

Watershed Report Released

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The Webster-Highland Lakes Watershed Partnership [presented] environmental recommendations to the Franklin Planning Board [on November 15], including updating shoreline septic systems and controlling manure management on small farms, to prevent further pollution in the lakes and surrounding tributaries in Franklin and Andover.

The watershed management plan, paid for by a \$30,000 grant by the New Hampshire Department of Environmental Services, was spearheaded by Franklin but expanded to include Andover residents who live on or near Highland Lake, which flows into Webster Lake in Franklin.

The project started last year after dangerous levels of blue-green algae containing cyanobacteria were detected in Webster Lake, posing a health risk and diminishing recreational activities. Much of the algae and nutrients, including phosphorous and chlorophyll, enter the water through runoff from rain, but some of it comes from other sources that can be regulated or monitored.

Project manager Brian Sullivan, Franklin's municipal services director and a planning board member, said the report is the first phase in protecting the lakes and educating residents, developers, and town officials about ways to prevent pollution.

"It's really not a major problem now, but in the future as development occurs and as logging continues and runoff keeps happening, eventually over time there's a negative impact on water bod-

ies," Sullivan said.

DES volunteers helped collect samples from the lakes and streams, and scientists used existing data to determine where and how the pollution started.

Much of the report focuses on reducing phosphorous, which can come from a number of sources – residential development, logging, roadway runoff, manure spread on hayfields as fertilizer, shoreline septic systems, pet waste, storm water runoff, use of detergents, sediment erosion, and other sediment disturbances from waves or boats.

The report estimates that 10 percent to 15 percent of homeowners on Webster Lake have poorly functioning or failing septic systems, and it identified working with those homeowners among critical needs. Other suggestions include maintaining roads and storm drain systems to control runoff, as well as implementing tighter zoning regulations to control pollution from development, logging, and other construction.

"I'd say this is the beginning phase of it," Sullivan said. "This is not a law. This is not something that's enforceable. It's something that identifies sources of problems and makes some initial recommendations."

The partnership will ask the planning boards in Andover and Franklin to incorporate the recommendations in zoning amendments or new land use regulations. The Andover Planning Board [was] scheduled to review the management plan November 28.

Jody Connor, the state limnologist, said New Hampshire's steady population growth will slow in the southern part of

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Description of Measure	Targeted Implementation	Estimated Cost*
1.0 Develop a Septic System Management Plan -On ground Property Owner Survey -GPS system locations -Develop GIS data base w/system data, location, soils data, maintenance schedule -Contact local septic haulers to develop pump-out discounts	June- Nov 2007	\$5,000
2.0 Investigate possible cost-sharing with Andover and other towns to fund the services of an on-call Forester to monitor and inspect timber harvesting operations in the area	Immediate	TBD
3.0 Fund/Contract a Part-Time Watershed Coordinator provide Liaison b/wn Andover and Franklin - Coordinate zoning updates, build-out analyses, etc. - Coordinate/update education and outreach efforts for shoreline - Provide consultation to interested property owners for suggestions on drainage and landscaping measures (i.e. rain gardens for roof drains, driveway runoff, etc.) owners and other stakeholders	May 2007- Sept 2008	\$12,800
4.0 Stabilize/Improve Roadside Swales Along Smiling Hill Rd	July-Aug. 2007	\$3,000
5.0 Seek Section 319 funds to Improve/Stabilize Swales along Sam Hill Road and Hoyt Road in Andover Install pervious pavers for Griffin Beach Parking Lot	Sept. 2007	TBD
6.0 Coordinate with NRCS to assess need for additional fencing or culverts to isolate drainage ways from pasture areas and manure spreading areas	Spring 2007	TBD
7.0 Provide/Subsidize Use of Rain Barrels to reduce roof runoff for Shoreline Property Owners	Spring 2007	\$2,500

* Cost estimates are preliminary rough estimates

Summary Of Watershed Report

The tables above and below are from the Webster-Highland Lakes Watershed Partnership's report. They summarize the Partnership's recommendations.

In studying table 5.1, keep in mind the following points:

- "P" stands for phosphorus, the pollutant of greatest concern in the watershed.
- "Kg" stands for kilograms. A kilogram is a little more than 2.2 pounds.
- The report recommends reducing the phosphorus in Webster Lake (its "load") by 94 to 140 kg. per year. This reduction would represent about 18% to 26% of the phosphorus flowing into the lake each year from all its tributaries (like Sucker Brook) and from septic systems around the lake.

The complete report is available at Webster-HighlandLakesPartnership.org/documents.php

Table 5-1. Summary of Various Management Measures, Potential Removal Efficiencies and Associated Implementation Cost Estimates

Estimated Source Contributions				Implementation							
Source	Location	Est. Annual P. Load (Kg)		Treatment Measure	Removal Efficiency	Est. Load Reduction (Kg)		Cost	Cost Per Kg reduced	Priority	
		Low	High			Low	High				
Septic Systems	Webster Lake shoreline	71.5	91	Sewer Extension	50 -100%	36	91	\$7,500,000	\$75 -100 k	Low	
		71.5	91	Inspections	variable	na	na	unk	unk	Med.	
		71.5	91	Encourage System Upgrade	variable	To Be Discussed	na	na	unk	unk	Med.
		71.5	91	GPS Survey/GIS Data base	variable	na	na	unk	unk	Med.	
		71.5	91	Educ & Outreach Maintenance	variable	To Be Discussed	na	na	unk	unk	Med.
Road Runoff	Webster Ave	2	5	Storm Treat CB Inserts	5-10%	<0.2	0.5	\$3,000	\$ 5-15 k	Low	
		2	5	Grass Swale	25-40%	0.5	1.6	\$5 -10k	\$ 6 -20 k	Low	
	Smiling Hill Rd	2	5	Manufactured CBBMP Ex. "StormCopter™"	25-40%	0.5	1.6	\$10 - 15 k	\$ 6 -30 k	Low	
		2	5	Stone Swale Rehabilitation	10-25%	0.3	1.0	\$1.5 -3 k	\$1.5 -3 k	Mod	
						To Be Discussed					
Timber Harvesting	Varies	TBD			To Be Discussed						
Pasture-Manure Mgt	Emory Pond / Dyers Crossing	65	80	Fencing out drainage ways	10-25%	6.5	20	\$10K	\$500-\$1,500	High	
		65	80	change manure application timing	20 - 40%	13	32	\$ 75 K	\$ 2,340 - \$ 5,700	High	
In-lake Sediment	Webster lake	TBD			To Be Discussed						

The cost estimates represent order of magnitude costs for the device or equipment being proposed and are for planning and discussion purposes only.

* The low P Load estimate generally represent values derived from the empirical data include in the DES D/P Study

The high estimate was derived from the STEPL model using conservative assumption of a 10% failure rate for septic systems.

**The potential effectiveness of sewer extension depends on whether every homeowner would connect to the sewer if it was available.

The pasture -manure mgt focuses primarily on the Emory Pond Area. The removal estimates are based on limited to no data and could be higher or lower.