

Chapter 6. Recommendations

6.1 INTRODUCTION

This chapter summarizes the risks and priorities used to identify watershed concerns and the recommendations developed by the Lake Sunapee Watershed Planning Committee. Specific recommendations have been identified and are listed as “objectives” below. In order to help implement these objectives, the committee developed concrete tasks or “strategies”. These objectives will be shared with watershed municipalities and others with the goal that the recommendations from this plan will be implemented.

6.2 RECOMMENDATIONS FOR IMPROVING WATER QUALITY

The Lake Sunapee Watershed Planning Committee identified 8 general areas of concern:

- Pollution from stormwater runoff; (A benchmark is the phosphorus loading limitation of 8 µg/L)
- Erosion from land development activities;
- Impacts of impervious cover to water quality and stormwater runoff;
- Impacts from aging septic systems, and location of new systems;
- Enforcement of existing ordinances and regulations;
- Road salt use and storage;
- Using a watershed approach for protection of water resources;
- Education and Implementation of the watershed plan.

Each area of concern or Goal is divided into several Objectives, and each objective is followed by a number of “strategies”. Strategies are specific actions which can be implemented in order to meet the objective. The overall emphasis is on improving water quality by addressing specific issues and identifying particular tasks. The strategies are being developed from the ground up, and some may evolve as they are implemented.

The objectives and strategies can be listed in a “report card” format which specifies potential lead agencies, partners, funding sources, timeline and benchmarks. When it comes time to review the efficacy of watershed protection activities, this format can aid in the evaluation process. Goals, objectives and strategies are summarized in Table 6.2.

Figure 6.1 Proposed Report Card format of goals, objectives, and strategies.

GOAL: (to improve water quality)

- **Objective** (To implement effective practices that will improve water quality)

Strategy (The specific practice that can be implemented to achieve the objective)

- **Potential Lead Agency and Partners:** Describes a likely candidate for implementing the strategy and highlights potential partners.
- **Potential Funding Sources:** Identifies potential sources for financial support
- **Time frame:** The anticipated time it will take for either implementation of the strategy or to bring about the desired outcome of implementation.
- **Benchmark:** The desired outcome of the strategy. The overarching goal is to preserve water quality, and use phosphorus loading of 8 $\mu\text{g/L}$ as a benchmark.

Table 6.2 List of Recommended Watershed Management Activities for the Lake Sunapee Watershed, New Hampshire. Recommendations developed by the SAWC Watershed Planning Committee.

Concern	Objective	Strategy	Potential Lead Agencies and Partners	Potential Funding Sources	Timeframe
I. Pollution from Stormwater Runoff	A. Reduce stormwater volumes and impacts. B. Specifically limit phosphorus loading so as to not exceed an in-lake concentration of to 8 µg/L. C. A major amount of phosphorus loading occurs via sediment transport, therefore an objective is to limit sediment loading to surface waters.	1. Incorporate Low Impact Development design measures in local regulations including subdivision regulations, site plan review, and individual home sites.	Planning Boards SAWC		
		2. Reduce erosive forces by decreasing velocities of stormwater and runoff through installation of stormwater management structures such as check dams and stone filters.	Watershed Municipalities, Highway Departments		
		3. Adopt local regulations which limit the amount of impervious cover permitted.	Planning Boards SAWC		
		4. Establish maximum disturbance limits for various zoning districts in municipal zoning ordinances.	Planning Boards SAWC		
		5. Adopt buffer requirements for streams in the watershed. Width, clearing limitations, soil type and slope must be considered.	Planning Boards SAWC		
		6. Include conservation design and compact development concepts into municipal regulations.	Planning Boards SAWC		
		7. Eliminate illicit cross connections between stormwater structures and sanitary sewer systems.	Sewer Authority	Sec 319, SRF, USDA Rural Development Funds	
		8. Adopt standards for new developments which require that stormwater be controlled through use of best management practices.	Planning Boards		
		9. Use covenants and deed restrictions to ensure long-term implementation of Low Impact Development measures and maintenance of stormwater structures.	Planning Boards		
		10. Conduct an e-coli speciation study to determine the source (human or animal) of this bacteria at selected sites of concern.	LSPA UNH	NH DES Source Protection Grant	
		11. Encourage members of town boards to take a field trip to UNH's Stormwater Center to learn about the latest technologies used to manage stormwater.	SAWC LSPA		
	D. Gather information about	1. Conduct a study on the effect of Climate Change on	LSPA		

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	stormwater in the watershed. Knowledge of where streams have been modified or where sediment is transported will help with the goal of holding in-waterbody nutrient concentrations.	stormwater flows in the watershed.	Antioch New England Graduate School		
		2. Identify and map all stormwater structures and stream crossings in the watershed. Use this inventory to develop a stormwater management plan and program.	Watershed Municipalities, HWY Departments LSPA GSRWA	NH DES Source Protection Grant	
	E. Reduce the quantity of contaminants from stormwater. Specifically limit phosphorus loading to 8 µg/L.	1. Continue to improve road design and maintenance in the watershed (e.g. road drainage, road-side design)	NHDOT Road Agents LSPA		
		2. Hold a stormwater management workshop for town officials and road agents.	LSPA		
		3. Continue to educate watershed residents about the use of lawn care chemicals. Prohibit chemical applications in riparian areas.	LSPA		
II. Erosion	A. Keep sediment out of surface waterbodies.	1. Provide education about the causes and effects of erosion by educating residents, developers, builders, building inspectors, road agents, and town managers about ways to prevent and manage erosion.	SAWC LSPA Watershed Municipalities		
	B. Monitor and enforce regulations and best management practices related to erosion prevention and control.	1. Watershed municipalities should look into coordinating zoning administrators whose responsibilities would include monitoring and enforcing implementation of erosion best management practices.	SAWC LSPA Watershed Municipalities Selectmen	Use building permits fees for staff salaries.	
	C. Establish permanent erosion controls.	1. Encourage planning boards to require permanent erosion control programs as part of the site plan process.	SAWC LSPA Planning Boards		
	D. Prevent disturbance of soils on slopes greater than 15%.	1. Adopt regulations which control development on slopes greater than 15% throughout the watershed. Soil criteria should be included. Sediment should be retained within the development area. Require USGS topo or soils data on building permits.	Planning Boards SAWC		
III. Development	A. Minimize impacts from	1. Adopt a watershed overlay district which limits the	SAWC		

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and Impervious Surfaces	development and impervious surfaces, such as in-lake phosphorus concentrations. The ideal result would be a return to pre-development conditions.	amount of impervious surface which can be developed per lot.	Planning Boards UVRPC		
	B. Limit the amount of impervious surface in the watershed, so as to reduce stormwater discharges, limit nutrient and pollutants into water resources.	1. Identify and conserve key properties to protect drinking water quality and sensitive ecological features. Use fee simple acquisition, conservation easements, tax incentives, transfer of development rights, and other tools to fund these conservation projects.	LSPA ASLPT Conservation Commissions		
	C. Provide education about the effects of impervious cover on stormwater discharge, and hydrologic impacts.	1. Educate landowners, contractors, architects, general contractors builders and others about preferred driveway surfacing techniques. Place an article in the local press. Develop a flyer for circulation for use when a building permit is requested.	Watershed Municipalities SAWC		
IV. Septic Systems	A. Ensure that septic systems do not pollute groundwater or surfacewater	1. Educate watershed residents and businesses about septic system maintenance and use. Develop an education and outreach program about the proper use and maintenance of septic systems.	SAWC LSPA Watershed Municipalities		
	B. Gather information about septic systems located within 250 ft of Lake Sunapee.	1. Conduct a septic system survey to collect information about system age, type, location, size, maintenance etc.	SAWC LSPA GSRWA	Watershed Municipalities NH DES Source Protection Program	
	C. Develop stronger controls for installation of new systems or replacement of systems.	1. Improve siting and technology where possible.	Planning Boards		
		2. Tie system replacement to building permits and require post-construction inspections and certification.	Planning Boards Selectmen		
		3. Create minimum setbacks from surface water (125 ft).	Planning Boards SAWC, LSPA		
D. Ensure adequate resources to repair/replace systems in cases of economic hardship.	1. Develop a finance program for cases of economic hardship which enable residents to fix or replace failing systems.	Watershed Municipalities Private Sector NHDES, SAWC			
V. Inadequate Enforcement of	A. Education and Outreach Including the effects of increased	1. Raise watershed awareness through signage, storm drain stenciling, stream walks, and maps.	SAWC LSPA	NH DES Watershed Assistance Grant Program	

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current laws and regulations	contaminants, including the tipping point of in-waterbody concentrations of phosphorus.	Have information about watershed protection and associated regulations available at town websites, town offices, and local libraries.			
		2. Promote personal stewardship by educating residents about the role they play in the watershed and communicating specific messages about positive and negative behaviors.	SAWC LSPA	NH DES Watershed Assistance Grant Program	
		3. Provide professional training for the land development and real estate community about tools for watershed protection.	SAWC LSPA		
		4. Provide opportunities for the public to actively engage in watershed protection and restoration (i.e. monitoring).	SAWC LSPA		
	B. Improve enforcement of Existing Laws and Regulations to prevent groundwater and surface water pollution. A metric for surface water improvement will be tracking in-waterbody phosphorus concentration which should not exceed 8µg/L.	1. Determine the official jurisdiction and enforcement responsibilities of existing laws and regulations.	SAWC Municipalities		
		2. Develop a local plan for carrying out these laws and regulations.	SAWC Municipalities		
		3. Identify and appoint the appropriate enforcement agents.	SAWC Municipalities		
		4. Develop and implement a formal procedure for addressing complaints and violations.	SAWC Municipalities		
		5. Ensure that adequate resources both financial and technical are available to carryout these ordinances and regulations through adoption of permit fees and use of training and educational outreach materials.	SAWC Municipalities		
		6. Examine and evaluate the effectiveness of Administrative Rule Env-ws 386.64 "Protection of the Purity of Lake Sunapee and Its Watershed"	SAWC Sunapee Water Dept LSPA		
		7. Compare building permits and associated process of the watershed municipalities. Use building permits as a tool to make property owners more accountable.	SAWC		
VI. Road Salt Use and Storage	A. Reduce the negative impacts on water resources from road salt use. The ideal goal would be to reduce the impact from road salt to pre-development levels.	1. Follow best management practices for use of road salt.	SAWC Road Agents Municipalities NH DOT Public Works		

<i>Concern</i>	<i>Objective</i>	<i>Strategy</i>	<i>Potential Lead Agencies and Partners</i>	<i>Potential Funding Sources</i>	<i>Timeframe</i>
			Departments		
		2. Identify salt-free or low-salt zones. Post signs to inform motorists of these areas. Work to implement lower speed limits in these areas.	SAWC Road Agents Municipalities		
		3. Large parking lots should have adequate snow storage areas identified and be sited for no run-off.	Planning Boards		
		4. Identify what de-icing materials are currently being used in the watershed by municipalities and NH DOT. Research case studies of model salt application and storage.	SAWC through DOT and DPWs		
		5. Ensure that all salt storage areas within the watershed use best management practices, have an impervious surface beneath de-icing materials and that these materials are covered, preventing run-off.	SAWC Road Agents Watershed Municipalities		
		6. Hold a workshop to discuss current salt application in the watershed, model and effects of salt in the watershed. Facilitate location of alternative snow dumping sites.	SAWC, LSPA Municipalities Road Agents NH DOT/DES		
	B. Work with NH DOT to identify methods for reducing road salt on state roads.	1. Encourage NH DOT to utilize spreader-mounted friction sensors and on-board pavement temperature measurement equipment to automatically control the application rate of salt.	SAWC LSPA NH DOT Municipalities		
		2. Encourage NH DOT to utilize other mechanical devices including the types of spreaders and plows which may aid in decreasing the amount of salt used.	SAWC LSPA NH DOT Municipalities		
		3. Encourage NH DOT to recognize that residual road salt may play an important anti-icing role and cause reduction in salt applications for subsequent storms.	SAWC LSPA NH DOT Municipalities		
		4. Explore the use of various spread patterns such as applying salt in a windrow onto the crown of the road rather than by spreading it uniformly across the surface.	SAWC LSPA NH DOT Municipalities		
		5. Encourage continuing education for Public Works Departments in an effort to stay current with the latest de-icing techniques and technologies. (e.g.	SAWC LSPA NH DOT		

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		Roads Scholar Program)	Municipalities		
<i>VII. Inadequate Protection of Water Resources.</i>	A. Adopt regulations which promote protection of water resources. These will minimize pollutants in those water resources.	1. Towns should be encouraged to draft water resources management and protection plans, and adopt them as part of their master plans. These plans review and evaluate existing regulations as they pertain to protection of water resources. These plans may serve as the justification for the adoption of water protection regulations.	SAWC Watershed Municipalities GSRWA UVLSRPC Planning Boards		
		2. Adopt a watershed overlay district which directs development away from ecologically sensitive areas, guides construction and development, and prohibits high risk land uses. The overlay should include environmental protections such as soil based lot sizing, limits the amount of impervious cover, and control development on slopes greater than 15%.	SAWC Watershed Municipalities UVLSRPC		
	B. Preserve high quality domestic water supply.	1. Collect and analyze existing information (e.g. location, type, depth, yield) of private residential wells. Use this to identify water quality trends and promote protection.	LSPA SAWC Watershed Municipalities UVRPC Dartmouth College NH DES US EPA		
	C. Preserve quality of public drinking water supplies.	1. Work with public water systems to help them protect their watersheds and wellhead protection areas.	LSPA SAWC Watershed Municipalities GSRWA NH DES UVLSRPC		
				2. Develop a water quality and quantity database of private well monitoring data. Facilitate local monitoring program.	SAWC

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	D. Protect ecological systems which support hydrological functions. For example, minimizing stream modifications and reduce sediment transport.	1. Identify and conserve key properties to protect water resources including riparian buffers, wetlands, and land over aquifers.	LSPA ASLPT Land Trusts Conservation Commissions Colby Sawyer Hubbard Brook Dartmouth UNH UVM Antioch NE US Forest Service	NH DES Drinking Water Supply Land Grant Program, local funding mechanisms such as general fund appropriations and legislatively approved tax increases, federal Land and Water Conservation	
VIII. Continue watershed protection activities and continue to raise awareness about the watershed.	A. Implement the Watershed Management Plan for the Lake Sunapee Watershed. Monitor in lake phosphorus and use the resulting measurement values as a tool for progress. The goal is 8µg/L intake concentration.	1. Encourage watershed municipalities to formally adopt the management plan and to work toward achieving the goals.	SAWC LSPA Municipalities SAWC		
		2. Continue the Sunapee Area Watershed Coalition in order to help shepherd the implementation of the management plan.	Municipalities SAWC LSPA		
	B. NH DES Demonstration Project	1. Define and carry out a demonstration project, as an educational tool for stormwater management.	SAWC LSPA	NH DES Watershed Pilot Grant	In Progress