

**TOWN OF WINDHAM
WATERSHED PROTECTION FUND
2019 GRANT APPLICATION**

Eligible Projects: Grant funds can only be used for the protection or restoration of water bodies located in whole, or in part, within the Town of Windham. Preference will be shown toward non-profit organizations that are based in Windham. Preference will also be shown toward projects that will promote the sharing of equipment, knowledge, and other resources with other non-profit groups in the Town of Windham.

Application Deadline: The grant application deadline is February 18, 2019. All applications must be delivered to the Windham Town Manager's Office by that date. Incomplete applications will not be accepted. Applicants will be notified of incomplete applications within five days of their receipt at the Town Manager's Office.

Grant Award and Disbursement: The Windham Town Council will complete their review of the applications and select grant recipients by March 12, 2019. All applicants will be notified of the Council's decision. Payment for organizations awarded a grant will be processed with the warrant of April 17, 2019. The Town reserves the right to grant all, or any part, of the total amount requested.

Deliverables: Grant recipients will be required to submit a Final Report upon completion of all project activities. The Final Report shall include an accounting of all income and expenses presented in the same format as the original budget spreadsheet, a list of accomplishments, digital photographs, and the name of the organization responsible for maintaining any equipment or infrastructure associated with the project.

Applicant Contact Information:

Applicant Name: Highland Lake Association

Contact Person: Rosie Hartzler, President Highland Lake Association

Address: 35 Beach Road

City: Windham State: Maine Zip Code: 04062

Phone : 207-415-3727 E-Mail: rosie.works.maine@gmail.com

Qualifications and Experience:

The Highland Lake Association (HLA) has been an established lake association since 1989, and is recognized as a leader in the efforts to preserve and protect Highland Lake. Water quality monitoring has been pursued since the mid 70's. The focused efforts of the water quality monitoring team, since the mid 80's resulted in the discovery of the picocyanobacteria bloom that first appeared in 2014.

This bloom is believed to be related to problematic levels of phosphorus in Highland Lake. Phosphorus, which reaches the lake through Non-Point Source pollution, (NPS) is most closely tied to overdevelopment. The results of the Watershed Survey conducted in 2018, revealed 129 erosion sites, are contributing to this erosion.

The HLA is seeking grant funding from the Town of Windham for the express purpose of remediating problematic residential and road sites as identified in the May, 2018 Watershed Survey. Grant funds will be appropriated to participating residents and road associations who agree to match grant funds, and who agree to implementing an agreed upon regular maintenance schedule in a manner that reflects Best Management Practices.

Administration of the grant funding will be the responsibility of the HLA. The HLA will appoint a committee that will include HLA board members, along with concerned watershed residents to implement this grant.

Project Description:

Project Name: Highland Lake Phosphorus Mitigation Project - 2019

Water Body Name: Highland Lake (Windham and Falmouth)

This project will focus on committing resources and remediation strategies to sites identified as priorities in the 2018 Watershed Survey.

Project Benefits:

Highland Lake is an important resource to the Town of Windham – first as a tax base. There is enormous recreational value to the town due to the high number of residents and visitors to Highland Lake who use the lake to swim, boat, water ski, fish, (winter and summer) snowmobile and cross country ski. The Windham side of Highland Lake watershed is also home to over 800 residents.

A large percentage of the roads that serve the watershed are unpaved private roads. Unless these roads are properly maintained, they become sources of NPS pollution.

Increased phosphorus levels in the lake were described in October 2017 in this email from Jeff Dennis (DEP) to Donna Chapman (Windham Town Council).

...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.

The May 2015 EPA study “*A Compilation of Cost Data Associated with the Impacts & Control of Nutrient Pollution*”** provides the following data on loss of property value due to reduced water quality.

Table III-3. Estimated Decreases in Property Values due to Reduced Water Quality

Study	State	Waters	Water Quality	Impact on Home Price (2012\$) ¹
Gibbs et al. (2002)	NH	Lakes	Poor water clarity	\$1,911 to \$16,713 (1% to 6.7%) per 1 meter change in Secchi depth
Poor et al. (2001)	ME	Lakes and ponds	Poor water clarity	\$3,917 to \$13,535 (3.5% to 8.7%) per 1 meter change in Secchi depth
Boyle et al. (1998)	ME	Lakes	Poor water clarity	\$616 to \$60,624 (less than 1% to 78%) per 1 meter change in Secchi depth
Michael et al. (2000)	ME	Lakes	Poor water clarity	\$1,296 to \$15,713 (1.0% to 29.7%) per 1 meter change in Secchi depth

The study further references New England “*In these markets, a 1 meter increase in water clarity led to a price increase of 1% to 25%. A decrease in water clarity had larger impacts, ranging between less than 1% to greater than 78% for a 1 meter decrease.*”

Based on this information, it is apparent that there is an immediate need to implement strategies that will reduce the phosphorus entering Highland Lake by way of NPS pollution (runoff).

The HLA is collaborating with Cumberland County Soil and Water Conservation District, and the Department of Environmental Protection (DEP) to develop a Watershed Based Management Plan. This plan upon approval from the DEP, will serve as the basis for applying to the EPA for 319 funding (Clean water Act funds) to be utilized in the water shed for mitigating high priority sites. This funding is projected to become available during the 2021 season.

Between now and 2021, the HLA is committed to collaborating with watershed residents in mitigating sites identified in the 2018 Watershed Survey. Taking steps during 2019 will get a jump-start on mitigating those "high priority sites" and reducing phosphorus in Highland Lake.

A focus of this grant funding will be to remediate up to 20 of the identified residential sites which were identified as having a High or Medium impact on the lake in terms of Non-Point Source pollution and sites that would benefit from the installing or the upgrading of buffer plantings. While these sites may not be large, they collectively significant phosphorus flow to a lake Highland Lake.

NOTE: There are over 60 residential sites identified in the 2018 Watershed Survey for which buffer enhancement / planting was recommended.

Project Schedule and Cost:

Planned Duration: Start Date: July, 2019 End Date: December 2019

Total Cost of the Project \$40,000 (including in-kind donations)

Amount Requested from the Windham Watershed Protection Fund \$ 20,000

Matching Funds: Cash: \$10,000 **Services:** \$10,000

Who will provide the matching funds/services?

Private Road Associations
Watershed Residents

Please attach a project budget spreadsheet including all income and expenses including material, equipment, labor, and indirect costs (e.g., insurance).

Income

\$20,000 Grant money from Town of Windham
\$20,000 Match money from Private Road Associations / Individuals

Expenses

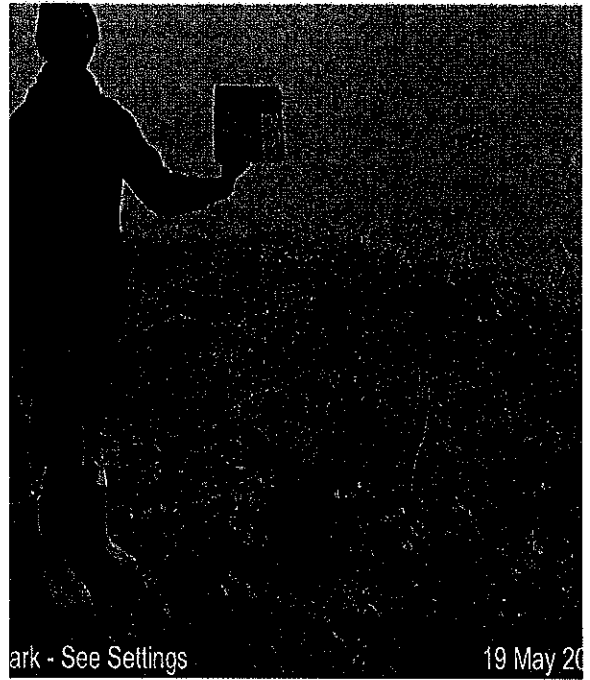
The focus of this project is to mitigate sites on residential properties and road / right of way sites that were identified in the 2018 Watershed Survey. The committee overseeing the implementation of the Watershed Protection Grant funds will prioritize sites that are the focus of this grant by utilizing the following criteria:

1. Was site previously a 319 site (from 2004 remediation by CCSWCD)? If so, the site would be potential site for implementing the current funding. If site was NOT a focus of 319 funding in 2004, then potentially it could become a designated focus for 319 funding in 2020.
2. Project Impact – impact on water quality in HL
3. Technical Level – complexity in design
4. Cost to implement
5. Property relations / complexity of the situation
6. Match ability of road association / resident

It should be noted that in 2018, the HLA in collaboration with the North Highland Lake Road Association and Duck Pond West Road Association, mitigated two of the High Priority sites – one being in the category Boat Access, and one being a Private Road.

Here are some photos of the examples of High and Medium Priority sites as identified in the Watershed Survey:





ark - See Settings

19 May 20



Your Watermark - See Settings

19 May 2018, 11:12



In conferring with DEP personnel, projected costs for remediating High to Medium Impact sites ranges from \$500 to over \$2500. Since as mentioned above the grant would focus on up to 20 sites needing buffer enhancements, costing an average of \$1000 each, this could require up to \$20,000 (grant money plus match)

There are several road / ROW sites that had been identified in the W.S . as being the “worst of the worst” – the plan would be to appropriate up to \$10,000 of the grant to be applied toward the remediation of those projects, which would include an additional \$10,000 match funding from the participating road association.

This project is focused on getting the most “bang for the buck.” It is our hope to apply this grant to those sites that are most problematic and to engage residents from that area in the mitigation efforts.

Resource Sharing:

The HLA is the organizing force for the neighborhoods that surround the lake. We provide the leadership and partnership to make these efforts coordinated and more effective.

HLA is the catalyst for much broader partnerships throughout Maine. There is focus on Highland Lake throughout the state because of the concern that this picocyanobacteria outbreak may be the “canary in the coal mine” for lakes in Maine. The potential economic and recreational loss to Maine is huge if this problem spreads to other lakes.

Numerous educational, scientific and environmental organizations are part of an ongoing effort to figure out what is going on in Highland Lake. We are already engaged with the following organizations:

- University of Southern Maine
- University of Maine Orono
- University of New Hampshire
- Lakes Environmental Association
- Casco Bay Estuary Project
- Maine Department of Environmental Protection
- Maine Department of Marine Resources
- Cumberland County Soil and Water Conservation District
- Bigelow Labs

ADDENDUM:

Template for Maintenance Agreement between Participants in the Project and the Town of Windham:

Operations & Maintenance Plan

Ditches

Ditches should be regularly inspected and maintained. It is critical to keep ditches free of obstructions to allow water to flow freely. Sediment and debris should be cleaned out of the ditch periodically. Bare soil should be re-seeded and covered in hay to promote new growth. Proper ditch shape and repairs should occur immediately where needed.

Vegetated ditches should be mowed periodically to ensure proper road drainage and water flow.

Leaves and sediment need to be manually removed from riprapped ditches using leaf blowers and shovels. Riprap should be promptly replaced should shifting occur (for example from winter plows, grading, etc.)

Culverts

Riprap-lined inlets and outlets of the culverts shall be inspected periodically to determine if high flows have caused scour beneath the riprap or dislodgment of any stone. Any needed repairs shall be accomplished immediately. In addition, culverts shall be inspected periodically to determine if any obstructions are blocking the flow of water, debris or sediment shall be removed to maintain their normal function.

Sediment Basins and Turnouts

Sediment basins and turnouts should be regularly inspected to insure they are properly functioning. Sediment and accumulated debris will need to be periodically removed and disposed of away from water resources. Sediment basins and turnouts should be immediately repaired should they no longer be functioning properly.

Vegetated sediment basins and turnouts should be stabilized with seed and hay promptly after removing sediment.

Leaves and sediment need to be manually removed from riprapped basins and turnouts using leaf blowers and shovels. Riprap should be promptly replaced should shifting occur to ensure optimal functioning.

Gravel Roads

Gravel roads should be graded a minimum of two times per year during the spring and after a rainfall to ensure proper road crowning and drainage. Grader and snow plow berms along the edge of the road need to be removed.

Road Maintenance Schedule & Tracking

	In the SPRING	In the FALL	After Every MAJOR STORM	Inspection Date & Condition
CULVERTS				
Remove accumulated sediment, leaves, and debris at the inlet, at the outlet, and within the culvert	X	X	X	
Repair any erosion damage at the culvert's inlet and outlet	X	X	X	
DITCHES				
Inspect ditches and swales	X	X	X	
Remove any obstruction and leaves, or debris	X	X	X	
Stabilize any erosion	X	X	X	
Mow grass ditches		X		
Remove woody vegetation growing through riprap		X		
Repair any slumping sideslopes	X	X	X	
Replace riprap where underlying filter fabric is showing or where stones have dislodged	X	X	X	
ROADWAYS				
Clear accumulated winter sand along the roadway and remove false berms	X			
Grade and crown/super-elevate the road surface and shoulder				
(year round roads should be graded and crowned 4 times per year- spring, 2 times in summer, and fall)	X X	X X		
Clean out sediment within waterbars and open-top culverts, and behind rubber razor bars	X	X	X	
VEGETATED SLOPES				
Inspect all slopes and embankments	X	X		
Replant bare areas or areas with sparse growth	X	X		
If you find areas with erosion, armor the area or divert erosive flows to areas that can withstand concentrated flows	X	X		

	Spring	Fall	After every major Storms	Inspect date
LEVEL SPREADERS & BUFFERS				
Inspect roadside buffers for evidence of erosion, concentrated flows or encroachment	X	X	X	
Mow vegetation in non-wooded buffer no shorter than 6 inches and less than 3 times per year	X			
Repair any sign of erosion	X	X	X	
Inspect and repair down-slope of all spreaders and turnouts for erosion	X	X	X	
Install more level spreaders or ditch turnouts if needed for a better distribution of flow	X			
Clean out any accumulation of sediment within the spreader	X	X	X	