoreline
A4-1	181 Lyons Point Rd	Residential	Direct flow of sediment to lake. Lack of shoreline buffer. Slight surface erosion.	Establish buffer.		9/20/2012	Problem	Medium	lack of shoreland buffer, appears sand has been added
A5-11	(12) Evergreen Rd.	Residential	Direct flow of sediment to lake. Bare soil. Shoreline erosion. Lack of shoreline buffer. Moderate surface erosion.	Establish buffer. Mulch. Define pathways. No raking.		9/20/2012	Problem	Medium	bare soil/sand between building and lake, needs vegetation and ECM

2012 Little Sebago Lake Watershed Survey Update

Phase-Sector-Site	Location	Land Use	Original Problem Description	Appendix A		2012 Follow-Up Survey Date	2012 Follow-Up Status	2012 Follow-Up Current Impact	2012 Follow-Up Additional Information
				Original Recommendations					
A5-12	(10) Evergreen Rd.	Residential	Direct flow of sediment to lake. Bare soil. Shoreline erosion. Lack of shoreline buffer. Slight surface erosion. Unstable construction site. New septic system under construction.	Add new surface material. Establish buffer. Mulch. No raking.		9/20/2012	Problem	Medium	small sandy beach, lack of vegetation and groundcover on yard, need ECM
A5-14	Deer Acres Rd. near Sand Island	Residential	Direct flow of sediment to lake. Bare soil. Lack of shoreline buffer. Slight surface erosion. Unstable beach access.	Establish buffer. Seed and mulch. No raking.		9/20/2012	Problem	Medium	steep paved driveway leading to concrete swale flowing to beach - more ECM and vegetation needed on property, lack of shoreline vegetation
A5-22	Arundel Rd. near corner w/ Gore Rd.	Residential	Direct flow of sediment to lake. Slight roof runoff. Bare soil. Shoreline erosion. Slight surface erosion.	Install stone-filled dripline trench. Seed and mulch. Define pathways.		7/23/2012	Problem	Medium	same recommendations as before
A5-23	3 Arundel Rd. near corner w/ Gore Rd.	Driveway	Direct flow of sediment to lake. Moderate surface erosion.	Add new surface material. Reshape or crown. Install waterbar. Establish buffer. Install infiltration trench.		7/23/2012	Problem	Medium	same recommendations as before
A5-29	Hayden Lane	Driveway	Direct flow of sediment to lake. Moderate road shoulder erosion. Moderate surface erosion.	Add new surface material. Install turnout(s). Reshape or crown. Install waterbar. Install detention basin.		7/25/2012	Problem	Medium	Same recommendations as before
A5-3	(58) Deer Acres Rd	Residential	Direct flow of sediment to lake. Slight road shoulder erosion. Road shoulder erosion. Moderate roof runoff. Bare soil. Lack of shoreline buffer. Moderate surface erosion.	Install stone-filled dripline trench. Establish buffer. Extend buffer. Seed and mulch. Define pathways.		9/21/2012	Problem	Medium	eroding gully down yard from paved road runoff despite some tiers having been installed, lack of shoreline vegetation
A5-6	(7) Evergreen Rd, Tele #4	Residential	Direct flow of sediment to lake. Bare soil. Lack of shoreline buffer. Slight surface erosion.	Establish buffer. Extend buffer. Seed and mulch. Mulch. Define pathways. No raking.		9/20/2012	Problem	Medium	need ECM to cover exposed soil, need dripline trench, need defined walkways, lack of veg. shoreline
A6-11	Between #2 and #4 Beaver Cove Rd	Private Road	Erosion, not stable, looks like a construction site with a lot of muck/dirt/mud. Has a buffer around some of it but is not doing much	Cleanup site			Problem	Medium	
A7-11	(187) Westwood Rd. (look up)	Residential	Direct flow of sediment to lake. Bare soil. Lack of shoreline buffer. Slight surface erosion.	Install dry well. Install waterbar. Establish buffer. Seed and mulch. Define pathways.		6/29/2012	Problem	Medium	bare soul under picnic table. Direct into rain garden at top of parking area

2012 Little Sebago Lake Watershed Survey Update

Phase-Sector-Site	Location	Land Use	Original Problem Description	Appendix A		2012 Follow-Up Survey Date	2012 Follow-Up Status	2012 Follow-Up Current Impact	2012 Follow-Up Additional Information
				Original Recommendations					
A7-23	Cobb Rd pole #167 on left of house (#	Residential	Direct flow of sediment to lake. Bare soil. Slight surface erosion.	Runoff diverters. Install stone-filled dripline trench. Install steps.		6/29/2012	Problem	Medium	perfect for infiltration steps and drip line trench.
A7-26	21 Swett rd	Residential	Bare soil, needs stabilization	Erosion controls, don't add sand, mulch			Problem	Medium	
A7-4	"Chickawauki" on camp	Residential	Direct flow of sediment to lake. Lack of shoreline buffer. Moderate surface erosion. Front of cottage moderate surface erosion, back of cottage severe surface erosion.	Plant trees and shrubs. Install stone-filled dripline trench. Establish buffer. Seed and mulch. Define pathways. No raking.		6/29/2012	Problem	Medium	still bare soil between camp and lake. Mulch like crazy. Also erosion where boats launched on shoreline. Stone since placed in drip line
A7-5	loop of Hunnewell by CMP poles 1711	Private Road	Direct flow of sediment to lake. Moderate surface erosion.	Install runoff diverters. Add new surface material. Reshape or crown. Establish buffer.		6/29/2012	Problem	Medium	same recommendation
A7-6	From Westwood Rd left of green cottag	Driveway	Direct flow of sediment to lake. Slight surface erosion.	Install open top culvert. Install detention basin.		6/29/2012	Problem	Medium	same recommendations
A7-7	Westwood Rd. after Hunnewell	Residential	Lack of shoreline buffer. Slight surface erosion.	Establish buffer. Seed and mulch. Define pathways.		6/29/2012	Problem	Medium	same recommendations as A7-6
A7-8	Hunnewell	Residential	Lack of shoreline buffer. Unstable beach access.	Install stone-filled dripline trench. Establish buffer. Seed and mulch. No raking.		6/29/2012	Problem	Medium	should focus on stabilization and buffers
B10-1	89 Northern Oaks Dr	Residential	Moderate surface erosion, unstable beach	Establish shoreline buffer, plant, add waterbar to driveway		9/21/2012	Problem	Medium	paved driveway leading to beach, lack of shoreline vegetation, driveway marks suggest retaining walls will be put in and some pavement will be removed?
B10-15	N Oaks Dr just before T with Worcest	Private Road	Unstable culvert inlet/outlet, clogged culvert, severe erosion	Clean out culvert, stablize inlet/outlet, armor ditch with stone or grass, clean out ditch, reshap ditch		9/21/2012	Problem	Medium	riprap ditch filled with sediment, should be grassed with check dams for easier sand removal, culvert inlets clogged with debris, winter sand, sand pile near culvert outlets, catchbasin across street at #51 is full
B10-5	next to 75 N. Oaks Dr	Boat access	moderate surface erosion	Install water diverters, add better surface material, reshape or crown road		9/21/2012	Problem	Medium	gravel ROW leading strating into lake, not very steep

2012 Little Sebago Lake Watershed Survey Update

Phase-Sector-Site	Location	Land Use	Original Problem Description	Appendix A		2012 Follow-Up Survey Date	2012 Follow-Up Status	2012 Follow-Up Current Impact	2012 Follow-Up Additional Information
				Original Recommendations					
B10-8	55 N. Oaks Rd	Beach	Moderate surface erosion, direct flow down driveway to lake	Establish buffer, plant, install runoff diverters		9/21/2012	Problem	Medium	paved driveway leading to beach to water - used for launching boats, milfoil marker in water, once had crushed stone trench at end of paved driveway yet is now filled in with sand, spoke with Judy Andrews about covering area with ECM or loam and grass; Rain garden is sparse yet basin appears to be helping.
B1-12	7 Lake Ave	trail	moderate trail erosion, bare soil, lack of buffer, moderate sheet surface erosion, roof runoff	install dripline trench, establish buffer, mulch, stop raking, terrace, waterbar, reshape driveway		9/21/2012	Problem	Medium	Roof dripline trench installed but significant erosion on path to lake still. Possibly install rain garden or check dams along side of path?
B1-17	Right of way between Lots 43 and 40	Right of way	slight ditch erosion, bare soil, slight surface erosion	add better surface material, reshape or crown, mulch, no raking		9/21/2012	Problem	Medium	Good opportunity to fix since road assoc president lived next to site. Could also install rubber razor(s).
B1-29	end of Edgewater ROW L2-21	Right of way	bare soil, road sand, shoreline erosion, lack of buffer, moderate surface erosion	add better sruface material, build up road, reshape or crown road, install broad-based dip, establish shoreline buffer, plant vegetation no raking		9/21/2012	Problem	Medium	Same
B1-5	Lake Ave. - roadside opposite CMP Po	Private Road	unstable culvert inlet/outlet, severe ditch erosion, moderate road shoulder erosion	stabilize inlet/outlet, slope stabilization, armor ditch with stone or grass, riprap		9/21/2012	Problem	Medium	Could also install sediment basin at base of ditch.
B1-6	ROW between 83 & 79 Lake Ave	Right of way	bare soil and roots, moderate surface erosion	add better surface material, build up if using for boat access, install runoff diverters, install steps if no longer used for boat launch		9/21/2012	Problem	Medium	Same
B2-13	154 Mt. hunger shore rd	driveway	erosion causing ditch erosion and filling up	driveway diverters and clean out ditch			Problem	Medium	
B2-2	24 Waterview	Residential	Shoreline erosion, lack of buffer, slight surface erosion.	Extend buffer, plant trees, shrubs and groundcovers		9/21/2012	Problem	Medium	Same
B2-6	Waterview, telephone pole #7	Private Road	Moderate road shoulder erosion, slight surface erosion	Install turnouts, reshape/veg shoulder, reshape or crown road		9/21/2012	Problem	Medium	Lots of material in channel
B2-9	(21) Abrahmson Rd	Driveway	Shoreline erosion, lack of buffer, moderate surface erosion	plant trees, shrubs, and groundcovers		9/21/2012	Problem	Medium	Shoreline fixed but now driveway erosion. Needs better material, diverters.
B3-13	239 Smith Rd	Residential	problem with private boat access	Install waterbar - paved speed bump type and extend buffer or remove paved ramp and replace with buffer		8/13/2012	Problem	Medium	Driveway culvert and downspout causing erosion directly to lake.

2012 Little Sebago Lake Watershed Survey Update

Phase-Sector-Site	Location	Land Use	Original Problem Description	Appendix A		2012 Follow-Up Survey Date	2012 Follow-Up Status	2012 Follow-Up Current Impact	2012 Follow-Up Additional Information
				Original Recommendations					
B3-4	10 Ladyslipper	Residential	Bare soil, lack of buffer, slight surface erosion	Establish shoreline buffer, no raking		8/13/2012	Problem	Medium	Property for sale. Runoff diverter needed on road and planting along shoreline.
B3-5	across from 16 Ladyslipper, between l	Boat access	Slight surface erosion	Install runoff diverters - some kind of paved speed bump to divert water		8/13/2012	Problem	Medium	Same recommendations as previous.
B3-6	247 Smith Rd	Residential	Bare soil, lack of buffer, moderate surface erosion	Establish shoreline buffer, no raking		8/13/2012	Problem	Medium	Lots of bare soil. Same recommendations as previous.
B4-37	Phil Hunt Road @ turn next to lake (#3	Private Road	Severe erosion where pavement ends. Some grassed buffer but erosion reaches lake.	Add new material/reclaim and diverter to buffer. Extend buffer.			Problem	Medium	
B5-1	11 Crocket Rd	Boat access	Bare soil, lack of buffer, moderate surface erosion, unstable boat access	Establish shoreline buffer, install infiltration trench, waterbar, improve existing steps		8/13/2012	Problem	Medium	Erosion at edges and end of pavement
B5-14	57 Island Dr	Private Road	Moderate road shoulder erosion, moderate surface erosion, unstable boat access	Establish shoreline buffer, install turnouts, close off portion of road near lake		8/13/2012	Problem	Medium	Puddle in road overtops and eroded small gully to lake.
B5-6	19 Happy Lane	Residential	Bare soil, lack of buffer	Establish shoreline buffer, seed and mulch		8/13/2012	Problem	Medium	Plant and install ECM along edge of shore.
B6-10	Outlet Cove Rd, across from pole 7, an	Private Road	Bare soil, severe surface erosion, hillside failure along road	Reduce slope, stabilize hill, plant trees, shrubs, groundcovers		7/25/2012	Problem	Medium	same recommendation as before
B6-12	18 Outlet Cove Rd	Residential	Bare soil, slight surface erosion	Plant, install waterbar or other runoff diverters		7/25/2012	Problem	Medium	Installed diverters which are helping but could be longer and have another one higher up
B6-5	112 Sabbady Point Rd	Residential	Bare soil, roof runoff	Plant trees, shrubs, and groundcovers (raised bed on lakeside of stone wall, veg roof dripline		7/25/2012	Problem	Medium	same recommendation as before.
B9-29	Hill just beyond site 9-28	Private Road	Clogged culvert, slight shoulder erosion	formalize and rip-rap turnout, install plunge pool		7/25/2012	Problem	Medium	Culvert open but half clogged; large amounts of sediment in woods; shoulder erosion
B9-47	190 Mt Hunger Shore	Private Road	Clogged culvert	Clean out culvert, create ditch to culvert		7/26/2012	Problem	Medium	clogged culvert; road erosion; poor road material
B9-53	175 Mt Hunger Shore	Residential	Bare soil, roof runoff, slight surface erosion	Instal stone-filled dripline trench, dry well at gutter spout. Extend buffer. Focus on area near water.		7/25/2012	Problem	Medium	driveway erosion; now problem - water from road below buffer zone.
B9-60	157 Mt Hunger Shore	Residential	Roof runoff, lack of buffer	Install dripline trench, dry well at gutter spout, eliminate pipe		7/25/2012	Problem	Medium	driveway erosion, path erosion
B9-93	Mt Hunger Shore	Private Road	plow or grader berm	Install turnouts, remove grader berms		7/25/2012	Problem	Medium	Recommend using another material that is less sand so will pack

2012 Little Sebago Lake Watershed Survey Update

Phase-Sector-Site	Location	Land Use	Original Problem Description	Appendix A		2012 Follow-Up Survey Date	2012 Follow-Up Status	2012 Follow-Up Current Impact	2012 Follow-Up Additional Information
				Original Recommendations					
A1-10	Qualey Rd. - Pole #63	Beach	Direct flow of sediment to lake. Lack of shoreline buffer. Slight surface erosion.	Add stone behind existing steps, restrict foot traffic to lakeInstall waterbar. Establish buffer. Seed and mulch. Install steps.		6/15/2012	Fixed	NA	
A1-10a	Pole #63 to #63 1/2 Qualey Road	Private Road	Moderate road shoulder erosion.	Remove grader berms. Seed and mulch.		6/15/2012	Fixed	NA	see actions taken
A1-12	(34) 79 Qualey Rd.	Residential	Slight surface erosion.	Close off parking area at base of slope. Seed and mulch.		6/15/2012	Fixed	NA	ECM down lot; stone at driveway, all drains south into new culvert
A1-13	(48) Qualey Road	Construction Site	Stockpiled soil. Bare soil. Unstable construction site.	More erosion controls needed due to proximity to lake. Install erosion controls.		6/15/2012	Fixed	NA	
A1-14	southern end of Qualey Rd.	Residential	Direct flow of sediment to lake. Bare soil. Lack of shoreline buffer. Moderate surface erosion.	Install retaining wall. Create infiltration area behind existing steps. Install stone-filled dripline trench. Establish buffer. Seed and mulch. Install steps.		6/15/2012	Fixed	NA	steep driveway paved and stabilized; end of stairway grassed and walkway established
A1-15	Qualey Rd. southern end	Driveway	Direct flow of sediment to lake. Moderate surface erosion.	Install ditch. Install turnout. Add new surface material.		6/15/2012	Fixed	NA	gully between driveway and Welch property flows into stone and vegetation prior to reaching lake
A1-16	Ramsdell Rd. - 1st 500' from Mt. View	Private Road	Unstable culvert inlet/outlet. Direct flow of sediment to stream. Moderate road shoulder erosion. Moderate surface erosion.	Lengthen culvert inlet. Detention basin along ditch to stream. Install plunge pool. Stabilize culvert inlet and/or outlet. Install ditch. Install turnout. Install detention basin.		6/15/2012	Fixed	NA	see actions taken
A1-17	Ramsdell Rd. from Jeep trail to stream	Private Road	Unstable culvert inlet/outlet. Direct flow of sediment to lake. Moderate road shoulder erosion. Slight surface erosion.	Clean out catch basins. Stabilize culvert inlet and/or outlet. Add new surface material. Install turnout(s). Reshape or crown. Establish buffer.		6/15/2012	Fixed	NA	have added new gravel road material, pitched the road and cleaned out catch basins
A1-18	Ramsdell Rd. across from Camp Sebago	Residential	Direct flow of sediment to lake. Lack of shoreline buffer. Moderate surface erosion.	Establish buffer.		6/15/2012	Fixed	NA	#381 across street from lake has underground drainage for spring; grassed to beach/water, stable
A1-2	Qualey Road	Boat Access	Direct flow of sediment to lake. Bare soil. Severe surface erosion. Unstable boat access.	Build up road. Reshape or crown. Install rubber blade.		6/15/2012	Fixed	NA	needs maintenance: clean out behind diverters, clean out riprap ditch
A1-21	~1/3 mi on Jeep Trail from Ramsdell Rd.	Trail	Direct flow of sediment to stream. Severe surface erosion. stream crossing	install stone ford where trail crosses stream.		6/15/2012	Fixed	NA	recently fixed, earthen water bar berm installed at end of path

2012 Little Sebago Lake Watershed Survey Update

Phase-Sector-Site	Location	Land Use	Original Problem Description	Appendix A		2012 Follow-Up Survey Date	2012 Follow-Up Status	2012 Follow-Up Current Impact	2012 Follow-Up Additional Information
				Original Recommendations					
A1-3	10 Qualey Rd. east of int. w/ Mt. View	Driveway	Direct flow of sediment to stream. Moderate surface erosion.	Add new surface material.		6/15/2012	Fixed	NA	see actions taken
A1-5	Across from 7 Qualey Rd., 46 Qualey	Beach Access	Direct flow of sediment to lake. Slight surface erosion.	Install rubber blade.		6/15/2012	Fixed	NA	see actions taken
A1-6	Tele pole #705	Private Road	Clogged culvert. Direct flow of sediment to stream. Slight surface erosion.	Clean out culvert. Add new surface material. Reshape or crown. Install detention basin.		6/15/2012	Fixed	NA	relate to site A1-3
A1-7a	(28) Qualey Rd.	Residential	Moderate surface erosion.	Install stone-filled dripline trench. Install waterbar. Establish buffer. Seed and mulch. Rip rap.		6/15/2012	Fixed	NA	appear to have removed three large trees / shrubs
A1-7c	(29) Qualey Rd.	Residential	Moderate surface erosion.	Cut back bank. Terrace.		6/15/2012	Fixed	NA	steep driveway with some erosion, could use diverters; exposed excavated soil, original problem fixed with terraced bank and plants
A1-7d	38 Qualey Rd.	Residential	Moderate surface erosion.	Add new surface material. Establish buffer. Terrace.		6/15/2012	Fixed	NA	boxed in stairs
A1-7e	Qualey Road between lot 24-4 and turr	Private Road	Moderate surface erosion.	Install culvert beneath driveway. Armor ditch with stone or grass. Install ditch. Install detention basin.		6/15/2012	Fixed	NA	
A1-7f	44 Qualey Road	Residential	Direct flow of sediment to lake. Moderate surface erosion.	Install stone-filled dripline trench. Install waterbar.		6/15/2012	Fixed	NA	installed new gravel road material and three rubber razor water diverters
A1-8	44 Qualey Rd.	Boat Access	Direct flow of sediment to lake. Severe surface erosion.	Add new surface material. Install rubber blade.		6/15/2012	Fixed	NA	
A1-9	between 48 Qualey and 46 Qualey	Trail	Direct flow of sediment to lake. Moderate surface erosion.	Define meandering path, possibly close off. Install rubber blade. Extend buffer. Define pathways.		6/15/2012	Fixed	NA	completely redone with new construction pavers put in for walkway
A1-9a	48 Qualey Rd. near bend	Residential	Slight roof runoff. Bare soil. Slight surface erosion.	Install stone-filled dripline trench. Establish buffer. Seed and mulch. Define pathways. No raking. Install steps.		6/15/2012	Fixed	NA	vegetaton growing; driveway drainage above improved
A1-9e	(61) Qualey Rd	Construction Si	Stockpiled soil. Unstable construction site.	Install silt fence properly. Install erosion controls.		6/15/2012	Fixed	NA	
A2-10	Loon Lane	Residential	Direct flow of sediment to lake. Bare soil. Slight surface erosion.	Establish buffer. Seed and mulch. No raking.		7/10/2012	Fixed	NA	driveway paved and redone, no gravel washing
A2-11	Loon Lane	Residential	Direct flow of sediment to lake. Bare soil. Lack of shoreline buffer. Moderate surface erosion.	Build up road. Establish buffer.		7/10/2012	Fixed	NA	good gravel, rubber razors and riprap ditch established along drive leading to beach

2012 Little Sebago Lake Watershed Survey Update

Phase-Sector-Site	Location	Land Use	Original Problem Description	Appendix A	2012 Follow-Up Survey Date	2012 Follow-Up Status	2012 Follow-Up Current Impact	2012 Follow-Up Additional Information
				Original Recommendations				
A2-20	Lake Grove Springs - Narrows	Residential	Direct flow of sediment to lake. Bare soil. Slight surface erosion.	Install waterbar. Extend buffer. Install steps. Terrace.	6/15/2012	Fixed	NA	not an issue
A2-24	Ramsdell Rd	Private Road	Unstable culvert inlet/outlet. Direct flow of sediment to stream. Severe road shoulder erosion. Moderate surface erosion. Stream undercutting road shoulder. Severe problem.	Complex site - needs engineering assistance. Enlarge culvert. Install plunge pool. Replace culvert. Stabilize culvert inlet and/or outlet. Armor ditch with stone or grass. Install turnout. Add new surface material. Build up road. Remove grader b	7/10/2012	Fixed	NA	road is crowned, no water water quality issue yet no maintenance occurring at site (ditch should be mowed and culvert inlet and outlet cleared)
A2-4	Ramsdell Rd. near Grape Island Trail	Residential	Bare soil. Slight surface erosion.	Extend buffer. Mulch.	7/10/2012	Fixed	NA	bare soil area still present yet shoreline is slightly more stable with vegetation growth
A2-5	Ramsdell Rd. near Grape Island Trail	Residential	Lack of shoreline buffer. Slight surface erosion.	Establish buffer.	7/10/2012	Fixed	NA	grassed in yard
A2-9	Loon Lane intersection with Ramsdell Rd	Private Road	Direct flow of sediment to lake. Moderate road shoulder erosion. Moderate surface erosion.	Add new surface material. Build up road. Install turnout(s). Install broad-based dip. Install waterbar.	7/10/2012	Fixed	NA	
A3-1	202 Birchwood Road near end	Residential	Direct flow of sediment to lake. Shoreline erosion. Lack of shoreline buffer. Slight surface erosion.	Drywell or turn gutter spout toward landscape bed. Install dry well. Establish buffer.	9/10/2012	Fixed	NA	
A3-18	Road in front of 122 Birchwood	Private Road	Direct flow of sediment to stream. Severe road shoulder erosion.	install cross culvert to other side. Armor ditch with stone or grass. Install ditch. Install detention basin.		Fixed	NA	Maintenance needed. Seeding, check dams and mulch banks.
A3-19	118 Birchwood Rd.	Private Road	Clogged culvert. Direct flow of sediment to lake. Severe road shoulder erosion.	Clean out culvert. Stabilize culvert inlet and/or outlet. Armor ditch with stone or grass. Install ditch. Install turnout(s).		Fixed	NA	
A3-28	(80) Birchwood Rd. Pole #138	Driveway	Direct flow of sediment to ditch. Severe surface erosion.	Armor ditch with stone or grass. Reshape ditch. Seed and mulch.	9/10/2012	Fixed	NA	
A3-29	80, 84 Birchwood Rd.	Driveway	Direct flow of sediment to lake. Severe surface erosion.	Install dry well. Establish buffer. Seed and mulch. Rip rap.	9/10/2012	Fixed	NA	Reclaim on some of driveway and waterbar added.
A3-30	~ 80 Birchwood Rd.	Private Road	Direct flow of sediment to lake. Severe erosion at culvert outlet	Needs professional help - severe problem	9/10/2012	Fixed	NA	Culvert outlet stable, but inlet needs stabilization.

2012 Little Sebago Lake Watershed Survey Update

Phase-Sector-Site	Location	Land Use	Original Problem Description	Appendix A	2012 Follow-Up Survey Date	2012 Follow-Up Status	2012 Follow-Up Current Impact	2012 Follow-Up Additional Information
				Original Recommendations				
A3-32	(64) Birchwood Rd.	Private Road	Clogged culvert. Direct flow of sediment to ditch. Moderate surface erosion.	Install level spreaders in buffer area to disperse flow. Clean out culvert. Enlarge culvert. Reshape ditch.	9/10/2012	Fixed	NA	Swale on uphill side should be cleaned out and seeded; swale/ditch should be created on hill along shore side of road. Bank and road are stable.
A3-35	Birchwood Rd. @ start of hill next to #5	Private Road	Moderate road shoulder erosion.	Create water diversion at top of hill. Enlarge culvert. Install ditch.	9/10/2012	Fixed	NA	Need to seed ditch and remove road berm.
A4-3	Lyons Pt from pole 18 to Johnson Prop	Private Road	Direct flow of sediment to lake. Moderate surface erosion. Pavement in poor condition.	Re-pave. Remove winter sand. Reshape or crown. Pave.	9/20/2012	Fixed	NA	road is now paved (unsure if treated with sand and salt in winter?)
A5-17	44 Aquilla Road	Residential	Direct flow of sediment to lake. Shoreline erosion. Lack of shoreline buffer. Unstable beach access.	Establish buffer. Seed and mulch. No raking.	7/23/2012	Fixed	NA	Great buffer. No raking
A5-24	Arundel Rd. near corner w/ Gore Rd.	Residential	Bare soil. Lack of shoreline buffer.	Extend buffer. Seed and mulch.	7/25/2012	Fixed	NA	Have added a wooden buffer around there beach so it doesn't get washed out. Lack of shoreline buffer. Cinder blocks added around edge of the land.
A5-25	Pole 4S & 4	Private Road	Clogged culvert. Unstable culvert inlet/outlet. Direct flow of sediment to ditch. Slight road shoulder erosion.	Clean out culvert. Stabilize culvert inlet and/or outlet. Install ditch. Reshape ditch.	7/25/2012	Fixed	NA	Crib stones where added to bring wall up to level of road.
A5-30	Hayden Lane - near rental camps	Driveway	Direct flow of sediment to lake. Moderate surface erosion.	Add new surface material. Install turnout(s). Install waterbar.	7/25/2012	Fixed	NA	water runoff does not seem to be an issue on driveway
A5-31	(17) Hayden Lane Sandy Beach for rer	Residential	Direct flow of sediment to lake. Slight surface erosion.	Establish buffer. Install infiltration trench. Mulch. Define pathways. Terrace.	7/25/2012	Fixed	NA	Has a shoreline buffer and pathways for water. Buffer around tennis court and it has a little ditch around it.
A5-32	(39) Arundel Road	Residential	Slight roof runoff. Slight surface erosion.	Extend gutter downspout to buffer. Install dry well. Extend buffer. Seed and mulch.	7/25/2012	Fixed	NA	Has some mulch down but it should be redone. Did put some plant buffers around the gutters but it could be better.
A5-33	(43) Arundel Road	Residential	Direct flow of sediment to lake. Slight roof runoff. Shoreline erosion. Lack of shoreline buffer. Slight surface erosion.	Establish stable slope. Build up at top of steps and divert into infiltration trench. Install stone-filled dripline trench. Install dry well. Establish buffer. No raking.	7/25/2012	Fixed	NA	Slope is stable, water is diverted into trench above stairs, and installed buffer along shoreline. There is no stone filled for drip line but water runs into gutters and directed towards a buffer.
A5-5	Evergreen Rd. Pvt. near turn of Deer A	Private Road	Direct flow of sediment to lake. Moderate road shoulder erosion.	Armor ditch with stone or grass. Install ditch. Remove winter sand.	9/21/2012	Fixed	NA	paved shoulders, grassed to pavement
A6-1	#2 Beaver Cove Rd	Driveway	OtherSlight surface erosion.	Install turnout(s). Install waterbar. Establish buffer.	7/25/2012	Fixed	NA	Buffer installed, grass has grown, and mulch has been added around driveway,

2012 Little Sebago Lake Watershed Survey Update

Phase-Sector-Site	Location	Land Use	Original Problem Description	Appendix A	2012 Follow-Up Survey Date	2012 Follow-Up Status	2012 Follow-Up Current Impact	2012 Follow-Up Additional Information
				Original Recommendations				
A6-10	Johnson Rd Pole #9	Private Road	Direct flow of sediment to stream. Stockpiled soil.	Install turnout. Seed and mulch.	7/23/2012	Fixed	NA	Sediment going to turnout
A6-3	Farwell Bk Rd Crossing	Private Road	Unstable culvert inlet/outlet. Direct flow of sediment to stream.	Stabilize culvert inlet and/or outlet. Reshape or crown. Rip rap.	7/25/2012	Fixed	NA	New culvert (an open culvert instead of 2), and road is crowned
A6-4	Sand Brook Crossing (Westwood Rd)	Town Road	Unstable culvert inlet/outlet. Direct flow of sediment to stream. Moderate road shoulder erosion.	Clean up winter sand. Stabilize culvert inlet and/or outlet. Install turnout(s). Remove winter sand.	7/25/2012	Fixed	NA	
A6-5	Westwood Rd/15 Narrows Ln	Residential	Septic system under construction. No silt fence.	Install erosion controls.	7/25/2012	Fixed	NA	Construction site is done.
A6-7	Johnson Rd	Private Road	Unstable culvert inlet/outlet. Direct flow of sediment to stream. Ditch blocked with excavated soil	lengthen culvert. Stabilize culvert inlet and/or outlet. Install ditch.	7/23/2012	Fixed	NA	Old culvert replaced with bigger one
A6-9	Pole #24 Johnson Rd	Private Road	Unstable culvert inlet/outlet. Direct flow of sediment to ditch.	Install ditch.	7/23/2012	Fixed	NA	Ditch installed and sediment is carried into the ditch and then into the woods
A7-14	(25) Swett Rd before house boat access	Residential	Beach enhancement with sand. Bare soil. Lack of shoreline buffer.	Reduce beach area near water. Extend buffer. Seed and mulch. Define pathways.	6/29/2012	Fixed	NA	grass now established over sand. Still littler/no buffer
A7-15	259 Westwood Rd 185.1 pole #	Driveway	Lack of shoreline buffer. Moderate surface erosion.	Install rubber blade. Establish buffer.	6/29/2012	Fixed	NA	installed rubber razors and scrushed stone.
A7-16	(257) Westwood Rd	Residential		Build up ice berm. Install stone-filled dripline trench. Install dry well. Install waterbar. Establish buffer.	6/29/2012	Fixed	NA	grass has established in gully. No buffer still but no erosion
A7-17	(271) Westwood Rd	Residential	Bare soil. Moderate surface erosion.	Stone at outlet of small pipe besides stairsInstall stone-filled dripline trench. Install waterbar. Establish buffer.	6/29/2012	Fixed	NA	installed gutter, grassed innow, no erosion at down spout
A7-18	(271) Westwood Rd	Driveway	Moderate surface erosion.	Build up edge of driveway closest to road	6/29/2012	Fixed	NA	built up beam at edge of driveway. Now draining
A7-19	Westwood Rd in front of Foster residence	Private Road	Severe road shoulder erosion.	Install turnout(s).	6/29/2012	Fixed	NA	problem on shoulder but no lake impact. Goes to buffer
A7-22	7 Cobb Rd pole # 165 1/2	Driveway	Direct flow of sediment to stream. Moderate surface erosion.	see recommendations for 7-21. This will take care of run off impacting driveway. Plant trees and shrubs along stream. Install waterbar.	6/29/2012	Fixed	NA	road grading and_____now keeps away from stream
A7-24	15 Cobb Rd	Residential	Direct flow of sediment to lake. Roof runoff.	Install stone-filled dripline trench. No raking.	6/29/2012	Fixed	NA	

2012 Little Sebago Lake Watershed Survey Update

Phase-Sector-Site	Location	Land Use	Original Problem Description	Appendix A	2012 Follow-Up Survey Date	2012 Follow-Up Status	2012 Follow-Up Current Impact	2012 Follow-Up Additional Information
				Original Recommendations				
A7-25	31 Cobb Rd	Residential	Direct flow of sediment to lake. Bare soil. Slight surface erosion.	Manage roof runoff. Enlarge existing dry wells. Install stone-filled dripline trench. Install dry well. Extend buffer. No raking.	6/29/2012	Fixed	NA	very little bare soil now. Driplines stable.
A7-3	banking between Hunnewell and Whitn	Residential	Severe surface erosion.	Restrict foot traffic. Extend buffer. Seed and mulch.	6/29/2012	Fixed	NA	totally vegetated now
B10-18	Northern Oaks Drive	Private Road	Moderate road shoulder erosion	Install turnouts, remove winter sand, install ditch, install ditch turnouts	9/21/2012	Fixed	NA	road is paved, evidence of winter sand use and lack of maintenance
B10-6	69 N. Oaks Dr (blue mailbox)	Driveway	moderate surface erosion	Add better surface material, reshape/veg shoulder, plant	9/21/2012	Fixed	NA	vegetation has grown over most of gravel driveway, paved near building, very flat
B1-10	between CMP pole 19 &18, right side c	Private Road	crushed/broken culvert, clogged culvert, moderate ditch erosio, slight road shoulder erosion	clean out culvert, reshape and clean out ditch, crown road, add vegetation to slope		Fixed	NA	
B1-11	14 Lake Ave	Residential	slight ditch erosion slight road shouldererosion, outlet pipe through rock wall discharging washing maching into chatch basin, through pipe, under road, into ditch and then lake	armor ditch, reshape shoulder	9/21/2012	Fixed	NA	Little evidence of erosion
B1-16	202 Cambell Shore Road	Beach	bare soil, shoreline erosion, slight to moderate surface erosion	establish shoreline buffer, seed and mulch, no raking	9/21/2012	Fixed	NA	Bank stabilized, less exposed sand but still bare areas
B1-19	Lattimer/Cambell Shore Road, near po	Private Road	moderate road shoulder erosion, road sand, moderate surface erosion	add better surface material, build up road, install turnouts, reshape or crosn, waterbar?		Fixed	NA	
B1-20	219 Cambell Shore Road	Driveway	slight road shoulder erosion, bare soil, moderate surface erosion	add better surface material, plant vegetation, seed and mulch, vegetate	9/21/2012	Fixed	NA	Driveway closed off and vegetated
B1-21	26 Lattimer Road	Driveway	bare soil, moderate surface erosion	add better surface material, plant vegetation, seed and mulch, no raking	9/21/2012	Fixed	NA	No direct flow to lake.
B1-24	Pole 6-7-8 Lattimer to Edgewater	Private Road	moderate road shoulder erosion, plow or grader berm, road sand, moderate surface erosion	add better surface material, build up road, remove grader berms, reshape or crown road	9/21/2012	Fixed	NA	Road is now paved
B1-26	11 Edgewater	Residential	roof runoff, bare soil, moderate surface erosion, exposed roots	install stone filled dripline trench, seed and mulch, no raking, define path for foot traffic, terrace	9/21/2012	Fixed	NA	Still bare but no lake impact

2012 Little Sebago Lake Watershed Survey Update

Phase-Sector-Site	Location	Land Use	Original Problem Description	Appendix A	2012 Follow-Up Survey Date	2012 Follow-Up Status	2012 Follow-Up Current Impact	2012 Follow-Up Additional Information
				Original Recommendations				
B1-28	12 Edgewater Road	Residential	slight road shoulder erosion, roof runoff, bare soil, moderate surface erosion	install stone filled dripline trench, plant vegetation, seed and mulch, less raking	9/21/2012	Fixed	NA	Not an issue
B1-30	20 Edgewater	Driveway	moderate ditch erosion, moderate road shoulder erosion, bare soil, moderate surface erosion	add better surface material, reshap/vegetate shoulder, install waterbar	9/21/2012	Fixed	NA	Driveway mostly stable.
B1-31	Rt side of Lake, new up high, new lot?	Construction Site	bare soil, severe surface erosion, unstable construction site	install proper erosion control, add vegetation, install turnouts, reshape shoulder, terrace, mulch	9/21/2012	Fixed	NA	Riprap on banks
B1-4	55 Lake Avenue	Residential	Slight ditch erosion, roof runoff, bare soil, slight surface erosion	armor ditch with stone, install stone filled dripline trench, establish buffer, seed/mulch, no raking	9/21/2012	Fixed	NA	Grassed and vegetated.
B1-7	35 Lake Ave	Construction Site	moderate ditch erosion, bare soil, shoreline erosion, lack of buffer, moderate surface erosion, unstable construction site with very poor BMPs	stabilize inlet/outlet, proper erosion control for construction site and stream stabilization, establish shoreline buffer, riprap, steps, terrace ,runoff diverters.	9/21/2012	Fixed	NA	Construction finished and site stable.
B1-9	23 Lake Ave	Residential	roof runoff, bare soil, slight surface erosion	install dripline trench under deck, mulch, no raking, runoff diverters	9/21/2012	Fixed	NA	Timbers enclose area under deck. Mulch at top of banking.
B2-10	23 Abrahamson Rd	Construction Site	Bare soil, moderate surface erosion, potential for severe, unstable construction site	Plant trees, shrubs, and groundcovers, seed and mulch, silt fence needs to be anchored	9/21/2012	Fixed	NA	
B2-11	Intersection of Abrahamson Rd and Kn	Private Road	Bare soil, slight surface erosion	Install plunge pool at culvert inlet, armor ditch, install turnout, reshape/veg shoulder, seed and mulch.		Fixed	NA	
B2-3	18 Waterview	Construction Site	Bare soil, unstable construction site	Seed and mulch, properly install silt fence	9/21/2012	Fixed	NA	
B2-4	Waterview Right of Way	Right of way	Bare soil, moderate surface erosion, unstable beach	Install runoff diverters, plant trees shrubs, and groundcovers, seed and mulch		Fixed	NA	
B2-5	Waterview	Residential	Bare soil, shoreline erosion, lack of buffer, moderate surface erosion	Establish shoreline buffer, plant trees, shrubs and groundcover, seed and mulch		Fixed	NA	
B2-7	67 Skilling Rd	Residential	Bare soil, slight and moderate surface erosion, culvert draining into stream	Plant trees, shrubs, and groundcovers, seed and mulch, stop raking		Fixed	NA	

2012 Little Sebago Lake Watershed Survey Update

Phase-Sector-Site	Location	Land Use	Original Problem Description	Appendix A		2012 Follow-Up Survey Date	2012 Follow-Up Status	2012 Follow-Up Current Impact	2012 Follow-Up Additional Information
				Original Recommendations					
B3-10	41 Many Oaks	Residential	Shoreline erosion, lack of buffer, moderate surface erosion, unstable beach	Rip rap - pavers		8/13/2012	Fixed	NA	Added buffer and stone to address issue.
B3-11	7 Narrows Landing	Beach	Bare soil	Install waterbar on beach trail, no raking		8/13/2012	Fixed	NA	Stopped raking. Site looks great.
B3-12	Many Oaks Lane	Residential	Roof runoff	Install stone-filled dripline trench, drywell gutter at spout		8/13/2012	Fixed	NA	Added mulch along dripline and more vegetation now.
B3-14	223 Smith Rd	Residential	Bare soil, slight surface erosion	Extend buffer, plant trees, shrubs and groundcovers, seed and mulch. Add steps and define path for foot traffic.		8/13/2012	Fixed	NA	Banking planted and terraced.
B3-15	Sebago Woods Trail (Low spot)	Town Road	Clogged culvert - half full of sand. Catch basin connected to stream	Clean out culvert, intall turnout. Annual maintenance is critical		8/13/2012	Fixed	NA	
B3-16	Smith Rd near pole # 12	Construction Site	Clogged culvert, ditch capacity exceeded	Clean out culvert, intall plunge pool, add erosion controls (silt fence).		8/13/2012	Fixed	NA	
B3-17	Ridge Road	Town Road	Clogged culvert - half full of sand. Catch basin connected to stream	Clean out culvert, intall turnout. Annual maintenance is critical		8/13/2012	Fixed	NA	
B3-18	Wipporrel	Town Road	Clogged culvert - half full of sand. Catch basin connected to stream	Clean out culvert, intall turnout. Annual maintenance is critical		8/13/2012	Fixed	NA	
B3-19	corner of Smith Rd	Town Road	Culvert, direct drainage to lake	Redesign drainage to outlet in wooded area		8/13/2012	Fixed	NA	
B3-2	18 Four Seasons Ln	Residential	Bare soil, lack of buffer, very slight surface erosion	Establish shoreline buffer, plant trees, shrubs and groundcover, seed and mulch. Stop raking.		8/13/2012	Fixed	NA	Much more grass covering sand.
B3-3	100 Honey Little Ln	Residential	Bare soil, road sand, lack of buffer, slight surface erosion	Establish shoreline buffer, seed and mulch		8/13/2012	Fixed	NA	More vegetation since area is hardly used. Still could use buffer though. Salvage yard on upland part of property.
B3-8	Smith Rd near pole # 12	Private Road	Road sand	Clean up winter sand		8/13/2012	Fixed	NA	
B3-9	Four Seasons Rd	Private Road	Slight ditch erosion, slight road shoulder erosion.	Install turnouts, reshape or crown road		8/13/2012	Fixed	NA	Road problems but does not reach lake.
B4-16	92 Brown Cove Road	Residential	Lack of buffer and unstable beach area.	Establish shoreline buffer and stabilize bare soil.			Fixed	NA	
B4-18	90 Brown Cove Road	Residential	Shoreline erosion, lack of buffer, slight surface erosion, unstable beach	Establish shoreline buffer, plant trees shrubs, and groundcovers		8/13/2012	Fixed	NA	Still bare but beach size reduced with grass and plantings.

2012 Little Sebago Lake Watershed Survey Update

Phase-Sector-Site	Location	Land Use	Original Problem Description	Appendix A	2012 Follow-Up Survey Date	2012 Follow-Up Status	2012 Follow-Up Current Impact	2012 Follow-Up Additional Information
				Original Recommendations				
B4-25	74 Brown Cove Rd	Residential	Bare soil, shoreline erosion, lack of buffer, moderate surface erosion	Extend buffer, plant, seed and mulch. Establish new slope, infiltration trench or terrace.		Fixed	NA	
B4-31	4 Sunnyside Dr	Residential	Bare soil, lack of buffer, moderate surface erosion	Extend buffer, plant, seed and mulch	8/13/2012	Fixed	NA	Installed terracing and plantings to catch runoff.
B4-9	114 Brown Cove Road	Residential	Bare soil, slight surface erosion, and lack of buffer in part of lot.	Extend buffer, seed and mulch bare areas, and define path for foot traffic.		Fixed	NA	
B5-11	28 Island Dr	Right of way	Severe surface erosion, unstable boat access	Establish shoreline buffer, reshape or crown road, install waterbar		Fixed	NA	
B5-13	53 Island Dr	Private Road	winter sand, lack of buffer	Establish buffer, remove winter sand, move snowplow away from water	8/13/2012	Fixed	NA	
B5-15	57 Island Dr	Residential	Roof runoff, moderate surface erosion	Plant trees, shrubs, and groundcovers, install stone filled dripline trench, mulch	8/13/2012	Fixed	NA	
B5-2	7 Crocket Rd	Boat access	Moderate surface erosion, unstable boat access	Install 2 rubber razor blads		Fixed	NA	
B5-3	7 Crocket Rd	Residential	Bare soil, slight surface erosion	Extend buffer, seed and mulch, limit lake access points	8/13/2012	Fixed	NA	
B5-4	22 Happy Lane	Residential	Roof runoff, bare soil	Seed and mulch, install stone-filled dripline trench		Fixed	NA	
B6-9	46 Outlet Cove Rd	Residential	Bare soil, lack of buffer, slight	Establish buffer, plant	7/25/2012	Fixed	NA	
B9-35	227 Mt Hunger Shore	Residential	Severe road shoulder erosion, plow or grader berm, roof runoff, lack of buffer, slight surface erosion, unstable beach	Re-establish berm at top of driveway, direct to plunge pool at outlet of cross culvert	7/25/2012	Fixed	NA	Driveway not currently being used; ditch on road diverts
B9-41	211 Mount Hunger Shore Road (adjacent to driveway)	Driveway	Slight ditch erosion, roof runoff, bare soil, slight surface erosion	install runoff diverters, add series of check dams along ditch, add plantings at end of driveway	7/24/2012	Fixed	NA	installed rain garden and ECM on hill below driveway
B9-45	197 Mt Hunger Shore	Driveway	lack of buffer	Install runoff diverters, extend buffer, add dripline trench		Fixed	NA	
B9-55	across from 172 Mt Hunger Shores	Right of way	Slight surface erosion	Install runoff diverters - rubber razor on slope	7/24/2012	Fixed	NA	installed timbers without crushed stone – looks good but will it work later?
B9-56	171 Mt Hunger Shore	Residential	Roof runoff, bare soil, lack of buffer	Establish buffer, no raking, install stone-filled dripline trench	7/25/2012	Fixed	NA	installed dripline trenches; shoreline seems okay
B9-86	101 Mt Hunger Shore	Boat access	Shoreline erosion	Install turnouts, rip rap	7/25/2012	Fixed	NA	Minor erosion by boat ramp
YCC_2001	148 Lyon's Point Road	Driveway	NA	NA		Fixed	NA	

2012 Little Sebago Lake Watershed Survey Update

Phase-Sector-Site	Location	Land Use	Original Problem Description	Appendix A		2012 Follow-Up Survey Date	2012 Follow-Up Status	2012 Follow-Up Current Impact	2012 Follow-Up Additional Information
				Original Recommendations					
YCC-2006	3 Pride Lane	Residential	Bare soil and exposed tree roots in backyard; bare and eroding soil in stream area to left side of house; severe erosion on roadside.	NA		7/25/2012	Fixed	NA	Mulch worked well, many plants in woods died
YCC-2006	355 Mount Hunger Shore Road	Residential	NA	NA		7/25/2012	Fixed	NA	road erosion to path
YCC-2006	227 Sandbar Road	Residential	NA	NA		7/25/2012	Fixed	NA	Trench covers with pine needle but seems to be working
YCC-2006	34 Qualey Road	Residential	NA	NA		6/15/2012	Fixed	NA	completely remodeled, new foundation, crushed stone, dripline trenches
YCC-2006	172 Mount Hunger Shore Road	Residential	NA	NA		7/25/2012	Fixed	NA	
YCC-2006	183 Mount Hunger Shore Road	Residential	NA	NA		7/25/2012	Fixed	NA	
YCC-2006	75 Lake Ave.	Residential	Eroding pathways on hillside bordering the lake, clogged culvert with erosion at outlet.	NA			Fixed	NA	
YCC-2006	46 Birchwood Road	Residential	Bare and eroding soil on moderately sloping ROW and erosion of existing waterbars (soil berms); bare and eroding soil on slope beside ROW; high-volume stormwater flow area	NA			Fixed	NA	
YCC-2006	117 Sabbady Point Road	Residential	Bare and eroding soil on ROW approximately 8' from shoreline	NA		7/25/2012	Fixed	NA	
YCC-2006	11 Crescent Lane	Residential	NA	NA			Fixed	NA	
YCC-2007	11 Loon Lane	Residential	NA	NA		7/25/2012	Fixed	NA	Still very open shoreline- lawn and sand
YCC-2007	32 Qualey Road	Residential	Shoreline erosion and lack of buffer	NA		6/15/2012	Fixed	NA	
YCC-2007	229 Mount Hunger Shore	Residential	NA	NA		7/24/2012	Fixed	NA	
YCC-2007	197 Smith Road	Driveway	Soil erosion on driveway and along side of house.	NA			Fixed	NA	
YCC-2007	46 Birchwood Road	Residential	Eroded pathway.	NA		9/10/2012	Fixed	NA	
YCC-2007	1 Birch Island Road	Residential	Runoff as sheet flow coming off of the roof of the house and cascading across your gently sloping beach area directly to the lake (erosion evidenced by exposed tree roots) Bare soil and exposed tree roots in the horseshoe area.	NA			Fixed	NA	
YCC-2008	2 Kram's Point Road	Residential	Bare soil, unstable beach and lack of buffer.	NA			Fixed	NA	

2012 Little Sebago Lake Watershed Survey Update

Phase-Sector-Site	Location	Land Use	Original Problem Description	Appendix A		2012 Follow-Up Survey Date	2012 Follow-Up Status	2012 Follow-Up Current Impact	2012 Follow-Up Additional Information
				Original Recommendations					
YCC-2008	9 Hayden Lane	Residential	Shoreline erosion and lack of buffer	NA			Fixed	NA	
YCC-2008	179 Mount Hunger Shore Road	Residential	Driveway runoff and bare soil.	NA			Fixed	NA	
YCC-2008	1 Moose Point Road	Residential	Bare soil from roof runoff.	NA			Fixed	NA	
YCC-2010	65 Northern Oaks Drive	Residential	Dripline runoff and bare soil.	NA			Fixed	NA	
YCC-2011	115 Mount Hunger Shores	Residential	NA	NA		7/25/2012	Fixed	NA	could use some maintenance. Could use more driveway diverters
YCC-2011	343 Mount Hunger Shore Road	Driveway	NA	NA		7/25/2012	Fixed	NA	
YCC-2011	185 Mount Hunger Shore Road	Residential	NA	NA		7/26/2012	Fixed	NA	
YCC-2011	166 Mount Hunger Shore Road	Residential	NA	NA		7/24/2012	Fixed	NA	driveway paved- carries ditch erosion
YCC-2011	161 Lyons Point Road	Residential	NA	NA			Fixed	NA	
YCC-2011	115 Mount Hunger Shores	Residential	NA	NA		7/25/2012	Fixed	NA	
YCC-2011	19 Brass Lane	Residential	Runoff from steep gravel driveways.	NA		8/13/2012	Fixed	NA	
A2-1	Ramsdell Rd. Pole #85 1/2	Residential	Pet waste. Shoreline erosion. Lack of shoreline buffer. Moderate surface erosion.	Install stone-filled dripline trench. Establish buffer. Seed and mulch.			Unknown	Unknown	
A2-12	Loon Lane	Residential	Direct flow of sediment to lake. Bare soil. Slight surface erosion.	Mulch. Install steps. Terrace.			Unknown	Unknown	
A2-13	Horse Farm	Agriculture	Bare soil. Slight surface erosion. Manure piles and open pasture with exposed soil.	Need ag natural resource management specialist to look at to determine risk and solution. Possible candidate for NRCS technical assistance.			Unknown	Unknown	
A2-14	66 Lake Grove Springs	Private Road	Direct flow of sediment to lake. Moderate road shoulder erosion.	Build up road. Install turnout(s). Reshape or crown. Install waterbar.			Unknown	Unknown	
A2-6	Ramsdell Rd. north of Grape Island Tr	Driveway	Direct flow of sediment to lake. Moderate road shoulder erosion. Lack of shoreline buffer. Moderate surface erosion.	Reshape area at road/driveway line. Reshape or crown. Install waterbar. Establish buffer.		7/10/2012	Unknown	Unknown	couldn't tell b/c too many cars in lot
A3-16	CMP Meter #3018066	Construction Site	Direct flow of sediment to lake. Bare soil. Severe surface erosion.	Install stone-filled dripline trench. Establish buffer. Seed and mulch. No raking.			Unknown	Unknown	
A3-24	(102, 100, Or 98) Birchwood Rd.	Residential	Direct flow of sediment to lake. Slight surface erosion. Erosion at base of stairway to beach area	Install dry well.			Unknown	Unknown	

2012 Little Sebago Lake Watershed Survey Update

Phase-Sector-Site	Location	Land Use	Original Problem Description	Appendix A	2012 Follow-Up Survey Date	2012 Follow-Up Status	2012 Follow-Up Current Impact	2012 Follow-Up Additional Information
				Original Recommendations				
A3-33	68 or 64 Birchwood Rd.	Driveway	Severe surface erosion.	Install waterbar. Extend buffer. Define pathways.	9/10/2012	Unknown	Unknown	Need more photos to determine site location
A3-36	across from swamp	Private Road	Moderate road shoulder erosion.	Install basin across from house. Install cross culvert. Install ditch. Install detention basin.	9/10/2012	Unknown	Unknown	
A3-37	Birchwood Road Pole #595	Private Road	Unstable culvert inlet/outlet. Direct flow of sediment to stream. Moderate road shoulder erosion.	Enlarge culvert. Install plunge pool. Reshape ditch.		Unknown	Unknown	
A3-7	192 Birchwood Rd. May Meadow Cove	Residential	Direct flow of sediment to lake. Bare soil. Slight surface erosion.	Install stone-filled dripline trench. Mulch. No raking.		Unknown	Unknown	
A4-4	Cedar gambrel. 164 Lyons Pt Rd	Residential	Direct flow of sediment to lake. Slight surface erosion. Unstable beach access.	Extend buffer. Install steps/runoff diverters.		Unknown	Unknown	
A4-4c	(8) Steele Rd north side	Residential	Direct flow of sediment to lake. Lack of shoreline buffer. Slight surface erosion.	Extend buffer. Mulch.		Unknown	Unknown	Did not find
A5-13	Deer Acres Rd. - Pirate's Cove	Residential	Direct flow of sediment to lake. Slight road shoulder erosion. Stockpiled soil. Lack of shoreline buffer. Slight surface erosion.	Extend buffer.		Unknown	Unknown	Did not survey - got site confused with A5-3
A9-1	near 40 Egypt Road	Town Road	Clogged culvert. Direct flow of sediment to ditch. Slight road shoulder erosion. Road shoulder erosion. Slight surface erosion.	Clean out culvert. Stabilize culvert inlet and/or outlet. Armor ditch with stone or grass. Reshape ditch. Add new surface material. Reshape or crown.		Unknown	Unknown	
A9-12	Northridge Acres Subdivision/25 Egypt	Construction Site	Unstable culvert inlet/outlet. Severe road shoulder erosion. Bare soil. Slight surface erosion.	Enlarge culvert. Stabilize culvert inlet and/or outlet. Install erosion controls. Install turnout(s). Reshape or crown. Seed and mulch.		Unknown	Unknown	
A9-13b	near 27 Egypt Rd	Town Road	Unstable culvert inlet/outlet. Direct flow of sediment to ditch. Slight road shoulder erosion. Road shoulder erosion.	Clean out culvert. Reshape ditch. Remove winter sand.		Unknown	Unknown	

2012 Little Sebago Lake Watershed Survey Update

Phase-Sector-Site	Location	Land Use	Original Problem Description	Appendix A		2012 Follow-Up Survey Date	2012 Follow-Up Status	2012 Follow-Up Current Impact	2012 Follow-Up Additional Information
				Original Recommendations					
A9-14	near 31 Egypt Rd.	Town Road	Clogged culvert. Unstable culvert inlet/outlet. Direct flow of sediment to ditch. Slight road shoulder erosion. Road shoulder erosion.	Clean out culvert. Stabilize culvert inlet and/or outlet. Armor ditch with stone or grass. Remove winter sand.			Unknown	Unknown	
A9-15	Egypt Rd. CMP Pole #8	Town Road	Clogged culvert. Unstable culvert inlet/outlet. Slight road shoulder erosion. Road shoulder erosion.	Clean out culvert. Stabilize culvert inlet and/or outlet. Armor ditch with stone or grass. Remove winter sand.			Unknown	Unknown	
A9-2	36 Egypt Road	Town Road	Clogged culvert. . Direct flow of sediment to ditch. Slight road shoulder erosion. Slight surface erosion.	Clean out culvert. Remove winter sand. Reshape or crown.			Unknown	Unknown	
A9-3	near 32 Egypt Road	Town Road	Clogged culvert. Direct flow of sediment to ditch. Slight road shoulder erosion. Slight surface erosion.	Clean out culvert. Remove winter sand. Reshape or crown.			Unknown	Unknown	
A9-4	near 24 Egypt Road	Town Road	Clogged culvert. Direct flow of sediment to ditch. Slight road shoulder erosion.	Clean out culvert. Stabilize culvert inlet and/or outlet. Remove winter sand.			Unknown	Unknown	
B10-17	N Oaks in front of #16, pole #320-5	Private Road	Unstable culvert inlet/outlet	Clean out culvert, stablize inlet/outlet, armor ditch with stone or grass, clean out ditch, reshap ditch			Unknown	Unknown	
B1-15	194 Cambell Shore Road	Beach	moderate ditch erosion, bare soil, lack of buffer ,slight surface erosion	Install plunge pool, armor with stone, detention basin, rip rap			Unknown	Unknown	
B1-18	50 Latimar Road	Residential	slight ditch erosion, bare soil, shoreline erosion, lack of buffer, moderate surface erosion	install stone filled dripline trench, establish shoreline buffer, mulch, no raking, terrace, runoff diverters			Unknown	Unknown	
B1-22	Adjacent to 15 Lattimer (Tim Hutchins	Beach	Brook between Lattimer and Campbell Shore, severe ditch erosion, shoreline erosion, moderate surface erosion, unstable bottom, large plume of sand in lake	detention basin, riprap, broad based stone lip, TECH SHOULD VISIT			Unknown	Unknown	
B1-23	15 Lattimer Road	Residential	bare soil, lack of shoreline buffer, moderate surface erosion	establish shoreline buffer, seed and mulch, no raking, terrace, install stone filled dripline trench			Unknown	Unknown	

2012 Little Sebago Lake Watershed Survey Update

Phase-Sector-Site	Location	Land Use	Original Problem Description	Appendix A	2012 Follow-Up Survey Date	2012 Follow-Up Status	2012 Follow-Up Current Impact	2012 Follow-Up Additional Information
				Original Recommendations				
B1-27	7 Edgewater Road	Residential	roof runoff, bare soil, moderate surface erosion, exposed roots	install stone filled rippline trench, add better surface material to driveway, plant vegetation, seed and mulch, no raking ,steps, define path for foot traffic, terrace	9/21/2012	Unknown	Unknown	Couldn't find
B1-8	31 Lake Ave	Residential	bare soil, lack of shoreline buffer, moderate surface erosion	install stone filled dripline trench, plant vegetation, seed and mulch, less raking		Unknown	Unknown	Asked not to be included.
B2-1	42 Waterview	Residential	Slight ditch erosion, shoreline erosion, slight surface erosion. Unstable beach.	Extend buffer	9/21/2012	Unknown	Unknown	Couldn't find
B4-14	98 Brown Cove Rd	Residential	Bare soil, shoreline erosion, lack of buffer, slight surface erosion	Establish shoreline buffer, plant trees, shrubs and groundcovers, seed and mulch	8/13/2012	Unknown	Unknown	
B5-5	23 Happy Lane	Residential	Bare soil, lack of buffer, slight surface erosion	Establish shoreline buffer, install steps, define path for foot traffic	8/13/2012	Unknown	Unknown	
B6-13	(5) Pride Lane	Driveway	Bare soil, slight surface surface erosion	Plant, seed and mulch, armor ditch with stone or grass	7/25/2012	Unknown	Unknown	
	4 Krams Point Road	Residential			9/22/2012	Problem	High	Sand brought in for beach, large area from house to shoreline
	neighbor of 4 Krams Point Road	Residential			9/22/2012	Problem	High	Sandy beach, lack of shoreline vegetation
	Next to pole 695 / across from #28 Qu	Driveway			9/22/2012	Problem	Medium	Driveway / parking lot eroding and washing into road, constant flow from parking behind. Add crushed stone or pavers
B6-8	2nd house Passby Rd, along shore	Residential	Bare soil, slight surface erosion	Establish shoreline buffer, plant, seed and mulch, define path for foot traffic	7/25/2012	Unknown	Unknown	

Little Sebago Lake Watershed Survey Report

Part I—North of Lyons Point



**Cumberland County Soil and Water Conservation District
Little Sebago Lake Association
Maine Department of Environmental Protection**

May 2003

Acknowledgments

The following people and organizations were instrumental in the Little Sebago Lake Watershed Survey Project and deserve special recognition for their efforts:

Watershed Survey Volunteers

Pam Wilkinson	Kim McBride	Doug Curry
Dennis Curry	Larry Lindenberg	Robert Westcott
Jean Hill	Judy Andrews	Chuck Stone
Holly Cole	Scott Lowell	Carol Doucette
Joy Hayes	Christine Godfrey	David Godfrey
Gail Wing	Jason White	

Steering Committee

Pam Wilkinson	Chuck Stone	Kim McBride
Scott Lowell	Carol Ann Doucette	Judy Andrews

Technical Staff

Jeff Brinck, Cumberland County Soil & Water Conservation District
Tamara Lee Pinard, Cumberland County Soil & Water Conservation District
Betty Williams, Cumberland County Soil & Water Conservation District
Jeff Stern, Oxford County Soil and Water Conservation District
Don Kale, Maine Department of Environmental Protection
Wendy Garland, Maine Department of Environmental Protection
Noralee Raymond, Americorps
Jessica Lincoln, Americorps
Brie Begiebing, Americorps
Ben Lubbers, Americorps
Melissa Steinleib, Americorps

Sponsors

The Little Sebago Lake Association
Maine Department of Environmental Protection
US EPA
The Town of Gray
The Town of Windham
Oxford County SWCD
Cumberland County SWCD

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.

All programs and services of the Cumberland County Soil & Water Conservation District are offered on a non-discriminatory basis, without regard to race, ethnicity, color, gender, religion, age, disability, political belief, sexual orientation, or marital or family status.

Cover Photo Credit: Ed Lefebvres

Table of Contents

Introduction	4
Purpose of the Watershed Survey	7
The Survey Method	7
Summary of Watershed Survey Findings	8
Residential	11
Driveways	12
Private Roads	13
Town Roads	14
Sites in Other Categories	15
Examples of Good Watershed Protection Techniques	15
Where Do We Go From Here?	16
Permitting ABC's	17
Glossary of Common Conservation Practices	18
Where Do I Get More Information?	19
Spreadsheet of All Survey Data	Appendix A
Maps of Sites Documented through the Survey	Appendix B



When combined with many other similar sites from 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 Little Sebago Lake Watershed. It provides the results and analysis of a watershed survey conducted on the portion of the Little Sebago Lake Watershed north of Lyons Point. A survey of the southern portion of the watershed will be completed in the spring and summer of 2003. The surveys are conducted in response to evidence compiled over many years that has shown a gradual decline in the lake's water quality.

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 ground water.

The Little Sebago Lake Association has tested water quality in Little Sebago Lake for more than 25 years. In recent years, water clarity and dissolved oxygen levels in the lake have shown some improvement. However, the Maine Department of Environmental Protection's (DEP) statistical analysis of the long term data shows that despite periodic fluctuations, the lake is under stress. Long term trends show that in some portions of the lake, the clarity of the water is decreasing. Also, the amount of oxygen in the bottom water of some portions of the lake has decreased, risking the

survival of cold water fish and the delicate water chemistry balance in the lake. Based on observations at other Maine lakes, these trends forecast a future decline in water quality. For these reasons, plus its regional significance, Little Sebago Lake appears on the list of **Nonpoint Source Priority Watersheds**.

Why is the Water Quality at Risk?

The biggest pollution culprit in Little Sebago Lake and other Maine's lakes is **nonpoint source (NPS) pollution**. NPS is found in storm water runoff from rain and snowmelt. During and after storms and snowmelt, soil (and hitch-hiking nutrients like phosphorus and nitrogen) washes into lakes from the surrounding landscape by streams and overland flow.

NONPOINT SOURCE POLLUTION

Also called NPS or polluted runoff. Pollution from diffuse, seemingly insignificant sources (such as erosion, roads, septic systems) that, when combined, add up to a significant amount of pollution to a watershed.



Runoff from the driveway and rooftops on this property combine to transport significant sediment into Little Sebago Lake.

An example of the powerful impact that storm water runoff can have on water quality is the improvement in Little Sebago Lake's water clarity and bottom water dissolved oxygen levels documented in 2001 and 2002. These improvements occurred during the years of lowest rainfall in recent history. One could safely say that this reduced rainfall resulted in less NPS, and thus an improvement in some water quality parameters.

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. In a developed watershed, however, storm water does not always receive the filtering treatment the forest once provided. It gathers with other runoff shed from impervious surfaces like rooftops, compacted soil, gravel camp roads and pavement, speeds up, and becomes a destructive erosive force.

Why is Stormwater Runoff a Problem?

The problem is not necessarily the water itself, it's the nutrients and the sediment in the storm water runoff that can be bad news. Large volumes of sediment can settle out in the lake, creating an ideal substrate for nuisance and invasive aquatic plants such as variable-leaved water milfoil. **Phosphorus**, a nutrient that is common on land and in storm water runoff, is a primary food for all plants, including **algae**. In natural conditions, the scarcity of phosphorus in a lake limits algae growth. However, when a lake receives extra phosphorus from the watershed, algae growth increases dramatically. Sometimes this growth causes choking blooms, but more often it results in small, insidious changes in water quality that, over time, damage the ecology, aesthetics and economy of lakes.



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

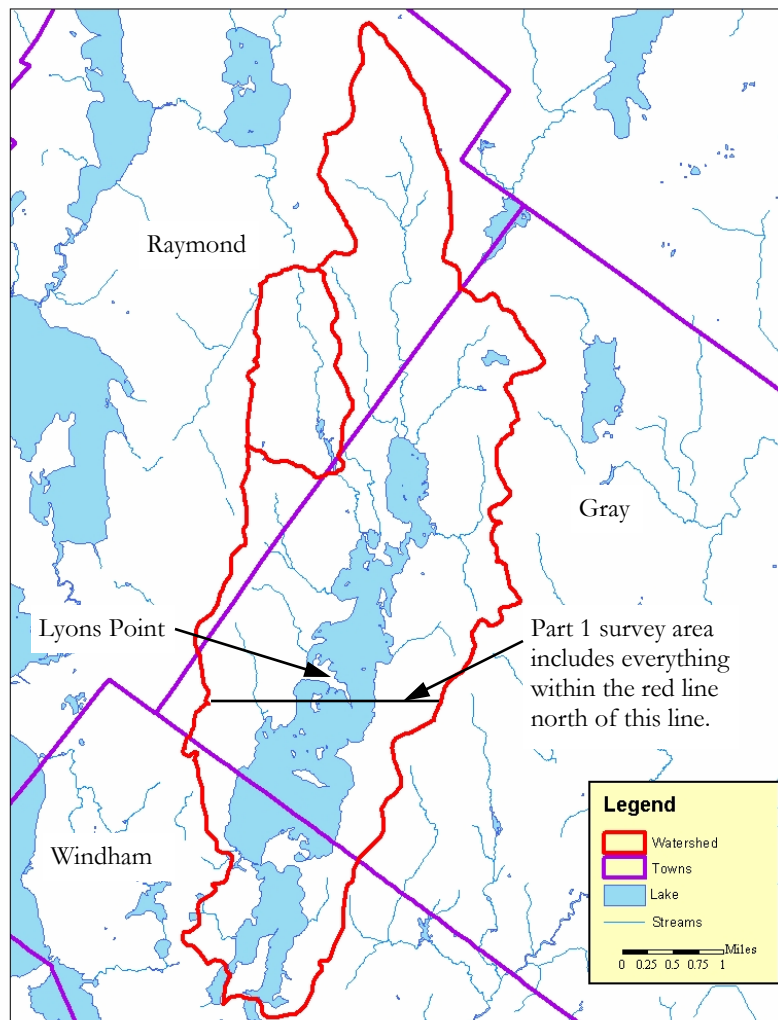


Figure 1. The Little Sebago Lake Watershed

Why should we protect the lake from polluted runoff?

- ◆ The lake is already host to variable-leaved water milfoil, an invasive aquatic plant. This plant and other invasive plants thrive in shallow areas with silty bottoms. Sediment deposited into the lake from erosion creates the ideal environment for these plants to thrive.
- ◆ The lake contains valuable habitat for fish, birds and other wildlife.
- ◆ Little Sebago Lake provides recreational opportunities to watershed residents and to visitors. It is an important contributor to the local economy.
- ◆ A 1996 University of Maine study demonstrated that lake water quality affects property values. For every meter (3 ft) decline in water clarity, shorefront property values can decline as much as 10 to 20 percent! Declining property values affect individual landowners as well as the economics of the entire community.
- ◆ Once a lake has declined, it can be difficult or impossible to restore.



Variable-leaved water milfoil thrives in silty areas caused by sediment deposition.

What is being done to protect the lake from polluted runoff?

The Little Sebago Lake Association (LSLA) is one of the most proactive and well-organized lake associations in the region, and is dedicated to addressing the NPS issues facing the lake. Its board and members work with agencies and watershed residents to promote conservation efforts within the watershed. The LSLA also tests water quality in Little Sebago Lake as part of the Maine Volunteer Lake Monitoring Program.

During the spring and summer of 2002, the LSLA worked with the Cumberland County Soil & Water Conservation District (SWCD) and DEP to seek funding for, and conduct this watershed survey on the northern portion of the lake—north of Lyons Point. The remainder of the watershed will be surveyed in the spring and summer of 2003. Volunteer watershed surveys have been found to be one of the most effective ways to protect lake water quality by getting citizens involved in identifying existing and potential sources of polluted runoff.

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 Little Sebago Lake Watershed.
- ◆ Raise public awareness of the connection between land use and water quality, and the impact of polluted runoff.
- ◆ Inspire people to become active stewards of the watershed.
- ◆ 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 our hope that through future projects we 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. Through the leadership of the Little Sebago Lake Association, and with assistance from groups and agencies concerned with lake water quality, the opportunities for stewardship are limitless!

The Survey Method

The survey was conducted by volunteers with the help of trained technical staff. Volunteers were trained on survey techniques and erosion identification during a two hour classroom workshop in May 2002. Following the classroom training, the volunteers and technical staff spent the remainder of the day in the field documenting erosion on the roads, shoreline, streams, and foot trails in their assigned sectors using cameras and standardized forms. The teams worked together throughout the remaining summer to complete their sectors. Trained technical staff conducted follow-up examinations of sites in the fall of 2002 to verify data accuracy and to calculate estimates, where possible, of the pollutant loading from each site.

The data collected was entered into a computer database to create a spreadsheet, and the documented erosion sites were plotted on maps using GIS (Geographic Information Systems). 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. Maps and a description of sites and associated ranks are discussed in the next section of this report. A copy of the spreadsheet that contains all collected data is located in Appendix A.

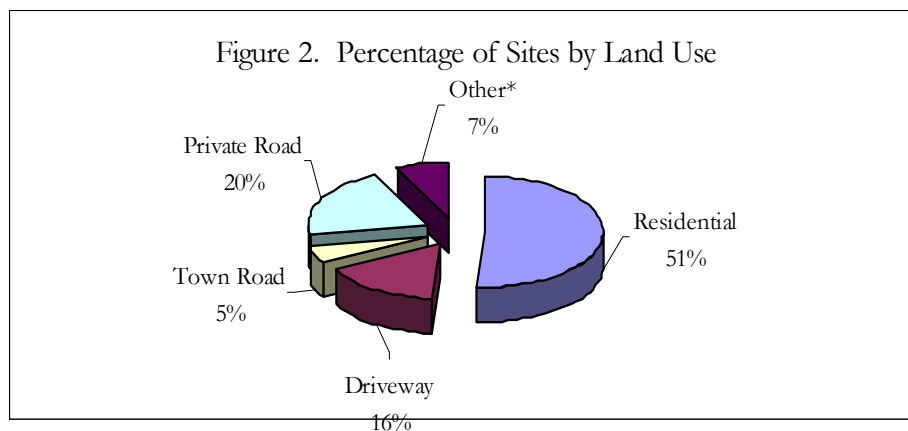
Summary of Watershed Survey Findings

Volunteers and technical staff identified 182 sites in the northern portion of the Little Sebago Lake Watershed that are currently impacting or have the potential to impact water quality of the lake. The data are outlined in the following pages in a variety of maps, tables and charts designed to summarize the problems documented and compare their relative impact on the lake. Also, information in Appendices A and B describe in more detail the locations of the sites documented through the survey.

Each documented site was placed into one of ten land use categories and ranked with a relative impact on the lake. Table 1 represents the tally of sites in each category as well as their impact rank. The different levels of impact are defined on the following page. The pie chart in Figure 2 below depicts the percentage of sites documented in each category. The majority of sites were associated with residential areas (51%).

Table 1. Summary of site categories and impacts

Category	High Impact	Medium Impact	Low Impact	Total
Residential	5	29	59	93
Private Road	10	12	16	38
Town Road	1	3	5	9
Construction	0	2	2	4
Driveway	3	14	12	29
Agriculture	0	1	0	1
Beach Access	0	1	2	3
Boat Access	2	0	0	2
Logging Road	1	0	0	1
Foot Trail/Path	0	1	1	2
Total	22	63	97	182



* Other sites include Agriculture (1%), Beach Access (1%), Boat Access (1%), Construction (2%), Logging Roads (1%), and Foot Trails/Paths (1%)

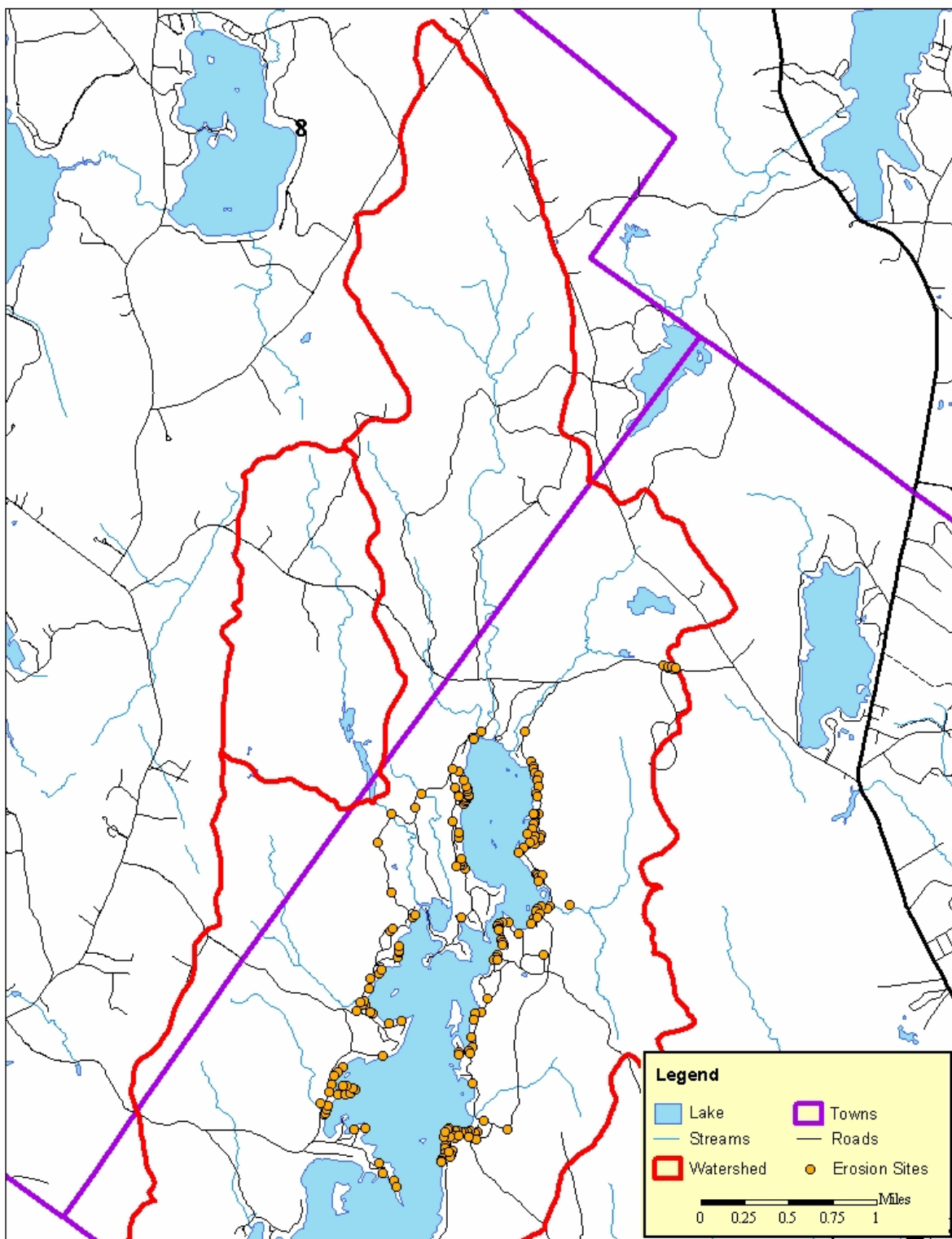
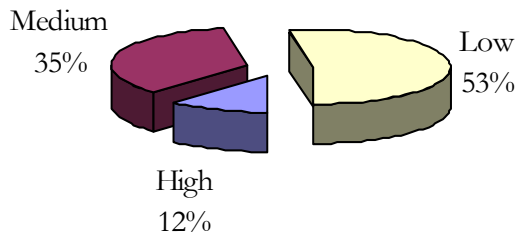


Figure 3. Survey Area with Points Representing Documented Sites

All of the documented sites were rated for their relative impact to water quality, and the costs and technical level of potential fixes. Figures 4, 5, and 6 depict these ratings.

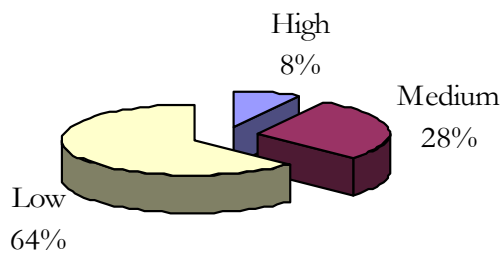
Figure 4. Impact of Documented Sites



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

- “Low” impact eroding 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 where there is significant erosion that flows directly into a stream, lake or ditch.

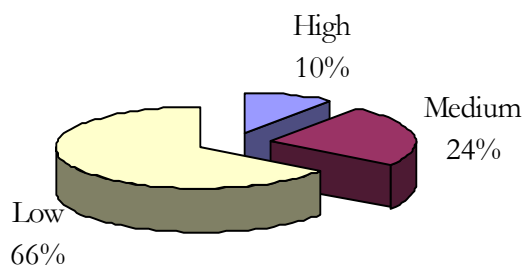
Figure 5. Technical Level to Repair Sites



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 of bare soil would require little technical expertise.
- Sites with a “medium” tech level need to be visited by a technical expert who can make detailed recommendations.
- A “high” tech level requires an engineered design.

Figure 6. Cost to Repair Sites



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.

Residential

Of the 93 sites associated with residential areas documented through the survey, 59 were low impact, 29 were medium impact, and 5 were high impact. Over half of the sites can be fixed with little technical expertise and low cost.

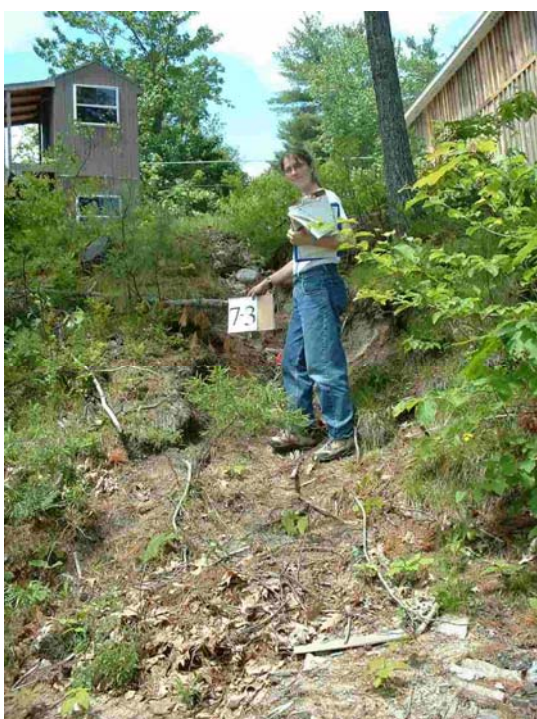
Common Problems Identified:

- Slight or moderate surface erosion
- Bare and sparsely vegetated soil
- Lack of vegetated buffer along shoreline
- Direct flow of runoff to lake
- Roof runoff causing erosion

Typical Solutions to these Problems:

- Seed and mulch bare soil
- Establish or enhance buffer
- Limit foot traffic in eroding areas
- Install dripline trench to catch roof runoff
- Install waterbar, open-top culvert, rubber razor or other runoff diverter
- Place mulch or stone on footpaths

Below is an actual example of residential polluted runoff on Little Sebago Lake, as well as a description of the problems and possible solutions for this site.



Problems:

- Moderate bank erosion from runoff.
- Unstable foot access to lake.
- Direct flow of sediment to lake.

Solutions:

- Hand place rocks in undercut areas.
- Plant trees and shrubs to enhance buffer.
- Create stable, meandering foot path elsewhere.
- Seed bare soil areas.
- Seek proper permits from DEP and Town.

Residential areas were associated with almost half (49%) of the identified sources of polluted runoff in the northern portion of Little Sebago Lake. These problems pose a significant threat to lake water quality. Fortunately, most 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.

Driveways

Of the 29 driveways documented to have problems, 12 were low impact, 14 were medium impact, and three were high impact. Most of the sites could be fixed with low to medium cost and technical expertise.

Common Problems Identified:

- Slight to moderate surface erosion
- Direct flow to lake or ditch
- Poor shaping
- Poor (too sandy) surface material

Recommended Solutions:

- Crown driveways so that water flows to either side
- Build up driveway with cohesive surface material
- Install diverters such as waterbars, open top culverts or rubber blades to get water off driveway
- Install turnouts to direct water into wooded depressions

Below is an actual example of polluted runoff from a driveway on Little Sebago Lake, as well as a description of the problems and possible solutions for this site.



Problems

- Moderate surface erosion.
- Poor driveway shaping and ruts cause water to concentrate and erode the surface.
- No ditches on the sides of driveway.

Solutions

- Add new surface material.
- Reshape and crown driveway so water moves quickly from the surface.
- Install diverters such as waterbars, open top culverts or rubber razors to get water off driveway.
- Install ditches to transport water downhill.

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 buffers.

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

Private Roads

Of the 38 private road sites documented through the survey, 16 were low impact, 12 were medium impact and 10 were high impact. The problems are more expensive to fix and would require technical assistance.

Common Problems Identified:

- Slight to moderate surface erosion
- Direct flow to lake or stream
- Slight to moderate ditch erosion
- Undersized ditches
- Poor (too sandy) surface material
- Unstable culvert inlet and outlet
- Clogged ditches and culverts

Recommended Solutions:

- Crown and reshape road to get water off road
- Install diverters such as waterbars, open top culverts or rubber blades to get water off road
- Build up road with cohesive surface material
- Clean out culverts
- Clean, reshape and armor ditches with stone or grass
- Remove grader berms and winter sand to allow proper drainage
- Install culverts and stabilize ends with stone

Below is an actual example of polluted runoff from a private road on Little Sebago Lake, as well as a description of the problems and possible solutions for this site.



Problems:

- Poor road surface material (too sandy).
- No ditch or culvert; no stable escape for water on road.
- Direct flow of road material to lake.

Solutions:

- Attempt to get more water off of the road before it reaches this low point.
- Reshape and crown road.
- Create ditches, cross culvert, and plunge pools, to collect water and settle out sediment.

Unpaved roads are one of the biggest sources of pollution to Maine lakes.

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

Town Roads

Of the 9 town road sites documented through the survey, 5 were low impact, 3 were medium impact and one was high impact. Over half of the problems can be fixed with low technical expertise and low cost.

Common Problems Identified:

- Slight to moderate shoulder erosion
- Slight to severe ditch erosion
- Direct flow of sediment to stream or ditch
- Undersized ditches
- Unstable culvert inlet and outlet
- Clogged and undersized culverts
- Winter sand

Recommended Solutions:

- Clean out culverts
- Install culverts and stabilize ends with stone
- Clean, reshape and armor ditches with stone or grass
- Install ditches
- Remove grader berms and winter sand to allow proper drainage
- Build turnouts to divert runoff out of ditches
- Install plunge pools or detention basins to hold runoff and catch sediment.

Below is an actual example of polluted runoff from a town road within the Little Sebago Lake watershed, as well as a description of the problems and possible solutions for this site.



Problems:

- Moderate to severe ditch and road shoulder erosion above leads to sediment deposition here.
- Direct flow of sediment and winter sand into stream.

Solutions:

- Reshape ditch and shoulder uphill.
- Armor ditch and shoulder with stone or grass.
- Install turnouts uphill, and possibly a detention basin to trap sediment before it reaches the stream.
- Remove winter sand.

Working with the Towns of Gray, Windham, and Raymond to fix and maintain town road sites will save money and improve water quality by keeping eroding soil and phosphorus out of Little Sebago Lake.

Sites in Other Categories

Boat Access Sites

Although only two boat access locations were documented as sites, they both were high impact. Problems identified at these locations included eroding tire ruts on the boat ramps, slumping or eroding banks on either side of the ramps, and moderate surface erosion where the ramps meet the lake. These problems can be fixed by establishing a crown on the ramp, armoring the banks with vegetation, rock, or concrete lock-blocks, and resurfacing the ramp where it meets the lake with a more stable material. The cost and technical level necessary to fix these sites are low to moderate.

Agricultural Sites

One horse farm was documented within the watershed as having a possible impact on the lake water quality. Exposed manure piles were observed and bare soil with slight sheet erosion was noted throughout the pasture and stable area. Technical assistance for these types of issues is available from the Cumberland County SWCD and the USDA Natural Resources Conservation Service. (Contact information for these groups is located on page 18 of this report.)

Beach Access Sites

Three eroding beach access sites were noted; two with slight surface erosion, and one with moderate surface erosion. Problems at these sites were often caused by runoff problems uphill. Waterbars and runoff diverters uphill from these beaches would help to control this erosion.

Construction Sites

Four construction sites were noted as having impacts on the watershed; two with moderate impact, and two with low impact. Bare soil on construction sites is inevitable, however, proper use of silt fences, hay bales, and other temporary erosion control measures is effective at limiting the impact of construction activity on the watershed. Maintenance of temporary measures, seeding and mulching disturbed areas, and frequent visits by trained code enforcement personnel are also critical to ensuring protection of the lake from the disturbance associated with construction.

Examples of Good Watershed Protection Techniques

Survey teams identified many sites that showed good watershed protection techniques. These good practices included good vegetated buffers, and well maintained driveways, roads, and ditches. This photo (at right) for example, depicts a good example of a properly designed driveway. Note that this driveway includes a stable substrate (pavement) and waterbars that direct runoff into the wooded area to the right. The Maine DEP and Cumberland County SWCD have created numerous demonstration projects that showcase good watershed protection practices. Many of those demonstration projects are located on lakes near Little Sebago Lake. Contact the Maine DEP and SWCD for more details (page 18).



Next Steps ~ Where Do We Go From Here?

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

Individual Citizens

- Prevent runoff from washing sediment into the lakes. Detain runoff in depressions or divert flow to vegetated areas. Call the Cumberland County SWCD or DEP for free advice.
- Minimize the amount of cleared land and road surfaces on your property.
- Stop mowing and raking, and let lawn and raked areas revert back to natural plants. Deep shrub and tree roots help hold the shoreline.
- Avoid exposing bare soil. Seed and mulch bare areas.
- Don't bring in sand or rebuild beaches without permits and technical assistance.
- Call the Town Code Enforcement Officer before cutting vegetation within 250' of the shore.
- 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 Little Sebago Lake Association.

Little Sebago Lake Association

- Continue to increase and empower the association's membership, and provide educational materials and guidance to members of the Little Sebago Lake watershed community.
- Continue to partner with agencies, municipalities, Districts, and others to jointly seek funding and implement projects to protect the 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.

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." and share it with contractors working on and/or plowing the road. This reference is a "must-have" for anyone managing a gravel road. (Call the DEP at 822-6300 to order a free copy.)
- For more extensive problems, contact the Cumberland County SWCD or DEP to get help.

Municipal Officials

- Enforce shoreland zoning ordinance to ensure protection of Little Sebago Lake.
- 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.

Permitting ABC's

Protection of the Little Sebago Lake Watershed is ensured through the good will of residents around the lakes and through laws and ordinances created and enforced by the State and Towns.

How do you know when you need a permit?

- Construction, clearing of vegetation and soil movement within 250 feet of the lake shore falls under the Shoreland Zoning Act, which is administered by the Towns through the Code Enforcement Officer and the Planning Board.
- Soil disturbance within 75 feet of the lakeshore or stream also falls under the Natural Resources Protection Act, which is administered by the DEP.

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. See the last page of this report for contact information.

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 (3 COPIES, PLEASE BEAR DOWN)

Name of Applicant: <u>Yamhill County SWCD</u>	Name of Owner: <u>Norm & Michelle Groleau</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>207 839-7839</u>
Name of Wetland, Water Body or Stream: <u>Sabbathday Lake</u>	
Detailed Directions to Site: <u>121 Outlet Road, Rte. 26 North turn right onto Outlet Road. 121 Outlet Road is on the left 4 to 5 houses before you reach Barefoot Beach.</u>	
Town/City: <u>New Gloucester</u> Map #: _____	Lot #: _____ County: _____
Description of Project: <u>Installation of a drywell to allow infiltration of roof runoff.</u>	Part of a larger project? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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 & Piling
<input type="checkbox"/> Sec. (3) Inland Ponds	<input type="checkbox"/> Sec. (9) Utility Crossing	<input type="checkbox"/> Sec. (15) Public Boat Ramps
<input type="checkbox"/> Sec. (4) Replacement of Structures	<input type="checkbox"/> Sec. (16) Stream Crossing	<input type="checkbox"/> Sec. (16) Coastal Sand Dune Projects
<input type="checkbox"/> Sec. (5) REPEALED	<input type="checkbox"/> Sec. (11) State Transportation Facilities	<input type="checkbox"/> Sec. (17) Transfers/Permit 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) Outfall Pipes	<input type="checkbox"/> Sec. (13) FAW Creation/Enhance/Restore Quality 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: Michelle Groleau Date: 7/28/00

Keep the bottom copy as a record of permit. Send the form with attachments via certified mail to the Maine Dept. of Environmental Protection. The DEP will send a copy to the Town Office as evidence of _____ or 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.

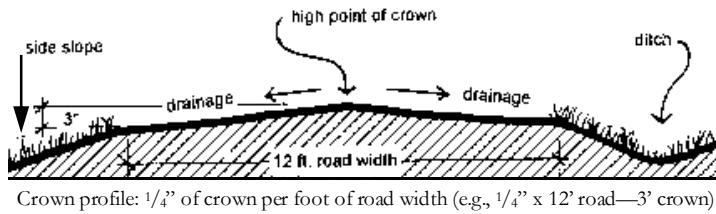
AUGUSTA DEP STATE HOUSE STATION 17 AUGUSTA, ME 04333-0017 (207)587-2111	PORTLAND DEP 312 CANCO ROAD PORTLAND, ME 04103 (207)852-6300	BANGOR DEP 106 HOGAN ROAD BANGOR, ME 04401 (207)641-4570	PRESQUE ISLE DEP 1235 CENTRAL DRIVE PRESQUE ISLE, ME 04769 (207)764-0477
OFFICE USE ONLY	CL#	Staff	Staff
PBR #	FF	Acc. Date	Del. Date
			After Photos

DEPLW-27-899

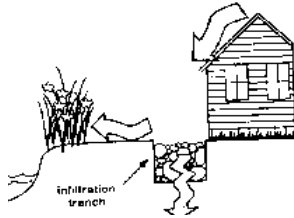
How to apply for Permit by Rule with DEP:

1. Fill out a notification form before completing any work on the ground. Forms are available from your town code enforcement officer or the Maine DEP offices in Portland or Augusta.
2. The permit will be reviewed by DEP within 14 days. If you do not hear from DEP within 14 days, you can assume your permit is approved and you can proceed with work on the project. If you bring the permit directly to a DEP office, you could get your permit approved immediately.
3. Follow the proper standards for keeping soil erosion to a minimum during construction, 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.

Glossary of Common Conservation Measures

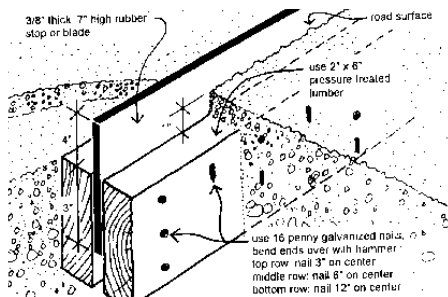
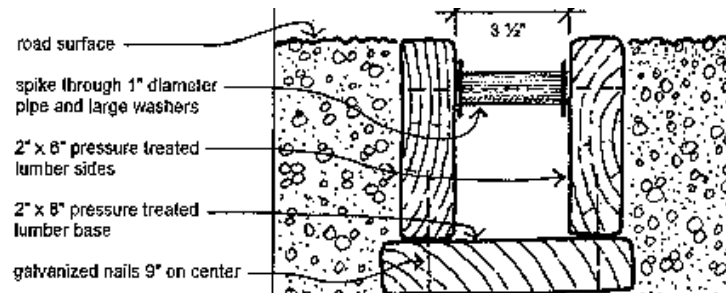


Crown—High point that runs lengthwise along the center of a road or driveway. The high point slopes gently away from the center toward the outer edge of the road, allowing water to drain off the road and preventing erosion of the road surface.



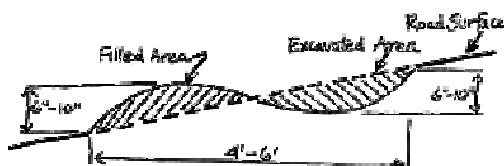
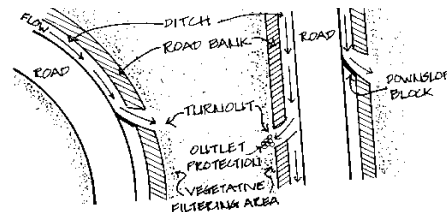
Dripline Trench—Rock-filled trench beneath the roof edge dripline that collects and stores roof runoff until it soaks into the ground. Helps control erosion and reduce wear on the house by preventing backsplash. A typical trench is 6-8" deep and 12-18" wide and filled with $\frac{3}{4}$ " stone. Can 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 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 not 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 belts 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 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.

Final Site #	Sector #	Site #	Tax Map #	Tax Lot# *	Location	Land Use	Description of Problem	Recommendations	Area Affected	Impact of Problems	Technical level to Install	Cost
A1	2	13	8	7	Horse Farm	Agriculture	Bare soil. Slight surface erosion. Manure piles and open pasture with exposed soil.	Need ag natural resource management specialist to look at to determine risk and solution. Possible candidate for NRCS technical assistance.	20000	Medium	Medium	Medium
Be1	1	10	32	L4-22	Qualey Rd. - Pole #63	Beach Access	Direct flow of sediment to lake. Lack of shoreline buffer. Slight surface erosion.	Add stone behind existing steps, restrict foot traffic to lake. Install waterbar. Establish buffer. Seed and mulch. Install steps.	200	Low	Low	Low
Be2	1	9c	32	ROW	Qualey Rd. Between I4-23, I4-24	Beach Access	Direct flow of sediment to lake. Moderate surface erosion.	Install waterbar. Establish buffer.	0	Medium	Low	Low
Be3	1	5	32	L4-34	Across from 7 Qualey Rd.	Beach Access	Direct flow of sediment to lake. Slight surface erosion.	Install rubber blade.	1440	Low	Low	Low
Bo1	1	8	32	L4-29	Qualey Rd.	Boat Access	Direct flow of sediment to lake. Severe surface erosion.	Add new surface material. Install rubber blade.	800	High	Low	Low
Bo2	1	2	32	L4-38, 39	Qualey Road	Boat Access	Direct flow of sediment to lake. Bare soil. Severe surface erosion. Unstable boat access.	Build up road. Reshape or crown. Install rubber blade.	2000	High	Medium	Medium
CS1	1	13	32	L4-20	Qualey Road	Construction Site	Stockpiled soil. Bare soil. Unstable construction site.	More erosion controls needed due to proximity to lake. Install erosion controls.	2500	Low	Low	Low
CS2	1	9e	32	L4-9	Qualey Rd	Construction Site	Stockpiled soil. Unstable construction site.	Install silt fence properly. Install erosion controls.	1200	Low	Medium	Low
CS3	3	16	18	L7-25	CMP Meter #3018066	Construction Site	Direct flow of sediment to lake. Bare soil. Severe surface erosion.	Install stone-filled dripline trench. Establish buffer. Seed and mulch. No raking.	0	Medium	Medium	Medium
CS4	9	12	7	10-15-1	Northridge Acres Subdivision	Construction Site	Unstable culvert inlet/outlet. Severe road shoulder erosion. Bare soil. Slight surface erosion.	Enlarge culvert. Stabilize culvert inlet and/or outlet. Install erosion controls. Install turnout(s). Reshape or crown. Seed and mulch.	6125	Medium	Medium	Medium
D1	1	15	40	L4-18	Qualey Rd. southern end	Driveway	Direct flow of sediment to lake. Moderate surface erosion.	Install ditch. Install turnout. Add new surface material.	1000	Medium	High	High
D2	1	7b	32	L4-4	Qualey Rd.	Driveway	Severe surface erosion.	Pave.	7500	Low	Medium	High
D3	1	9b	32	L4-26	Qualey Rd. near sharp bend	Driveway	Moderate surface erosion.	Extend timbers to trap sediment. Close off gravel driveway. Create footpath. Remove winter sand. Install rubber blade.	3500	Low	Low	Low
D4	1	3	32	L4-42, 39 or 44	Qualey Rd. east of int. w/ Mt. View	Driveway	Direct flow of sediment to stream. Moderate surface erosion.	Add new surface material.	120	Medium	Low	Low
D5	1	4	33	L4-45	Birch Haven Assoc Driveway	Driveway	Direct flow of sediment to lake. Slight surface erosion.	Install rubber blade.	600	Low	Low	Low

Site #	Tax Map #	Tax Lot# *	Location	Land Use	Description of Problem	Recommendations	Area Affected	Impact of Problems	Technical level to Install	Cost
6	24	L5-22	Ramsdell Rd. north of Grape Island Trail	Driveway	Direct flow of sediment to lake. Moderate road shoulder erosion. Lack of shoreline buffer. Moderate surface erosion.	Reshape area at road/driveway line. Reshape or crown. Install waterbar. Establish buffer.	3000	Medium	Low	Low
4	18	L6-43	Birchwood Rd. near end	Driveway	Direct flow of sediment to lake. Moderate surface erosion.	Cut back slopes and vegetate or rock. Install stone-filled dripline trench. Install open top culvert.	7500	Low	Medium	Medium
18A	18	L7-33	Birchwood Rd.	Driveway	Direct flow of sediment to stream. Moderate surface erosion.	Install ditch. Install detention basin.	500	Medium	Medium	Medium
19a	18	L7-32A	Birchwood Rd. east side of road	Driveway	Direct flow of sediment to ditch. Severe road shoulder erosion.	Clean out culvert. Armor ditch with stone or grass. Install ditch. Reshape ditch. Install turnout. Install detention basin.	125	Medium	Medium	Medium
21	18	L7-37A	CMP Pole #133 1/2	Driveway	Stockpiled soil. Moderate surface erosion.	Install ditch. Reshape or crown. Install open top culvert. Install waterbar.	1950	Medium	Medium	Medium
22	18	L7-38	Birchwood Rd.	Driveway	Direct flow of sediment to lake. Severe surface erosion.	Install turnout(s). Pave. Install waterbar.	1200	Medium	Medium	Medium
26	18	L7-49	Birchwood Rd. near island	Driveway	Unstable culvert inlet/outlet. Direct flow of sediment to stream. Moderate surface erosion.	Replace culvert. Stabilize culvert inlet and/or outlet. Install dry well. Reshape or crown. Install waterbar. Seed and mulch. Rip rap.	1292	High	High	High
28	12	L8-1	Birchwood Rd. Pole #138	Driveway	Direct flow of sediment to ditch. Severe surface erosion.	Armor ditch with stone or grass. Reshape ditch. Seed and mulch.	40	Medium	Medium	Medium
29	12	L8-1,2	Birchwood Rd.	Driveway	Direct flow of sediment to lake. Severe surface erosion.	Install dry well. Establish buffer. Seed and mulch. Rip rap.	300	Medium	Medium	Medium
31	12	L8-9	Birchwood Road pole #140	Driveway	Severe surface erosion.	Install waterbar. Define pathways.	0	Low	Low	Low
33	12	L8-10	Birchwood Rd.	Driveway	Severe surface erosion.	Install waterbar. Extend buffer. Define pathways.	80	Low	Low	Low
34	12	L8-11	next door to 68 Birchwood	Driveway	Severe surface erosion.	Install culvert and install plunge pool at culvert outlet.	90	Low	Medium	Medium
22	11	L9-21	7 Cobb Rd pole # 165 1/2	Driveway	Direct flow of sediment to stream. Moderate surface erosion.	see recommendations for 7-21. This will take care of run off impacting driveway. Plant trees and shrubs along stream. Install waterbar.	600	High	Low	Low

Site #	Tax Map #	Tax Lot# *	Location	Land Use	Description of Problem	Recommendations	Area Affected	Impact of Problems	Technical level to Install	Cost
6	11	L9-9	From Westwood Rd left of green cottage	Driveway	Direct flow of sediment to lake. Slight surface erosion.	Install open top culvert. Install detention basin.	2000	Low	Medium	Low
15	17	L10-32	259 Westwood Rd 185.1 pole #	Driveway	Lack of shoreline buffer. Moderate surface erosion.	Install rubber blade. Establish buffer.	650	Medium	Low	Low
18	17	L10-29	Westwood Rd	Driveway	Moderate surface erosion.	Build up edge of driveway closest to road	450	Low	Low	Low
1	17	L-12-6	#2 Beaver Cove Rd	Driveway	OtherSlight surface erosion.	Install turnout(s). Install waterbar. Establish buffer.	1350	Low	Low	Low
35	24	L12-42	Kentwood Rd & Arundel	Driveway	Direct flow of sediment to ditch. Moderate roof runoff. Moderate surface erosion.	Install dry well. Add new surface material. Reshape or crown.	525	Low	Low	Low
30	14	L12-20	Hayden Lane - near rental camps	Driveway	Direct flow of sediment to lake. Moderate surface erosion.	Add new surface material. Install turnout(s). Install waterbar.	2000	Medium	Medium	Medium
29	24	L13-16	Hayden Lane	Driveway	Direct flow of sediment to lake. Moderate road shoulder erosion. Moderate surface erosion.	Add new surface material. Install turnout(s). Reshape or crown. Install waterbar. Install detention basin.	1875	Medium	Low	Low
28	24	L13-15	ROW near corner of Arundel Rd, Hayden Lane	Driveway	Direct flow of sediment to lake. Moderate road shoulder erosion. Moderate surface erosion.	Add new surface material. Install turnout(s). Install waterbar. Extend buffer.	2400	Low	Medium	Low
26	14	L13-7,8	ROW on Arundel Rd.	Driveway	Direct flow of sediment to lake. Moderate road shoulder erosion.	Install turnout(s). Install waterbar. Extend buffer.	1000	High	Low	Low
23	24	L13-3	Arundel Rd. near corner w/ Gore Rd.	Driveway	Direct flow of sediment to lake. Moderate surface erosion.	Add new surface material. Reshape or crown. Install waterbar. Establish buffer. Install infiltration trench.	3400	Medium	Medium	Medium
4	32	2-11A	Deer Acres Rd. 'Tele #7	Driveway	Direct flow of sediment to lake. Moderate surface erosion.	Add new surface material. Build up road. Reshape or crown. Install rubber blade. Establish buffer. Seed and mulch.	1500	Medium	Low	Medium
10	18	L7-1	Logging Road off Birchwood	Logging	Direct flow of sediment to stream. Severe surface erosion.	Install culvert or stone ford over stream crossing. Install rubber blade. Install waterbar. Install detention basin.	3250	High	Medium	Medium
6	33	L4-45	Tele pole #705	Private Road	Clogged culvert. Direct flow of sediment to stream. Slight surface erosion.	Clean out culvert. Add new surface material. Reshape or crown. Install detention basin.	1350	High	High	High
17	33	L4-49 - 55	Ramsdell Rd. from Jeep trail to stream crossing	Private Road	Unstable culvert inlet/outlet. Direct flow of sediment to lake. Moderate road shoulder erosion. Slight surface erosion.	Clean out catch basins. Stabilize culvert inlet and/or outlet. Add new surface material. Install turnout(s). Reshape or crown. Establish buffer.	3000	High	High	High

Final Site #	Sector #	Site #	Tax Map #	Tax Lot# *	Location	Land Use	Description of Problem	Recommendations	Area Affected	Impact of Problems	Technical level to Install	Cost
PR4	1	10a	32	L4-10,11	Pole #63 to #63 1/2 Qualey Road	Private Road	Moderate road shoulder erosion.	Remove grader berms. Seed and mulch.	450	Low	Low	Low
PR5	1	7e	32	L4-4	Qualey Road between lot 24-4 and turn in road	Private Road	Moderate surface erosion.	Install culvert beneath driveway. Armor ditch with stone or grass. Install ditch. Install detention basin.	750	Low	Medium	Medium
PR6	1	7	32	L4-38-40	Mountain View & Qualey Rd. intersection	Private Road	Unstable culvert inlet/outlet. Direct flow of sediment to stream. Slight road shoulder erosion. Road shoulder erosion.	Clean out culvert. Stabilize culvert inlet and/or outlet. Reshape ditch. Remove grader berms.	242	Medium	Low	Low
PR7	2	2	32	L5-11	near pole #85	Private Road	Unstable culvert inlet/outlet. Slight road shoulder erosion. Road shoulder erosion.	Stabilize culvert inlet and/or outlet. Armor ditch with stone or grass. Install ditch. Remove grader berms. Reshape or crown.	500	Low	Medium	Medium
PR8	2	25	25	L5-22 to 23	Pole #91 1/2 Ramsdell Rd.	Private Road	Direct flow of sediment to lake. Moderate road shoulder erosion. Moderate surface erosion.	Complex road problem. Many fixes needed here. Install plunge pool. Install ditch. Build up road.	600	High	High	High
PR9	2	24	25	L5-26	Ramsdell Rd	Private Road	Unstable culvert inlet/outlet. Direct flow of sediment to stream. Severe road shoulder erosion. Moderate surface erosion. Stream undercutting road shoulder. Severe problem.	Complex site - needs engineering assistance. Enlarge culvert. Install plunge pool. Replace culvert. Stabilize culvert inlet and/or outlet. Armor ditch with stone or grass. Install turnout. Add new surface material. Build up road. Remove grader berms. Reshape or crown.	450	High	High	High
PR10	2	9	25	L6-11	Loon Lane intersection with Ramsdell Rd	Private Road	Direct flow of sediment to lake. Moderate road shoulder erosion. Moderate surface erosion.	Add new surface material. Build up road. Install turnout(s). Install broad-based dip. Install waterbar.	0	Medium	Medium	Medium
PR11	2	14	25	L6-35	Lake Grove Springs	Private Road	Direct flow of sediment to lake. Moderate road shoulder erosion.	Build up road. Install turnout(s). Reshape or crown. Install waterbar.	3000	Medium	Medium	Low
PR12	3	30	12	L8-6	~ 80 Birchwood Rd.	Private Road	Direct flow of sediment to lake. Severe erosion at culvert outlet	Needs professional help - severe problem	960	High	High	High
PR13	3	18	18	L7-33, L7-32B	Road in front of 122 Birchwood	Private Road	Direct flow of sediment to stream. Severe road shoulder erosion.	Install cross culvert to other side. Armor ditch with stone or grass. Install ditch. Install detention basin.	240	High	High	High
PR14	3	19	18	L7-35	Birchwood Rd.	Private Road	Clogged culvert. Direct flow of sediment to lake. Severe road shoulder erosion.	Clean out culvert. Stabilize culvert inlet and/or outlet. Armor ditch with stone or grass. Install ditch. Install turnout(s).	1600	High	Medium	Medium

Final Site #	Sector #	Site #	Tax Map #	Tax Lot# *	Location	Land Use	Description of Problem	Recommendations	Area Affected	Impact of Problems	Technical level to Install	Cost
PR15	3	35	12	L8-11	Birchwood Rd.	Private Road	Moderate road shoulder erosion.	Create water diversion at top of hill. Enlarge culvert. Install ditch.	200	Low	Medium	High
PR16	3	11	18	L7-5,6,4,3	Birchwood Rd. - Birchwood Shores area	Private Road	Unstable culvert inlet/outlet. Direct flow of sediment to lake. Moderate road shoulder erosion. Stockpiled soil. Slight surface erosion.	Install earthen berm and vegetate along stream edge where snow is plowed. Stabilize culvert inlet and/or outlet. Install turnout(s).	60	Low	Low	Low
PR17	3	32	12	~L8-10	Birchwood Rd.	Private Road	Clogged culvert. Direct flow of sediment to ditch. Moderate surface erosion.	Install level spreaders in buffer area to disperse flow. Clean out culvert. Enlarge culvert. Reshape ditch.	12	Low	Medium	Medium
PR18	3	3	18	L6-38,39	End of Birchwood Road	Private Road		Install turnout. Install detention basin.	88	Medium	Medium	Medium
PR19	3	5	18	L6-43-47	Birchwood Road	Private Road	Moderate road shoulder erosion.	Armor ditch with stone or grass. Install ditch. Install detention basin.	1000	Medium	High	High
PR20	3	37	12	4-14	Birchwood Road Pole #595	Private Road	Unstable culvert inlet/outlet. Direct flow of sediment to stream. Moderate road shoulder erosion.	Enlarge culvert. Install plunge pool. Reshape ditch.	100	Medium	Medium	Medium
PR21	3	36	12	4-14	across from swamp	Private Road	Moderate road shoulder erosion.	Install basin across from house. Install cross culvert. Install ditch. Install detention basin.	300	Medium	High	High
PR22	3	27	18	L7-49 to 51	near 88 Birchwood	Private Road	Unstable culvert inlet/outlet. Bank failure.	Clean out culvert. Install plunge pool. Stabilize culvert inlet and/or outlet. Reshape ditch. Install turnout. Remove grader berms.	90	Medium	Medium	Medium
PR34	5	5	32	L14-36, 35	Evergreen Rd. Pvt. near turn of Deer Acres	Private Road	Direct flow of sediment to lake. Moderate road shoulder erosion.	Armor ditch with stone or grass. Install ditch. Remove winter sand.	1125	Medium	Medium	Medium
PR35	5	34	24	L12-41, 42	Kentwood Rd	Private Road	Direct flow of sediment to ditch. Slight surface erosion. Unstable construction site. New gravel road - unstable surface and ditches.	Install ditch. Install turnout.	625	Low	Medium	Medium
PR36	5	27	24	L13-22	Arundel Road Pole #9	Private Road	Clogged culvert. Unstable culvert inlet/outlet. Direct flow of sediment to ditch. Moderate road shoulder erosion.	Clean out culvert. Install plunge pool. Stabilize culvert inlet and/or outlet. Install ditch.	50	Low	Low	Low
PR37	5	25	24	L13-28	Pole 4S & 4	Private Road	Clogged culvert. Unstable culvert inlet/outlet. Direct flow of sediment to ditch. Slight road shoulder erosion.	Clean out culvert. Stabilize culvert inlet and/or outlet. Install ditch. Reshape ditch.	50	Low	Low	Low

Final Site #	Sector #	Site #	Tax Map #	Tax Lot# *	Location	Land Use	Description of Problem	Recommendations	Area Affected	Impact of Problems	Technical level to Install	Cost
PR37a	5	21	24	L13-2, L-13-29	Junction Aquila & Arundel Rds	Town Road	Clogged culvert. Unstable culvert inlet/outlet. Direct flow of sediment to stream. Moderate road shoulder erosion.	Clean out culvert. Enlarge culvert. Install plunge pool. Replace culvert. Stabilize culvert inlet and/or outlet. Armor ditch with stone or grass. Install ditch. Reshape ditch. Install turnout. Install turnout(s). Remove winter sand. Extend buffer.	475	High	High	High
PR38	4	3	40	L15-45	Lyons Pt from pole 18 to Johnson Property	Private Road	Direct flow of sediment to lake. Moderate surface erosion. Pavement in poor condition.	Re-pave. Remove winter sand. Reshape or crown. Pave.	3600	Low	Medium	High
PR39	7	1	11	L9-12	Hunnewell	Private Road	Moderate surface erosion.	Add new surface material. Build up road. Install turnout(s). Install waterbar.	3000	Low	Medium	Medium
PR40	7	5	11	L9-7 - 11	loop of Hunnewell by CMP poles 1711 and 171	Private Road	Direct flow of sediment to lake. Moderate surface erosion.	Install runoff diverters. Add new surface material. Reshape or crown. Establish buffer.	7200	High	Medium	Medium
PR41	7	12	17	3-3c	Top of Swett Dr pole # 176 Caracass Rd	Private Road	Moderate road shoulder erosion. Moderate surface erosion.	Install culvert, reshape veg shoulder. Install ditch. Install turnout(s). Remove winter sand. Reshape or crown. Rip rap.	2600	Medium	High	Medium
PR42	7	19	17	3-3a	Westwood Rd in front of Foster residence (277)	Private Road	Severe road shoulder erosion.	Install turnout(s).	688	Medium	Medium	Medium
PR43	7	21	11	L9-20,21	Cobb Rd from beginning w/ Westwood pole #167	Private Road	Direct flow of sediment to stream. Moderate road shoulder erosion. Moderate surface erosion.	Install culvert under driveway, Enhance turnout. Install ditch. Remove grader berms. Reshape or crown. Install detention basin.	3900	High	High	High
PR44	6	3	17	3-4	Farwell Bk Rd Crossing	Private Road	Unstable culvert inlet/outlet. Direct flow of sediment to stream.	Stabilize culvert inlet and/or outlet. Reshape or crown. Rip rap.	340	Medium	Medium	Low
PR45	6	6	17	L11-21	Westwood Rd 30ft north of Pickersl Pond Ave	Private Road	Clogged culvert. Direct flow of sediment to lake. Slight road shoulder erosion. road shoulder erosion.	Clean out culvert. Install plunge pool. Stabilize culvert inlet and/or outlet. Armor ditch with stone or grass. Reshape ditch.		Low	Low	Low
PR46	6	7	17	3-11	Johnson Rd	Private Road	Unstable culvert inlet/outlet. Direct flow of sediment to stream. Ditch blocked with excavated soil	lengthen culvert. Stabilize culvert inlet and/or outlet. Install ditch.	200	Low	Medium	Low

Final Site #	Sector #	Site #	Tax Map #	Tax Lot# *	Location	Land Use	Description of Problem	Recommendations	Area Affected	Impact of Problems	Technical level to Install	Cost
PR47	6	9	17	3-12	Pole #24 Johnson Rd	Private Road	Unstable culvert inlet/outlet. Direct flow of sediment to ditch.	Install ditch.	1000	Low	Low	Low
PR48	6	8	17	3-13	Near #116 pole #20.4	Private Road	Unstable culvert inlet/outlet. Direct flow of sediment to ditch.	Install plunge pool. Stabilize culvert inlet and/or outlet. Armor ditch with stone or grass. Rip rap.	250	Low	Medium	Low
PR49	6	10	17	3-4b	Johnson Rd Pole #9	Private Road	Direct flow of sediment to stream. Stockpiled soil.	Install turnout. Seed and mulch.	2500	Low	Low	Low
R1	1	14	40	L4-18	southern end of Qualey Rd.	Residential	Direct flow of sediment to lake. Bare soil. Lack of shoreline buffer. Moderate surface erosion.	Install retaining wall. Create infiltration area behind existing steps. Install stone-filled dipline trench. Establish buffer. Seed and mulch. Install steps.	1500	Medium	Medium	Medium
R2	1	12	32	L4-14	Qualey Rd.	Residential	Slight surface erosion.	Close off parking area at base of slope. Seed and mulch.	300	Low	Low	Low
R3	1	11	32	4-12	Across from pole #63 Qualey Road	Residential	Moderate surface erosion.	Close off 2nd driveway. Install landscape timbers along edge of trailer platform and crushed stone along edge of platform. Establish buffer. Seed and mulch. No raking.	180	Low	Low	Low
R4	1	9d	32	L4-23	Qualey Rd.	Residential	Direct flow of sediment to lake. Slight roof runoff. Lack of shoreline buffer. Moderate surface erosion.	Shore up retaining wall. Install dry well. Install waterbar. Establish buffer. Seed and mulch. Install steps.	900	Low	Low	Medium
R4a	1	9a	32	L4-27	Qualey Rd. near bend	Residential	Slight roof runoff. Bare soil. Slight surface erosion.	Install stone-filled dipline trench. Establish buffer. Seed and mulch. Define pathways. No raking. Install steps.	600	Low	Low	Low
R5	1	7c	32	L4-4	Qualey Rd.	Residential	Moderate surface erosion.	Cut back bank. Terrace.	1000	Low	High	High
R6	1	7f	32	L4-29	Qualey Road	Residential	Direct flow of sediment to lake. Moderate surface erosion.	Install stone-filled dipline trench. Install waterbar.	600	Medium	Low	Low
R7	1	7d	32	L4-33	Qualey Rd.	Residential	Moderate surface erosion.	Add new surface material. Establish buffer. Terrace.	750	Low	Medium	Medium
R8	1	7a	32	L4-36	Qualey Rd.	Residential	Moderate surface erosion.	Install stone-filled dipline trench. Install waterbar. Establish buffer. Seed and mulch. Rip rap.	25	Low	Low	Low
R9	1	1	32	L4-37	Qualey Rd. - Policeman's Cove	Residential	Direct flow of sediment to lake. Bare soil. Lack of shoreline buffer. Slight surface erosion.	Establish buffer. Seed and mulch.	644	Low	Low	Low

Final Site #	Sector #	Site #	Tax Map #	Tax Lot# *	Location	Land Use	Description of Problem	Recommendations	Area Affected	Impact of Problems	Technical level to Install	Cost
R9a	1	18	33	L4-76	Ramsdell Rd. across from Camp Sebago	Residential	Direct flow of sediment to lake. Lack of shoreline buffer. Moderate surface erosion.	Establish buffer.	24	Low	Low	Low
R10	1	19	32	L5-4	Grape Island Trail	Residential	Bare soil. Lack of shoreline buffer.	Install landscape timbers along edge of sand to retain sand, then plant buffer between timbers and lake. Establish buffer.	1600	Low	Low	Low
R11	1	20	32	L5-5	Grape Island Trail	Residential	Direct flow of sediment to lake. Slight roof runoff. Lack of shoreline buffer.	Install stone-filled dripline trench. Install dry well. Establish buffer. Seed and mulch.	75	Low	Low	Low
R12	2	1	32	L5-11	Ramsdell Rd. Pole #85 1/2	Residential	Pet waste. Shoreline erosion. Lack of shoreline buffer. Moderate surface erosion.	Install stone-filled dripline trench. Establish buffer. Seed and mulch.	750	Low	Low	Low
R13	2	3	32	L5-12	Ramsdell Rd. near Grape Island Trail	Residential	Moderate road shoulder erosion. Bare soil. Moderate surface erosion. Exposed roots. Trash. Junk car. Broken car battery.	Add new surface material. Reshape or crown. Install waterbar. Establish buffer. Seed and mulch.	75	Medium	Low	Low
R14	2	4	24	L5-14	Ramsdell Rd. near Grape Island Trail	Residential	Bare soil. Slight surface erosion.	Extend buffer. Mulch.	600	Low	Low	Low
R15	2	5	24	L5-18	Ramsdell Rd. near Grape Island Trail	Residential	Lack of shoreline buffer. Slight surface erosion.	Establish buffer.	1600	Low	Low	Low
R16	2	10	25	L6-11	Loon Lane	Residential	Direct flow of sediment to lake. Bare soil. Slight surface erosion.	Establish buffer. Seed and mulch. No raking.	2000	Low	Low	Low
R17	2	11	25	L6-11-12	Loon Lane	Residential	Direct flow of sediment to lake. Bare soil. Lack of shoreline buffer. Moderate surface erosion.	Build up road. Establish buffer.	1000	Medium	Medium	Low
R18	2	12	25	L6-14	Loon Lane	Residential	Direct flow of sediment to lake. Bare soil. Slight surface erosion.	Mulch. Install steps. Terrace.	500	Low	Low	Low
R19	2	23	25	L6-18	Lake Grove Springs	Residential	Beach enhancement with sand. Bare soil. Lack of shoreline buffer. Slight surface erosion. Unstable beach access.	Remove of supplemented beach material. Establish buffer. Seed and mulch.	0	Medium	Low	Medium
R20	2	22	25	L6-19	Lake Grove Springs - Narrows	Residential	Direct flow of sediment to lake. Bare soil. Slight surface erosion.	Establish buffer. Seed and mulch.	0	Low	Low	Low
R21	2	21	25	L6-20	Lake Grove Springs - Narrows	Residential	Direct flow of sediment to lake. Bare soil. Shoreline erosion. Lack of shoreline buffer. Moderate surface erosion.	Install stone-filled dripline trench. Install waterbar. Establish buffer. Seed and mulch. Mulch. Install steps. Terrace.	0	Medium	Medium	Medium

Final Site #	Sector #	Site #	Tax Map #	Tax Lot# *	Location	Land Use	Description of Problem	Recommendations	Area Affected	Impact of Problems	Technical level to Install	Cost
R22	2	20	25	L6-23	Lake Grove Springs - Narrows	Residential	Direct flow of sediment to lake. Bare soil. Slight surface erosion.	Install waterbar. Extend buffer. Install steps. Terrace.	0	Low	Low	Low
R23	2	19	25	L6-24	Lake Grove Springs - Narrows	Residential	Direct flow of sediment to lake. Bare soil. Shoreline erosion. Lack of shoreline buffer. Moderate surface erosion.	Establish buffer. Seed and mulch. No raking.	0	Medium	Low	Low
R24	2	18	25	L6-25	Lake Grove Springs - Narrows	Residential	Bare soil. Shoreline erosion. Lack of shoreline buffer. Moderate surface erosion.	Establish buffer. Seed and mulch. No raking.	0	Medium	Low	Low
R25	2	17	25	L6-26	Lake Grove Springs - Narrows	Residential	Direct flow of sediment to lake. Bare soil. Shoreline erosion. Lack of shoreline buffer. Moderate surface erosion.	Establish buffer. Seed and mulch. Terrace.	0	Medium	Medium	Medium
R26	2	16	25	L6-27	Lake Grove Springs - Narrows	Residential	Direct flow of sediment to lake. Bare soil. Lack of shoreline buffer. Severe surface erosion.	Some of plants given away at LSLA meeting were planted where alders were cut. Install waterbar. Establish buffer. Seed and mulch. Mulch. No raking.	10000	Medium	Medium	Medium
R27	2	15	18	L6-30	Lake Grove Springs	Residential	Direct flow of sediment to lake. road shoulder erosion. Road shoulder erosion. Bare soil. Moderate surface erosion. Unstable beach access.	Install waterbar. Mulch. No raking. Terrace.	300	Medium	Medium	Low
R28	3	1	18	L6-38	Birchwood Road near end	Residential	Direct flow of sediment to lake. Shoreline erosion. Lack of shoreline buffer. Slight surface erosion.	Drywell or turn gutter spout toward landscape bed. Install dry well. Establish buffer.	525	Medium	Low	Low
R29	3	2	18	L6-39	Birchwood Road near end	Residential	Direct flow of sediment to lake. roof runoff. Road material transported to lake	Install stone-filled dripline trench. Remove winter sand.	480	Low	Low	Low
R30	3	6	18	L6-45	Birchwood Rd.	Residential	Direct flow of sediment to lake. roof runoff. Bare soil. Lack of shoreline buffer. Unstable boat access.	Install stone-filled dripline trench. Establish buffer. Seed and mulch. Mulch.	750	High	Low	Medium
R31	3	7	18	L6-46	Birchwood Rd. May Meadow Cove	Residential	Direct flow of sediment to lake. Bare soil. Slight surface erosion.	Install stone-filled dripline trench. Mulch. No raking.	400	Low	Low	Low
R32	3	8	18	L6-48	Birchwood Rd. May Meadow Cove	Residential	Moderate surface erosion. unstable foot trail out of house	Install gutter downspout. Install dry well. Install steps.	50	Low	Low	Low
R33	3	9	18	L6-50	Birchwood Rd. May Meadow Cove	Residential	Direct flow of sediment to stream. Severe roof runoff. Severe surface erosion.	Install rip rap or gabions. Install dry well. Establish buffer. Rip rap.	50	Medium	Medium	Low
R34	3	11a	18	L7-6	Birchwood Rd.	Residential	Shoreline erosion. Lack of shoreline buffer. Unstable beach access.	Establish buffer. Mulch. No raking.	0	Low	Low	Low
R35	3	12	18	L7-8 or 9	Birchwood Rd.	Residential	Shoreline erosion. Lack of shoreline buffer. Slight surface erosion. Unstable beach access.	Install stone-filled dripline trench. Establish buffer.	0	Low	Low	Low

Final Site #	Sector #	Site #	Tax Map #	Tax Lot# *	Location	Land Use	Description of Problem	Recommendations	Area Affected	Impact of Problems	Technical level to Install	Cost
R36	3	13	18	L7-9	Birchwood Rd.	Residential	Lack of shoreline buffer. Moderate surface erosion.	Terrace more. Install stone-filled dipline trench. Establish buffer. Seed and mulch. Terrace.	7500	Medium	Medium	Medium
R37	3	14	18	L7-11	160 Birchwood near pole #125 1/2	Residential	Direct flow of sediment to lake. Shoreline erosion. Lack of shoreline buffer. Moderate surface erosion.	Install waterbar. Extend buffer. Seed and mulch.	2400	Low	Low	Low
R38	3	15a	18	L7-28	Birchwood Rd.	Residential	Shoreline erosion. Lack of shoreline buffer.	Establish buffer. Seed and mulch.	600	Low	Low	Low
R39	3	17	18	L7-32	Birchwood Rd.	Residential	Direct flow of sediment to lake. Slight surface erosion.	Send copy of Camp Road Maintenance Manual. Install stone-filled dipline trench. No raking.	400	Low	Low	Low
R40	3	20	18	L7-35	Birchwood Rd. at road bend	Residential	Direct flow of sediment to lake. Moderate surface erosion.	Install dry well. Extend buffer. Seed and mulch. No raking.	150	High	High	High
R41	3	23	18	L7-40, 41	Birchwood Rd.	Residential	Shoreline erosion. Severe surface erosion.	Extend buffer. Mulch.	320	Medium	Low	Medium
R41a	3	16a	18	L7-36	Birchwood Rd.	Residential	Direct flow of sediment to lake. Slight roof runoff. Severe surface erosion.	Waterbar on path to beach. Install stone-filled dipline trench. Install waterbar.	600	Medium	Medium	Medium
R42	3	24	18	L7-42	Birchwood Rd.	Residential	Direct flow of sediment to lake. Slight surface erosion. Erosion at base of stairway to beach area	Install dry well.	40	Low	Low	Low
R43	3	25	18	L7-49	Birchwood Rd.	Residential	Shoreline erosion. Moderate surface erosion.	Continue with large red pavers. Seed and mulch.	75	Low	Low	Low
R44	6	5	11	L-33	Westwood Rd	Residential	Septic system under construction. No silt fence.	Install erosion controls.	0	Low	Low	Low
R45	7	23	11	L9-18	Cobb Rd pole #167 on left of house	Residential	Direct flow of sediment to lake. Bare soil. Slight surface erosion.	Runoff diverters. Install stone-filled dipline trench. Install steps.	280	Low	Medium	Low
R46	7	24	11	L9-15	15 Cobb Rd	Residential	Direct flow of sediment to lake. Roof runoff.	Install stone-filled dipline trench. No raking.	300	Low	Low	Low
R47	7	25	11	L9-14	31 Cobb Rd	Residential	Direct flow of sediment to lake. Bare soil. Slight surface erosion.	Manage roof runoff. Enlarge existing dry wells. Install stone-filled dipline trench. Install dry well. Extend buffer. No raking.	456	Medium	Low	Low
R48	7	4	11	L9-13	"Chickawauki" on camp	Residential	Direct flow of sediment to lake. Lack of shoreline buffer. Moderate surface erosion. Front of cottage moderate surface erosion, back of cottage severe surface erosion.	Plant trees and shrubs. Install stone-filled dipline trench. Establish buffer. Seed and mulch. De-fine pathways. No raking.	2374	High	Medium	Medium

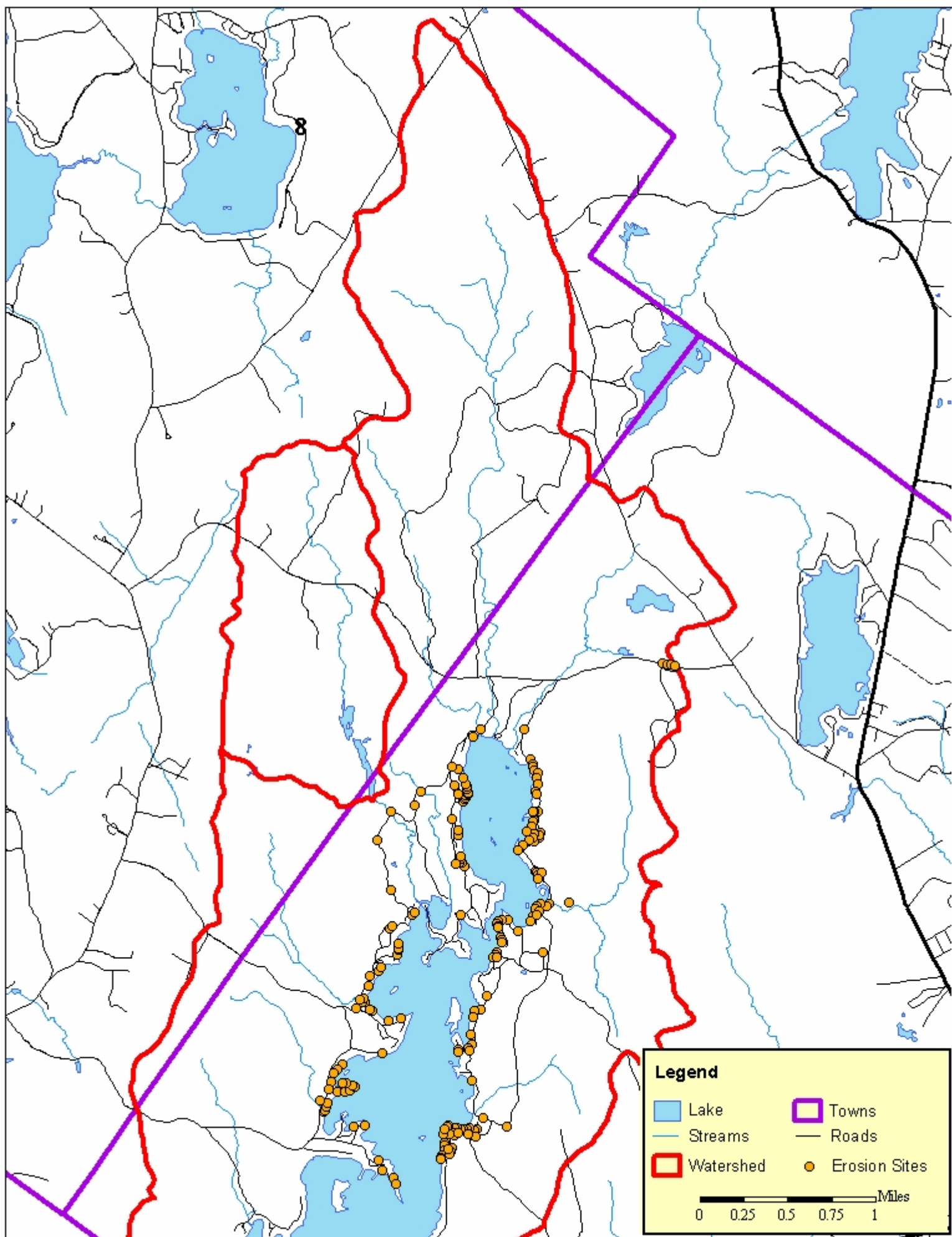
Final Site #	Sector #	Site #	Tax Map #	Tax Lot# *	Location	Land Use	Description of Problem	Recommendations	Area Affected	Impact of Problems	Technical level to Install	Cost
R49	7	3	11	L9-11	banking between Hunnewell and Whitmore	Residential	Severe surface erosion.	Restrict foot traffic. Extend buffer. Seed and mulch.	320	High	Low	Medium
R50	7	8	11	L9-11	Whittmore	Residential	Lack of shoreline buffer. Unstable beach access.	Install stone-filled dripline trench. Establish buffer. Seed and mulch. No raking.	4790	Medium	Low	Low
R51	7	7	11	L9-9	Westwood Rd. after Hunnewell	Residential	Lack of shoreline buffer. Slight surface erosion.	Establish buffer. Seed and mulch. Define pathways.	350	Low	Low	Low
R52	7	9	17	L9-8	Westwood Rd - steps down to lake	Residential	Bare soil. Lack of shoreline buffer. Slight surface erosion.	Plant trees and shrubs. Install stone-filled dripline trench. Extend buffer. No raking.	160	Low	Low	Low
R53	7	10	17	L9-7	Westwood Rd steps to lake. End of Swett Dr.	Residential	Bare soil. Lack of shoreline buffer.	Plant trees and shrubs. Install waterbar. Establish buffer. Seed and mulch.	160	Low	Low	Low
R54	7	11	17	L9-5	Westwood Rd.	Residential	Direct flow of sediment to lake. Bare soil. Lack of shoreline buffer. Slight surface erosion.	Install dry well. Install waterbar. Establish buffer. Seed and mulch. Define pathways.	720	Low	Low	Low
R55	7	13	17	L10-43	13 Swett Rd (or adjacent)	Residential	Beach enhancement with sand. Lack of shoreline buffer.	Plant trees and shrubs. Enhance retaining wall.	960	Low	Low	Low
R56	7	14	17	L10-40	Swett Rd before house boat access	Residential	Beach enhancement with sand. Bare soil. Lack of shoreline buffer.	Reduce beach area near water. Extend buffer. Seed and mulch. Define pathways.	540	Low	Low	Low
R57	7	16	17	L10-30	Westwood Rd	Residential		Build up ice berm. Install stone-filled dripline trench. Install dry well. Install waterbar. Establish buffer.	540	Low	Low	Low
R58	7	17	17	L10-29	Westwood Rd	Residential	Bare soil. Moderate surface erosion.	Stone at outlet of small pipe besides stairs. Install stone-filled dripline trench. Install waterbar. Establish buffer.	225	Medium	Low	Low
R59	7	20	17	L10-26	Westwood Rd	Residential	Lack of shoreline buffer. Moderate surface erosion.	Runoff diverters. Install stone-filled dripline trench. Install rubber blade. Extend buffer. Install steps.	450	Medium	Low	Low
R60	6	2	17	L-12-7	127 Johnson Rd	Residential	Direct flow of sediment to lake. Slight surface erosion. Unstable beach access.	Install rubber blade. Install waterbar. Establish buffer.	0	Low	Low	Low
R61	5	33	24	L12-17	Arundel Road	Residential	Direct flow of sediment to lake. Slight runoff. Shoreline erosion. Lack of shoreline buffer. Slight surface erosion.	Establish stable slope. Build up at top of steps and divert into infiltration trench. Install stone-filled dripline trench. Install dry well. Establish buffer. No raking.	1200	Low	Low	Low

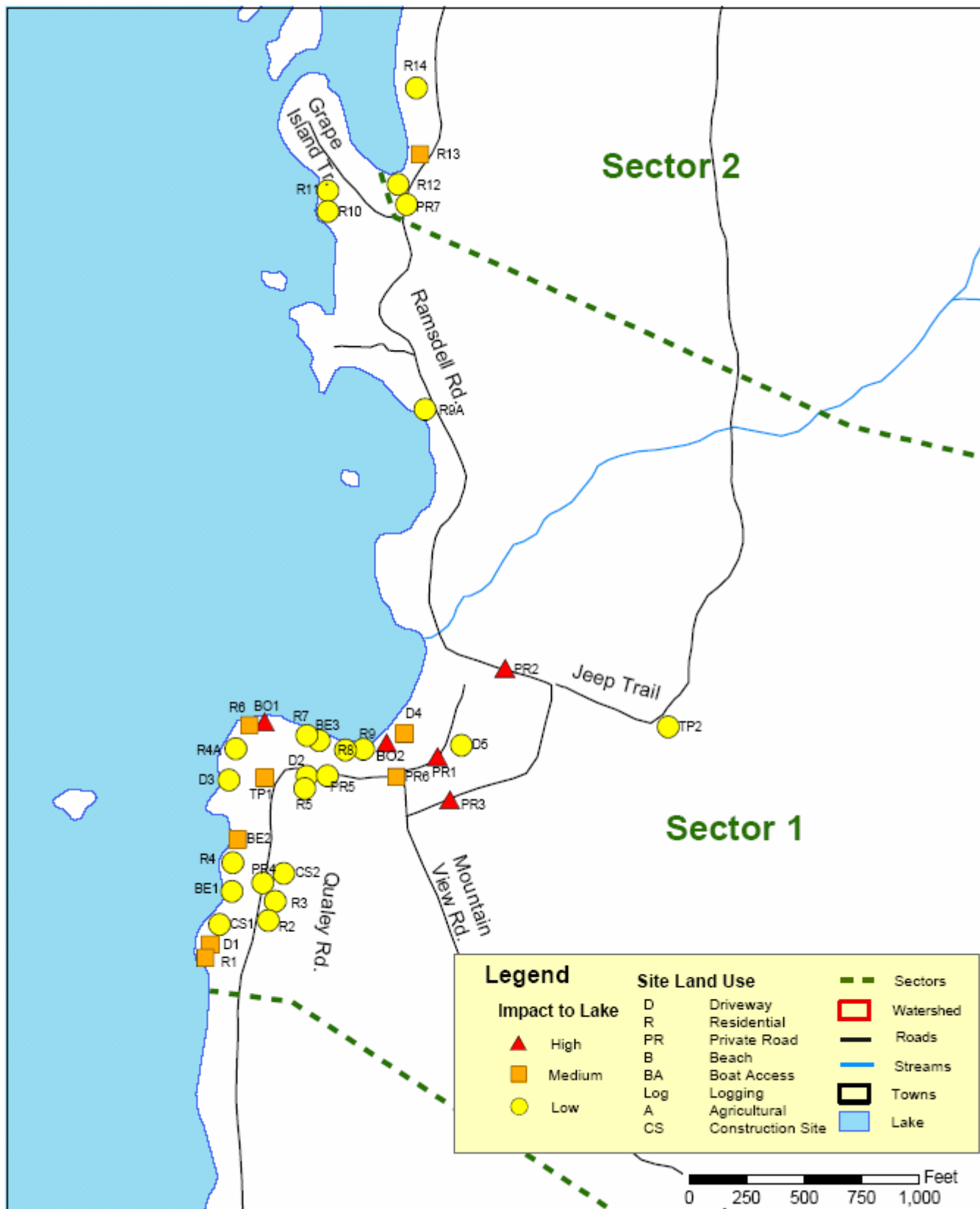
Final Site #	Sector #	Site #	Tax Map #	Tax Lot# *	Location	Land Use	Description of Problem	Recommendations	Area Affected	Impact of Problems	Technical level to Install	Cost
R62	5	32	24	L12-19	Arundel Road	Residential	Slight roof runoff. Slight surface erosion.	Extend gutter downspout to buffer. Install dry well. Extend buffer. Seed and mulch.	400	Low	Low	Low
R63	5	31	24	L12-21	Hayden Lane Sandy Beach for rentals	Residential	Direct flow of sediment to lake. Slight surface erosion.	Establish buffer. Install infiltration trench. Mulch. Define pathways. Terrace.	3000	High	Low	Low
R64	5	24	24	L13-4	Arundel Rd. near corner w/ Gore Rd.	Residential	Bare soil. Lack of shoreline buffer.	Extend buffer. Seed and mulch.	1200	Low	Low	Low
R65	5	22	24	L13-3	Arundel Rd. near corner w/ Gore Rd.	Residential	Direct flow of sediment to lake. Slight roof runoff. Bare soil. Shoreline erosion. Slight surface erosion.	Install stone-filled dripline trench. Seed and mulch. Define pathways.	7500	Medium	Low	Low
R66	5	20	24	L13-32	Aquilla Rd. near corner w/ Gore Rd.	Residential	Lack of shoreline buffer. Slight surface erosion.	Establish buffer. Seed and mulch. No raking.	2500	Low	Low	Low
R67	5	21	24	L13-33	Aquilla Rd. near corner w/ Gore Rd.	Residential	Lack of shoreline buffer. Slight surface erosion.	Establish buffer. Seed and mulch. No raking.	0	Low	Low	Low
R68	5	19	24	L13-40,41	Kram's Point	Residential	Direct flow of sediment to lake. Lack of shoreline buffer. Slight surface erosion.	Establish buffer. Seed and mulch. No raking.	3750	Low	Low	Low
R69	5	18	24	L13-46	Kram's Point near Gansmere Point	Residential	Bare soil. Shoreline erosion. Slight surface erosion. Unstable beach access.	Install stone-filled dripline trench. Install dry well. Establish buffer. Seed and mulch. No raking.	3750	Low	Low	Low
R70	5	17	32	L13-70	Aquilla Rd. near end	Residential	Direct flow of sediment to lake. Shoreline erosion. Lack of shoreline buffer. Unstable beach access.	Establish buffer. Seed and mulch. No raking.	2500	Low	Low	Low
R71	5	16	32	L14-13	Deer Acres Rd. near Sand Island	Residential	Direct flow of sediment to lake. road shoulder erosion. Unstable beach access.	Establish buffer. Seed and mulch. No raking.	22600	Low	Low	Low
R72	5	14	32	L14-17	Deer Acres Rd. near Sand Island	Residential	Direct flow of sediment to lake. Bare soil. Lack of shoreline buffer. Slight surface erosion. Unstable beach access.	Establish buffer. Seed and mulch. No raking.	7500	Low	Low	Low
R73	5	13	32	L14-20	Deer Acres Rd. - Pirate's Cove	Residential	Direct flow of sediment to lake. road shoulder erosion. Stockpiled soil. Lack of shoreline buffer. Slight surface erosion.	Extend buffer.	1000	Low	Low	Low
R74	5	15	32	L14-16	Deer Acres Rd. near Sand Island	Residential	Direct flow of sediment to lake. Shoreline erosion. Lack of shoreline buffer. Unstable beach access.	Armor ditch with stone or grass. Install turnout. Establish buffer. Seed and mulch. No raking.	0	Low	Low	Low

Final Site #	Sector #	Site #	Tax Map #	Tax Lot# *	Location	Land Use	Description of Problem	Recommendations	Area Affected	Impact of Problems	Technical level to Install	Cost
R75	5	12	32	L14-25	Evergreen Rd.	Residential	Direct flow of sediment to lake. Bare soil. Shoreline erosion. Lack of shoreline buffer. Slight surface erosion. Unstable construction site. New septic system under construction.	Add new surface material. Establish buffer. Mulch. No raking.	7500	Medium	Low	Low
R76	5	11	32	L14-26	Evergreen Rd.	Residential	Direct flow of sediment to lake. Bare soil. Shoreline erosion. Lack of shoreline buffer. Moderate surface erosion.	Establish buffer. Mulch. Define pathways. No raking.	7500	Medium	Low	Low
R77	5	10	32	L14-28	Evergreen Rd.	Residential	Direct flow of sediment to lake. Bare soil. Lack of shoreline buffer. Slight surface erosion.	Establish buffer. Mulch. No raking.	3750	Medium	Low	Low
R78	5	9	32	L14-29	Evergreen Rd.	Residential	Direct flow of sediment to lake. Bare soil. Lack of shoreline buffer. Slight surface erosion.	Establish buffer. Mulch. No raking.	9600	Medium	Low	Low
R79	5	8	32	L14-30	Evergreen Rd.	Residential	Direct flow of sediment to lake. Bare soil. Lack of shoreline buffer. Slight surface erosion.	Establish buffer. Mulch. No raking.	3750	Medium	Low	Low
R80	5	7	32	L14-32, 31	Evergreen Rd.	Residential	Direct flow of sediment to lake. Bare soil. Lack of shoreline buffer. Slight surface erosion.	Establish buffer. Seed and mulch. No raking.	7500	Medium	Low	Low
R81	5	6	32	L14-34	Evergreen Rd, Tele #4	Residential	Direct flow of sediment to lake. Bare soil. Lack of shoreline buffer. Slight surface erosion.	Establish buffer. Extend buffer. Seed and mulch. Mulch. Define pathways. No raking.	3750	Medium	Low	Low
R82	5	3	32	L14-39	Deer Acres Rd	Residential	Direct flow of sediment to lake. Slight road shoulder erosion. Road shoulder erosion. Moderate roof runoff. Bare soil. Lack of shoreline buffer. Moderate surface erosion.	Install stone-filled dipline trench. Establish buffer. Extend buffer. Seed and mulch. Define pathways.	0	Medium	Low	Low
R83	5	2	32	L14-40	Deer Acres Rd	Residential	Direct flow of sediment to lake. Bare soil. Lack of shoreline buffer. Slight surface erosion.	Install stone-filled dipline trench. Establish buffer. Seed and mulch. Mulch. Define pathways. No raking.	1500	Medium	Low	Low
R84	5	1	32	L14-41	Deer Acres Rd.	Residential	Direct flow of sediment to lake. Slight road shoulder erosion. Severe roof runoff. Lack of shoreline buffer. Slight surface erosion.	Stabilize culvert inlet and/or outlet. Install rubber razor. Install waterbar. Extend buffer.	300	Low	Low	Low
R85	4	6b	14	41	Deer Acres Rd.	Residential	Direct flow of sediment to lake. Stockpiled soil.	Remove stockpiled soil	50	Low	Low	Low

Final Site #	Sector #	Site #	Tax Map #	Tax Lot# *	Location	Land Use	Description of Problem	Recommendations	Area Affected	Impact of Problems	Technical level to Install	Cost
R86	4	4c	15	27	Steele Rd north side	Residential	Direct flow of sediment to lake. Lack of shoreline buffer. Slight surface erosion.	Extend buffer. Mulch.	120	Low	Low	Low
R87	4	4b	15	30	End of Steele Rd	Residential	Direct flow of sediment to lake. Lack of shoreline buffer. Slight surface erosion.	Establish buffer. Mulch.	600	Low	Low	Low
R88	4	4	15	43	Cedar gambrel. 164 Lyons Pt Rd	Residential	Direct flow of sediment to lake. Slight surface erosion. Unstable beach access.	Extend buffer. Install steps/runoff diverters.	300	Low	Low	Low
R89	4	2	15	50	178 Lyons Pt Rd	Residential	Direct flow of sediment to lake. Bare soil. Lack of shoreline buffer. Slight surface erosion.	Establish buffer.	60	Low	Low	Low
R90	4	1	15	51	181 Lyons Point Rd	Residential	Direct flow of sediment to lake. Lack of shoreline buffer. Slight surface erosion.	Establish buffer.	50	Low	Low	Low
TP1	1	9	32	14-28	between 48 Qualey and 46 Qualey	Trail or Path	Direct flow of sediment to lake. Moderate surface erosion.	Define meandering path, possibly close off. Install rubber blade. Extend buffer. Define pathways.	400	Medium	Low	Low
TP2	1	21	33	7-6	~1/3 mi on Jeep Trail from Ramsdell Rd.	Trail or Path	Direct flow of sediment to stream. Severe surface erosion. stream crossing	install stone ford where trail crosses stream.	150	Low	Medium	High
TR1	1	16	33	14-1a, 1b	Ramsdell Rd. - 1st 500' from Mt. View Rd.	Private Road	Unstable culvert inlet/outlet. Direct flow of sediment to stream. Moderate road shoulder erosion. Moderate surface erosion.	Lengthen culvert inlet. Detention basin along ditch to stream. Install plunge pool. Stabilize culvert inlet and/or outlet. Install ditch. Install turnout. Install detention basin.	3000	High	Medium	High
TR2	9	4	7	10-25D	24 Egypt Road	Town Road	Clogged culvert. Direct flow of sediment to ditch. Slight road shoulder erosion.	Clean out culvert. Stabilize culvert inlet and/or outlet. Remove winter sand.	150	Low	Low	Low
TR3	9	3	7	10-26	32 Egypt Road	Town Road	Clogged culvert. Direct flow of sediment to ditch. Slight road shoulder erosion. Slight surface erosion.	Clean out culvert. Remove winter sand. Reshape or crown.	176	Low	Low	Low
TR4	9	2	7	10-32	36 Egypt Road	Town Road	Clogged culvert. Direct flow of sediment to ditch. Slight road shoulder erosion. Slight surface erosion.	Clean out culvert. Remove winter sand. Reshape or crown.	216	Low	Low	Low
TR5	9	13b	7	4-3	27 Egypt Rd	Town Road	Unstable culvert inlet/outlet. Direct flow of sediment to ditch. Slight road shoulder erosion. Road shoulder erosion.	Clean out culvert. Reshape ditch. Remove winter sand.	1000	Medium	Low	Low

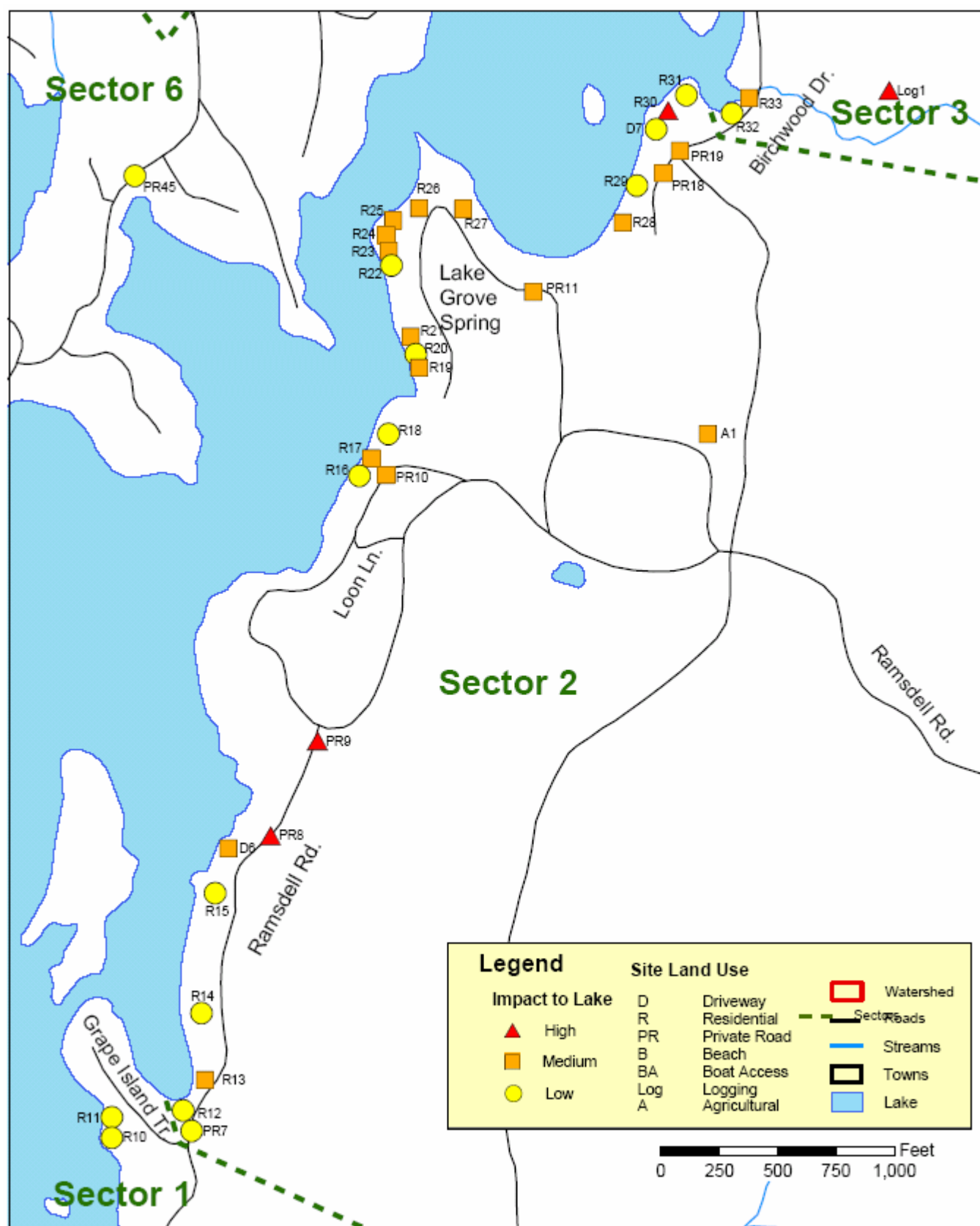
Final Site #	Sector #	Site #	Tax Map #	Tax Lot# *	Location	Land Use	Description of Problem	Recommendations	Area Affected	Impact of Problems	Technical level to Install	Cost
TR6	9	14	7	4-2	31 Egypt Rd.	Town Road	Clogged culvert. Unstable culvert inlet/outlet. Direct flow of sediment to ditch. Slight road shoulder erosion. Road shoulder erosion.	Clean out culvert. Stabilize culvert inlet and/or outlet. Armor ditch with stone or grass. Remove winter sand.	1000	Medium	Low	Low
TR7	9	15	7	10-10B	Egypt Rd. CMP Pole #8	Town Road	Clogged culvert. Unstable culvert inlet/outlet. Slight road shoulder erosion. Road shoulder erosion.	Clean out culvert. Stabilize culvert inlet and/or outlet. Armor ditch with stone or grass. Remove winter sand.	6000	Low	Low	Low
TR8	9	1	7	4-23	40 Egypt Road	Town Road	Clogged culvert. Direct flow of sediment to ditch. Slight road shoulder erosion. Road shoulder erosion. Slight surface erosion.	Clean out culvert. Stabilize culvert inlet and/or outlet. Armor ditch with stone or grass. Reshape ditch. Add new surface material. Reshape or crown.	360	Low	Low	Low
TR9	6	4	11	L9-36	Sand Brook Crossing (Westwood Rd)	Town Road	Unstable culvert inlet/outlet. Direct flow of sediment to stream. Moderate road shoulder erosion.	Clean up winter sand. Stabilize culvert inlet and/or outlet. Install turnout(s). Remove winter sand.	270	Medium	High	Medium





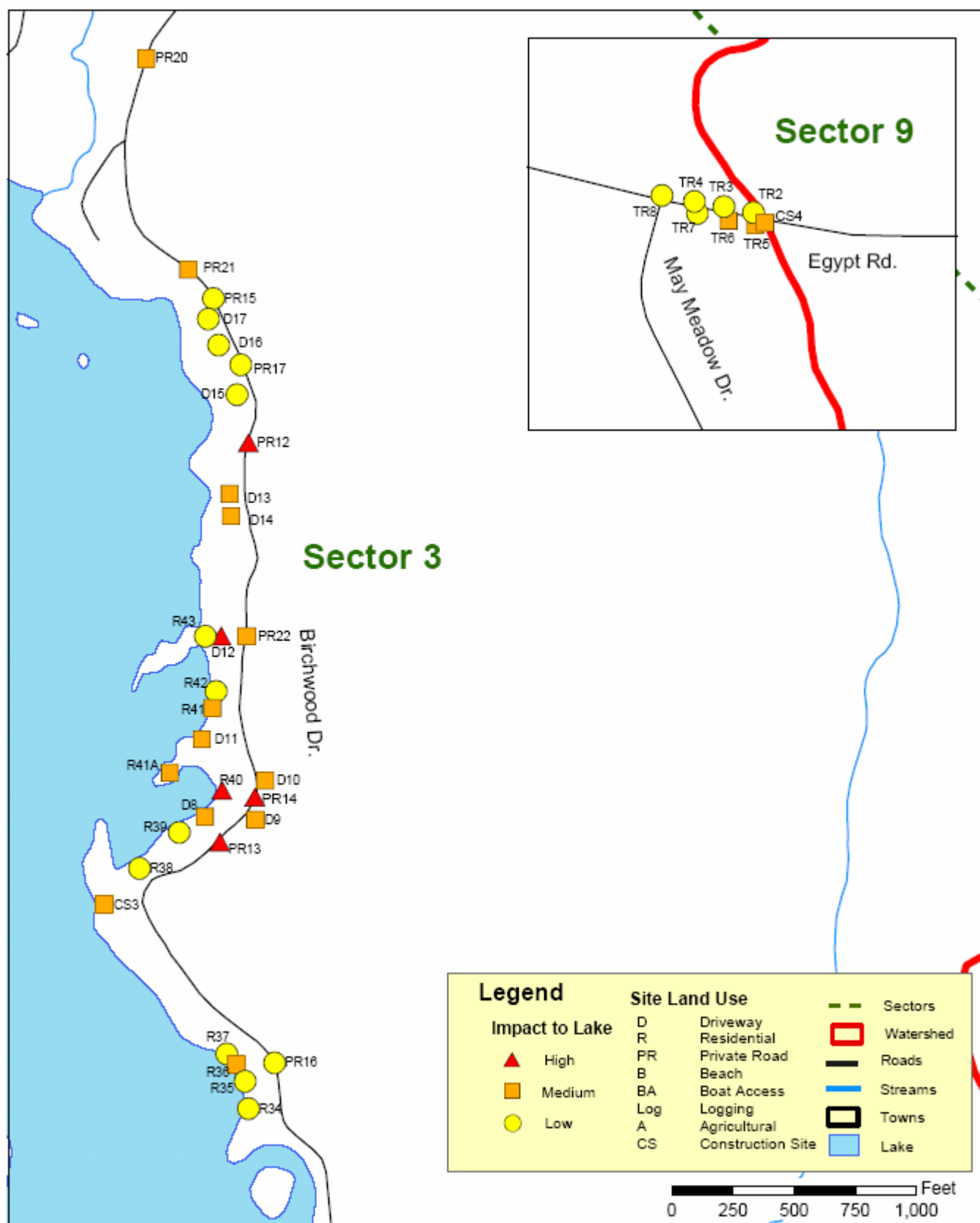
Map 6. Sectors 1 and 2 **

** Site locations shown are approximate.



Map 4. Sectors 2 and 3**

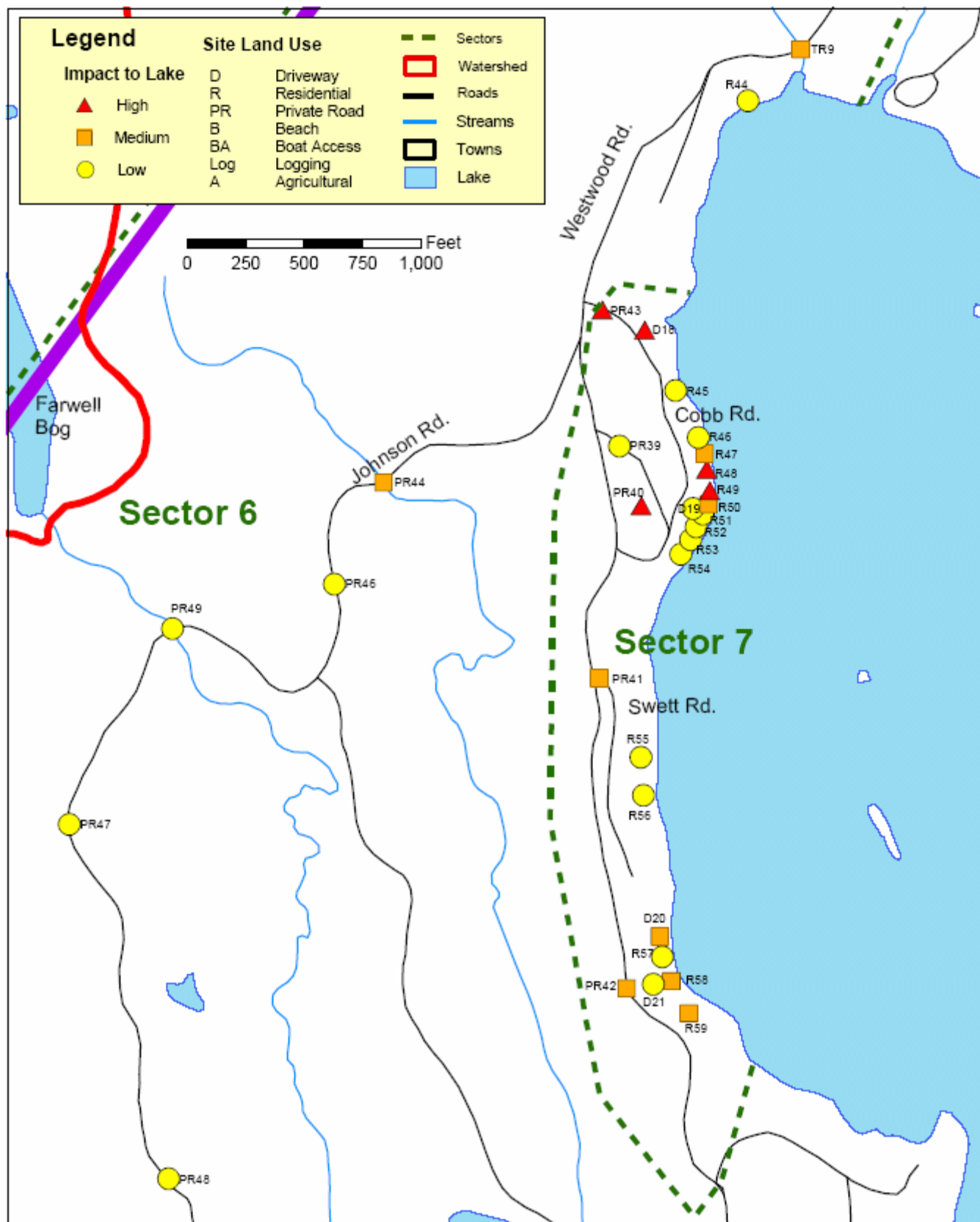
**Site locations shown are approximate.



Map 2. Sectors 3 and 9**

**Site locations shown are approximate.

**Site locations shown are approximate.



Map 1. Sectors 6 and 7**

**Site locations shown are approximate.

Where Do I Get More Information?

Contacts

Little Sebago Lake Association

PO Box 912

E-mail: info@littlesebagolake.com

Windham, ME 04092

Web site: www.littlesebagolake.com

Outreach and advocacy within the watershed, provides educational materials and directs individuals to appropriate agencies.

Cumberland County Soil and Water Conservation District

201 Main St. Suite 6, Westbrook, ME 04092

(207) 856-2777

Offers assistance with watershed planning and survey work, 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

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

Maine Congress of Lake Associations (COLA)

1-877-254-2511

E-mail: info@mainecola.org

Web site: www.mainecola.org

The only statewide network of individuals and lake associations devoted solely to the protection and preservation of our lakes.

Publications

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

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

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

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

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

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

Little Sebago Lake Watershed Survey Report

Part II—South of Lyons Point



**Cumberland County Soil and Water Conservation District
Little Sebago Lake Association
Maine Department of Environmental Protection**

June 2004

Acknowledgments

The following people and organizations were instrumental in the Little Sebago Lake Watershed Survey Project and deserve special recognition for their efforts:

Watershed Survey Volunteers

Terry Strouse	Kim McBride	Mary Braunscombe
Steve McFarland	Sam McFarland	Jim Theiss
Duane Snyder	Judy Andrews	Chuck Stone
Sharon Lamontagne	Scott Lowell	Carol Ann Doucette
Elizabeth Salomone	Caroline Libby	Michael Rogalus

Steering Committee

Pam Wilkinson	Chuck Stone	Kim McBride
Scott Lowell	Carol Ann Doucette	Judy Andrews
Sandie Mizerak		

Technical Staff

Mary Gilbertson, Cumberland County Soil and Water Conservation District
Betty Williams, Cumberland County Soil & Water Conservation District
Tamara Lee Pinard, Cumberland County Soil & Water Conservation District
Wendy Garland, Maine Department of Environmental Protection
Don Kale, Maine Department of Environmental Protection
Jessie Mae McDougal, Maine Department of Environmental Protection
Meghan Kreider, Americorps
Shauna Little, Americorps
Ben Lubbers, Americorps
Melissa Steinleib, Americorps

Sponsors

The Little Sebago Lake Association
Maine Department of Environmental Protection
US EPA
The Town of Gray
The Town of Windham
Cumberland County SWCD

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.

All programs and services of the Cumberland County Soil & Water Conservation District are offered on a non-discriminatory basis, without regard to race, ethnicity, color, gender, religion, age, disability, political belief, sexual orientation, or marital or family status.

Cover Photo Credit: Ed Lefebvres

Table of Contents

Introduction	4
Purpose of the Watershed Survey	7
The Survey Method	7
Summary of Watershed Survey Findings	8
Residential	11
Driveways	12
Private Roads	13
Right of Ways	14
Sites in Other Categories	15
Examples of Good Watershed Protection Techniques	15
Building a Better Buffer	16
Using Soils to Help the Watershed	17
Key Findings from the Watershed Surveys	18
Where Do We Go From Here?	19
Permitting ABC's	20
Glossary of Common Conservation Practices	21
Where Do I Get More Information?	22
Spreadsheet of All Survey Data	Appendix A
Maps of Sites Documented through the Survey	Appendix B



When combined with many other similar sites from 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 Little Sebago Lake Watershed. It provides the results and analysis of a watershed survey conducted on the portion of the Little Sebago Lake Watershed south of Lyons Point. A survey of the northern portion of the watershed was completed in the spring of 2003. The surveys are conducted in response to evidence compiled over many years that has shown a gradual decline in the lake's water quality.

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 ground water.

The Little Sebago Lake Association has tested water quality in Little Sebago Lake for more than 25 years. In recent years, water clarity and dissolved oxygen levels in the lake have shown some improvement. However, the Maine Department of Environmental Protection's (DEP) statistical analysis of the long term data shows that despite periodic fluctuations, the lake is under stress. Long term trends show that in some portions of the lake, the clarity of the water is decreasing. Also, the amount of oxygen in the bottom water of some portions of the lake has decreased, risking the

survival of cold water fish and the delicate water chemistry balance in the lake. Based on observations at other Maine lakes, these trends forecast a future decline in water quality. For these reasons, plus its regional significance, Little Sebago Lake appears on the list of **Nonpoint Source Priority Watersheds**.

Why is the Water Quality at Risk?

The biggest pollution culprit in Little Sebago Lake and other Maine's lakes is **nonpoint source (NPS) pollution**. NPS is found in storm water runoff from rain and snowmelt. During and after storms and snowmelt, soil (and hitch-hiking nutrients like phosphorus and nitrogen) washes into lakes from the surrounding landscape by streams and overland flow.

NONPOINT SOURCE POLLUTION

Also called NPS or polluted runoff.
Pollution from diffuse, seemingly insignificant sources (such as erosion, roads, septic systems) that, when combined, add up to a significant amount of pollution to a watershed.



Runoff from the driveway and rooftops on this property combine to transport significant sediment into Little Sebago Lake.

An example of the powerful impact that storm water runoff can have on water quality is the improvement in Little Sebago Lake's water clarity and bottom water dissolved oxygen levels documented in 2001 and 2002. These improvements occurred during the years of lowest rainfall in recent history. One could safely say that this reduced rainfall resulted in less NPS, and thus an improvement in some water quality parameters.

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. In a developed watershed, however, storm water does not always receive the filtering treatment the forest once provided. It gathers with other runoff shed from impervious surfaces like rooftops, compacted soil, gravel camp roads and pavement, speeds up, and becomes a destructive erosive force.

Why is Stormwater Runoff a Problem?

The problem is not necessarily the water itself, it's the nutrients and the sediment in the storm water runoff that can be bad news. Large volumes of sediment can settle out in the lake, creating an ideal substrate for nuisance and invasive aquatic plants such as variable-leaved water milfoil. **Phosphorus**, a nutrient that is common on land and in storm water runoff, is a primary food for all plants, including **algae**. In natural conditions, the scarcity of phosphorus in a lake limits algae growth. However, when a lake receives extra phosphorus from the watershed, algae growth increases dramatically. Sometimes this growth causes choking blooms, but more often it results in small, insidious changes in water quality that, over time, damage the ecology, aesthetics and economy of lakes.



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

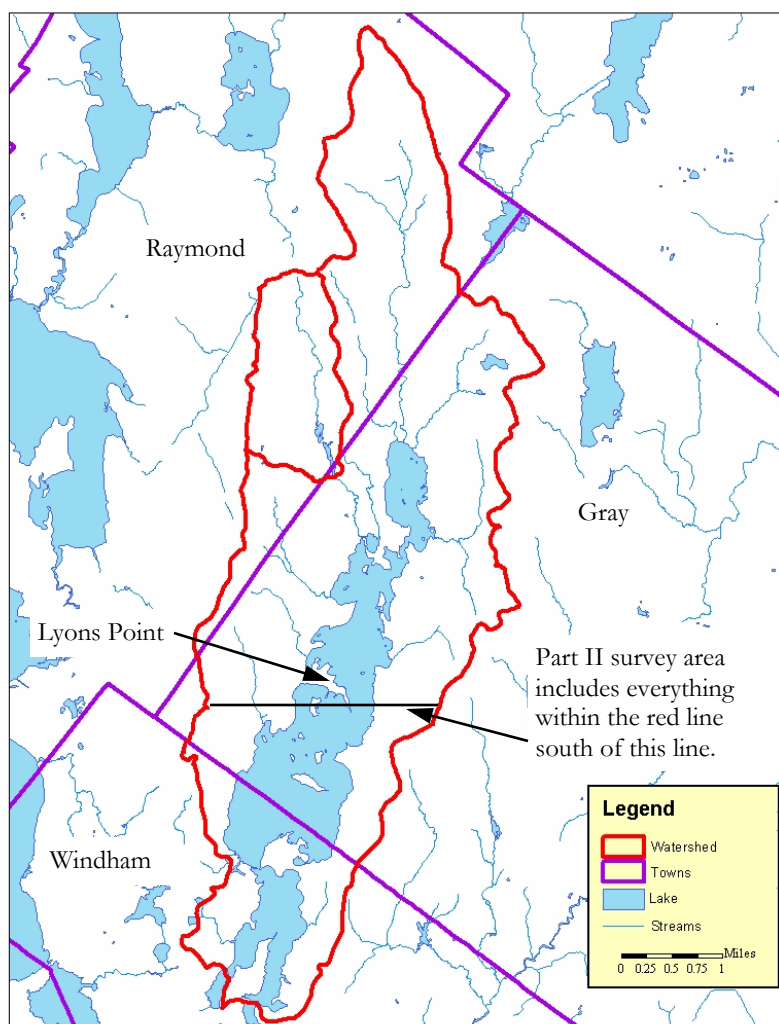


Figure 1. The Little Sebago Lake Watershed

Why should we protect the lake from polluted runoff?

- ◆ The lake is already host to variable-leaved water milfoil, an invasive aquatic plant. This plant and other invasive plants thrive in shallow areas with silty bottoms. Sediment deposited into the lake from erosion creates the ideal environment for these plants to thrive.
- ◆ The lake contains valuable habitat for fish, birds and other wildlife.
- ◆ Little Sebago Lake provides recreational opportunities to watershed residents and to visitors. It is an important contributor to the local economy.
- ◆ A 1996 University of Maine study demonstrated that lake water quality affects property values. For every meter (3 ft) decline in water clarity, shorefront property values can decline as much as 10 to 20 percent! Declining property values affect individual landowners as well as the economics of the entire community.
- ◆ Once a lake has declined, it can be difficult or impossible to restore.



Variable-leaved water milfoil thrives in silty areas caused by sediment deposition.

What is being done to protect the lake from polluted runoff?

The Little Sebago Lake Association (LSLA) is one of the most proactive and well-organized lake associations in the region, and is dedicated to addressing the NPS issues facing the lake. Its board and members work with agencies and watershed residents to promote conservation efforts within the watershed. The LSLA also tests water quality in Little Sebago Lake as part of the Maine Volunteer Lake Monitoring Program.

During the spring and summer of 2003, the LSLA worked with the Cumberland County Soil & Water Conservation District (SWCD) and DEP to conduct this watershed survey on the southern portion of the lake—south of Lyons Point. This effort completes the survey of the entire watershed, following the survey of the northern portion of the watershed in 2002. Volunteer watershed surveys have been found to be one of the most effective ways to protect lake water quality by getting citizens involved in identifying existing and potential sources of polluted runoff.

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 Little Sebago Lake Watershed.
- ◆ Raise public awareness of the connection between land use and water quality, and the impact of polluted runoff.
- ◆ Inspire people to become active stewards of the watershed.
- ◆ 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 our hope that through future projects we 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. Through the leadership of the Little Sebago Lake Association, and with assistance from groups and agencies concerned with lake water quality, the opportunities for stewardship are limitless!

The Survey Method

The survey was conducted by volunteers with the help of trained technical staff. Volunteers were trained on survey techniques and erosion identification during a two hour classroom workshop in May 2003. Following the classroom training, the volunteers and technical staff spent the remainder of the day in the field documenting erosion on the roads, shoreline, streams, and foot trails in their assigned sectors using cameras and standardized forms. The teams worked together throughout the remaining summer to complete their sectors. Trained technical staff conducted follow-up examinations of sites in the summer and fall of 2003 to verify data accuracy and to calculate estimates, where possible, of the pollutant loading from each site.



The data collected was entered into a computer database to create a spreadsheet, and the documented erosion sites were plotted on maps using GIS (Geographic Information Systems). 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. Maps and a description of sites and associated ranks are discussed in the next section of this report. A copy of the spreadsheet that contains all collected data is located in Appendix A.

Summary of Watershed Survey Findings

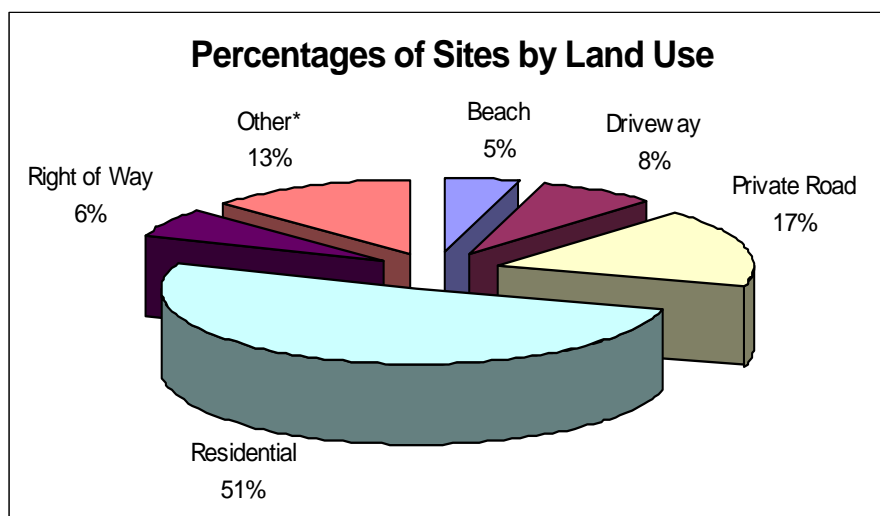
Volunteers and technical staff identified 119 sites in the southern portion of the Little Sebago Lake Watershed that are currently impacting or have the potential to impact water quality of the lake. The data are outlined in the following pages in a variety of maps, tables and charts designed to summarize the problems documented and compare their relative impact on the lake. Also, information in Appendices A and B describe in more detail the locations of the sites documented through the survey.

Each documented site was placed into one of nine land use categories and ranked with a relative impact on the lake. Table 1 represents the tally of sites in each category as well as their impact rank. The different levels of impact are defined on the following page. The pie chart in Figure 2 below depicts the percentage of sites documented in each category. The majority of sites were associated with residential areas (49%).

Table 1. Summary of site categories and impacts

Land Use	High Impact	Medium Impact	Low Impact	Total
Beach	2	1	3	6
Boat Access	0	2	3	5
Construction	4	1	2	7
Driveway	1	2	7	10
Private Road	2	5	15	22
Residential	2	22	43	67
Right of Way	3	4	1	8
Town Road	1	0	3	4
Trail	0	1	0	1
Total	15	38	77	130

Figure 2.



* Other sites include Construction (5%), Boat Access (4%), Town Road (3%), and Foot Trails/Paths (1%)

Little Sebago Watershed Survey Phase II Erosion Sites

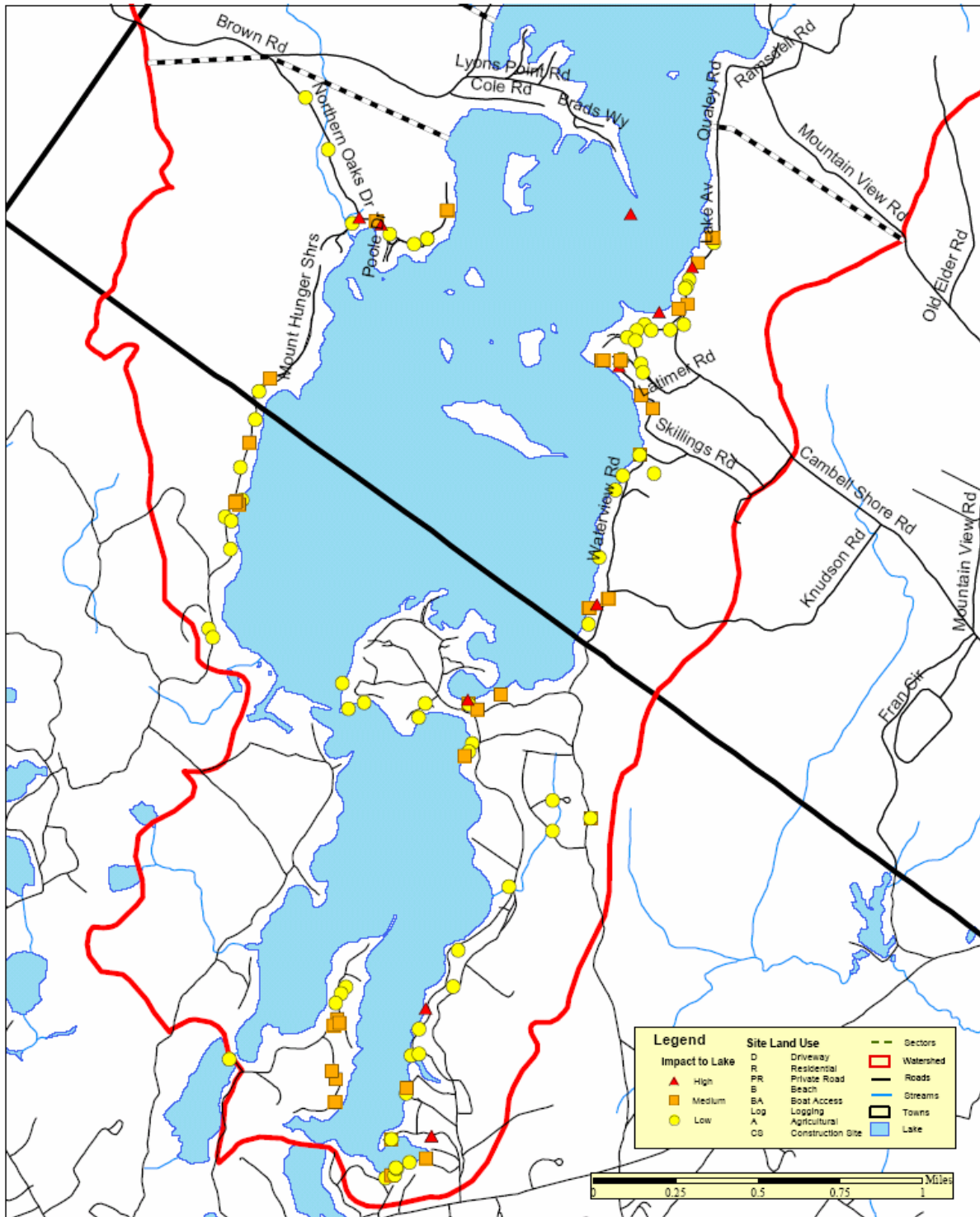


Figure 3. Survey Area with Points Representing Documented Sites

All of the documented sites were rated for their relative impact to water quality, and the costs and technical level of potential fixes. Figures 4, 5, and 6 depict these ratings.

Figure 4.

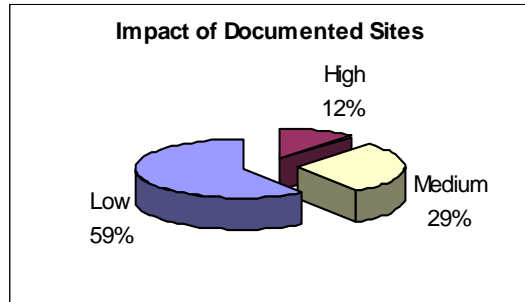


Figure 5.

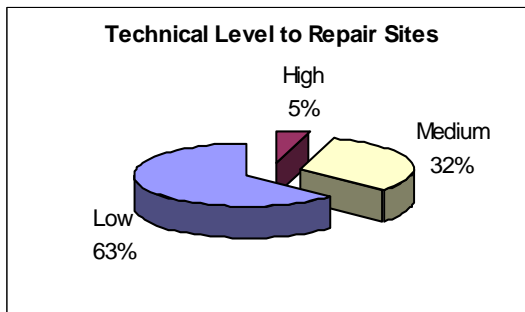
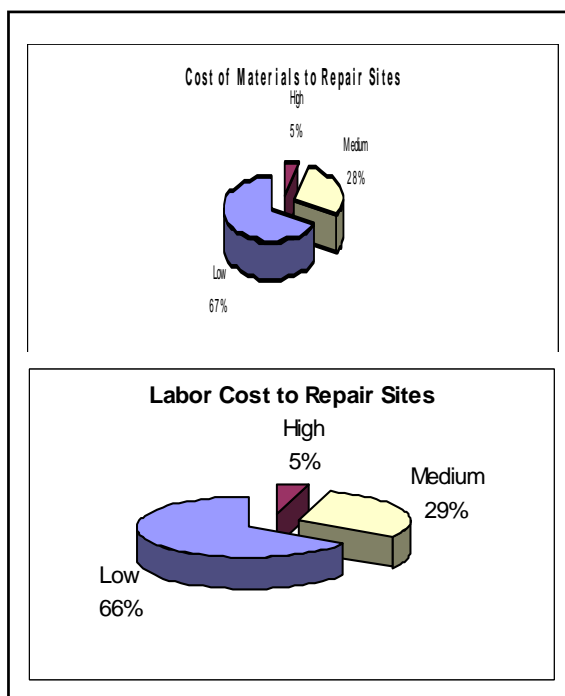


Figure 6.



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

- “Low” impact eroding 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 where there is significant erosion that flows directly into a stream, lake or ditch.

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 of bare soil would require little technical expertise.
- Sites with a “medium” tech level need to be visited by a technical expert who can make detailed recommendations.
- A “high” tech level requires an engineered design.

Cost is an important factor in planning for restoration. It is useful to consider costs for materials and labor individually, so as to not miss any “hidden” costs.

- “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.

Residential

Of the 59 sites associated with residential areas documented through the survey, 40 were low impact, 18 were medium impact, and 1 was high impact. The majority 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 lake
- Roof runoff causing erosion

Typical Solutions to these Problems:

- Seed and mulch bare soil
- Establish or enhance buffer
- Limit foot traffic in eroding areas
- Install dripline trench to catch roof runoff
- Install waterbar, open-top culvert, rubber razor or other runoff diverter
- Place mulch or stone on footpaths

Below is an actual example of residential polluted runoff on Little Sebago Lake, as well as a description of the problems and possible solutions for this site.



Since this site was documented during the survey, the landowners have taken steps to stabilize this site. Each step taken helps reduce the amount of soil that reaches the lake.

Problems:

- Moderate bank erosion from roof runoff.
- Bare soil with surface erosion.
- Direct flow of sediment to lake.

Solutions:

- Install a stone-filled dripline trench to manage roof runoff.
- Plant trees and shrubs to enhance buffer.
- Create stable, meandering foot path.
- Seed or mulch bare soil areas.
- Seek proper permits from DEP and Town.

Residential areas were associated with nearly half (49%) of the identified sources of polluted runoff in the southern portion of Little Sebago Lake. These problems pose a significant threat to lake water quality. Fortunately, most of these sites can be corrected with easy, low cost fixes.

Driveways

Of the 10 driveways documented to have problems, 6 were low impact, 3 were medium impact, and one was high impact. Most of the sites could be fixed with low cost and technical expertise.

Common Problems Identified:

- Slight to moderate surface erosion
- Direct flow to lake or ditch
- Poor shaping
- Poor (too sandy) surface material
- Slight ditch erosion

Recommended Solutions:

- Crown driveways so that water flows to either side
- Build up driveway with cohesive surface material
- Install diverters such as waterbars, open top culverts or rubber blades to get water off driveway
- Install turnouts to direct water into wooded depressions

Below is an actual example of polluted runoff from a driveway on Little Sebago Lake, as well as a description of the problems and possible solutions for this site.



Problems

- Moderate surface erosion.
- Poor driveway shaping and ruts cause water to concentrate and erode the surface.

Solutions

- Add new surface material.
- Reshape and crown driveway so water moves quickly from the surface.
- 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 buffers.

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

Private Roads

Of the 19 private road sites documented through the survey, 12 were low impact, 5 were medium impact and 2 were high impact. The problems are more expensive to fix and most require technical assistance.

Common Problems Identified:

- Slight to moderate surface erosion
- Direct flow to lake or stream
- Moderate to severe ditch erosion
- Poor (too sandy) surface material
- Unstable culvert inlet and outlet
- Clogged ditches and culverts
- Slight to moderate shoulder erosion
- Plow or grader berms
- Hillside failure

Recommended Solutions:

- Crown and reshape road to get water off road
- Install diverters such as waterbars, open top culverts or rubber blades to get water off road
- Build up road with cohesive surface material
- Clean out culverts
- Clean, reshape and armor ditches with stone or grass
- Remove grader berms and winter sand to allow proper drainage
- Formalize culverts and stabilize ends with stone, plunge pool

Below is an actual example of polluted runoff from a private road on Little Sebago Lake, as well as a description of the problems and possible solutions for this site.

Problems:



- Grader or plow berm limits stable escape for water from road
- Moderate road shoulder erosion
- Direct flow of road material to stream.

Solutions:

- Attempt to get more water off of the road before it reaches this low point.
- Reshape and crown road.
- Create turnouts, plunge pools, and level-lip spreader to collect water and settle out sediment.

Unpaved roads are one of the biggest sources of pollution to Maine lakes.

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

Right of Ways

Of the 7 Right of Way sites documented through the survey, one was low impact, 4 were medium impact and 2 were high impact. Most sites would benefit from technical assistance, yet have relatively low to medium cost.

Common Problems Identified:

- Bare soil
- Slight to severe surface erosion
- Slight to moderate ditch erosion
- Shoreline erosion
- Lack of vegetation
- Direct flow of sediment to lake

Recommended Solutions:

- Add better surface material
- Reshape or crown if used for vehicular traffic
- Install runoff diverters, such as waterbars, open-top culverts, or rubber razor blades.
- Stop raking
- Establish or enhance shoreline buffer

Below is an actual example of polluted runoff on a Right of Way in the Little Sebago Lake watershed, as well as a description of the problems and possible solutions for this site.



Problems:

- Moderate surface erosion.
- Direct flow of sediment and winter sand into stream.

Solutions:

- Install rubber razor blades along the Right of Way.
- Enhance/clean out the existing waterbar.
- Add surface material and crown.

Remember, it's the cumulative impact of all the sites that causes water quality to decline.

Sites in Other Categories

Boat Access Sites

Five boat access sites were documented; two with medium impact and three with low impact. Problems identified at these locations included slumping or eroding banks on either side of the ramps, and moderate surface erosion where the ramps meet the lake. These problems can be fixed by adding better surface material and establishing a crown on the ramp, and adding some sort of paved speed bump, waterbar, or infiltration trench to divert the water. Additionally the banks can be armored with vegetation or rock. The cost and technical level necessary to fix these sites are low to moderate.

Town Roads

Of the five town road sites documented in this survey, one was a high impact site, and four were low impact. Three sites involved culverts and catch basins with large amounts of road sand. Annual maintenance is critical for structures designed to capture road sand. Unless properly maintained, these structures may become sources, rather than sinks, for sediment.

Trails

One eroding trail beach access site with medium surface erosion was documented. Moderate trail surface erosion, along with bare soil and a lack of buffer were noted. Problems at these sites were often caused by runoff problems uphill, including roof runoff. The installation of a roof drip line trench, along with stopping raking, would help to control this erosion. On the trail itself, the path could be mulched, and runoff diverters can be placed along the trail.

Construction Sites

Six construction sites were noted as having impacts on the watershed; Three with high impact, one with moderate impact, and two with low impact. Bare soil on construction sites is inevitable, however, proper use of silt fences, hay bales, and other temporary erosion control measures is effective at limiting the impact of construction activity on the watershed. Maintenance of temporary measures, seeding and mulching disturbed areas, and frequent visits by trained code enforcement personnel are also critical to ensuring protection of the lake from the disturbance associated with construction.

Examples of Good Watershed Protection Techniques

Survey teams identified many sites that showed good watershed protection techniques. These good practices included good vegetated buffers, and well maintained driveways, roads, and ditches. This photo (at right) for example, depicts a good example of a properly designed driveway. Note that this driveway includes a stable substrate (pavement) and an open-top culvert that direct runoff into the buffer area to the right. The Maine DEP and Cumberland County SWCD have created numerous demonstration projects that showcase good watershed protection practices. Many of those demonstration projects are located on lakes near Little Sebago Lake. Contact the Maine DEP and SWCD for more details (page 18).



Build a Better Buffer

Survey volunteers noted many sites throughout the watershed that lacked buffers. Because no active erosion was present, these sites were not documented in this survey. Still, over 70 locations were noted as lacking a sufficient or any buffer. This overall lack of buffers around Little Sebago Lake should be of concern for the residents of the Little Sebago Lake Watershed.

The west side of the lake, in particular, has very flat topography. Furthermore, many properties had beaches that abutted expansive lawns. While these factors may seem to reduce the flow of stormwater runoff, it still reaches the lake. Lawns alone cannot provide sufficient water quality protection. The grasses used in common lawn mixes are shallow-rooted. While they provide some protection against surface erosion, they can't provide adequate protection over the long haul. Buffers are the key to reducing the transport of polluted runoff to Little Sebago Lake.



Numerous lakeshore properties had little or no vegetation at the water's edge. Lawns alone do little to prevent polluted stormwater from reaching the lake.

What is a buffer?

Buffers are areas of trees, shrubs, groundcover, and a duff layer that catch sediment and nonpoint source pollution before they reach the lake. Vegetation situated between the built environment and the water trap sediments, excess nutrients and other pollutants, prevent erosion, and help to stabilize sloped areas and the shoreline.

How do buffers work?

- ⇒ The tree and shrub canopy intercepts raindrops and reduces their impact on the soil.
- ⇒ Leaf surfaces collect rain and allow for evaporation.
- ⇒ Shorter plants, groundcover, and the duff layer filter sediment and pollutants from runoff.
- ⇒ Root systems hold soil in place and absorb water and nutrients.
- ⇒ An uneven soil surface allows rain and snowmelt to puddle and infiltrate.



Often folks feel that once a buffer is in place, they will lose control of their access to the water—both physically and visually. Not so! Traffic can be directed by the use of appropriately placed shrubs and trees, which can be trimmed so that views of the water are preserved. In fact, buffers can be designed to protect against noise and enhance privacy for lakefront residents.





The photo at left shows an excellent example of trail access to the lake. The trail winds through this buffer, essentially eliminating any direct path for runoff to reach the lake.

You can reduce the effects of polluted runoff, protect the quality of Little Sebago Lake, and improve property values....simply by establishing new vegetated buffers and enhancing existing ones!

Using Soils to Help the Watershed

Understanding the soils in your watershed helps with planning erosion control measures, as well as choosing plants that will thrive. The soils in the Little Sebago Lake Watershed are mostly sandy gravelly loams that are very permeable and very well drained. These soils are moderately acidic.

Plant types of vegetation that can handle drought conditions and acidic soils. The following plants are examples of those well suited to Little Sebago lake properties, are a good addition to any buffer planting, and are readily available at local nurseries.

Native Plant Recommendations			
<u>Shrubs</u>			<u>Perennials</u>
◆ Blueberry (High & Lowbush)		Blueberry	◆ Black Eyed Susan
◆ Bearberry			◆ Cinnamon Fern
◆ Bayberry		Black Eyed Susan	◆ Yarrow
◆ Sweet Fern			◆ Purple Coneflower
◆ Sheep Laurel		Snowberry	◆ Scarlet Bee Balm
◆ Snowberry			◆ Hay Scented Fern
◆ Blue Rug Juniper		Bee Balm	◆ Solomon Seal
			◆ Mint

Phosphorus Free Fertilizer Dealers

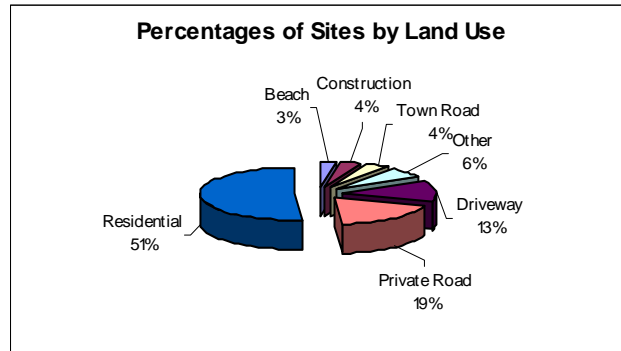
Most soils in Maine have enough phosphorus to keep a lawn healthy. If you must fertilize, use phosphorus free fertilizer. Retailers include:

Home Depot	149 Mt. Auburn	Auburn	777-0042
Hansen's Farm Market	74 County Road	Gorham	839-9060
O'Donal's Nurseries	6 County Road	Gorham	839-4262
Ossipee Trail Garden Ctr.	333 Ossipee Trail	Gorham	839-2885
Ace Cooks Hardware	P.O. Box 299	Gray	657-4204
True Value	P.O. Box 577	Raymond	655-7320
Coastal Hardware	708 U.S. Rte One	Yarmouth	846-3861

Key Findings from the Watershed Surveys

With the completion of this survey, the entire Little Sebago Lake Watershed has now been surveyed for nonpoint source pollution. What have we found?

- ⇒ Of the 312 sites identified by the two surveys, 160 (51%) were residential sites.
- ⇒ Of these sites, most of the sites can be fixed with low to medium technical expertise and cost.
- ⇒ Attention should be given to all sites, since the **cumulative** impact of all the sites causes water quality to decline.



- ⇒ 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 Little Sebago Lake.

Although 312 sites may sound like a daunting number, fixing the problems in the watershed is highly feasible. Education, coupled with hands-on instruction, can go a long way to increase the awareness and use of BMPs. A variety of simple, cost-effective conservation practices can help solve many erosion problems and protect Little Sebago Lake from polluted runoff. Simple and seemingly small actions taken by many residents will add up quickly to make a big effort in protecting and improving the health of the lake!



Timeline for NPS Work in the Little Sebago Lake Watershed	
Watershed Survey north of Lyon's Point	Completed 2003
Watershed Survey south of Lyon's Point	Completed 2004
Conduct implementation project to address sites in northern watershed	2004
Pursue funds for shoreline survey for buffer evaluation	2004
Pursue funds for implementation project in southern watershed	2005
Reevaluate accomplishments and remaining issues, discuss need for additional funds	2006

Next Steps ~ Where Do We Go From Here?

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

Individual Citizens

- Prevent runoff from washing sediment into the lakes. Detain runoff in depressions or divert flow to vegetated areas. Call the Cumberland County SWCD or DEP for free advice.
- Minimize the amount of cleared land and road surfaces on your property.
- Stop mowing and raking, and let lawn and raked areas revert back to natural plants. Deep shrub and tree roots help hold the shoreline.
- Avoid exposing bare soil. Seed and mulch bare areas.
- Don't bring in sand or rebuild beaches without permits and technical assistance.
- Call the Town Code Enforcement Officer before cutting vegetation within 250' of the shore.
- 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 Little Sebago Lake Association.

Little Sebago Lake Association

- Continue to increase and empower the association's membership, and provide educational materials and guidance to members of the Little Sebago Lake watershed community.
- Continue to partner with agencies, municipalities, Districts, and others to jointly seek funding and implement projects to protect the 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.

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." and share it with contractors working on and/or plowing the road. This reference is a "must-have" for anyone managing a gravel road. (Call the DEP at 822-6300 to order a free copy.)
- For more extensive problems, contact the Cumberland County SWCD or DEP to get help.

Municipal Officials

- Enforce shoreland zoning ordinance to ensure protection of Little Sebago Lake.
- 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.

Permitting ABC's

Protection of the Little Sebago Lake Watershed is ensured through the good will of residents around the lakes and through laws and ordinances created and enforced by the State and Towns.

How do you know when you need a permit?

- Construction, clearing of vegetation and soil movement within 250 feet of the lake shore falls under the Shoreland Zoning Act, which is administered by the Towns through the Code Enforcement Officer and the Planning Board.
- Soil disturbance within 75 feet of the lakeshore or stream also falls under the Natural Resources Protection Act, which is administered by the DEP.

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. See the last page of this report for contact information.

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 (3 COPIES, PLEASE BEAR DOWN)

Name of Applicant: <u>Yamhill County SWCD</u>	Name of Owner: <u>Norm & Michelle Groleau</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>207 839-7839</u>
Name of Wetland, Water Body or Stream: <u>Sabbathday Lake</u>	
Detailed Directions to Site: <u>121 Outlet Road, Rte. 26 North turn right onto Outlet Road. 121 Outlet Road is on the left 4 to 5 houses before you reach Barefoot Beach.</u>	
Town/City: <u>New Gloucester</u> Map #: _____	Lot #: _____ County: _____
Description of Project: <u>Installation of a drywell to allow infiltration of roof runoff.</u>	Part of a larger project? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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) Intake Pipes	<input type="checkbox"/> Sec. (9) Utility Crossing	<input type="checkbox"/> Sec. (15) Public Boat Ramps
<input type="checkbox"/> Sec. (4) Replacement of Structures	<input type="checkbox"/> Sec. (16) Stream Crossing	<input type="checkbox"/> Sec. (16) Coastal Sand Dune Projects
<input type="checkbox"/> Sec. (5) REPEALED	<input type="checkbox"/> Sec. (11) State Transportation Facilities	<input type="checkbox"/> Sec. (17) Transfers/Permit 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) Outlet Pipes	<input type="checkbox"/> Sec. (13) FAW Creation/Enhance/Restore Quality 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: <u>Michelle Groleau</u>	Date: <u>7/28/00</u>
---	----------------------

Keep the bottom copy as a record of permit. Send the form with attachments via certified mail to the Maine Dept. of Environmental Protection. The DEP will send a copy to the Town Office as evidence of _____ o 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)587-2111	PORTLAND DEP 312 CANCO ROAD PORTLAND, ME 04103 (207)862-6300	BANGOR DEP 106 HOGAN ROAD BANGOR, ME 04401 (207)641-4570	PRESQUE ISLE DEP 1235 CENTRAL DRIVE PRESQUE ISLE, ME 04769 (207)764-5477
--	---	---	---

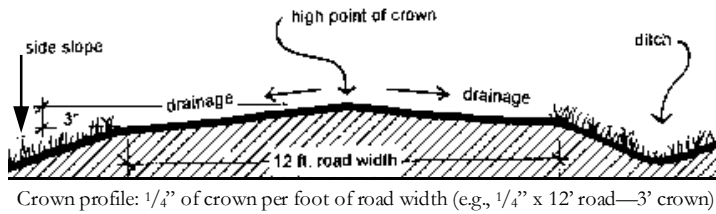
OFFICE USE ONLY	CL#	Staff	Staff
PBR #	FF	Acc. Date	Del. Date
			After Photo

DEPLW-27-899

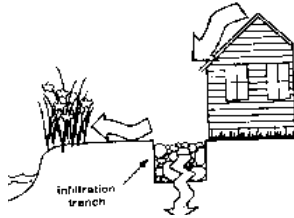
How to apply for Permit by Rule with DEP:

1. Fill out a notification form before completing any work on the ground. Forms are available from your town code enforcement officer or the Maine DEP offices in Portland or Augusta.
2. The permit will be reviewed by DEP within 14 days. If you do not hear from DEP within 14 days, you can assume your permit is approved and you can proceed with work on the project. If you bring the permit directly to a DEP office, you could get your permit approved immediately.
3. Follow the proper standards for keeping soil erosion to a minimum during construction, 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.

Glossary of Common Conservation Measures

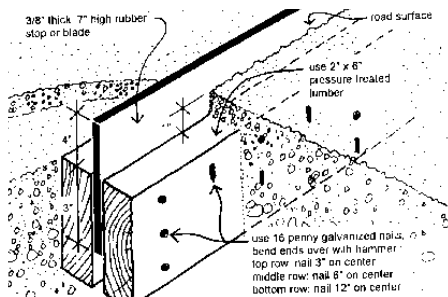
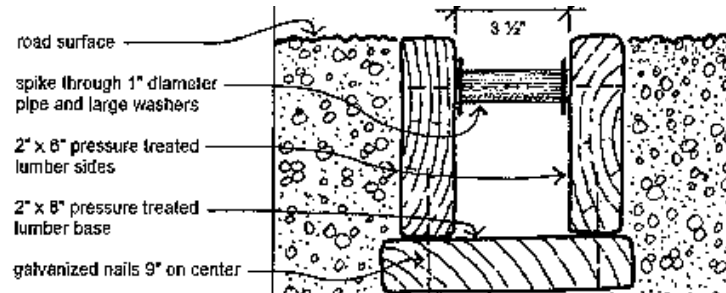


Crown—High point that runs lengthwise along the center of a road or driveway. The high point slopes gently away from the center toward the outer edge of the road, allowing water to drain off the road and preventing erosion of the road surface.



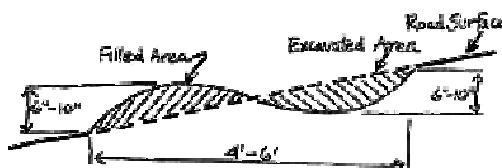
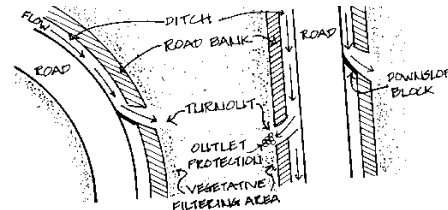
Dripline Trench—Rock-filled trench beneath the roof edge dripline that collects and stores roof runoff until it soaks into the ground. Helps control erosion and reduce wear on the house by preventing backsplash. A typical trench is 6-8" deep and 12-18" wide and filled with $\frac{3}{4}$ " stone. Can 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.



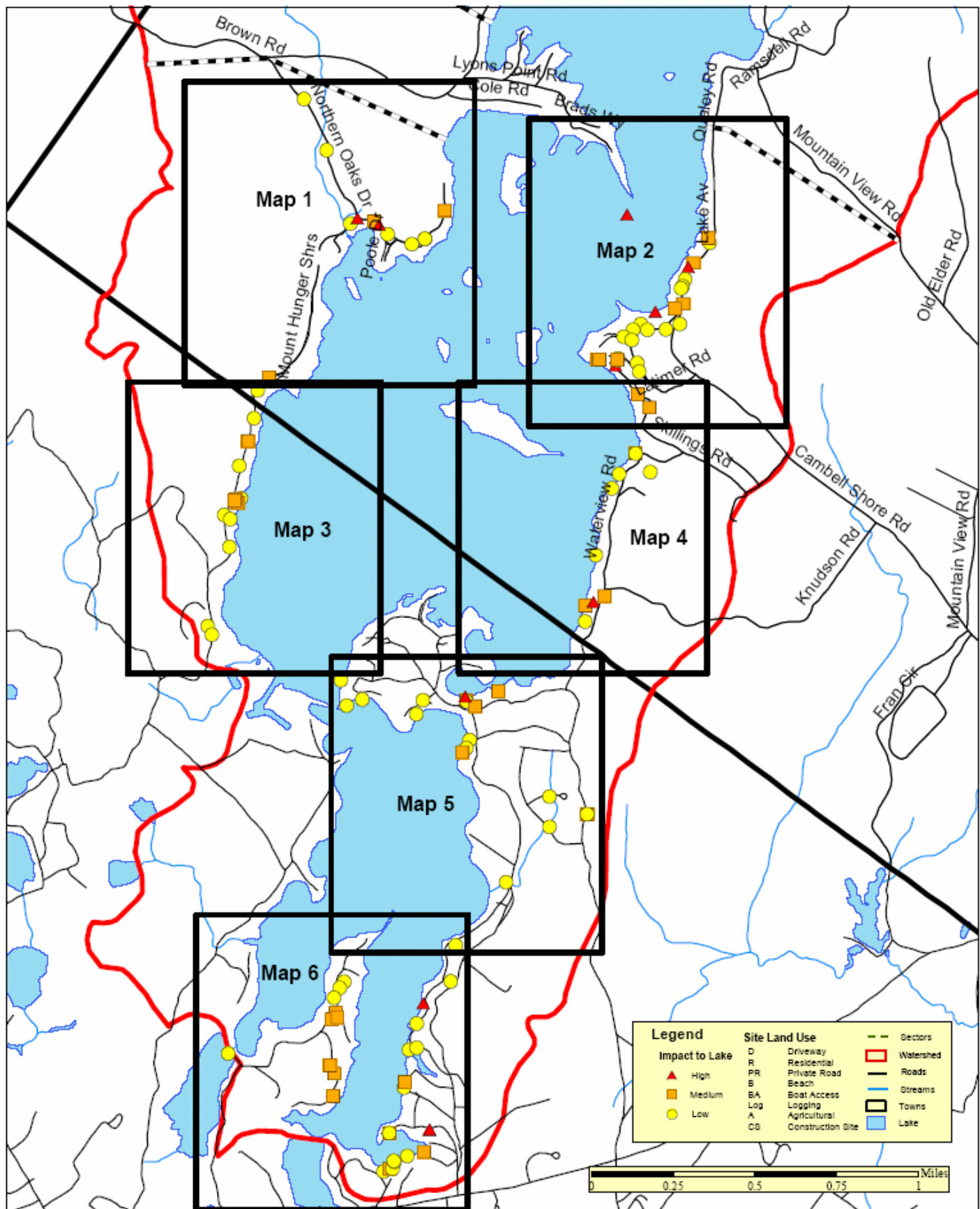
Rubber Blade—Structure that protrudes above the road surface high enough to intercept and collect water, while allowing traffic to pass over it. It is generally not used on seasonal roads and driveways because of the likelihood of plow damage. Install at a 30° angle to the road and direct the outlet into a stable buffer. The rubber conveyor belts can be purchased at some hardware stores or Portland Rubber Company (774-3993).

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.

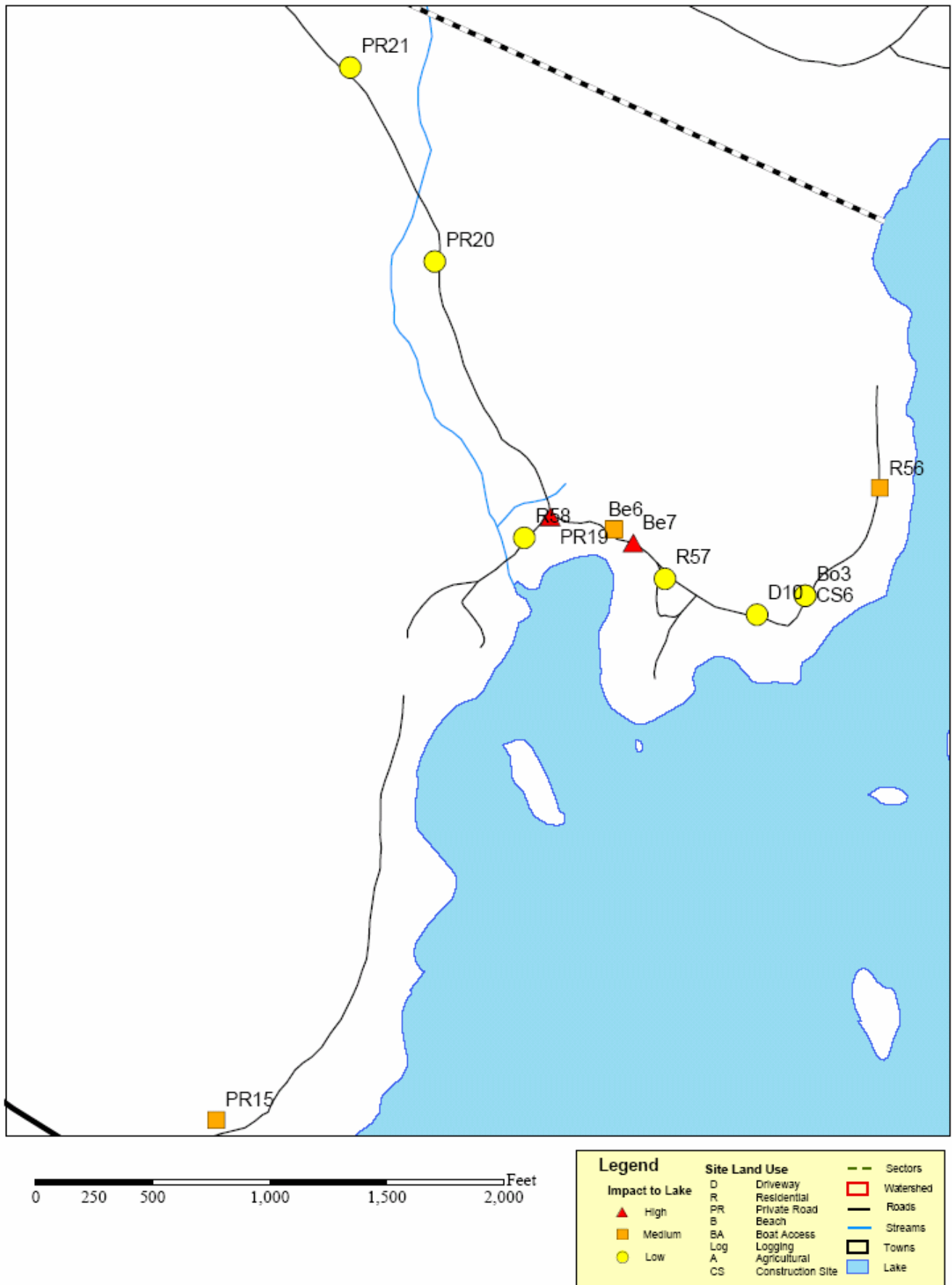


Waterbar—Ridge (like a speed bump) that runs diagonally across a road, driveway or path, typically at a 30° angle. Stops water from running down the road and diverts it to the side. Easy to construct and most appropriate for roads with low traffic volume. Needs to be rebuilt periodically.

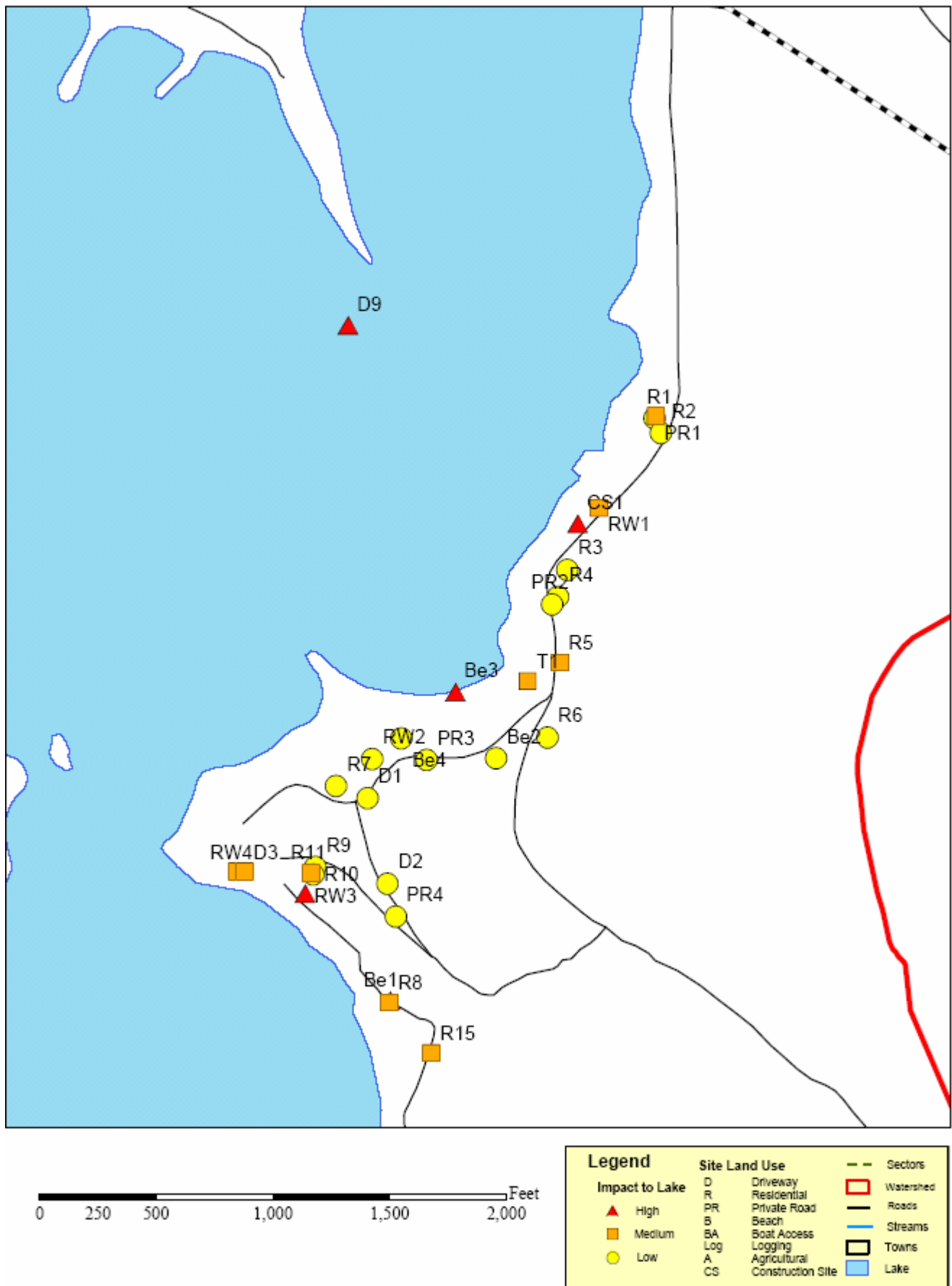
Key to Detailed Maps



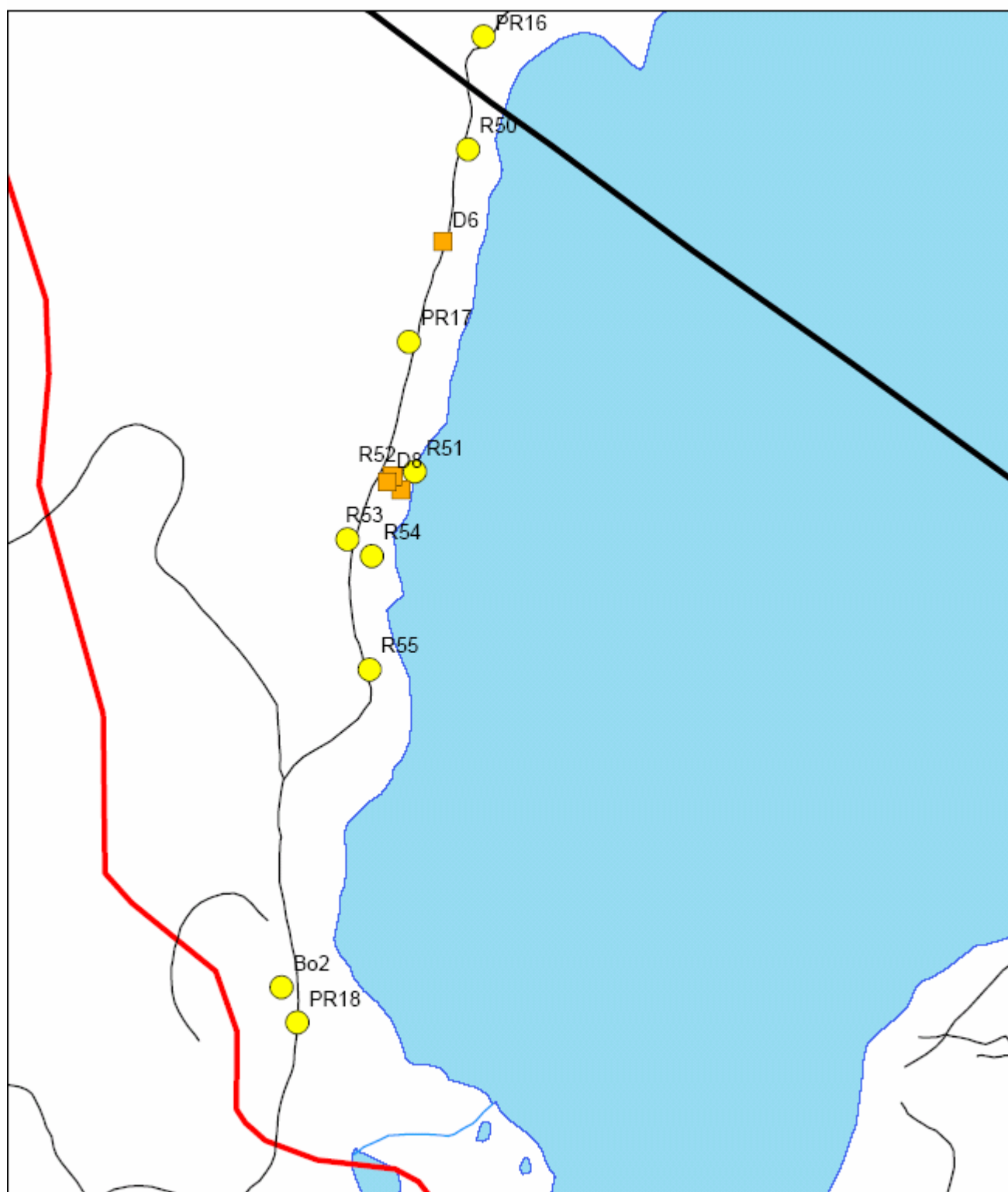
Map 1 - Erosion Sites



Map 2 - Erosion Sites



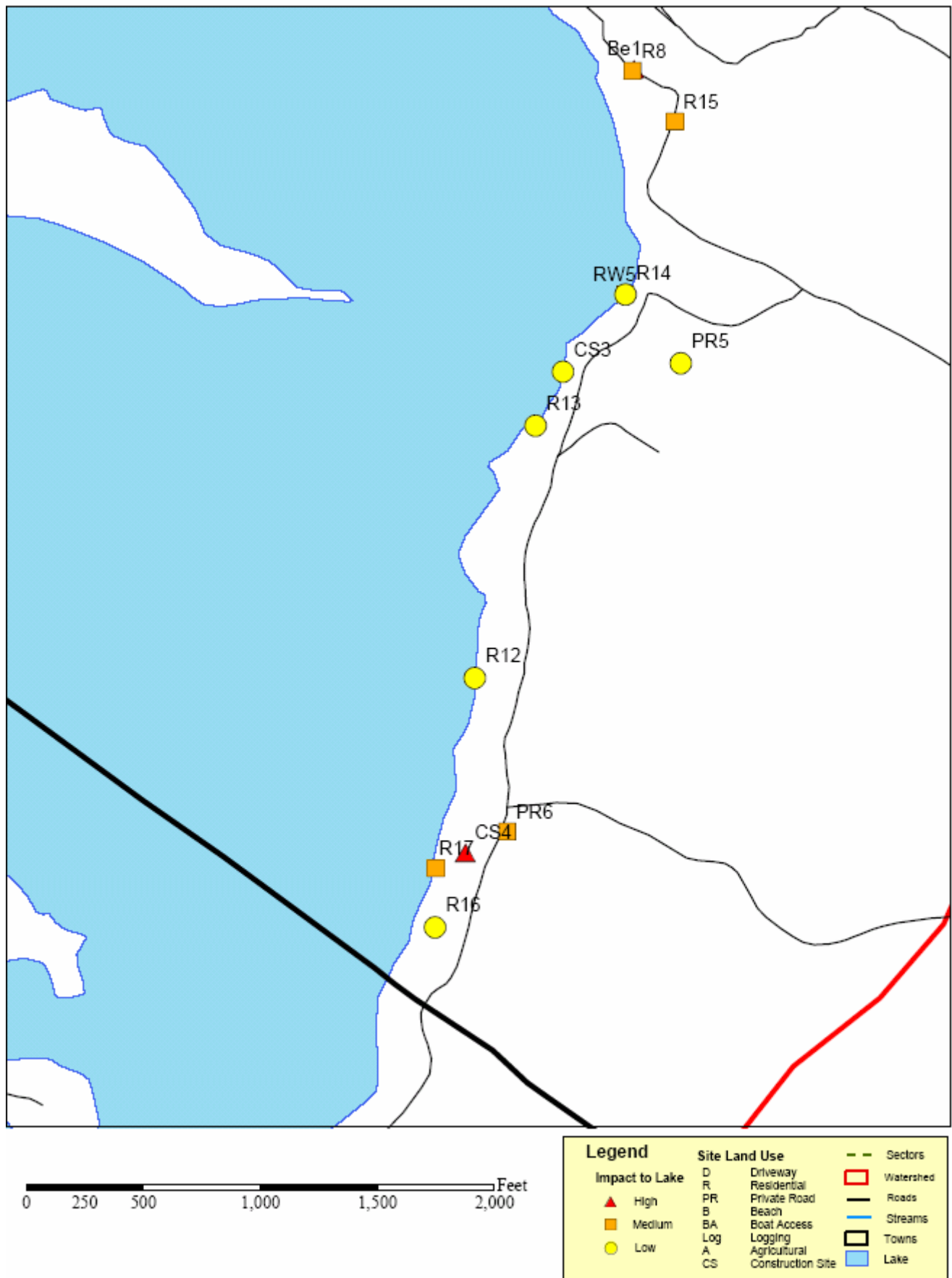
Map 3 - Erosion Sites



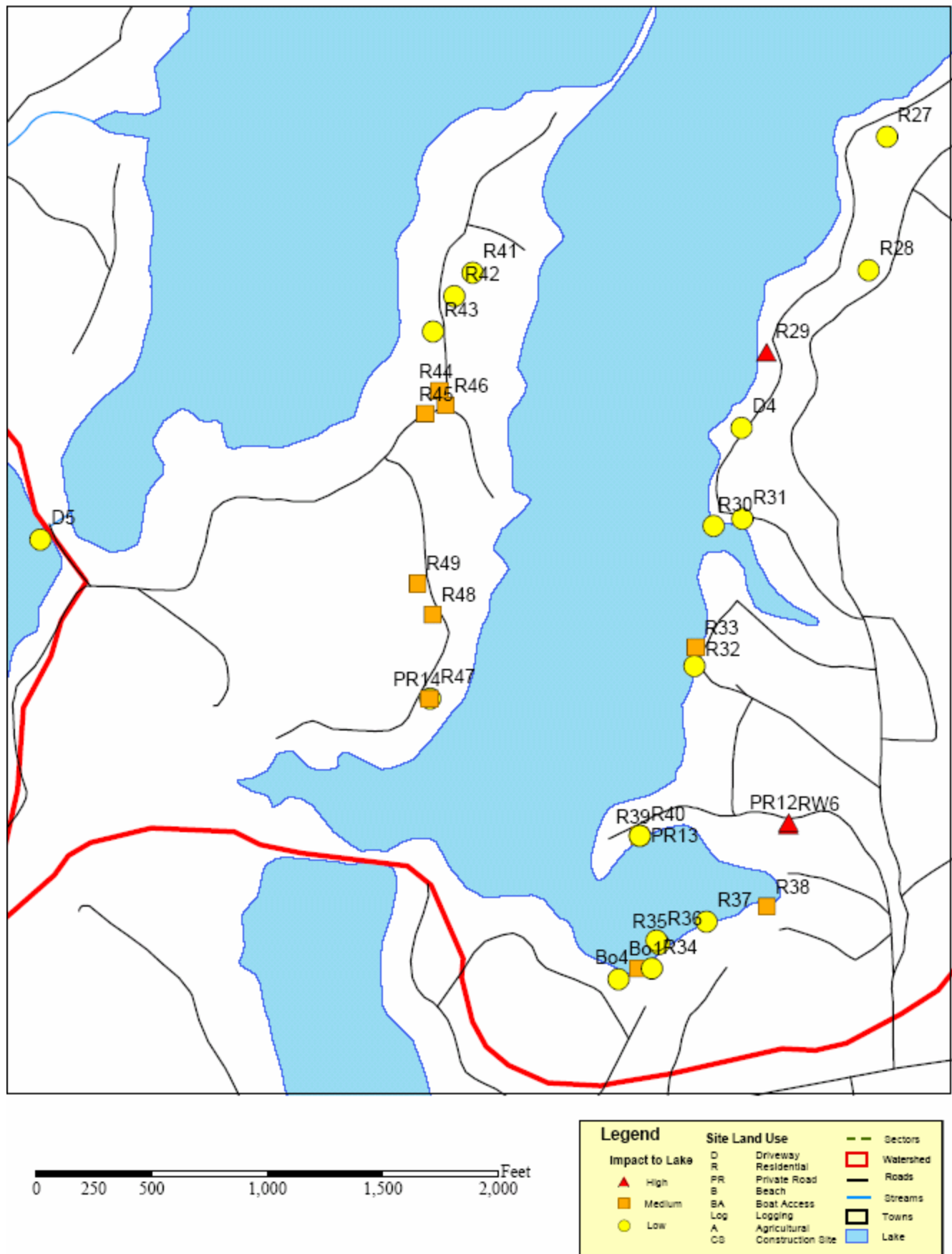
0 250 500 1,000 1,500 2,000 Feet

Legend		Site Land Use	Sectors
Impact to Lake	▲ High	D Driveway	Watershed
	■ Medium	R Residential	Roads
	● Low	PR Private Road	Streams
		B Beach	Towns
		BA Boat Access	Lake
		Log Logging	
		A Agricultural	
		CS Construction Site	

Map 4 - Erosion Sites



Map 6 - Erosion Sites



Map ID	Sector	Site #	Tax Map	Tax Lot*	Land Use	Type of Problem	Recommendations	Area Affected (length x width)	Impact of Problems	Technical Level to Install	Cost of Materials	Cost of Labor	Positive Comments
R1	1	3	L-03	13	Residential	Slight ditch erosion, roof runoff, bare soil, slight surface erosion	armor ditch with stone, install stone filled drip line trench	25' x 1'	low	low	low	low	
R2	1	4	L-03	9	Residential	Slight ditch erosion, roof runoff, bare soil, slight surface erosion	armor ditch with stone, install stone filled drip line trench, establish buffer, seed/mulch, no raking		low	low	low	low	recently planted shrubs at shoreline
PR1	1	5	L-03	8	Private Road	unstable culvert inlet/outlet, severe ditch erosion, moderate road shoulder erosion	stabilize inlet/outlet, slope stabilization, armor ditch with stone or grass, riprap	1/4 mile	medium	medium	medium	medium	
RW1	1	6	L2	6	Right of way	bare soil and roots, moderate surface erosion	add better surface material, build up if using for boat access, install runoff diverters, install steps if no longer used for boat launch	15' x 150'	medium	medium	medium	medium	
CS2	1	7	L2	77	Construction Site	moderate ditch erosion, bare soil, shoreline erosion, lack of buffer, moderate surface erosion, unstable construction site with very poor BMPs	stabilize inlet/outlet, proper erosion control for construction site and stream stabilization, establish shoreline buffer, riprap, steps, terrace, runoff diverters.	entire lot	high	medium	medium	medium	
R3	1	8	L2	23	Residential	bare soil, lack of shoreline buffer, moderate surface erosion	install stone filled drip line trench, plant vegetation, seed and mulch, less raking		low	low	low	low	
R4	1	9	L2	65	Residential	roof runoff, bare soil, slight surface erosion	install dripline trench under deck, mulch, no raking, runoff diverters		low	low	low	low	
PR2	1	10	L2	between 65 & 66	Private Road	crushed/broken culvert, clogged culvert, moderate ditch erosion, slight road shoulder erosion	clean out culvert, reshape and clean out ditch, crown road, add vegetation to slope	200'	low	medium	medium	medium	

Map ID	Sector	Site #	Tax Map	Tax Lot*	Land Use	Type of Problem	Recommendations	Area Affected (length x width)	Impact of Problems	Technical Level to Install	Cost of Materials	Cost of Labor	Positive Comments
R5	1	11	L2	62	Residential	slight ditch erosion, slight road shoulder, erosion, outlet pipe through rock wall discharging washing machine into catch basin, through pipe, under road, into ditch and then lake	armor ditch, reshape shoulder		medium	low	low	low	most of property well vegetated
T1	1	12	L2	57	trail	moderate trail erosion, bare soil, lack of buffer, moderate sheet surface erosion, roof runoff	install dripline trench, establish buffer, mulch, stop raking, terrace, waterbar, reshape driveway	300'	medium	medium	low	medium	
R6	1	13	L2	55	Residential	roof runoff, bare soil, slight surface erosion	install stone filled dripline trench, establish shoreline buffer, mulch, stop raking, terrace		low	low	low	low	
Be1	1	14	L2	53	Beach	bare soil, lack of buffer, slight road shoulder erosion, slight surface erosion	extend buffer, plant trees/shrubs/groundcover		low	low	low	low	
Be2	1	15	L2	52	Beach	moderate ditch erosion, bare soil, lack of buffer, slight surface erosion	Install plunge pool?, armor with stone, detention basin?, rip rap	long gully from road to lake	high	medium	medium	medium	gully well vegetated; needs outlet improvements
Be3	1	16	L2	44	Beach	bare soil, shoreline erosion, slight to moderate surface erosion	establish shoreline buffer, seed and mulch, no raking		low	low	low	low	
RW2	1	17	L2	43 and 40	Right of way	slight ditch erosion, bare soil, slight surface erosion	add better surface material, reshape or crown, mulch, no raking		low	low	low	low	some efforts have been made with fire bricks and cobble stone

Map ID	Sector	Site #	Tax Map	Tax Lot*	Land Use	Type of Problem	Recommendations	Area Affected (length x width)	Impact of Problems	Technical Level to Install	Cost of Materials	Cost of Labor	Positive Comments
R7	1	18	L2	38?	Residential	slight ditch erosion, bare soil, shoreline erosion, lack of buffer, moderate surface erosion	install stone filled drip-line trench, establish shoreline buffer, mulch, no raking, terrace, runoff diverters	500 sq ft	low	low	low	low	
PR3	1	19	L2	41-51	Private Road	moderate road shoulder erosion, road sand, moderate surface erosion	add better surface material, build up road, install turnouts, reshape or crown, waterbar?	400 ft on road	low	medium	low	medium	
D1	1	20	L2	31	Driveway	slight road shoulder erosion, bare soil, moderate surface erosion	add better surface material, plant vegetation, seed and mulch, vegetation	15' x 75'	low	low	low	low	
D2	1	21	L2	29	Driveway	bare soil, moderate surface erosion	add better surface material, plant vegetation, seed and mulch, no raking	800 sq ft	low	low	low	low	
RW5	1	22	L2	2A	Beach	severe ditch erosion, shoreline erosion, moderate surface erosion, unstable bottom, large plume of sand in lake	detention basin, riprap, broad based stone lip, *Technical Assistance Visit Recommended*		high	high	high	high	
R12	1	23	L2	29	Residential	bare soil, lack of shoreline buffer, moderate surface erosion	establish shoreline buffer, seed and mulch, no raking, terrace, install stone filled dripline trench	1500 sq ft	medium	low	medium	low	some natural shoreline buffer
PR4	1	24	L2	Next to 2A	Private Road	moderate road shoulder erosion, plow or grader berm, road sand, moderate surface erosion	add better surface material, build up road, remove grader berms, reshape or crown road	450 linear feet on road	low	low	medium	low	

Map ID	Sector	Site #	Tax Map	Tax Lot*	Land Use	Type of Problem	Recommendations	Area Affected (length x width)	Impact of Problems	Technical Level to Install	Cost of Materials	Cost of Labor	Positive Comments
RW4	1	25	L2	next to 13	Right of way	severe road shoulder erosion, roof runoff, bare soil, road sand, shoreline erosion, lack of buffer, moderate surface erosion	Install stone filled drip-line trench, add better surface material, reshape and vegetate shoulder, crown road, install runoff diverters, establish shoreline buffer, seed and mulch *Technical Assistance Visit Recommended*	300' + 1000 sq ft	high	medium	medium	medium	some buffer between houses and beach
R9	1	26	L2	17	Residential	roof runoff, bare soil, moderate surface erosion, exposed roots	install stone filled drip-line trench, seed and mulch, no raking, define path for foot traffic, terrace	500 sq ft	low	low	medium	low	
R10	1	27	L2	13	Residential	roof runoff, bare soil, moderate surface erosion, exposed roots	install stone filled drip-line trench, add better surface material to driveway, plant vegetation, seed and mulch, no raking ,steps, define path for foot traffic, terrace	500 sq ft	low	low	medium	low	
R8	1	28	L2	24	Residential	slight road shoulder erosion, roof runoff, bare soil, moderate surface erosion	install stone filled drip-line trench, plant vegetation, seed and mulch, less raking	300 sq ft	medium	low	low	low	
RW3	1	29	L2	near 21	Right of way	bare soil, road sand, shoreline erosion, lack of buffer, moderate surface erosion	add better surface material, build up road, reshape or crown road, install broad-based dip, establish shoreline buffer, plant vegetation, no raking	25' on ROW + 250 sq ft	medium	medium	low	low	large trees

Map ID	Sector	Site #	Tax Map	Tax Lot*	Land Use	Type of Problem	Recommendations	Area Affected (length x width)	Impact of Problems	Technical Level to Install	Cost of Materials	Cost of Labor	Positive Comments
D3	1	30	L2	20	Driveway	moderate ditch erosion, moderate road shoulder erosion, bare soil, moderate surface erosion	add better surface material, reshape/vegetate shoulder, install water-bar	15' x 40'	medium	medium	low	low	
CS1	1	31	L2	?	Construction Site	bare soil, severe surface erosion, unstable construction site	install proper erosion control, add vegetation, install turnouts, reshape shoulder, terrace, mulch	600+ sq ft	high	medium	medium	medium	
R15	2	1	L1	1	Residential	Slight ditch erosion, shoreline erosion, slight surface erosion. Unstable beach.	Extend buffer	10' x 3'	low	low	low	low	
R14	2	2	L1	12	Residential	Shoreline erosion, lack of buffer, slight surface erosion.	Extend buffer, plant trees, shrubs and groundcovers	10' x 5'	low	low	low	low	
CS3	2	3	L1	15	Construction Site	Bare soil, unstable construction site	Seed and mulch, properly install silt fence	150' x 12'	low	low	low	low	
RW6	2	4	L1	19	Right of way	Bare soil, moderate surface erosion, unstable beach	Install runoff diverters, plant trees, shrubs, and groundcovers, seed and mulch	100' x 6'	medium	medium	low	low	
R13	2	5	L1	19a	Residential	Bare soil, shoreline erosion, lack of buffer, moderate surface erosion	Establish shoreline buffer, plant trees, shrubs and groundcover, seed and mulch	40' x 2'	low	low	low	low	diverter in beach works
PR5	2	6	L1	16-18	Private Road	Moderate road shoulder erosion, slight surface erosion	Install turnouts, reshape/vegetate shoulder, reshape or crown road		low	low	low	low	
R11	2	7	L1	27	Residential	Bare soil, slight and moderate surface erosion, culvert draining into stream	Plant trees, shrubs, and groundcovers, seed and mulch, stop raking	20'x10' high, 15'x5'wide	medium	medium	low	low	
R17	2	8	L1a	2	Residential	Moderate surface erosion	install drywell at base of cement stairs		low	medium	low	low	

Map ID	Sector	Site #	Tax Map	Tax Lot*	Land Use	Type of Problem	Recommendations	Area Affected (length x width)	Impact of Problems	Technical Level to Install	Cost of Materials	Cost of Labor	Positive Comments
R16	2	9	L1a	6	Residential	Shoreline erosion, lack of buffer, moderate surface erosion	plant trees, shrubs, and groundcovers	4' x 15'	medium	medium	low	low	
CS4	2	10	L1a	7	Construction Site	Bare soil, moderate surface erosion, potential for severe, unstable construction site	Plant trees, shrubs, and groundcovers, seed and mulch, silt fence needs to be anchored	30' x 100'	high	medium	low	low	
PR6	2	11	L1a	close to 8	Private Road	Bare soil, slight surface erosion	Install plunge pool at culvert inlet, armor ditch, install turnout, reshape/vegetate shoulder, seed and mulch.	120' x 8'	medium	medium	medium	medium	
R24	3	1	60	25a	Residential	Slight surface erosion	Establish shoreline buffer, plant trees, shrubs and groundcover, seed and mulch	30'	low	low	low	low	
R21	3	2	60	6	Residential	Bare soil, lack of buffer, very slight surface erosion	Establish shoreline buffer, plant trees, shrubs and groundcover, seed and mulch. Stop raking.		low	low	low	low	
R25	3	3	59	2	Residential	Bare soil, road sand, lack of buffer, slight surface erosion	Establish shoreline buffer, seed and mulch	15' x 30'	low	low	low	low	
R26	3	4	59	6	Residential	Bare soil, lack of buffer, slight surface erosion	Establish shoreline buffer, no raking	50'	low	low	low	low	
Bo1	3	5	59	between 5a & 6a	Boat access (pvt.)	Slight surface erosion	Install runoff diverters - some kind of paved speed bump to divert water	30' x 10'	medium	medium	medium	medium	
R20	3	6	59	18	Residential	Bare soil, lack of buffer, moderate surface erosion	Establish shoreline buffer, no raking	50' x 50'	medium	low	low	low	
PR8	3	7	59	16	Private Road	Slight surface erosion, direct flow to lake	Establish buffer		low	low	low	low	
PR7	3	8			Town Road	Road sand	Clean up winter sand		low	low	low	low	

Map ID	Sector	Site #	Tax Map	Tax Lot*	Land Use	Type of Problem	Recommendations	Area Affected (length x width)	Impact of Problems	Technical Level to Install	Cost of Materials	Cost of Labor	Positive Comments
PR9	3	9			Private Road	Slight ditch erosion, slight road shoulder erosion.	Install turnouts, reshape or crown road		low	medium	low	medium	
R23	3	10	60	18	Residential	Shoreline erosion, lack of buffer, moderate surface erosion, unstable beach	Rip rap - pavers		low	low	low	low	
Be4	3	11	60	16	Beach	Bare soil	Install waterbar on beach trail, no raking	30' x 40'	low	low	low	low	
R22	3	12	60		Residential	Roof runoff	Install stone-filled drip-line trench, drywell gutter at spout		low	low	low	low	
R19	3	13	59	20	Residential	problem with private boat access	Install waterbar - paved speed bump type and extend buffer or remove paved ramp and replace with buffer		medium	medium	medium	medium	
R18	3	14	59	23	Residential	Bare soil, slight surface erosion	Extend buffer, plant trees, shrubs and groundcovers, seed and mulch. Add steps and define path for foot traffic.		medium	medium	medium	medium	
TR4	3	15			Town Road	Clogged culvert - half full of sand. Catch basin connected to stream	Clean out culvert, install turnout. Annual maintenance is critical	.25 mi x 30'	low	low	low	low	
CS5	3	16			Construction Site	Clogged culvert, ditch capacity exceeded	Clean out culvert, install plunge pool, add erosion controls (silt fence).		medium	high	medium	medium	
TR3	3	17			Town Road	Clogged culvert - half full of sand. Catch basin connected to stream	Clean out culvert, install turnout. Annual maintenance is critical		low	low	low	low	
TR2	3	18			Town Road	Clogged culvert - half full of sand. Catch basin connected to stream	Clean out culvert, install turnout. Annual maintenance is critical		low	low	low	low	
TR1	3	19	59	20	Town Road	Culvert, direct drainage to lake	Redesign drainage to outlet in wooded area	5' x 5'	high	high	high	high	

Map ID	Sector	Site #	Tax Map	Tax Lot*	Land Use	Type of Problem	Recommendations	Area Affected (length x width)	Impact of Problems	Technical Level to Install	Cost of Materials	Cost of Labor	Positive Comments
PR10	4	2	58		Private Road	Unstable culvert inlet/outlet, culvert too short, road sand	Lengthen and stabilize inlet/outlet of culvert, remove winter sand	20' x 10' on each side of road	low	medium	medium	medium	
R27	4	14	58	7	Residential	Bare soil, shoreline erosion, lack of buffer, slight surface erosion	Establish shoreline buffer, plant trees, shrubs and groundcovers, seed and mulch	100'x100'	low	low	medium	medium	
R28	4	18	58	4	Residential	Shoreline erosion, lack of buffer, slight surface erosion, unstable beach	Establish shoreline buffer, plant trees shrubs, and groundcovers	30' x 50'	low	low	medium	medium	
R29	4	25	57	43	Residential	Bare soil, shoreline erosion, lack of buffer, moderate surface erosion	Extend buffer, plant, seed and mulch. Establish new slope, infiltration trench or terrace.	140' x 75'	high	high	low	medium	
D4	4	28	57	39	Driveway	Moderate surface erosion	Extend buffer, plant, seed and mulch. Add better surface material, install turnouts, reshape/vegetate shoulder	75'	low	low	low	low	
R30	4	30	57	35	Residential	Bare soil, lack of buffer, slight surface erosion	Extend buffer, plant, seed and mulch, no raking	30' x 60'	low	low	low	low	
R31	4	31	57	34	Residential	Bare soil, lack of buffer, moderate surface erosion	Extend buffer, plant, seed and mulch	20' x 65'	low	low	low	low	
R33	4	35	57	25	Residential	Bare soil, slight surface erosion	Extend buffer, seed and mulch, no raking	20' x 30'	low	low	low	low	
R32	4	36	57	26	Residential	Bare soil, lack of buffer	Establish buffer, plant, seed and mulch	30' x 80'	medium	low	medium	medium	
Bo3	5	1	56	9	Boat access	Bare soil, lack of buffer, moderate surface erosion, unstable boat access	Establish shoreline buffer, install infiltration trench, waterbar, improve existing steps	12' x 12'	low	low	low	low	

Map ID	Sector	Site #	Tax Map	Tax Lot*	Land Use	Type of Problem	Recommendations	Area Affected (length x width)	Impact of Problems	Technical Level to Install	Cost of Materials	Cost of Labor	Positive Comments
Bo2	5	2	56	11	Boat access	Moderate surface erosion, unstable boat access	Install 2 rubber razor blades	150' x 10'	medium	medium	low	low	
R40	5	3	56	11	Residential	Bare soil, slight surface erosion	Extend buffer, seed and mulch, limit lake access points	50' x 30'	low	low	low	low	stone pathways, hillside plantings
R39	5	4	56	12	Residential	Roof runoff, bare soil	Seed and mulch, install stone-filled dripline trench	30' x 20'	low	low	low	low	veg. buffer on south shore
R38	5	5	56	13	Residential	Bare soil, lack of buffer, slight surface erosion	Establish shoreline buffer, install steps, define path for foot traffic	20' x 20'	low	low	low	low	terraced plantings
R37	5	6	56	14c	Residential	Bare soil, lack of buffer	Establish shoreline buffer, seed and mulch	75' x 20'	low	low	medium	low	terraces, stone walls, veg. on hill
R36	5	7	56	14b	Residential	Bare soil, moderate surface erosion	Plant trees, shrubs, groundcovers, install waterbar, install stone-filled dripline trench, install drywell at gutter spout	50' x 20'	medium	low	low	low	
PR13	5	10	57	5a-5-9	Private Road	Moderate surface erosion	Establish shoreline buffer, install ditch, catch basin, remove grader berms, reshape or crown road	200' x 12'	medium	medium	medium	medium	
RW7	5	11	57	10	Right of way	Severe surface erosion, unstable boat access	Establish shoreline buffer, reshape or crown road, install waterbar	176' x 10'	high	medium	medium	medium	
PR12	5	12	57	5 thru 11	Private Road	Plow or grader berm, moderate surface erosion	Install turnouts, remove grader berms, reshape or crown road	500' x 14'	high	medium	high	high	

Map ID	Sector	Site #	Tax Map	Tax Lot*	Land Use	Type of Problem	Recommendations	Area Affected (length x width)	Impact of Problems	Technical Level to Install	Cost of Materials	Cost of Labor	Positive Comments
PR11	5	13	56	15	Private Road	winter sand, lack of buffer	Establish buffer, remove winter sand, move snowplow away from water	20' x 20'	low	low	low	low	
R35	5	14	56	16	Residential	Moderate road shoulder erosion, moderate surface erosion, unstable boat access	Establish shoreline buffer, install turnouts, close off portion of road near lake	40' x 20'	medium	medium	low	medium	
R34	5	15	56	16	Residential	Roof runoff, moderate surface erosion	Plant trees, shrubs, and groundcovers, install stone filled dripline trench, mulch	35' x 15'	low	low	low	low	
R49	6	1	66	8	Residential	Bare soil	Plant trees, shrubs, and groundcovers	30' x 30'	low	low	low	low	nice vegetated drip trench
R48	6	2	66	6	Residential	Bare soil	Plant trees, shrubs, and groundcovers	50' x 30'	low	low	low	low	
R47	6	3	66	4	Residential	Bare soil	Extend buffer, plant	30' x 3', 60' x 30'	low	low	low	low	
R46	6	5	66	2	Residential	Bare soil, roof runoff	Plant trees, shrubs, and groundcovers (raised bed on lakeside of stone wall, vegetate roof dripline	50' x 100'	medium	low	low	low	
R45	6	7	66	1	Residential	Bare soil, shoreline erosion, slight surface erosion, unstable beach	Establish shoreline buffer, plant trees, shrubs, groundcovers, install dripline trench, open top culvert	50' x 70'	medium	medium	medium	medium	
R44	6	8	66	lot after 12b	Residential	Bare soil, slight surface erosion	Establish shoreline buffer, plant, seed and mulch, define path for foot traffic	10' x 15'	medium	low	low	low	
R41	6	9	65	10	Residential	Bare soil, lack of buffer, slight	Establish buffer, plant	100' x 40'	low	low	low	low	

Map ID	Sector	Site #	Tax Map	Tax Lot*	Land Use	Type of Problem	Recommendations	Area Affected (length x width)	Impact of Problems	Technical Level to Install	Cost of Materials	Cost of Labor	Positive Comments
PR14	6	10	65	36a and 36a1	Private Road	Bare soil, severe surface erosion, hillside failure along road	Reduce slope, stabilize hill, plant trees, shrubs, groundcovers	150' x 15'	medium	high	high	high	
R42	6	11	65	7	Residential	Bare soil, moderate surface erosion	Install runoff diverters, plant trees shrubs, and groundcovers, add infiltration trench after pavement, restrict boat access	300' x 10'	medium	high	high	high	
R43	6	12	65	5	Residential	Bare soil, slight surface erosion	Plant, install waterbar or other runoff diverters	50' x 10'	medium	medium	low	low	
D5	6	13	64	29	Driveway	Bare soil, slight surface erosion	Plant, seed and mulch, armor ditch with stone or grass	10' x 4' , 8' x 8'	low	low	low	low	landowners have terraced, planting trees and shrubs
R50	8	1	62	22	Residential	Direct flow to lake, roof runoff, moderate surface erosion, unstable beach	Install stone-lined drip-line trench, install turnout, extend shoreline buffer, install infiltration steps, install waterbar across edge of property to direct road runoff to turnout	150' x 2'	medium	medium	medium	medium	good use of hay as a temporary fix, good native vegetation.
Bo4	9	1	21	31a-1	Boat access	Shoreline erosion	Install turnouts, rip rap, veg.. Shoreline	10' x 5' (x2)	low	low	low	low	paved
R51	9	2	21	28a04	Residential	Roof runoff, lack of buffer, moderate surface erosion	Install stone-lined drip-line trench, install waterbar, establish shoreline buffer	30' x 3'	low	low	low	low	
D6	9	3	21	29	Driveway	Bare soil, direct flow of sediment to stream, moderate surface erosion	Install culvert, ditch, turnout, runoff diverters, plant trees, shrubs, groundcovers	75" x 10'	medium	medium	medium	medium	

Map ID	Sector	Site #	Tax Map	Tax Lot*	Land Use	Type of Problem	Recommendations	Area Affected (length x width)	Impact of Problems	Technical Level to Install	Cost of Materials	Cost of Labor	Positive Comments
R52	9	4	21	29	Residential	Direct flow of sediment to lake and stream, bare soil, shoreline erosion, lack of buffer, unstable beach	Establish shoreline buffer, plant trees, shrubs and groundcovers along wet area	30' x 5'	medium	medium	low	low	
CS6	9	5	21	30	Construction Site	Direct flow of sediment to stream, bare soil, unstable construction site adjacent to stream	Install drainage culvert, stabilize culvert inlet/outlet, add better surface material to driveway, plant trees, shrubs along stream	75' x 25'	high	high	medium	medium	
R53	9	6	21	30	Residential	Bare soil, lack of buffer, severe surface erosion where stream empties, unstable beach	Establish shoreline buffer, plant trees, shrubs, groundcovers along drainage and on bare sand areas, riprap where drainage empties, install landscape timbers between driveway and water to confine sand		high	medium	medium	medium	great driveway waterbar and surface material
D7	9	7	61	24	Driveway	Direct flow of sediment to lake, moderate surface erosion	install turnouts, install runoff diverters, install landscape timber at bottom of driveway to trap sediment	30' x 10'	low	medium	low	low	
R54	9	8	61	24	Residential	Direct flow of sediment to lake, roof runoff, bare soil, slight surface erosion, unstable beach	Install stone-filled drip-line trench, establish shoreline buffer, define path for foot traffic	40' x 5'	low	low	low	low	
R56	9	9	61	22	Residential	Roof runoff, lack of buffer, unstable boat access	Install dripline trench, dry well at gutter spout, extend buffer, plant groundcovers, stop raking, don't add sand to beach		low	low	low	low	good terraces, plantings

Map ID	Sector	Site #	Tax Map	Tax Lot*	Land Use	Type of Problem	Recommendations	Area Affected (length x width)	Impact of Problems	Technical Level to Install	Cost of Materials	Cost of Labor	Positive Comments
R55	9	10	61	28	Residential	Bare soil, moderate surface erosion	Install runoff diverter, extend buffer, plant groundcovers, maintain landscape timber at top of slope		low	low	low	low	lots of duff
R57	9	11	61	21	Residential	Direct flow of sediment to lake, ditch, roof runoff, lack of shoreline buffer	armor ditch with stone, enhance rock lining at edge of driveway, extend buffer	200' x 1'	low	medium	medium	medium	nice terracing
PR15	9	12	61	44	Private Road	Clogged culvert, moderate ditch and surface erosion, plow or grader berm	Clean out culvert, stabilize inlet and outlet, reshape and armor ditch, remove grader berms, riprap ditch a upper end of Lum's culvert	100' x 3'	low	medium	low	medium	
D8	9	13	61	45	Driveway	Direct flow of sediment to ditch, moderate surface erosion	Install drywell at gutter spout, add better surface material	75' x 6'	low	low	low	low	
R58	9	14	61	19	Residential	Bare soil, moderate surface erosion, roof runoff, direct flow of sediment to lake	Install runoff diverters, turnouts, establish shoreline buffer, plant groundcovers, mulch, no raking, fix retaining wall before failure		medium	low	low	low	
RW8	9	15	61	18	Right of way	Slight surface erosion	Install runoff diverters - rubber razor on slope, install infiltration trench behind timber	10' x 150'	medium	low	low	low	
R59	9	16	61	18	Residential	Roof runoff, bare soil, lack of buffer	Establish buffer, no raking, install stone-filled dripline trench, mulch bare areas, no raking, install steps, restrict foot traffic between road and building	100' x 3'	medium	low	low	low	nice rocks

Map ID	Sector	Site #	Tax Map	Tax Lot*	Land Use	Type of Problem	Recommendations	Area Affected (length x width)	Impact of Problems	Technical Level to Install	Cost of Materials	Cost of Labor	Positive Comments
PR16	9	17	61	14	Private Road	Clogged culvert, direct flow to ditch	Clean out culvert, create ditch to culvert, stabilize culvert inlet and outlet		low	low	low	low	natural-lots of duff
R60	9	18	61	11	Residential	lack of buffer, direct flow of sediment to lake	Install runoff diverters, extend buffer, add drip-line trench	20' x 5'	low	low	low	low	nice wa-terfront plantings
R61	9	19	61	8	Residential	Slight ditch erosion, roof runoff, bare soil, slight surface erosion	install runoff diverters, add series of check dams along ditch, add plantings at end of driveway		medium	medium	high	high	lots of ter-racing and planting
R62	9	20	61	3a	Residential	Severe road shoulder erosion, plow or grader berm, roof runoff, lack of buffer, slight surface erosion, unstable beach	Re-establish berm at top of driveway, direct to plunge pool at outlet of cross culvert, extend buffer		low	high	medium	me-dium	lots of duff and natural buffers
PR17	9	21	L-18	1	Private Road	Clogged culvert, slight shoulder erosion	formalize and rip-rap turnout, install plunge pool, clean out culvert, reposition culvert, install ditch, install turnouts	100' x 12'	low	medium	medium	me-dium	
PR18	9	22			Private Road	Moderate road shoulder erosion, plow or grader berm	Install turnout into plunge pool, seed basin with level lip spreader	32' x 12'	medium	medium	medium	me-dium	
PR19	9	23	L-18	25	Private Road	Moderate surface erosion caused by runoff from paved driveway	Install turnouts and build up existing water-bar on adjacent paved driveway and extend into woods	15' x 15'	low	low	low	low	
R63	9	24	L-18	25	Residential	Bare soil, lack of buffer, moderate surface erosion	Add better surface material, install waterbar across top of driveway, establish shoreline buffer	20' x 8'	low	low	medium	low	

Map ID	Sector	Site #	Tax Map	Tax Lot*	Land Use	Type of Problem	Recommendations	Area Affected (length x width)	Impact of Problems	Technical Level to Install	Cost of Materials	Cost of Labor	Positive Comments
R64	9	25	L-18	26	Residential	Direct flow of sediment to lake, lack of buffer, moderate surface erosion	Establish shoreline buffer, seed and mulch bare soil, install water-bar across top of driveway, add better surface material to driveway						
R67	10	1	L-16	3	Residential	Moderate surface erosion, unstable beach	Establish shoreline buffer, plant, add water-bar to driveway	30' x 35'	low	low	low	low	1 diverter and riprap on steep area
D10	10	3	L-17	34	Driveway	Moderate surface erosion	Establish buffer, plant	75' x 25'	high	low	low	low	good buffer next to dock
CS7	10	4			Construction Site	Severe surface erosion, unstable construction site	install erosion controls (silt fence)	60' x 25'	low	low	low	low	
Bo5	10	5			Boat access	moderate surface erosion	Install water diverters, add better surface material, reshape or crown road	110' x 10'	low	low	low	low	
D9	10	6	L-17		Driveway	moderate surface erosion	Add better surface material, reshape/veg shoulder, plant	75' x 15'	low	medium	medium	medium	good buffer on side of property
R66	10	7	L-17	17	Residential	Slight surface erosion	Plant, define path for foot traffic	25' x 4'	low	low	low	low	pretty view
Be5	10	8	L-17	12	Beach	Moderate surface erosion, direct flow down driveway to lake	Establish buffer, plant, install runoff diverters	50' x 20'	medium	low	medium	medium	
Be6	10	12	L-17	10	Beach	Shoreline erosion, severe surface erosion	Establish buffer, plant, define path for foot traffic	50' x 25'	high	low	low	low	

Map ID	Sector	Site #	Tax Map	Tax Lot*	Land Use	Type of Problem	Recommendations	Area Affected (length x width)	Impact of Problems	Technical Level to Install	Cost of Materials	Cost of Labor	Positive Comments
R65	10	13	L-17	8	Residential	Slight surface erosion	Plant trees, shrubs, groundcovers	10' x 1'	low	low	low	low	retaining wall has stopped most shoreline erosion
PR20	10	15			Private Road	Unstable culvert inlet/outlet, clogged culvert, severe erosion	Clean out culvert, stabilize inlet/outlet, armor ditch with stone or grass, clean out ditch, reshape ditch	30' x 10', 20' x 31'	high	medium	medium	medium	
PR21	10	17	6	2	Private Road	Unstable culvert inlet/outlet	Clean out culvert, stabilize inlet/outlet, armor ditch with stone or grass, clean out ditch, reshape ditch	10' x 5'	low	medium	low	medium	
PR22	10	18			Private Road	Moderate road shoulder erosion	Install turnouts, remove winter sand, install ditch, install ditch turnouts	1500' x 30'	low	low	medium	medium	

Where Do I Get More Information?

Contacts

Little Sebago Lake Association

PO Box 912

E-mail: info@littlesebagolake.com

Windham, ME 04092

Web site: www.littlesebagolake.com

Outreach and advocacy within the watershed, provides educational materials and directs individuals to appropriate agencies.

Cumberland County Soil and Water Conservation District

201 Main St. Suite 6, Westbrook, ME 04092

(207) 856-2777

Offers assistance with watershed planning and survey work, 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

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

Maine Congress of Lake Associations (COLA)

1-877-254-2511

E-mail: info@mainecola.org

Web site: www.mainecola.org

The only statewide network of individuals and lake associations devoted solely to the protection and preservation of our lakes.

Publications

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

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

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

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

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

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

Appendix D: Action Items

Activity	Management	Schedule	Cost Estimates	Potential Funding Sources / Resources
<i>Reduce current sources of phosphorus loading</i>				
Apply for EPA 319 watershed implementation grant funds through MDEP to primarily address impact sites identified in the 2012 watershed survey	Cumberland County Soil and Water Conservation District (CCSWCD)	Summer 2013	\$3,850	CCSWCD and LSLA
Provide mini grant funds to address targeted erosion sites within the watershed	Little Sebago Lake Association (LSLA)	Summer 2013	\$4,000	LSLA
If funded, conduct 319 watershed implementation project targeting 25 remaining NPS sites high impact sites and residential sites (fifteen residential sites, eight private road sites, two right-of-way sites, one town road site)	CCSWCD	January 2014 - March 2016	\$150,000	EPA (319) and MDEP watershed implementation grant program and local match
⇒ Through potential 319 watershed implementation project, provide up to 50% cost share to address 12 of the highest priority sites identified in the 2012 watershed survey	CCSWCD	Six sites addressed in 2014, six sites addressed in 2015	\$72,000	EPA (319) and MDEP watershed implementation grant program and non-federal match from towns and private road associations
⇒ Through potential 319 watershed implementation project, provide a Youth Conservation Corps (YCC) program or similar program that educates and offers on-the-ground assistance in fixing residential NPS sites	CCSWCD / LSLA	Summer of 2014 and summer of 2015	\$40,000	EPA (319) and MDEP watershed implementation grant program and non-federal match Watershed Towns and Landowners
<i>Prevent new sources of phosphorus loading</i>				
Contact landowners and provide educational material about NPS pollution prevention and remediation	LSLA	Summer 2013	\$1,000	LSLA
Write and distribute yearly newsletters promoting phosphorous reduction methods and distribute to watershed residents, towns and stakeholders	LSLA	Yearly	\$2,900	LSLA
Conduct two presentations: one for the Town Council of Windham and one for the Town Council of Gray to promote lake protection and highlight opportunities available through potential 319 watershed implementation grant	CCSWCD	2015	\$2,000	EPA (319) and MDEP watershed implementation grant program and local match

Appendix D: Action Items

Activity	Management	Schedule	Cost Estimates	Potential Funding Sources / Resources
Conduct two presentations at LSLA Annual Meetings to promote lake protection and highlight opportunities available through potential 319 watershed implementation grant	CCSWCD	Summer 2014 and Summer 2015	\$2,000	EPA and MDEP 319 watershed implementation grant program and local match
Submit press releases to local papers to promote lake protection and highlight opportunities available through potential 319 watershed implementation grant	CCSWCD	2014-2016	\$1,200	EPA (319) and MDEP watershed implementation grant program and local match
Create summary of sites addressed through the potential implementation grant to be available by LSLA to watershed stakeholders	CCSWCD/LSLA	2016	\$1,500	EPA (319) and MDEP watershed implementation grant program and local match / LSLA
<i>Build local capacity</i>				
Establish NPS sub-committee to form steering committee for watershed implementation grants	LSLA	Ongoing (to meet approximately three times per year)	Volunteer	LSLA Board Members
Send out yearly newsletters and appeals to join as a LSLA member and volunteer and raise funding for LSLA - sponsored activities	LSLA	Yearly (Spring)	\$2,900	LSLA
Continue to hold yearly LSLA meetings to educate and recruit members	LSLA	Yearly (Summer)	\$800	LSLA
<i>Conduct ongoing assessment of lake and watershed conditions</i>				
Continue yearly water quality monitoring through Maine's Volunteer Lake Water Quality Monitoring Program	LSLA's Water Quality Volunteers	Yearly (Spring, Summer, and Fall)	Volunteers	LSLA Volunteers
Update NPS Site Tracker with sites addressed in 2013	LSLA	2013	Volunteer	LSLA Board Members
Update NPS Site Tracker with sites addressed through the 319 implementation project	CCSWCD	2014-2015	\$600	EPA (319) and MDEP watershed implementation grant program
Continue to update NPS Site Tracker as sites are addressed and as new sites become apparent	LSLA	Yearly	\$300	LSLA