

# Town of Windham

Planning Department  
8 School Road  
Windham, ME 04062

voice 207.894.5960

fax 207.892.1916

## MEMO

DATE: May 1, 2018

TO: Windham Town Council  
THROUGH: Tony Plante, Town Manager  
FROM: Amanda Lessard, Planner *ALL*  
Cc: Chris Hanson, Director of Code Enforcement  
Jon Earle, Town Engineer

RE: Planning Board Recommendation - Ordinance Amendment – Sections 800 Site Plan Review and 900 Subdivision Review, changes proposed by Highland Lake Association (HLA).

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At the Planning Board's meeting on April 23, 2018, a public hearing was held on the proposed ordinance changes to Section 800 Site Plan Review and Section 900 Subdivision Review regarding stormwater management and cluster subdivisions within the Highland Lake watershed. The three specific changes requested by the Highland Lake Association (HLA) are proposed to be retroactive to September 5, 2017, the effective date of the moratorium on development within the Highland Lake watershed, and include:

1. All subdivisions and site plans in the Highland Lake watershed must be designed to meet the current DEP phosphorous allocation of 0.020 lbs/acre/year.
2. A proposal for a subdivision to pay a fee in lieu of meeting the 0.020 lbs/acre/year is not acceptable.
3. Allowing public use of the open space within a subdivision will not result in any subdivision bonus houses within the Highland Lake watershed.

Three members of the Highland Lake Association spoke in favor of the proposed amendment and one member of the public spoke against the proposed amendment. The HLA supported the amendments with the retroactive language in order to address water quality concerns in the watershed by closing the gap between site plan and subdivision standards and the phosphorous controls adopted for residential development that were recently added to the Surface Water Protection Ordinance. The comments against the amendments were that an ordinance change was unnecessary as DEP had already changed the phosphorous allocation and that standard is currently referenced for site plans and subdivision applications, that the fee in lieu was not widely used and does not appear to be abused as there is only a small amount of money in the account, and a density bonus still requires those additional lots to meet stormwater standards which could include providing mitigation for existing offsite sources of untreated runoff. Cumberland County Soil and Water Conservation District also provided a draft of their

preliminary recommendations to the Highland Lake Leadership Team for ordinance and policy changes to protect water quality in Highland Lake.

During Planning Board discussion members of the Board commented that offsite mitigation would remain an option if paying the fee in lieu of meeting the phosphorous standard was prohibited and that while it may be problematic to reference a metric in the ordinance when the state standard could change, the ordinance could later be amended to remove the number and keep the reference. Some members commented that keeping bonus lots would allow developers a tool to address offsite problems.

Following discussion of the proposed changes, the Board made the following motion:

To recommend approval of the proposed amendments to Sections 800 and 900 and of the Land Use Ordinance regarding stormwater management and cluster subdivisions within the Highland Lake watershed, with the retroactivity language suggested by the Town Attorney.

Motion: Bill Walker  
2<sup>nd</sup>: Nick Kalogerakis

Vote: 5-2 (Nick Kalogerakis and Keith Elder opposed)

The site plan shall provide for a system of pedestrian ways within the development appropriate to the type and scale of development. This system shall connect the major building entrances/exits with parking areas and with existing sidewalks, if they exist or are planned in the vicinity of the project. The pedestrian network may be located either in the street right-of-way or outside of the right-of-way in open space or recreation areas. The system shall be designed to link the project with residential, recreational, and commercial facilities, schools, bus stops, and existing sidewalks in the neighborhood or, when appropriate, to connect with amenities such as parks or open space on or adjacent to the site.

**E. Stormwater Management**

1. Adequate provisions shall be made for the collection and disposal of all stormwater that runs off proposed streets, parking areas, roofs, and other surfaces, through a stormwater management plan, which shall not have adverse impacts on abutting or downstream properties.
  - (a) Stormwater management systems for minor and major site plans shall detain, retain, or result in the infiltration of stormwater from the 24-hour storms of the 2-year, 10-year, and 25-year frequencies such that the peak flows of stormwater from the project site do not exceed the peak flows of stormwater prior to undertaking the project. The Planning Board may waive the flooding standard in accordance with the following criteria:
    - (1) Insignificant Increases in Peak Flow Rates from a Project Site. When requesting a waiver for a project resulting in an insignificant increase in peak flow rates from a project site, the applicant shall demonstrate that insignificant increases in peak flow rates cannot be avoided by reasonable changes in project layout, density, and stormwater management design. The applicant shall also demonstrate that the proposed increases will not unreasonably increase the extent, frequency, or duration of flooding at downstream flow controls and conveyance structures. In making its determination to allow insignificant increases in peak flow rates, the Planning Board shall consider cumulative impacts.
    - (b) The applicant shall demonstrate that on- and off-site downstream channel or system capacity is sufficient to carry the flow of a minimum 25-year storm without adverse effects, including but not limited to, flooding and erosion of drainage channels and shoreland areas, or that he/she will be responsible for whatever improvements are needed to provide the required increase in capacity and/or mitigation. The Development Review Committee or Planning Board may require capacity for a storm of greater than 25 years due to soil, topographic, or other factors that affect stormwater drainage.

- (c) All natural drainage ways shall be preserved at their natural gradients and shall not be filled or converted to a closed system unless approved as part of the site plan review.
- (d) The design of the stormwater drainage system shall provide for the disposal of stormwater without damage to streets, adjacent properties, downstream properties, soils, and vegetation.
- (e) The design of the storm drainage systems shall be fully cognizant of upstream runoff which shall pass over or through the site to be developed and provide for this movement.
- (f) Major site plans, regardless of size, shall submit a stormwater management plan that complies with Section 4B4C(2) and Section 4B4C(3) of the General Standards of the DEP Chapter 500 Stormwater Management, as amended.

(g) Major and minor site plan projects located within the Highland Lake watershed shall also meet the following standards:

- i. Projects in the Highland Lake watershed must include a stormwater plan designed to meet the standards of DEP Chapter 500, Section 4D, Phosphorous standards. The option to pay the compensation fee for exceeding the parcel's phosphorus allocation is not allowed in this watershed. Notwithstanding 1 M.R.S. §302, this amendment shall be applicable to and shall govern any application for site plan approval that did not receive lawful final approval by, and so was pending on or at any time after, September 5, 2017 regardless of whether that application was a "pending proceeding" under 1 M.R.S. §302.

#### F. Erosion Control

1. All building, site, and roadway designs and layouts shall harmonize with existing topography and conserve desirable natural surroundings to the fullest extent possible, such that filling, excavation and earth moving activity shall be kept to a minimum. Parking lots on sloped sites should be terraced to avoid undue cut and fill, and/or the need for retaining walls. Natural vegetation shall be preserved and protected wherever possible.
2. Soil erosion and sedimentation of watercourses and water bodies shall be minimized by an active program meeting the requirements of the "Maine Erosion and Sediment Control BMPS" (Maine Department of Environmental Protection), dated March

### I. Floodplain Management

When any part of a subdivision is located in a special flood hazard area as identified by the Federal Emergency Management Agency:

1. All public utilities and facilities, such as sewer, gas, electrical and water systems shall be located and constructed to minimize or eliminate flood damages.
2. Adequate drainage shall be provided so as to reduce exposure to flood hazards.
3. The plan shall include the finished floor elevation of all proposed structures within the flood hazard area.
4. The plan shall meet the requirements of the Town's floodplain management ordinance.

### J. Stormwater Management

1. Stormwater management for subdivisions shall incorporate appropriate treatment measures for water quantity and quality to meet the requirements specified below for development of the lots as well as the infrastructure to support the project. Each application shall include maximum developed, disturbed and impervious areas for each lot based upon the definitions contained in Section 3 DEP Chapter 500 Stormwater Management.
2. For subdivisions that require a DEP review under the Site Location of Development Act (SLDA), a stormwater management plan shall be submitted which complies with the SLDA permit and the requirements of DEP Chapter 500 Stormwater Management.
3. For subdivisions that do not require a SLDA permit, but require a DEP permit under the Stormwater Law, a stormwater management plan shall be submitted which complies with the requirements of DEP Chapter 500 Stormwater Management.
4. For subdivisions outside of the watershed of a Great Pond, that neither require a SLDA permit, nor a DEP stormwater permit, a stormwater management plan shall be submitted that complies with Section 4~~AB~~ Basic Standards and 4~~CB~~ General Standards of the DEP Chapter 500 Stormwater Management.
5. For subdivisions within the watershed of a Great Pond that require neither a DEP SLDA permit nor a DEP Stormwater Permit, a stormwater management plan shall be submitted that complies with Section 4A Basic Standards of DEP Chapter 500 Stormwater Management. In addition, the stormwater management plan shall comply with Section 4~~DE~~ Phosphorous Standards of DEP Chapter 500 Stormwater Management. ~~If the Great Pond is not severely blooming as listed in DEP Chapter 502, the applicant shall submit a stormwater management plan that complies with~~

~~either Section 4B General Standards or Section 4C Phosphorous Standards of DEP Chapter 500 Stormwater Management.~~

6. For all subdivisions, regardless of size, a stormwater management plan shall be submitted that complies with Section 4E Flooding Standard of the DEP Chapter 500 Stormwater Management, as amended. For a project that does not require a DEP SLDA Permit, the Planning Board, upon a request by the Applicant, may waive the Flooding Standard in the event that greater than 75% of the impervious and developed areas (as defined in Section 3 of DEP Chapter 500) for both the lots and infrastructure are treated through the use of buffers in accordance with DEP Chapter 500 Stormwater Management.

7. For all subdivision, regardless of size, located in the Highland Lake watershed, the following additional standards shall be met:

(a) Projects in the Highland Lake watershed shall not be allowed to pay the compensation fee for exceeding the project's phosphorus allocation. Notwithstanding 1 M.R.S. §302, this amendment shall be applicable to and shall govern any application for subdivision plan approval that did not receive lawful final approval by, and so was pending on or at any time after, September 5, 2017 regardless of whether that application was a "pending proceeding" under 1 M.R.S. §302.

*(See also Chapter 142 Surface Water Protection Ordinance)*

## K. Cluster Developments

### 1. **Purpose**

Development under this provision is intended to promote imaginative, well-designed subdivisions which preserve open space and agricultural uses, provide public access to land for passive and active recreation, protect natural features, environmentally sensitive areas and wildlife cover, respect the physical qualities of the land, and, in some instances, reduce the overall development costs of a subdivision. The standards for cluster development allow for the creation of lots that are smaller than those that would otherwise be required by the applicable zoning district regulations and in some cases can be combined with density bonuses to allow additional lots, in return for setting aside the balance of the property as permanent common open space. In addition to all applicable standards of this Ordinance, the Planning Board may approve a single-family cluster subdivision provided the following conditions are met:

### 2. **Procedure**

- (a) **Application Requirements.** All submissions for single-family subdivisions that meet the space and bulk requirements listed in the appropriate zoning district may be designed as a cluster subdivision.

- (b) Property located within more than one residential zoning district. The overall density of the subdivision shall not exceed the combination of the density requirements of the districts in which the subdivision is located, before density bonuses are applied.

### 3. *Basic Standards for Cluster Subdivisions*

- (a) Cluster developments shall meet all applicable requirements of the Land Use Ordinance.
- (b) Each building envelope shall be an element of an overall subdivision plan for site development. Only developments having a total site plan for structures will be considered. The application shall illustrate the placement of building envelopes and the treatment of spaces, paths, roads, service and parking and in so doing shall take into consideration all requirements of this section and of other relevant sections of these regulations.
  - (1) For cluster subdivisions that are not served by a public water supply, the applicant must demonstrate on the plan that it is possible to locate a subsurface wastewater disposal field and a well on each lot. When determined that it is necessary for specific lots, by the Planning Board, as a Condition of Approval, the location of these elements shall be elements of the subdivision plan, and any future changes to the location of these elements will require an amended subdivision plan review.
- (c) The Planning Board shall allow lots within cluster developments to be reduced from standard subdivision standards as specified in the applicable zoning district. In return for the reduction in the requirements for lot area, frontage, and structure setbacks, the applicant shall provide common open space.
- (d) In order to determine the maximum number of dwelling units permitted on a tract of land, the net residential acreage of the parcel shall be divided by the net residential density standard of the applicable zoning district. Density bonuses are applicable, per the appropriate zoning district standards (see Section 400.)
  - (1) Density Bonuses are not applicable in the Highland Lake watershed.  
Notwithstanding 1 M.R.S. §302, this amendment shall be applicable to and shall govern any application for subdivision plan approval that did not receive lawful final approval by, and so was pending on or at any time after, September 5, 2017 regardless of whether that application was a “pending proceeding” under 1 M.R.S. §302.
- (e) Up to 30% of individual lots or dwelling units may have direct vehicular access onto a public road existing at the time of development.

# Town of Windham

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## MEMO

DATE: April 18, 2018

TO: Windham Planning Board

FROM: Amanda Lessard, Planner *AL*

Cc: Chris Hanson, Director of Code Enforcement  
Jon Earle, P.E., Town Engineer

RE: Ordinance Amendment: Sections 800 Site Plan Review and 900 Subdivision Review, changes proposed by Highland Lake Association (HLA)  
Planning Board Meeting – April 23, 2018

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At their meeting on March 20, 2018, the Town Council voted to forward the enclosed proposed ordinance change to the Board. The proposed ordinance language was developed by staff to support the request of the Highland Lake Association (HLA).

The three specific changes the HLA has requested are:

1. All subdivisions and site plans in the Highland Lake watershed must be designed to meet the current DEP phosphorous allocation of 0.020 lbs/acre/year.
2. A proposal for a subdivision to pay a fee in lieu of meeting the 0.020 lbs/acre/year is not acceptable.
3. Allowing public use of the open space within a subdivision will not result in any subdivision bonus houses within the Highland Lake watershed.

See attached memo dated March 2, 2018 from Planning Director Ben Smith for additional staff discussion points and recommendations. Since the March 20, 2018 Council meeting, the proposed ordinance changes have been revised based on recommended language from town counsel Jim Katsiaficas to include language to make any ordinance changes relative to these items retroactive to September 5, 2017, the effective date of the moratorium on development within the Highland Lake watershed.

### **Zoning Amendment Process**

The Planning Board must hold a public hearing prior to making a recommendation on this item to the Town Council. The Town Council will need to vote on the proposed changes to the Land Use Ordinance for the changes to be officially approved. A public hearing has been scheduled



for the Board meeting on April 23, 2018. After the public hearing and discussion by the Board, the Planning Board may vote on a recommendation to the Town Council similar to the following:

**MOTION:** To (**recommend/recommend with comments/not recommend**) approval of the proposed amendments to Sections 800 and 900 and of the Land Use Ordinance regarding stormwater management and cluster subdivisions within the Highland Lake watershed.

# Town of Windham

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8 School Road  
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## MEMO

DATE: March 2, 2018

TO: Windham Town Council  
THROUGH: Tony Plante, Town Manager  
FROM: Ben Smith, Planning Director *BUS*  
Cc: Chris Hanson, Director of Code Enforcement  
Amanda Lessard, Planner  
Jon Earle, P.E., Town Engineer

RE: Highland Lake – ordinance changes recommended by Highland Lake Association (HLA)

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At the direction of the Council, staff has developed ordinance language changes to support the request of HLA as detailed in their letter to the Council dated February 5, 2018, which is attached to this memo. A key component of the HLA request is to make any ordinance changes relative to these items retroactive to the date of the moratorium approved on September 12, 2017.

The three specific changes the HLA has requested, along with staff discussion points and recommendations, follow below.

1. All subdivisions and site plans in the Highland Lake watershed must be designed to meet the current DEP phosphorous allocation of 0.020 lbs/acre/year.
2. A proposal for a subdivision to pay a fee in lieu of meeting the 0.020 lbs/acre/year is not acceptable.
3. Allowing public use of the open space within a subdivision will not result in any subdivision bonus houses within the Highland Lake watershed.

### Discussion

Retroactivity in these changes is not required based on the establishment of a new 6-month moratorium on development in the watershed voted on as an emergency measure at the Council meeting on February 27, 2018. Such language can be added later if deemed necessary.

Staff supports the goals of improving Highland Lake water quality in continuing to reduce the impact of runoff from development and redevelopment in the watershed. However, staff does not fully support the recommended ordinance changes suggested by the Highland Lake Association.

All subdivisions and site plans in the watershed to meet the current DEP phosphorous allocation.

Requiring all subdivisions and site plans in the watershed to meet the current DEP phosphorous allocation of 0.020 is a relatively easy change as almost every project in the watershed already has to meet DEP phosphorous requirements. This change would apply to the smallest site plan and subdivision projects within the watershed that are too small to trigger Site Location of Development permitting or a Stormwater Permit through DEP. The current ordinance language for minor subdivisions gives developers an option to meet either the DEP Section 4C General Standards or Section 4D Phosphorous Standards. This attached language removes the choice and requires subdivisions in this watershed to be designed to meet the Phosphorous Standards.

Removal of option for projects to pay a fee in lieu of meeting the phosphorous standard.

The impact of removing the option to pay a fee in lieu of meeting the DEP phosphorous standard is less clear than the proposed change above. If the Town enacted this change, Windham would likely be the only community in the state to have taken that step. At a Highland Lake Leadership Team Ordinance Committee (OC) meeting on February 28, 2018, Jeff Dennis from Maine DEP stated that when it came to passing the current statewide stormwater and phosphorous loading regulations, having the option for a fee in lieu of meeting the standard was essential. At a local level, removal of this option will have a major impact on how some properties are able to be developed and may effectively prevent some properties from being developed at all.

Such a change will likely have a larger impact on the ability of smaller projects in the Commercial-3 (C-3) zoning district along Route 302 as opposed to residential subdivision development anywhere else in the watershed. If a commercial project ends up developing most of property for a building, parking and septic system, there may not be enough property left for stormwater buffers or stormwater treatment Best Management Practices (BMPs) like infiltration basins or rain gardens to treat the amount of runoff from the developed site. These considerations could severely limit or prohibit development on smaller parcels.

Removal of the density bonus for cluster subdivisions in the watershed.

Removing the density bonus in Cluster Subdivisions seems to put important community goals of public access to open space and water quality protection in competition with each other. However, the overall goal of the Cluster Subdivision ordinance is to allow subdivisions to preserve important natural features and to potentially have shorter roads and less environmental impacts than a conventional subdivision design. As noted by the Cumberland County Soil and Water District in an ordinance comparison prepared for the February 28, 2018, OC meeting, “Windham’s cluster subdivision density bonus is likely not a factor that would contribute to water quality impacts on Highland Lake, given that it allows for designs that mitigate impacts to drainage ways and allow better buffering.” The lot bonuses to ensure public access to subdivision open space has no direct impact on, or link to, water quality. This is because these subdivisions, like any other subdivision in the watershed, will need to meet the DEP Phosphorous standards.

Windham Town Council and Planning Board  
2/5/18

Before you take up the Highland Lake Association (HLA) proposal to change/add three subdivision ordinance recommendations we hope that the existing moratorium will be extended so that these recommendations will have had the opportunity to work their way through the Windham ordinance process. Given the condition of Highland Lake with the picocyanobacteria blooms and the precarious phosphorus levels, we hope that you will allow these recommendations to move forward.

Since it has been determined that the Highland View project as proposed, does not comply with either Windham or State regulations, that project will have to be resubmitted or at least altered to meet those regulations. Extending the moratorium at least until these ordinance changes are fully considered should have minimum impact on that project's schedule. Even as the project was proposed, there are issues. The DEP has just reopened the Highland Views Stormwater Permit because some of the developed areas were not included in the phosphorus calculations. Those concerns were identified in the HLA appeal of the permit. That process will likely take until April at least to be resolved. Further, there will be a number of ordinance recommendations coming from the Highland Lake Leadership Team around that time that would further protect the lake.

The HLA began a petition to address high density housing and phosphorus export to the lake. We collected 970 signatures before learning that the language on the petition was not specific enough for ordinance consideration so we stopped the petition drive but have the 970 Windham resident signatures supporting our cause to retroactively change Town ordinance to further protect the lake.

Everything we've learned about Highland Lake Water quality over the past 6 months tells us that the condition is worse than the DEP believed, and that phosphorus is a key element impacting the water quality. There's certainly more to learn as indicated in the Highland Lake presentation by Don Kretchmer to the Windham Town Council and some representatives from the Planning Board heard last week.

The Science and Water Quality Group is working hard to develop a testing plan for this coming summer that will focus on identifying the exact type of cyanobacteria that is blooming in Highland Lake, as well as learning why this particular bloom is happening only at Highland Lake. Hypotheses will have been developed, tests to prove/disprove each hypothesis will be identified and hopefully can be shared by the time of the Public Forum on March 7 at the Windham High School Auditorium at 7:00 PM. One thing that is agreed on is that Phosphorus is one of the major contributing factors to the ongoing bloom at

Highland Lake, and that efforts need to be amplified in the ongoing effort to reduce the influx of phosphorus into the lake.

Jeff Dennis is a highly regarded biologist at the Maine DEP who spoke at the same presentation last week on the science of Highland Lake. He wrote in a communication to Donna Chapman last September 28:

"I think the recent picoplankton bloom is a complex phenomena that needs a lot more study, but after looking at the data more closely, especially all the large amount of phosphorus data that Keith had collected but had not shared with us, it is very clear that the lake has changed a lot over the years, that it is still changing, and that phosphorus is a driving force. Efforts to continue to reduce phosphorus inputs from existing sources and to strictly limit them from new sources are needed."

See Attachment 1

It is with this background that we encourage you to support our recommendations for additions/changes to the Windham subdivision ordinance. Future changes/recommendations will likely not be retroactive, and will be the results of a concerted effort of the Highland Lake Leadership Team as mentioned above, working through the ordinance of Falmouth and Windham, as well as other towns with lake protections. The recommended additional safeguards will not only protect Highland Lake water quality going forward, but to get it back to where it should be. A great deal of effort is in the planning stages to address current phosphorus export through education, outreach and grants to correct areas that are causing the most phosphorus export to the lake.

## **Proposed Ordinance Changes:**

The HLA is proposing that the Windham Town Council adopt the following changes to its current land use ordinances retroactive to any subdivision that does not have final permitting by the town as of the beginning of the Moratorium. Land Use Ordinance, Section 800 & 900

1. All subdivisions and site plans in the Highland Lake watershed must be designed to meet the current DEP phosphorous allocation of 0.020 lbs/acre/yr
2. A proposal for a subdivision to pay a fee in lieu of meeting the 0.020 lbs/acre/year standard is not acceptable.
3. Allowing public use of the open space within a subdivision will not result in any subdivision bonus houses within the Highland Lake watershed.

Discussion:

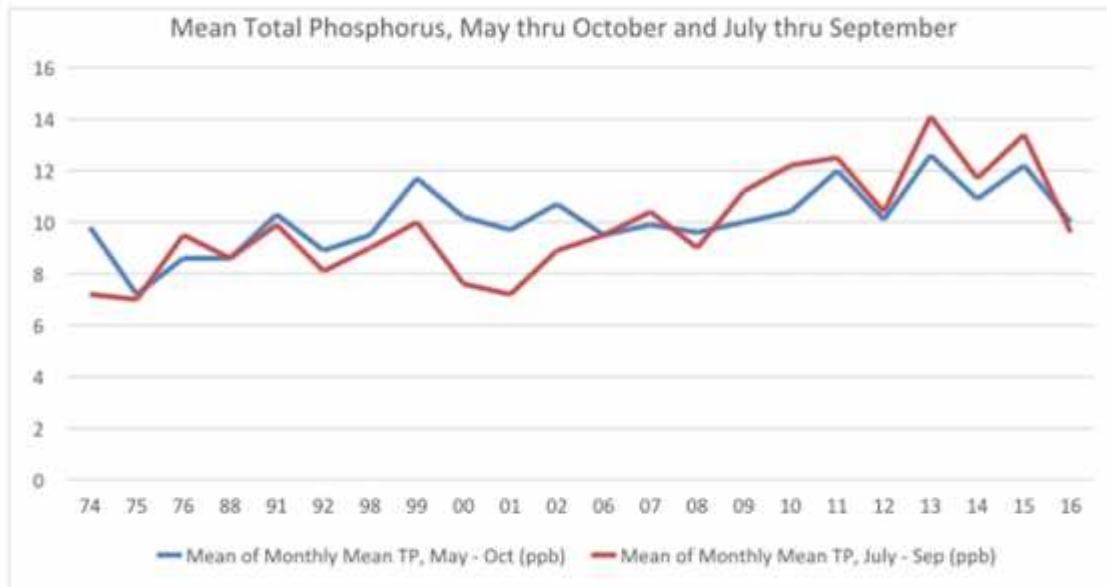
1. Because of what we now know of the phosphorus trend and level in the lake, we believe it is essential to approve ordinance retroactivity for all projects not already fully permitted by the Town, requiring all unpermitted projects to meet the current phosphorus standard. The current DEP phosphorus budget level for the Highland Lake watershed is 0.020 lbs/acre/yr, down from 0.027 lbs/acre/yr at the beginning of 2017. The 0.027 lbs/acre/yr was inappropriately high given the lake conditions, and obviously hasn't worked to keep the phosphorus levels from rising.
2. Secondly, the current allowed provision for stormwater management is to allow a developer to export more phosphorus into a water body than he should be allowed to do as long as the developer can capture at least 60% of the budgeted amount, pays a one time fee, and uses natural buffers for the amount that he does capture. We considered a number of options on this, but in the end, we decided that there is no reason to allow excess phosphorus to be exported into the lake given its current condition. This is consistent to what the Windham staff originally proposed for subdivisions several months back.
3. Our third recommendation is to remove the bonus provision that a developer can add 20% more houses to the development if the open space is made available to the general public, not just to the people within the development. This takes away one of the very advantages of the Cluster Housing within the watershed by adding more houses than would otherwise be allowed under conventional zoning. This will add more impervious surface and more lawns etc. increasing the amount of phosphorus exported from the site. We believe that Cluster Housing done correctly can help minimize phosphorus export, but we should not allow provisions that minimize the Cluster Housing advantages.

**We believe that it is vitally important to make these changes retroactively so that we can collectively start to improve the lake now, and not sometime after we allow the lake to get worse. It will likely be May or June before the HLLT recommendations make their way through the respective HLLT and Town processes. If the moratorium should end before that time, it would allow developers to take advantage of the small window to file for projects under the old inadequate standards. These proposed ordinance changes are consistent with the work of the HLLT, enjoyed strong support from the Windham community, addresses a standard that was overly generous in the recent past and will work well with the efforts to address current phosphorus export efforts through the HLLT.**

## Attachment 1

Below is a graph that clearly shows the phosphorus trend in Highland Lake over the 40 years.

**Figure 3. Mean of Monthly Mean TP in ppb from 1974 to 2016 for years with data.**



It can be seen in the chart developed by Jeff Dennis above that the phosphorus initially peaked in 1999. With great effort and about \$1 million in grants and lake resident financial support, the phosphorus dropped below the 1999 high for about 11 years for the May through October time frame and about 7 years for the July through September time frame. During that period, increased development and likely some complacency took their toll on the phosphorus export to the lake. We have started the awareness effort with attendance at the Town Council meetings and we will see it at the Public Forum. The HLLT will use all means at our disposal to help spread the word that individual actions are necessary to change the trajectory we're on. Based upon the response we've seen and heard from our neighbors, the petition drive and the interest in the clean water, we're confident in making a difference going forward with those already on the lake. Don Kretchmer said it well with one of his slides that spelled out that it is much easier to keep phosphorus from getting into the lake than to deal with it once it is there. Your support on the proposed retroactive ordinance is a key part of this overall challenge to bring Highland Lake back to where it should be.

## Highland Lake Association

### Land Use Ordinance Change Requests at the March 20, 2018 Town Council Meeting

Anyone who knows about Highland Lake and its water quality challenges probably understands that even a small increase of 1 ppb of phosphorus in lake water could be consequential to the health of the lake and could worsen the picocyanobacteria bloom that has occurred over the past four summers. That is why the Highland Lake Association is adopting such a strict stance on ordinances which govern land development in the Highland Lake watershed.

All three of the ordinance changes requested by the Highland Lake Association are intended to be made retroactive to the date of the moratorium approved on September 12, 2017. Retroactivity is important to us because of the uncertainty associated with the timing of the end of the moratorium.

**Although a 6-month extension was approved as an emergency measure by the town council on February 27, we understand that it could be shortened. Consequently, retroactivity will ensure that the proposed ordinance changes, if enacted, would apply to projects currently stalled by the moratorium as well as those projects that may submit within a potential gap between the end of the moratorium and full enactment of ordinance changes.**

In an attempt to mitigate phosphorus in runoff from new development, the Highland Lake Association is advocating changes to ordinance language that will effectively plug holes in ordinances that currently allow phosphorus export beyond acceptable levels.

The first of the proposed changes is to have all subdivisions and site plans in the watershed meet the current DEP phosphorus of 0.020 lbs/acre/year. This would put all projects, major and minor, on the same playing field and would be designed to meet the Phosphorus Standard, as was explained by Ben Smith in his memo.

The second of the proposed changes addresses the current ordinance that allows a subdivision to pay a fee in lieu of meeting the 0.020lbs/acre/year phosphorus budget for the Highland Lake watershed. The fee can be used elsewhere in the watershed to construct Best Management Practices to mitigate phosphorus in runoff. However, it is a one-time fee that, for practical purposes, does not account for the inspection, maintenance, or reconstruction of Best Management Practices. The life of the subdivision will likely far exceed



the life of Best Management Practices built with the fee, and will continue to export phosphorus above the originally budgeted amounts into the future. This effect is multiplied if several projects in the watershed were to take advantage of paying a fee in lieu of meeting the phosphorus standard.

We're completely sympathetic to scenarios where a small lot size may preclude establishment of buffers or construction of rain gardens because of their space requirements, particularly in the C-3 zone along Route 302. However, regulations often drive innovation and manufactured stormwater treatment systems already exist that can be placed under parking lots that provide stormwater pollutant removal capabilities similar to traditional stormwater best management practices. These systems are designed specifically for small lots and are in common use in states other than Maine.

The Highland Lake Association believes that another "hole" in the ordinances can be plugged by the third of the proposed ordinance changes, removal of the density bonus for cluster subdivisions in the watershed. We certainly believe in the advantage of Cluster Subdivisions to lessen environmental impact relative to conventional subdivisions, but we question why we should allow that advantage to be diluted by providing a density bonus that will result in more impervious surface and thus greater phosphorus export. While it may be appropriate to create recreational open space elsewhere in Windham by using the density bonus, the benefits of using it in a watershed of a lake listed by the DEP as most at risk of new development are outweighed by the impact to the lake, also an important recreational resource. Furthermore, a Cluster Subdivision could, in theory, take advantage of the density bonus and pay a fee in lieu of meeting the phosphorus standard, thus compounding the amount of phosphorus exported from a development.

We ask that the Council carefully consider all three proposed ordinance changes, keeping in mind that a little bit more phosphorus control can make a huge difference in lake water quality.

## 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
<b>1. Enforcement</b>	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.
<b>2. Relevant Ordinances</b>	<p>Both Falmouth and Windham have multiple ordinances applicable to Highland Lake water quality goals. See <b>Attachment C</b> for a list.</p> <p>No changes to the overall structure of ordinances is recommended by CCSWCD at this time.</p>
<b>3. General Zoning Districts</b>	<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>
<b>4. Overlay Districts</b>	<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 <b>Attachment G</b> 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"><li>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.</li></ol>




	<ul style="list-style-type: none"><li>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 <b>Attachment F</b>. Note that this preliminary boundary needs to be ground-truthed.</li><li>c. Conduct periodic updates to the watershed boundary maps to account for new development, taking into account complex urban subsurface drainage systems.</li></ul>
<b>5. Shoreland Zoning</b>	<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>
<b>6. Site Plan Review</b>	<p>Site Plan Criteria for both Falmouth and Windham are similar. See <b>Attachment C</b> 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>
<b>7. Subdivision review thresholds</b>	<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>
<b>8. Water Access ROW Provisions</b>	<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 <b>Attachment C &amp; Attachment D</b> 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>
<b>9. Cluster / Conservation Subdivision Provisions</b> 	<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>



<b>10. BMP Inspection and Maintenance Requirements</b>	<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>
<b>11. Standards for Drainage Ways / Hydrology</b>	<p>Both Falmouth and Windham have similar language requiring conformity with natural drainage channels in new development. See <b>Attachment C</b>.</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>
<b>12. Septic System Standards in Highland Lake Zones</b>	<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>
<b>13. Pollutant Loading Standards (Phosphorus)</b>	<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 <b>Attachment E</b>)</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 <b>Attachment C</b> 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
<b>1. Remove Windham Mobile Home Park Overlay retroactively to its expiration date.</b> 	<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>
<b>2. Incorporate requirements into subdivisions and single-family development requirements</b>	<p>a. <b>Third party review of all subdivision plans:</b> 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. <b>Adding a conservation zone in the Watershed:</b> Both towns have overlay zones protecting Highland Lake now that Windham has enacted new requirements through its Surface Water Protection Ordinance.</p>
	<p>c. <b>Restriction on number of lots per 25 feet of right-of-way to Highland Lake:</b> 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>





<b>3. Enhance phosphorus requirements</b>	<p>a. <b>Lower phosphorus load limit to 0.02 lb. / acre year in subdivisions:</b> 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. <b>Review the phosphorus ordinances and eliminate all waiver options and fees currently allowed in lieu of meeting phosphorus load requirements:</b> 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. <b>Eliminate 20% (density) bonus for open space:</b> See #4 (below)</p>
<b>4. Cluster Subdivisions</b>	<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>
<b>5. Enhance Buffer Requirements</b>	<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.
<b>6. Septic Design and Inspection Requirements</b>	<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 <b>Attachment C # 12</b>. 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>
<b>7. Lawn Fertilizer Restrictions</b>	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.
<b>8. Milfoil Control and Boat Launch Site Control Measures</b>	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. 28<sup>th</sup> 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

