



# 2023 WATERSHED ASSISTANCE GRANTS PRE-PROPOSAL



Watershed Management Bureau/Watershed Assistance Section  
The pre-proposal submittal deadline is 4 PM on **September 16, 2022.**

RSA/Rule: Voluntary

Applicants are required to call or email us to discuss their pre-proposal prior to completing this form no later than **September 2, 2022.**

## 1. Project Title

Ossipee Lake Watershed Management Plan Phase 2: Danforth Ponds BMPs & Community Engagement

Format: *Name of the waterbody, watershed plan implementation, project phase, and description.* Example: *Crystal Lake Watershed Management Plan Implementation Phase 2: Smith Street BMPs*

## 2. Applicant Information

A. Organization Name: Green Mountain Conservation Group

B. Project Manager

Project manager's name:	Matt Howe
Title:	Executive Director
Affiliation:	Green Mountain Conservation Group
Street address:	236 Huntress Bridge Rd
City, State, ZIP:	Effingham, NH 03882
Day phone: (603)539-1859	Fax: ( )                      Email: director@gmcg.org

C. Legal Contact (Officer legally authorized to sign agreements)

Legal Contact's name:	Matt Howe
Title:	Executive Director
Affiliation:	Green Mountain Conservation Group
Street address:	236 Huntress Bridge Road
City, State, ZIP:	Effingham, NH 03882
Day phone: (603) 539-1859	Fax: ( )                      Email: director@gmcg.org

Signature of Legal Contact: *Matthew A Howe*                      Date: 9-16-22

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### 3. Project Location

A. City/Town(s): **Freedom**

County: **Carroll**

Does project involve other states? Yes  No

B. What water body does it affect? **The Danforth Ponds**

12-digit hydrologic unit code (HUC):

010600020803

C. Attach a project location map in PDF format showing the watershed and relevant project site locations (required).

**HUC look-up:** [Surface WQ Assessment Viewer](#) or contact your NHDES project leader for assistance.

### 4. Problem/Need

Provide a clear statement of the types of nonpoint source pollution (NPS) and water quality impairments or threats to water quality that would be addressed by the project.

Over the past years a notable trend of anoxic conditions has been observed in numerous single sampling events on Lower Danforth Pond. In May 2022, GMCG and the Friends of Danforth Ponds embarked on an expanded annual monitoring program for Middle Danforth Pond as it was determined in 2021 by NHDES that Middle Danforth behaves somewhat differently than Lower Danforth Pond. In addition, the Shawtown Brook that flows into Middle Danforth has been added for monitoring. While samples are still being analyzed for the Summer of 2022, attached (filename: Dissolved O2 Middle Danforth) is a dissolved oxygen graph from data collected by GMCG in 2019. It shows anoxic conditions in Middle Danforth starting in June, and persisting throughout the remainder of the summer. This is mimicked in the data collected through the NHDES VLAP program of Lower Danforth Pond, and seen as recently as 2021. These anoxic conditions are typically indicative of internal phosphorus loading that can either be from legacy nutrients, leeching from benthic sediments, or a combination of the two. Also observed from Lower Danforth Ponds was a significant increase in the amount of cyanobacteria in the phytoplankton population collection (purple segment of bar, bottom right graph in attached document, (filename: VLAP 2021- lower danforth-freedom). The New Hampshire Department of Environmental Services has issued five Cyanobacteria Advisories for Middle Danforth Ponds since 2018. The advisories have ranged in length from 4 days to 33 days. Middle Danforth Pond is included as an impaired waterbody on the EPA's 303(d) list in 2022.

Indicate the watershed priority categorization as referenced in the New Hampshire Department of Environmental Services (NHDES) [Nonpoint Source Management Program Plan- Appendix B](#) (search by town or waterbody name):

*High priority for restoration or protection.*

*Medium priority for restoration or protection.*

*Low priority for restoration or protection.*

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## 5. Desired Environmental Outcome

Provide a concise statement of the expected environmental outcome(s) that this project strives to achieve. For multi-phase projects, if the environmental outcome is not expected to be achieved during this phase, explain how the project will make progress toward the outcome. Goal-setting and results-planning can help water resource managers develop more deliberate project designs and achieve optimal project outcomes, e.g., watershed phosphorus loading will be reduced by 28 lbs/yr resulting in lake phosphorus levels below 7.2 µg/l; the impaired river segment is now in a state of equilibrium based on stream morphology principles; or, ambient fecal coliform bacteria levels will be reduced to enable reopening of a closed shellfish harvest area (18 acres).

The Ossipee Lake Watershed Management Plan Phase 1, dated Oct. 2017, recommends a 20% reduction in phosphorous loading for the Danforth Ponds over a ten-year period, from 9.0 ppb to 7.2 ppb. Based on modeling techniques, the annual phosphorous reductions that will result from Site #4 (Ossipee Lake Road) and Site# 6 (Danforth Bay Campground) as identified in the Watershed Management Plan Phase 1 are 11.18 and 5.39 lbs./yr. respectively. The load reductions at Site #11 (West Danforth Road) are estimated to be 3.50 lbs./yr. We assigned the West Danforth Road site as Site # 11 (next site # of the appendix E of Management Plan) and have attached the details for this site. The overall annual reduction is estimated as 20.07 lbs./yr.

The Cyanobacteria blooms of the last few summers at Middle Danforth has raised awareness around Danforth Ponds and throughout the community that we maybe loving our ponds and lakes too much by our activities. We hope that with improved communication techniques to build on that awareness and to re-invigorate people about the installation of small scale BMPs and that septic system maintenance and upgrades are the ways we can all help our ponds and lakes.

The overall phosphorous reduction amount from implementation of BMPs at individual property parcels of a portion of the 74 owners around the Danforth Ponds will be hard to quantify but as a large number of the parcels have steps or paths down to the water, we hope to encourage owners to incorporate items like the runoff prevention stair designs used at the Danforth Bay Campground project overseen by GMCG in the Phase 1. Similarly, the reductions derived from septic system improvements will require analysis. The benefits stemming from zoning policy enhancements and education and marketing initiatives, while clearly beneficial, will be more difficult to quantify on an annual basis. The expanded water quality monitoring of Middle Danforth will enable better evaluation of internal loading sources and severity. Overall, the measurement of results is critical to the management of efforts in 2023 and the out years. As we work to reduce phosphorous loading, salt and sediment pollution should lessen and the oxygen content should increase. These and other areas will require close monitoring over the next several years.

## 6. Executive Summary

In **200 words or less**, provide a general description of the proposed project which would be suitable for a press release. This section should summarize the water quality concerns, stakeholder involvement and how the project will help achieve the desired environmental outcome(s).

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Effingham-based Green Mountain Conservation Group, which has been working since 1997 to preserve and protect the land, water, and wildlife of the Ossipee Watershed, will collaborate with the newly formed Friends of the Danforth Ponds on a multi-pronged approach to improve water quality in the Danforth Ponds. Work funded by the grant will focus on four key elements: reducing stormwater runoff from roads; increasing understanding and awareness of the condition of shorefront septic systems and motivating property owners to pump, inspect and potentially replace substandard septic systems; engagement with the Town of Freedom to refine zoning laws and ordinances governing land use practices and development; and the development of a community-based education and marketing plan to inspire residential and commercial property owners to embrace and implement best land management practices.

## 7. Watershed-based Plan Implementation

Check one:

X Project **implements** actions from an existing (a) through (i) watershed-based plan.

Project implements **an alternative** to a watershed-based plan which has been discussed with NHDES prior to this pre-proposal.

**Describe how the project will implement a watershed-based plan (or accepted alternative plan).** The project should address measures intended to maintain or meet a quantifiable water quality goal.

This Watershed Assistance Grant Proposal encompasses four initiatives designed to improve water quality within the Danforth Pond network of the Ossipee Lake Watershed. They serve to complement previous work in 2019-2020 under a Phase I grant of \$50,000 to GMCG which resulted in the completion of 7 demonstration BMPs across the Ossipee Lake System, including an extensive project at Danforth Bay Campground featuring infiltration steps, a dripline trench, and a dry well integrated system on a steep slope to a beach area. The proposed Phase II initiatives below are also in keeping with the findings and recommendations contained in the Ossipee Lake Management Plan of October 2017:

1. **Efforts to mitigate stormwater runoff at three high priority sites;** Site #4 Ossipee Lake Road runoff to Lower Danforth Pond (Problem is 2 gullies that carry rain runoff directly from town road down slope to the pond), Site #6 private road and camping area runoff to the Shawtown Brook / Middle Danforth Pond noted in the Watershed Management Plan Phase 1 (the problem is a system of private roads connecting campsites crossing a brook in a hollow where rain water carries sediment laden runoff into brook). The third site is a stormwater runoff location from West Danforth Road (now called site #11) to Middle Danforth Pond that has developed after the completion of the initial Watershed Plan (Problem is intersection of a low point of a town road with a private property access to the pond where runoff flows from town road to pond). These are proposed to be addressed as separate collaborations; one project is with the Town of Freedom for runoff from the two public roads, the other with the Danforth Bay Campground for the runoff of private roads and camping areas.

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2. **The development and issuance of a septic system survey/questionnaire for homeowners of waterfront properties on the Danforth Ponds to better identify and address inadequate and outdated waste systems, as well as develop new educational and motivational tools to encourage proper use, inspection, maintenance, and replacement when necessary.** A septic system survey was issued under Phase I, but the response rate was very low and the information is now dated. The percentage of total phosphorous in the Danforth Ponds contributed by defective septic systems and cited in the Watershed Plan is 4%, however more recent estimates of phosphorous contributed by defective septic systems is now in the mid-teens for other lakes. Key to this initiative is gaining access to the data that will allow sizing of the septic system problem on water front properties so that motivational and educational efforts can be better targeted. The plan is to build on the concerns raised at the public forum about septic systems during Management Plan development by having direct interaction with the ponds' homeowners.
  
3. **Communication and marketing and the development of strategies to marshal greater community support and engagement in the adoption of recommendations contained in the Ossipee Lake Watershed Management Plan, Phase 1.** The target population includes town residents, leadership, and the private sector. An educational pamphlet will be developed to inform the public on conservation concepts and practices, with a special emphasis on the use of Best Management Practices by homeowners to reduce stormwater runoff. Additionally, GMCG Outreach Coordinator Moselle Spiller, who has planned and supervised numerous BMPs in the Ossipee Lake System, will coordinate on-site small-scale BMP demonstration projects on the property of Martha Buisman (33 Abenaki Drive, see attached photos and letter of support). The Buisman property includes multiple acute locations on a steep incline where a series of measures are warranted that may include water bars, rubber razors, pervious pavers, a rain garden, and stairway replacement. A concerted effort will be made to invite to these demonstrations both town officials and the owners of Danforth properties identified in the watershed management plan as excessively contributing to stormwater runoff.
  
4. **A review of local zoning laws and ordinances, planning policies, and the development of action plans to advocate policy changes having the potential to both alter current laws and land use practices and mitigate the impacts of future development in currently less developed areas of the watershed.** The last couple years the Freedom Conservation, Zoning and Planning Boards have shown more willingness to be more protective of the shoreline as a result of the added pressures on lakes during the pandemic. The Watershed Management Plan completed a build-out analysis and stated a need to improve water quality protection thru nonstructural BMPs along with a recommendation to develop new or improved ordinances to address setbacks, buffers, lot coverage, low impact development and open space. The timing is good for a new review of local zoning laws and ordinances. For example, we believe that the owners of the larger tracts of shorefront land on Upper Danforth Pond – the most

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undeveloped of the three ponds – will be willing to endorse a minimum lot size of 12 to 15 acres for any future subdivision.

Note: Pre-proposals for **projects dealing with geomorphology-based restoration or hydromodification (culvert replacement, dam or other barrier removals, etc.)** are not required to address pollutant loading, but must demonstrate that the assessment unit is impaired or threatened according to the criteria as detailed in the Consolidated Assessment and Listing Methodology (CALM); please contact us prior to submitting this pre-proposal.

**For continuing implementation of a completed watershed-based plan**, please provide an updated copy of your Watershed Plan Implementation Tracking Form in addition to completing this section. Contact Andrea Bejtlich at [andrea.l.bejtlich@des.nh.gov](mailto:andrea.l.bejtlich@des.nh.gov) if you need a copy of this form.

## 8. Phasing Considerations

NHDES recognizes that years of sustained NPS implementation may be needed to achieve measurable improvement to a waterbody. If additional phases of the project beyond the scope and time period of this project are anticipated, briefly describe the anticipated future phases needed to achieve the desired environmental outcome(s) described in Section 5. Cases in which phasing may be warranted include projects to restore impaired waters, and projects in large watersheds where numerous BMPs are needed to achieve the water quality goals outlined in the watershed-based plan.

The projects outlined in this grant application represent a renewed investment in a multi-year program of conservation activity and will serve as a catalyst for subsequent projects. Many more state and town roads, public and private, will require stormwater runoff mitigation. BMPs adopted by homeowners in 2023 are merely another round of a long-term investment to curtail nutrient loading of the Danforth Ponds. Lasting septic system rehabilitation will require homeowner mindset changes as well as future infrastructure expenditure. With each passing year, the issue becomes more dire unless timely action is taken on the Danforth Ponds and across Ossipee Lake at large. Land use and development are inherently charged, long-term issues and the review of existing zoning laws and regulations as described in this application is only the first phase in identifying and implementing needed changes to advance conservation goals over time. Each project described in this application will require steady and concentrated effort over the next few years to ensure lasting progress. Future discrete implementation phases will need to be developed.

## 9. Stakeholder Coordination, Roles and Responsibilities

Describe participation and commitments expected from stakeholders, landowners, other agencies, organizations and municipalities, and identify proposed sources of non-federal, matching funds. Grantees should be aware that the United States Environmental Protection Agency (EPA) Section 319 of the Clean Water Act Grant funds require a 40% match in non-federal funds. Match can be in the form of cash or in-kind contributions (time, labor, easements, materials, equipment, etc.) from your organization and/or project partners. If available at this time, provide letters of support or commitment from project stakeholders. While letters of support and commitment are both encouraged, please note that letters of *commitment* from a willing landowner to install a BMP on their property, or from other stakeholders willing to contribute time, materials, equipment, and/or funding, will score higher in the ranking scheme when compared to an individual or group simply supporting the project in concept.

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The project will be guided by a Steering Committee comprised primarily of volunteers from the Danforth Ponds community but also including GMCG’s Executive Director Matt Howe and GMCG Outreach Coordinator Moselle Spiller. The Town of Freedom and Danforth Bay Campground have pledged significant in-kind support for road improvement projects on their properties. This includes labor, machinery and materials. Homeowners participating in BMP initiatives will contribute to both labor and material costs. Friends of Danforth Ponds volunteers are projected to contribute at least 300 hours to support these projects. Attached find commitment letters from the Town of Freedom, Danforth Bay Campground, and property owner Martha Buisman.

**10. Estimated Watershed Assistance Grant Request**

Provide a rough estimate of your anticipated funding request, **excluding non-federal match**.

- Less than \$25,000 Watershed Assistance Grant funds.
- Between \$25,000 and \$50,000 Watershed Assistance Grant funds.
- Between \$50,000 and \$75,000 Watershed Assistance Grant funds.
- Between \$75,000 and \$100,000 Watershed Assistance Grant funds.
- Greater than \$100,000 Watershed Assistance Grant funds. Estimate of project costs \$ \_\_\_\_\_

**11. Submittal Requirements**

Submit the Watershed Assistance Grants pre-proposal and all attachments, via email in Microsoft Word or PDF file formats to [andrea.l.bejtlich@des.nh.gov](mailto:andrea.l.bejtlich@des.nh.gov) prior to **4 PM on September 16, 2022**.

If you have difficulty emailing attachments, such as maps and photos, please contact Andrea Bejtlich at [\(603\) 271-8475](tel:6032718475) or [andrea.l.bejtlich@des.nh.gov](mailto:andrea.l.bejtlich@des.nh.gov) to make alternate arrangements.

**Your pre-proposal package should include:**

- The completed Watershed Assistance Grants pre-proposal. Please be sure to use spell check and proofread your preapplication.
- A project map (see section 3C).

GPS Coordinates

# Ossipee Lake Road 43.81785 N, 71.10388 W  
 #6 Danforth Bay Campground: 43.82929 N, 71.10721 W  
 #11 West Danforth Road: 43.824686 N, 71.108294 W

- N.A.** Watershed Plan Implementation Tracking Form (as applicable, see Section 7).
- Commitment letters from landowners (as applicable, see Section 9).
- Optional: **project site photos; water quality data, letters of support**; any other items that you would like us to consider regarding this pre-proposal.

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