



MEMORANDUM

To: Norm Lamie, P.E., General Manager, Auburn
Water and Sewerage Districts

From: Rebecca Balke, P.E., CEI
Preliminary Recommendations for Auburn

Subject: Comprehensive Plan

Job No. 222-2

Date: June 5, 2009

Recognizing the importance of watershed protection for maintaining a filtration waiver for its unfiltered surface drinking water supply, the Auburn-Lewiston Water District is working with Comprehensive Environmental Inc. (CEI) to update its 1987 Lake Auburn Watershed study. The result will be a Watershed Management Master Plan for Lake Auburn that quantitatively models proposed recommendations to match water quality goals. Combined with engineering cost estimates, the quantitative analysis will allow for prioritization of recommendations, providing the Auburn-Lewiston Water District the greatest watershed protection value for its dollar. The overall goal of the plan is to prioritize and direct watershed protection measures to help maintain the filtration waiver.

The purpose of this memorandum is to outline preliminary recommendations that will be included in the Lake Auburn Watershed Management Master Plan to facilitate coordination with the Auburn Comprehensive Plan update. These recommendations focus on areas that overlap with the Comprehensive Plan (e.g., ordinance based recommendations associated with zoning, land use and watershed protection) and do not represent all recommendations (e.g., specific structural stormwater practices) that will be included in the final Lake Auburn Management Master Plan. Consistent with the language in the Comprehensive Plan, the following recommendations are somewhat general to provide some flexibility in implementation and drafting the associated ordinance provisions. The recommendations are presented as the actions to be taken, followed by some background information to support the need for the recommendation. For consistency, the following recommendations follow the headings used in the draft Auburn Comprehensive Plan, Natural Resources Policies. Additional details will be included in the final Lake Auburn Management Master Plan.

Public Uses

1. Control Invasive Species: Continue work to and seek the most cost-effective methods to prevent the introduction of invasive plant species into the lake and to control the growth of existing invasive plant species. Prevent the introduction of invasive fish species through live bait restrictions and public education.

Invasive plants displace the native plant populations that support wildlife habitat and prevent erosion. They also hinder boating and increase the rate of pond filling and internal recycling of nutrients through their die off cycles. Invasive fish species may be introduced through fishing



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activities involving live bait. Non-native fish can impact the lake food web by competing with native fish for food and habitat.

2. Develop Trail Networks: Develop trail networks on appropriate protected lands around the lake and within the watershed to promote low-impact recreational public use.

Allowing public access to protected lands benefits the public, while increasing public support of watershed protection. Providing public access can also help the Lake Auburn Watershed Protection Commission (LAWPC) and Auburn Water District (AWC) monitor the land for improper uses and problems (e.g., vandalism, trash, erosion).

Existing Development

1. Supplement Stormwater Practices: Design and install stormwater practices to address specific areas of concern that are contributing pollution to Lake Auburn. Conceptual stormwater practices for specific locations will be provided in the final Lake Auburn Management Plan. AWD and LAWPC should implement these stormwater practices to minimize pollution to the lake. For example, there are several stormwater discharges to Lake Auburn along Route 4. The lake will benefit from treatment of these direct discharges.

Stormwater runoff picks up pollutants as it runs over pervious and impervious surfaces (e.g., fertilized lawns, roadways, parking lots), carrying them directly to the lake. Stormwater discharges should be controlled and treated to minimize the impacts to the lake.

2. Supplement Erosion Control Strategies: Stabilize eroded areas around the lake and within the watershed through the use of permanent access ways and stabilization techniques.

Erosion introduces sediments and pollutants to the lake. Providing permanent access ways to the lake will direct vehicle and pedestrian traffic to stabilized areas, avoiding the disturbance of nearby vegetation.

3. Minimize Pollution Contributions from Existing Subsurface Wastewater Disposal Systems Through the Following:
 - a. Consider a requirement that any subsurface wastewater disposal system within the Lake Auburn Watershed Overlay (LAO) District be inspected periodically and corrected if necessary. This will identify malfunctions sooner than only requiring an inspection at the time of property transfer.
 - b. Explore opportunities to provide needs-based financial support using established funding programs such as those offered by the Maine Department of Environmental Protection to property owners within the Lake Auburn watershed whose subsurface wastewater disposal systems require replacement, including existing grants. Consider developing a subsurface wastewater disposal system replacement loan program.



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- c. Consider adding subsurface wastewater disposal system operation and maintenance requirements to the LAO ordinance and explore options to oversee on-going maintenance of systems in the watershed.
 - d. Develop an educational program focused on the proper operation and maintenance of subsurface wastewater disposal systems. Include information on how improper use and function can impact drinking water supplies, both private and public.
4. Promote the Use of Low Impact Development (LID) Techniques for Redevelopment Projects: Consider requiring the use of LID techniques for expansion and reconstruction projects within the watershed.

Impervious surfaces contribute stormwater pollution by increasing stormwater runoff and pollution load. Depending on the age of the development, some existing development may have little stormwater control in place. Requiring these properties to incorporate controls when redeveloping will help minimize existing pollutant loads to the lake.

5. Develop a Public Education Program: Explore the development of a public education program to increase public awareness of the impacts of individual activities. Public education efforts may include fertilizer and pesticide use, disposal of yard waste, disposal of pharmaceuticals and personal care products and septic system maintenance.

New Development

1. Minimize Pollution Contributions from New Subsurface Wastewater Disposal Systems Through the Following:
 - a. Consider amending the LAO ordinance to prevent the construction of subsurface wastewater systems on lots separate from the building lot.
 - b. Consider amending the LAO ordinance to restrict the subsurface wastewater flows per area of land. The purpose is to avoid overloading an area with wastewater flows and associated pollutants and allow for adequate treatment through the soils.
 - c. Consider a tiered structure for septic system design requirements within the LAO. For example, require greater vertical separation distances between the bottom of the distribution system and seasonal high groundwater or restrictive layer in sandy soils. Sandy soils allow wastewater flows to pass through more quickly, reducing the level of treatment. Increased vertical separation in these soils will result in more effective treatment.
 - d. Consider amending the LAO to prohibit the construction of new septic systems within 300 feet of the lake regardless of soil type. Explore a smaller buffer for tributaries to the lake.
 - e. Consider requiring an acceptable reserve area on sites for a replacement subsurface wastewater disposal field in the event of failure. The reserve area ensures a suitable location for replacement at a lower cost to the owner, while also providing fresh soils for pollutant uptake in the event a new system is needed.



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2. Protect the Lake from the Impacts of New Development Through the Following:
 - a. Continue key parcel land acquisition and conservation efforts of environmentally sensitive land areas within the watershed.
 - b. Promote LID standards for new development that limit impervious surfaces.
 - c. Consider developing use regulations within the LAO that prohibit or control specific uses and practices within the watershed or proximity to the lake. This should focus on sources that present the potential for high pollutant loads or increased risk to the lake.
 - d. Consider developing a public education program targeting developers and their engineers about the watershed protection program.

Monitoring and Evaluation

1. Continue Watershed and In-Lake Monitoring: Continue monitoring water quality in the lake and watershed to evaluate trends and address identified concerns.