

5.4 Watershed Action Strategy including Schedule and Estimated Costs



A. INTRODUCTION

This Action Plan was developed through contributions from area stakeholders and participants at a community forum and two successive meetings held during the winter and spring of 2009. Preliminary action items are presented here as ideas to foster further thinking about long-term strategies for protecting the high-quality waters and related natural resources located within the SF headwater lakes watersheds, and to promote communication between citizens, municipalities, Maine DEP and NHDES. This Action Plan incorporates these ideas and outlines responsible parties, potential funding sources, approximate costs (where available), and an implementation schedule for specific tasks within each of the five categories identified below. Current cost estimates for each action item will need to be adjusted based on further research and site design considerations.

The SF headwater lakes Steering Committee, which is an important outgrowth of the stakeholder participation process, will work toward refining and improving the Action Plan, which consists of action items within five major categories:

1. *Private and Public Roadway BMPs*
2. *Community Planning & Development*
3. *Residential BMPs- Riparian Buffers, Low Impact Development and Septic Systems*
4. *Education and Outreach*
5. *Land Conservation*

The Action Plan will be incorporated into the Watershed Management Plan for implementation by the SF headwater lakes Steering Committee. It is important for local stakeholders to take an interest in and gain valuable knowledge from water quality management, assessment, and improvement strategies. As such, the SF headwater lakes Steering Committee will need to meet regularly and be diligent in coordinating resources to implement practices that will reduce NPS pollution in the Acton-Wakefield region. This effort will require the support of a number of other entities, including the municipalities of Acton and Wakefield, the York County Soil and Water Conservation District, Maine DEP, NHDES, consultants/contractors, area schools, local business owners, and individual landowners.

Each of the five Action Plan categories are presented below with identified threats and a table of proposed action items (compiled from the community forum and subsequent meetings). The tables contain several acronyms which are defined as follows:

- **CELCP**- Coastal and Estuarine Land Conservation Program
- **NHDES 319** – New Hampshire Department of Environmental Services Clean Water Act Funds
- **Maine DEP 319** – Maine Department of Environmental Protection Clean Water Act Funds
- **PREP** – Piscataqua River Estuary Partnership
- **NH DOT** – New Hampshire Department of Transportation
- **Maine DOT** – Maine Department of Transportation
- **FEMA** – Federal Emergency Management Agency

B. COMPONENTS of the ACTION PLAN

1. Private & Public Roadway BMPs

Stakeholder concerns focused on improper culverts, eroding stream banks around crossings, and eroding road shoulders. Action items on this issue involve installing BMPs such as diversions for stormwater, check dams on hillsides, and vegetated ditches along roadways. Reducing sediment loads to the lakes and tributary streams is a priority and can be accomplished through the stabilization and reinforcement of road crossings and roadsides to trap pollutants before entering the watercourses. In all cases, stakeholders recommended distinguishing between private, local and state roads since BMP implementation strategies will be somewhat unique for each ownership type.

Identified Roadway Threats: Specifications for gravel road layout and design; maintenance restrictions; lack of education regarding stormwater runoff for state & local road maintenance crews; excessive winter road sand and salt applications and inadequate post-winter sand removal; soil erosion on camp roads; lack of understanding about camp road maintenance; improperly / inadequately maintained roads; considerations for paving roads; regulations defining impervious surface limitations; lack of funds to fix roads.

ROAD BMP ACTION ITEMS	How?	Who?	Funding	Schedule	Suggested Annual Cost*
1. Develop and deliver contractor training and certification program	Convene meeting of potential stakeholders to develop and implement training & certification program. Use T2 Roads Scholar program for camp road maintenance practices (including certification component) and ME NEMO's training materials as resources.	UNH, AWWA, Lake and Road Associations	DES 319, PREP	2010 and ongoing	\$25,000
2. Initiate formation of private road associations	Provide training on "How to Form a Road Association" and follow-up with assistance/capacity building (refer to ME's Guide to Forming Road Associations).	AWWA, Lake Associations, Residents	DES 319, PREP	2010 and ongoing	\$5,000
3. Standardize camp road maintenance practices	1) Develop and adopt camp road maintenance standards including considerations for ongoing maintenance needs (refer to UNH Roads Scholar Program and ME Camp Road Maintenance Manual). 2) Develop a list of certified contractors.	Private Road Associations, Contractors	Volunteer	1) 2011 2) 2012 and ongoing	N/A
4. Install / Implement BMPs on private roads	1) Use watershed survey results to identify priority action areas. 2) Select and implement appropriate BMPs using UNH Roads Scholar references & Maine Camp Road Manual (including considerations for winter sand removal).	Landowners, contractors, Road Associations, NH Stormwater Center	FEMA, DES 319, DEP 319	1) 2009 and ongoing 2) 2010 and ongoing	\$75,000

5. Install / Implement BMPs on public roads	1) Use watershed survey results to identify priority action areas. 2) Select and implement appropriate BMPs using UNH Roads Scholar references (including considerations for winter sand removal).	NHDOT, ME DOT and local road crews, road agents & commissioners	FEMA, DES 319, DEP 319	2010 and ongoing	\$200,000
6. Evaluate all tributary crossings in consideration of stream ecology and stability (geomorphology)	1) Identify stream crossings that do not meet specifications according to the <i>New Hampshire Stream Crossings Guidelines</i> (UNH, 2009) 2) Work with towns and DOT to develop a plan to replace non-conforming stream crossings 3) Replace non-conforming stream crossings	NHDOT, ME DOT, local road crews, road agents & commissioners, NH Fish & Game (F & G), NH DES	FEMA, DES 319, DEP 319 (??), NHF&G	2010-2012 (survey); 2012-ongoing (planning and replacement)	\$20,000
Total Annual Cost					\$325,000

* Suggested Annual Costs will likely need to be revised following review of watershed survey results and other related research.

2. Community Planning & Development

The importance of responsible community planning and development in providing adequate shoreland and water resource protection cannot be overstated. Proper planning and development are essential not only to maintain and enhance the water quality and scenic value of New Hampshire’s shores, which are so critically important to its \$9.7 billion dollar tourism industry, but also to protect property investments on shorelines vulnerable to erosion. While New Hampshire’s Comprehensive Shoreland Protection Act (CSPA) has established the basic mechanisms to protect its scenic and ecologically valuable shorelines, the Act in its present form, and the ability of NHDES to provide adequate regulatory oversight, enforcement and education, are often ineffective. Maine’s experience might provide a useful model in supporting local community efforts to protect scenic shorelines for the mutual benefit of the tourism economy and private property owners. Maine’s popular LakeSmart Program effectively engages local and regional organizations (e.g., Lake Associations, Soil & Water Conservation Districts) in collaborative partnerships to remove barriers for lake water quality protection and restoration efforts. Additionally, the recently completed municipal ordinance review for the towns of Acton and Wakefield provides numerous recommendations for strengthening the role of community planning and development in water resource protection. The steering committee should identify whether there is a need for a Watershed District that would help coordinate watershed efforts across state, town and county political lines.

Identified Community Planning & Development Threats: The NH Comprehensive Shoreline Protection Act (CSPA) alienates residents; permitting issues make it difficult to fix erosion problems; perceived conflict between individual rights & community use of lakes; enforcement is a problem at both local & state levels; need to build public support for town decisions/initiatives (including municipal ordinance revisions to provide greater water resource protection); inadequate enforcement/education; disregard for rules/laws; inconsistency of enforcement.

COMMUNITY PLANNING & DEVELOPMENT ACTION ITEMS	How?	Who?	Funding	Schedule	Suggested Annual Cost*
1. Coordinate with DES and DEP enforcement staff to address local and state regulatory concerns.	Establish a working group to meet with DES/DEP staff to request more consistent application / enforcement of regulations from DES.	Towns / AWWA / Consultants	DES & DEP 319	2009 and ongoing	\$1,500
2. Strengthen ordinances to control impact from polluted runoff	1) Provide recommendations for local ordinances (use the WBMP Ordinance Review and "Innovative Land Use Guide" as references).	Towns / AWWA / Consultants	DES 319, PREP	1) 2010 and ongoing 2) 2010	\$25,000

3. Encourage and implement installation of LID practices	1) Use local ordinances to protect WQ through promotion of LID measures.	AWWA, Towns	DES 319, DEP 319, Stimulus Funds	1) 2009 and ongoing 2) 2011 and ongoing	\$60,000
4. Increase and improve existing enforcement	1) Ensure that town boards are aware of enforcement issues. 2) Strengthen enforcement at the parcel level. 3) Include Code Enforcement staff in regulatory/plan reviews. 4) Consider providing training workshops for CEO's. 5) Promote increased funding at local level to provide adequate regulatory oversight and enforcement. 6) Develop greater local capacity to enforce state regs.	Towns / AWWA / Consultants	Towns	1-6) 2011 - 2014	\$7,500
5. Develop build out analysis for watershed and develop action items related to results	1) Being completed as part of watershed based plan. 2) Present findings / recommendations to planning boards in support of needed changes to local ordinances.	AWWA, DES, FBE	DES 319	2009	N/A
6. Consider establishing a Watershed District	1) If substantial headway is not being made to implement planning strategies, and lake water quality continues to decline then a watershed district should be seriously considered	AWWA, Towns, Legislators	Tax revenue set aside, permit fees, grants	Examine changes in water quality	TBD
Total Annual Cost					\$94,000

* Suggested Annual Costs will likely need to be revised following review of watershed survey results and other related research.

3. Residential BMPs - Riparian Buffer, LID, and Septic Systems

The residential action items place a strong emphasis on improving protection of shoreland vegetated buffers, promoting and demonstrating low impact development (LID) techniques, and proper operation and maintenance of septic systems. Action items include encouraging stewardship through a variety of social marketing techniques, and a preliminary assessment of septic systems to identify the potential extent of system failures. This latter action item will first require identifying the communities' capacity to conduct a cursory septic system evaluation entirely on their own or with the assistance of a consultant. In all cases, coordination with the landowners will be crucial because mitigation measures will frequently need to be implemented on private land (including privately owned roads). This set of tasks will also strongly encourage the use of native plant species.

Identified Threats from Residential Land Uses: Shoreline vegetation clearing along SF headwater lakes; stormwater runoff from roads, roofs & steep sites without buffers; lack of buffers on small streams; inadequately maintained and malfunctioning septic systems.

RESIDENTIAL BMP ACTION ITEMS	How?	Who?	Funding	Schedule	Suggested Annual Cost*
1. Enhance current residential BMP and technical assistance program	1) Develop Technical Assistance pledge sheets. 2) Continue promoting YCC services to property owners with identified erosion problems. 3) Design and Install BMPs.	AWWA, Lake Associations	DES 319	1-4) 2009 and ongoing	\$50,000
2. Initiate incentive-based watershed wide erosion control BMP installation program	1) Implement program to encourage land owners to install erosion control BMPs with cost share option for plants and materials. 2) Install demonstration projects throughout watershed.	AWWA, land owners, lake associations	DES 319	2010 and ongoing	\$25,000

3. Conduct a sanitary survey to identify potential problem septic systems	1) Conduct cursory assessment of malfunctioning septic systems to estimate extent of potential impact and establish clear need for survey (e.g., review septic files at town offices, inspect lots via survey from boat or on land). 2) Identify capacity to administer project; if inadequate establish capacity improvement plan. 3) Have road associations accept some role in helping to facilitate survey project.	AWWA, Towns, Road Associations, Consultants	DES 319, PREP	1-3) 2011 - 2013	\$20,000
Total Annual Cost					\$95,000

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4. Education and Outreach

Education and outreach are vital components to watershed protection and improvement. Fortunately, AWWA has already established an exceptional capacity and reputation in this regard. The organization has served as a critical community resource for relevant and timely information regarding the state of the region’s surface waters. As such, AWWA will continue to play a central role in helping to coordinate efforts among various stakeholders and interest groups in the region, particularly with local lake associations. They will also be instrumental in any efforts to communicate with seasonal residents as emphasized by comments at recent community forums. Refining water quality monitoring activities to provide the most relevant data will also be an important aspect of the Education and Outreach action items. The Watershed Management Plan includes numerous recommendations for enhancing current water quality monitoring efforts, including sample collection from various tributaries and consideration for establishing an invasive species screening program. Since volunteers typically conduct so many monitoring activities, it will be critical to continue building on the success of AWWA’s ongoing education and outreach program.

Identified Threats from Inadequate Awareness: Lack of knowledge of rules & laws and the impact of human activities; lack of understanding about how water quality is important for the entire community; inadequate awareness for non-shorefront property owners and visitors about how their activities can adversely affect water quality; negative impacts of ATV activity; poor communication with landowners; seasonal residents aren't engaged enough with water quality protection efforts.

EDUCATION & OUTREACH ACTION ITEMS	How?	Who?	Funding	Schedule	Suggested Annual Cost*
1. Develop comprehensive strategic education & outreach plan that coordinates and unifies efforts of various organizations.	1) Convene meeting of potential stakeholders (e.g., lake associations, towns, land trusts, etc.) to develop unified E&O strategy. 2) Develop initiative to encourage greater citizen involvement in planning and regulatory process through improved E&O.	AWWA	Dorr Foundation	1) 2009 2) 2010	\$10,000
2. Provide more tools to lake associations to promote "lake smart" practices.	1) Strengthen relationships between AWWA and lake associations. 2) Press releases, on-boat education program, media tools (e.g., ThinkBlue ME's Rubber Ducky and / or YouTube videos). All should have sound scientific basis.	AWWA	DES 319	2010 and ongoing	\$5,000
3. Implement wide scale education and outreach program	Expand existing efforts with help of committees.	AWWA	DES 319, DEP 319	2011	\$35,000

* Suggested Annual Costs will likely need to be revised following review of watershed survey results and other related research.

4. Seek citizen participation for expanded monitoring and evaluation program (based on WBMP recommendations) that include watershed streams.	1) Implement monitoring recommendations from WBMP. 2) Identify critical tributaries and develop appropriate sampling study design. 3) Recruit volunteers to participate in the Volunteer River Assessment Program for tributary monitoring. Also revitalize lake monitoring programs through involvement of local schools. 4) Present WQ monitoring results to town boards. 5) Establish volunteer-based invasive species assessment programs (aquatic & terrestrial) for areas where they don't currently exist.	DES-VRAP, Lake Associations, AWWA	DES 319	1&2) 2011 3-5) 2012 and ongoing	\$20,000
6. Provide education for summer residents and short-term visitors	1) Conduct a survey to identify behaviors, barriers to change, and incentives to promote desired outcomes. 2) Develop program to provide incentives for behavior change.	AWWA	DES 319	1) 2010 2) 2011	\$15,000
7. Provide watershed-based education so that people "identify" with their watershed	Provide flyers and maps to people to help them visualize their watershed connection.	AWWA	PREP, DES 319, DEP 319	2011	\$2,000
Total Annual Cost					\$87,000

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5. Land Conservation

Land Conservation can have tremendous benefits for water quality protection. Protection of the “upland” areas of the SF headwater lakes watersheds will ensure that some land remains in an undisturbed state, which will help reduce total phosphorus runoff. Efforts for land conservation need to be coordinated among the local land trusts, regional planning commissions, lake associations, and the municipalities, so that the tasks are shared and communication is open and ongoing.

Identified Threats from Inadequate Land Conservation: Development is improperly planned; particular focus needed for upper watershed development; expansions and seasonal modifications of waterfront properties are inadequately monitored; threats posed from commercial development are not adequately understood.

LAND CONSERVATION ACTION ITEMS	How?	Who?	Funding	Schedule	Suggested Annual Cost*
1. Develop coordinated and unified land acquisition strategy that relates directly to (and informs) local development rules to maximize program effectiveness.	1) Convene stakeholder meeting to identify initial program goals and objectives. 2) Develop clear plan for sustaining land acquisition program. 3) Coordinate with towns to integrate land protection considerations into their development rules.	Land Trusts in collaboration with Towns and Lake Associations	CELCP	1-3) 2010 - 2011 and ongoing	widely variable
2. Identify and purchase ecologically and aesthetically sensitive land.	1) Identify critical lands and potential funding sources. 2) Initiate land owner contact. 3) Strengthen ties to and coordinate activities with local land trusts.	Land Trusts in collaboration with Towns and Lake Associations	CELCP	1-3) 2011 and ongoing	widely variable

* Suggested Annual Costs will likely need to be revised following review of watershed survey results and other related research.

C. CONCLUSIONS

The elements described in the preceding Action Plan will be a major part of the Watershed Management Plan, particularly in providing a “road map” for the Salmon Falls headwater lakes Steering Committee. The Steering Committee will work toward implementing the Action Plan, which outlines responsible parties, potential funding sources, approximate costs, and an implementation schedule for each task within five major categories: Private and Public Roadways BMPs; Community Planning & Development; Residential BMPs; Education and Outreach; and Land Conservation. **The total estimated annual cost to complete all of the associated tasks is approximately \$600,000.**

The Steering Committee shall meet (at a minimum) annually to provide periodic updates to the plan, track any progress made, maintain and sustain the action items, and make the plan relevant on an ongoing basis. An adaptive management approach is recommended in order to assess annual progress, determine key projects and focus areas for the following year, and provide a venue for sharing information within the Salmon Falls headwater lakes region. Adaptive management is the process by which new information about the health of the watershed is incorporated into the WMP. This process allows stakeholders the opportunity to evaluate the effectiveness of restoration and monitoring activities before implementing future actions. Tasks listed in the Action Plan should be tracked and recorded as they occur, and new tasks should be added to the plan as determined through the adaptive management process. All achievements, such as press releases, outreach activities, number of sites repaired, number of volunteers, amount of funding received, number of sites documented, will be tracked. The Steering Committee will use established indicators within the watershed-based management plan to determine the effectiveness of the Plan.