

MEMO

TO: Highland Lake Leadership Team Ordinance Subcommittee

FROM: Damon Yakovleff & Heather True, Cumberland County Soil and Water Conservation District (CCSWCD)

DATE: 2/26/2018

RE: Preliminary Recommendations for ordinance and policy changes to protect water quality in Highland Lake to Highland Lake Leadership Team (HLLT)

The Cumberland County Soil and Water Conservation District (CCSWCD) worked with the Highland Lake Leadership Team (HLLT) Ordinance Subcommittee to identify those ordinances and policies in the towns of Windham and Falmouth most relevant to protecting water quality in Highland Lake. The scope of work for this project is included as **Attachment A**.

The ultimate goal of this work was to recommend changes to administrative policy **and / or zoning legislation** that could improve and protect water quality in Highland Lake. This memo summarizes the recommendations derived from the policy and ordinance comparisons and examinations of the relevant GIS data.

CCSWCD addressed the priorities identified in the document included as **Attachment B**: ("Exhibit B: Revised HLA List of Projects") dated November 7, 2017. In addition, other recommendations were identified through research and dialogue with planners in each town and members of the Ordinance Subcommittee.

CCSWCD collated the results of this analysis in the following deliverables:

- 1) 3 tables, attached to this memo as:
 - a. **Attachment C**: Comparison of Zoning Standards – Windham and Falmouth Maine
 - b. **Attachment D**: Comparison of Zoning District Requirements
 - c. **Attachment E**: Windham phosphorus scoring table for use in implementing new Surface Water Protection Ordinance phosphorus scoring system.
- 2) 2 maps, each showing the mapped watershed with a new updated watershed boundary
 - a. **Attachment F**: Highland Lake aerial image with LiDAR-based drainage model overlay (LiDAR stands for "Light Detection and Ranging")
 - b. **Attachment G**: Highland Lake integrated zoning map for Windham and Falmouth.

A summary of the findings and recommendations generated through this analysis is included in **Table 1**. Responses to Highland Lake Association's priorities (Attachment B) are listed in **Table 2**.


Table 1: Findings and Recommendations

Policy or Ordinance	CCSWCD Findings & Recommendations
1. Enforcement	With regard to enforcement, CCSWCD recommends that Planning Boards and Code Enforcement Officers for both Falmouth and Windham be provided materials communicating how enforcement of relevant zoning ordinances can help improve water quality. If possible, convene joint Shoreland Zoning trainings for the Boards and Officers from both municipalities.
2. Relevant Ordinances	<p>Both Falmouth and Windham have multiple ordinances applicable to Highland Lake water quality goals. See Attachment C for a list.</p> <p>No changes to the overall structure of ordinances is recommended by CCSWCD at this time.</p>
3. General Zoning Districts	<p>Windham has three general zones in the Highland Lake Watershed and Falmouth has two general zones.</p> <p>No changes to the overall number or configuration of general zones is recommended by CCSWCD at this time.</p>
4. Overlay Districts	<p>Windham has an overlay district designated for Mobile Home Parks for 2 areas within the Highland Lake Watershed.</p> <p>Both Falmouth and Windham have analogous overlay zones protecting the Highland Lake Watershed. Falmouth has the Highland Lake Conservation Overlay District, and Windham accomplishes this through special provisions in the Surface Water Protection Ordinance that only affect Highland Lake. See Attachment G for a map showing Highland Lake watershed zoning for both municipalities.</p> <p>Map adjustments recommended by CCSWCD with regard to Overlay Districts include:</p> <ol style="list-style-type: none">Adding the northern portion of the lake watershed delineated as a portion of Macintosh Brook (a direct tributary of Highland Lake) to Falmouth's Highland Lake Conservation Overlay District.




	<ul style="list-style-type: none">b. Adopt/upgrade watershed boundary maps in both towns to reflect new 2-foot contours provided by the State's updated LiDAR data. A map showing the Maine Department of Environmental Protection's (DEP's) preliminary updated boundary, along with a flow direction model output created by CCSWCD, is included as Attachment F. Note that this preliminary boundary needs to be ground-truthed.c. Conduct periodic updates to the watershed boundary maps to account for new development, taking into account complex urban subsurface drainage systems.
5. Shoreland Zoning	<p>Shoreland zoning ordinances are similar for both Falmouth and Windham with the exception of Falmouth's applying to additional areas that may be further than the setbacks but within the Federal Emergency Management Agency (FEMA) 100-year flood plain.</p> <p>Falmouth's Shoreland Zoning Ordinance also includes all mapped streams from DEP in stream protection.</p> <p>CCSWCD recommends that Windham update its Stream Protection zoning layer based on desktop analysis of GIS stream data layers. In addition, each town should continue to update its Shoreland Zoning based on changes due to development and re-development.</p>
6. Site Plan Review	<p>Site Plan Criteria for both Falmouth and Windham are similar. See Attachment C for a detailed comparison of zoning standards, districts, and provisions. The main difference between the site plan review criteria for both towns is that Falmouth includes all non-residential developments or redevelopments, whereas Windham only includes non-residential developments or redevelopments over 2,000 SF.</p> <p>CCSWCD recommends that each town consider expanding the Site Plan Review process, or at minimum thresholds for review of conservation practices, for additional development and redevelopment types.</p>
7. Subdivision review thresholds	<p>Windham has a slightly lower threshold to trigger major subdivision review based on number of units (4 lots, as compared to 5 in Falmouth). However, the Falmouth standard is</p>



	<p>triggered for any new construction of internal ways. Subdivisions below these thresholds are considered to be “minor subdivisions”.</p> <p>CCSWCD does not have any preliminary recommendations for changes to the Subdivision review thresholds for either town at this time notwithstanding its recommendations to expand review of conservation practices at other development types.</p>
8. Water Access ROW Provisions	<p>Both Falmouth and Windham require 200 feet of water frontage for lots located in the Shoreland zone.</p> <p>CCSWCD believes that standards for erosion and sedimentation control in both ordinances appear adequate to mitigate effects of traffic to and from Highland Lake via any public access ways or establishment of new permanent piers or similar structures, assuming the ordinance provisions are adequately enforced. See Attachment C & Attachment D for more information on these requirements.</p> <p>A potential loophole for both towns is the definition of temporary piers and / or docks. CCSWCD recommends additional clarification on what constitutes "temporary" in both Falmouth's and Windham's ordinances.</p>
9. Cluster / Conservation Subdivision Provisions 	<p>Windham has a cluster subdivision density bonus that is not likely to contribute to water quality impacts in Highland Lake as it actively encourages designs that mitigate impacts to drainage ways and allows for better vegetative buffers or for reducing areas used for new roads and driveways. This does assume that the intent of the ordinance is enforced and that all standards for erosion and sedimentation control on roads, structures, and other development features are met for all projects.</p> <p>Falmouth does not offer provisions for density bonuses, although it does allow for conservation subdivisions which may accomplish many similar goals to the Windham cluster subdivision provision.</p> <p>CCSWCD recommends that if Falmouth adopts density bonuses that Windham's ordinance be used as a basis.</p>



10. BMP Inspection and Maintenance Requirements	<p>The baseline requirements for BMP inspections and maintenance (derived from Maine DEP Chapter 500 Stormwater Management Standards) are identical for both towns. Falmouth has additional requirements for inspection and maintenance of level spreader BMPs in the Highland Lake Overlay Zone that do not trigger Chapter 500. Windham does not do this specifically, but leaves the decision to the discretion of the Code Enforcement Officer.</p> <p>CCSWCD recommends that both towns adopt ordinance requirements to increase the frequency of BMP inspection and maintenance beyond the requirements in Chapter 500, to include all stormwater BMPs in the Highland Lake watershed. In addition, administrative oversight delegated to the towns through Chapter 500 requirements should be used to the greatest degree possible to ensure adequate maintenance and inspections take place.</p> <p>Furthermore, the towns should ensure all BMPs installed using Clean Water Act Section 319 funding are adequately cataloged, inspected, and maintained. The towns should specify inspection and maintenance parameters such as who is qualified to perform the work and establish a standard menu of fees for services.</p>
11. Standards for Drainage Ways / Hydrology	<p>Both Falmouth and Windham have similar language requiring conformity with natural drainage channels in new development. See Attachment C.</p> <p>CCSWCD recommends that both towns ensure decision makers - including the Planning Board, the City Council, and municipal - staff are aware of these requirements and limit waivers issued. </p>
12. Septic System Standards in Highland Lake Zones	<p>Both Falmouth and Windham have similar requirements for new, replacement, or updated septic systems in the Shoreland Zone. However, existing non-compliant systems may be directly discharging into Highland Lake.</p> <p>CCSWCD recommends creating a process for identifying and upgrading “grandfathered” direct discharge systems. For example, ordinances could call for a 180-day grace period to report all direct discharge systems with no fines incurred and cost sharing be provided (funding source TBD) to make</p>




	<p>upgrades. If unreported direct discharge is found subsequent to end of grace period then fines imposed and no cost sharing provided.</p>
13. Pollutant Loading Standards (Phosphorus)	<p>Most major development projects in the Highland Lake Watershed in both towns are required to meet Chapter 500 Standards set by the State, which allow for up to 0.02 lb. / acre / year (see Appendix C of the "Maine Stormwater Management Design Manual").</p> <p>Non-major/minor development activity within the Highland Lake Watershed, including the development of single family homes, must meet enhanced phosphorus standards. In Falmouth, the enhanced phosphorus standard is 0.053 lb. / acre and projects must have a Phosphorus Control Plan approved by the Code Enforcement Officer. In Windham, the enhanced standard is 0.027 lb. / acre / year according to the updated Surface Water Protection Ordinance and projects within the Highland Lake Watershed that are not otherwise subject to subdivision or site plan review must also have a Phosphorus Control Plan approved by the Code Enforcement Officer. (See Attachment E)</p> <p>CCSWCD recommends that both towns amend ordinances to require more restrictive phosphorus standards or to restrict how fee in lieu is allowed for Chapter 500 projects. Currently, the rules allow for fee in lieu of 40% of the phosphorus standard, so the "effective" standard is 0.033 lb. / acre / year plus a one-time fee. One alternative is to change the threshold where fee may be applied, for example to 80% or 0.025 lb./ acre / year with a one-time fee, or some other number determined by the towns. Additionally, explore requiring an annual rather than one-time fee in lieu.</p> <p>Recommendations for both towns: Consider third-party review of stormwater related ordinances identified in Attachment C for clarity and consistency with stormwater engineering terminology.</p>


See "Next Steps" on Page 9 for information regarding finalizing these preliminary recommendations. Additional analysis of how these policy and zoning parameters relate to Highland Lake Association priorities is included as Table 2.



Table 2: Follow up on Attachment B, Highland Lake Association (HLA) priorities

HLA Priority	CCSWCD Findings & Recommendations
1. Remove Windham Mobile Home Park Overlay retroactively to its expiration date. 	<p>This was addressed in a working meeting with Windham's Planning Director Ben Smith on 2/14/18. Windham is required to have a certain number of mobile home park overlays by state law. The concern is that moving the overlay could create issues no matter where in the town it is located. The overlay does not include an expiration date. At the same meeting on 2/14/18 John MacKinnon (Chair of the Highland Lake Leadership Team Ordinance Subcommittee) stated this is no longer a priority for the HLA.</p>
2. Incorporate requirements into subdivisions and single-family development requirements	<p>a. Third party review of all subdivision plans: Falmouth's Land Subdivision Ordinance incorporates CCSWCD review of all subdivision Stormwater Management Plans. Falmouth generally requires CCSWCD review of other development. Windham predominately relies on its town engineer for these reviews. Both towns require review of Phosphorus Control Plans for minor development (such as single-family homes) in the Highland Lake Watershed by town Code Enforcement Officers.</p>
	<p>b. Adding a conservation zone in the Watershed: Both towns have overlay zones protecting Highland Lake now that Windham has enacted new requirements through its Surface Water Protection Ordinance.</p>
	<p>c. Restriction on number of lots per 25 feet of right-of-way to Highland Lake: Shoreland zoning in both towns currently requires 200 feet of waterfront frontage per house lot. Existing standards include specifications for building trails and roads for access. These requirements can be interpreted at Planning Board level in context of water quality impacts. Outreach to Planning Boards and Code Enforcement Officers on an annual basis is recommended to reinforce the reason and need for these protections at new and redevelopment sites.</p>



3. Enhance phosphorus requirements	<p>a. Lower phosphorus load limit to 0.02 lb. / acre year in subdivisions: Phosphorus load limit is already at 0.02 lb. / acre / year in subdivisions, per Maine State law as most recently amended in November 2017.</p>
	<p>b. Review the phosphorus ordinances and eliminate all waiver options and fees currently allowed in lieu of meeting phosphorus load requirements: A waiver is allowed for up to 40% of load per Chapter 500 standards. The town has some flexibility to adjust or eliminate this waiver. See Table 1 #13 for more information</p>
	<p>c. Eliminate 20% (density) bonus for open space: See #4 (below)</p>
4. Cluster Subdivisions	<p>This provision applies only to Windham, as Falmouth does not have a cluster subdivision provision. The 20% density bonus for open space is awarded if at least 50% of gross land areas to be subdivided is set aside as open space. This must include at least 50% of land suitable for development. The intention is to provide usable public space for recreation, and also to allow for improved site designs that preserve natural features.</p> <p>Cluster subdivision's 20% density bonus, in itself, does not necessarily correlate to an increase of phosphorus loading to Highland Lake. The cluster provision may allow for better buffer designs or shorter internal roadways which consequently have less impervious surfaces. Ultimately, phosphorus loading impact depends on site design on a case-by-case basis.</p> <p>The cluster subdivision may be strengthened further to create a "zero tolerance" policy for filling wetlands. </p>
5. Enhance Buffer Requirements	<p>CCSWCD recommends that Windham consider enhanced buffer requirements for single family homes in the new Surface Water Protection Ordinance as current language favors structural BMPs more so than vegetative buffers.</p>




	Falmouth's Highland Lake Conservation Overlay ordinance already requires buffer requirements.
6. Septic Design and Inspection Requirements	<p>This is currently an area both towns need to strengthen. While there are good standards for new construction or expansion of existing systems, many deficient or grandfathered direct discharge type systems may exist. See Attachment C # 12. In addition to reporting direct discharges to DEP's overboard discharge program, CCSWCD supports Highland Lake Association's suggestion for septic systems to be required to be inspected during property sales and transfers to determine if they are functioning properly. This could be included as a special provision in each towns' Highland lake conservation overlay zoning.</p> <p>The recent (unsuccessful) attempt to institute a similar provision to this in York, Maine may provide some useful background research about municipal septic upgrade programs. In addition, further information from towns that have "self-insured" grant programs for septic replacements should be researched.</p>
7. Lawn Fertilizer Restrictions	CCSWCD is currently investigating examples of lawn fertilizer restrictions. At minimum, it is recommended that Highland Lake Association collaborate to promote CCSWCD's "Yardscaping" program, which provides consumer education about the proper use of fertilizers, herbicides, pesticides, and other chemicals for landscaping which affect water quality. Yardscaping is currently being promoted at area businesses that sell fertilizers in Falmouth and Windham as an effort of Municipal Separate Storm Sewer System(MS4) permit-required education yet could be augmented with targeted outreach to Highland Lake Watershed residents.
8. Milfoil Control and Boat Launch Site Control Measures	This topic was covered at the 2/14/18 working group meeting between Windham's and Falmouth's Planning Directors (Ben Smith and Ethan Croce) and the Chair of the Highland Lake Leadership Team's Ordinance Committee, John MacKinnon. It is against State law to transport any plant material into Maine's lakes. According to John at the 2/14/18 working meeting, patrolling for violations /



	implementing courtesy boat inspectors will be a task to be taken on by the Highland Lake Association and does not need to be addressed through ordinance language.
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Next Steps

The next steps in this process will be determined subsequent to the Feb. 28th meeting of the Highland Lake Leadership Team Ordinance Subcommittee. **These next steps will be followed up on primarily by the Greater Portland Council of Governments with support from CCSWCD.** Some possible next steps include: 

- 1) Inventory of model lake friendly ordinances
- 2) Nutrient management policies or ordinances, such as enhanced fertilizer regulations
- 3) Other TBD

