11. CPA PROJECT APPLICATION FORM

[CPC Use Only: Date Received_____By:_____
Assigned CPC #2019 - _____]

If possible, use word processor to fill out form. Please answer all questions, use "N/A" if not applicable.

1. a.) Applicant Name and Organization: Last __Luening_____ First __James_____
Organization(s) (if appropriate)_Great Ponds Advisory Com.

b.) Regional Project: Yes_X_? or No?__ If Yes, Town/Organization: Groton Water Depart., Weed Harvest Com., Groton Lakes Association

2. Submission Date:_1/18/2018_

3. Applicant Address: St. 711 Martins Pond Rd.
City/ State: Groton, MA ZIP: 01450__

4. Ph. # 585-545-8344 Email: luening11@gmail.com

5. CPA Purpose. Check all that apply:
Community Housing___ (Affordable Housing: __) Historic Preservation:__. Open Space: : X .
Recreation _X_

6. Town Committee or boards participating: Great Ponds Advisory Com., Groton Water Depart., Weed Harvest Com.,

7. Project Location/Address: Baddacook Pond, Groton MA

8. Project Name: Baddacook Pond Environmental Restoration – Year 3 (2019)

9. Additional Responsible Parties (If applicable):

Role (specify)	Name	Address	Ph. (w) (cell)	Email
Property/Site Owner	Town of Groton	173 Main St.		
Project Manager	James Luening	711 Martins Pond Rd.	585-545-8344	luening11@gmai.com
Lead Architect				
Project Contractor	Must be bid			
Project Consultants				
Other:				
Other				

10. As appropriate, indicate if proposal requires P&S agreement __ Deed__
Option agreement ___ Other-describe: N/A

11. a.) Assessor info. (map/ block/ lot id.(s)): N/A b.) Tax classification type: N/A

12. Permits required: Zoning: N/A Historic Preservation: N/A Other :

13. Historic Commission Approval signoff (when required): N/A Date:

14. Funding: a.) Requested from CPC: $ 140,000 b.) Committed from other sources:$ 0

c.) Annual anticipated total income :$ N/A d.) Annual anticipated total expense: $140,000

d.) Anticipated net income (loss): $ 0.00 e.) Estimator name/company: Jim Luening

15. CCP Objectives - use codes from **Section 5** to indicate all that apply: 5.1.3, 5.3

16. Project Timelines: Proposed Start Date: 4/1/2019 Projected Complete Date: 12/31/2019

17. Estimated Delivery Date of Completion Report to CPC: 1/31/2020

18. Project description and explanation (attach additional sheets as needed): This is a funding for the third year of a 3 year environmental restoration program. Year 1 has already been successfully completed. Year 2 will be this summer (2018).
See Baddacook Pond Environmental Restoration – Year 3 description description.

19. Feasibility: Both Hydro-raking and weed harvesting are well vetted methods of lake of lake Management

20. List of attachments: 1) See Baddacook Environmental Restoration – Year 3 description
2) Solitude – Baddacook2017_FinalReport
3) Baddaook maps and images
4) Baddacook 2017_Final Report

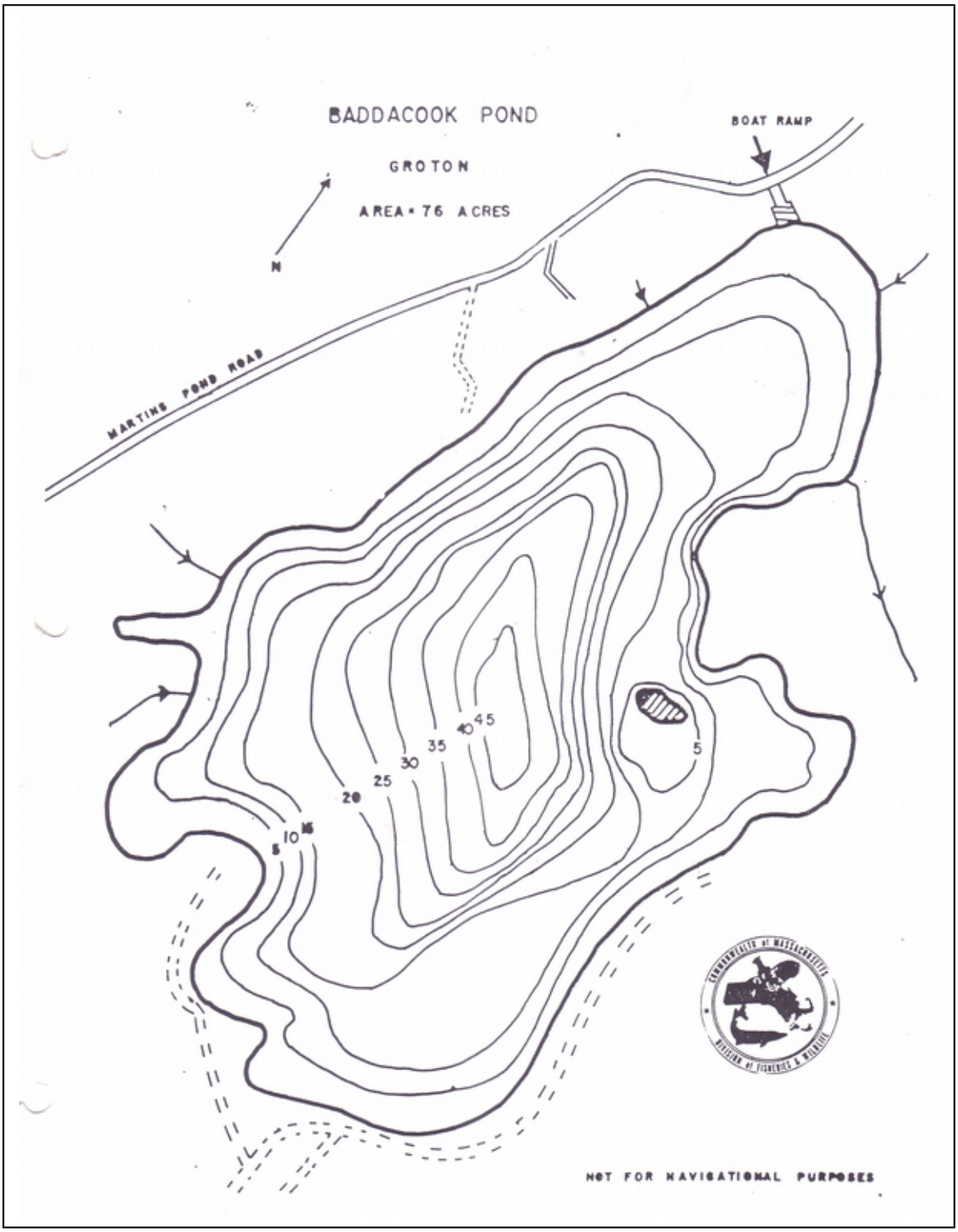
21. Additional Information: Debris from both Weed Harvesting and Hydro-raking will be brought to a shore transfer point. At the transfer point, debris will moved to a dumpster or trailer and transported to a composing location, outside the wet land area.

22. Management Plan: The project will be managed by Jim Luening, GPAC Chairman. He will over see the project and ensure that objectives and target dates are met. Based on the legal bidding process, the contract shall be awarded to the best qualified contractor to perform the work. The contractor shall conduct day to day operations. They will be required to conduct pre and post surveys to determine the effectivity of these methods which will be included in a year end report.

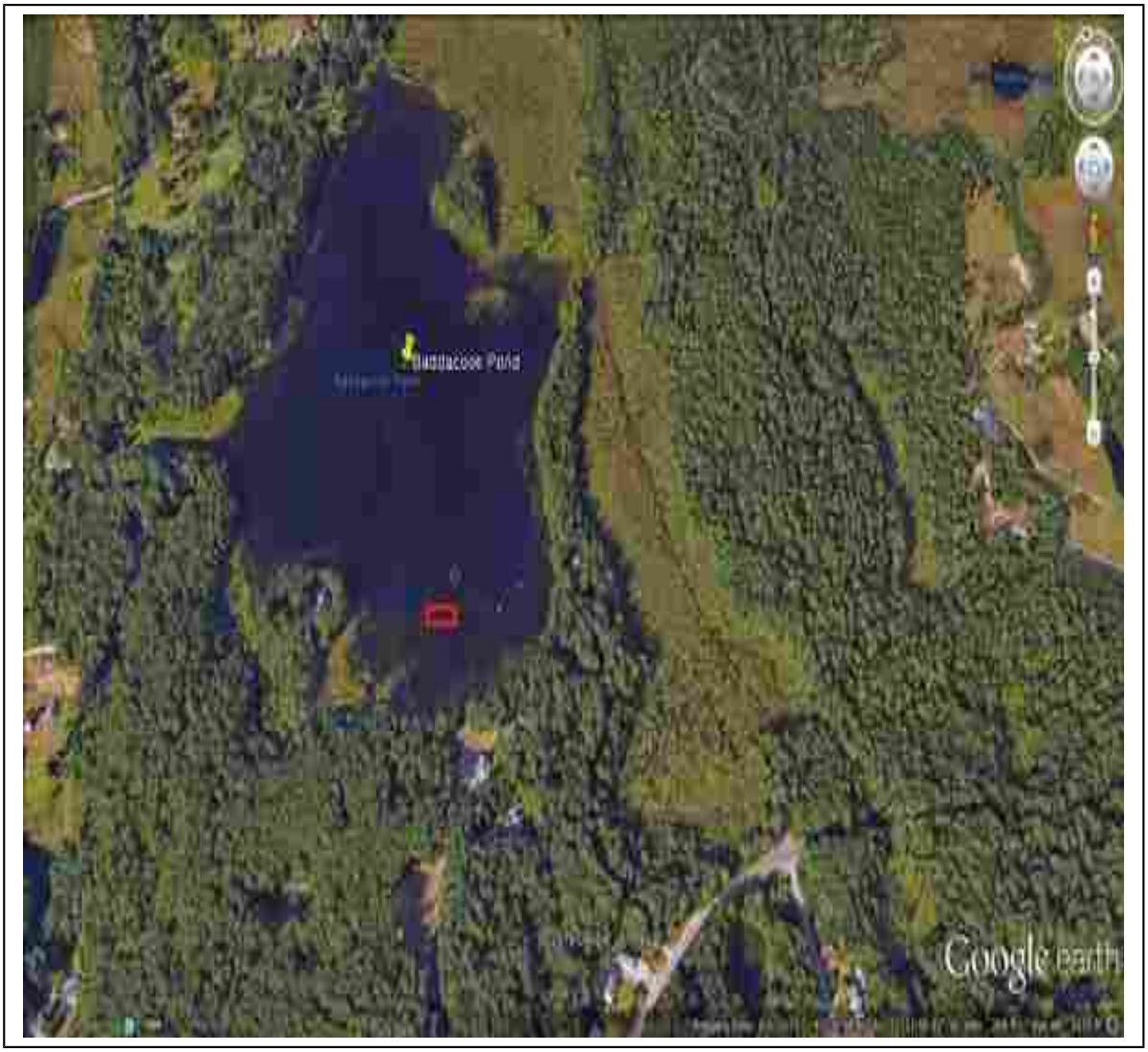
23. Applicant Signature: Jim Luening Date: 1/17/2018

Co Applicant Signature: _____ Date: _____

Co Applicant Signature: _____ Date: _____



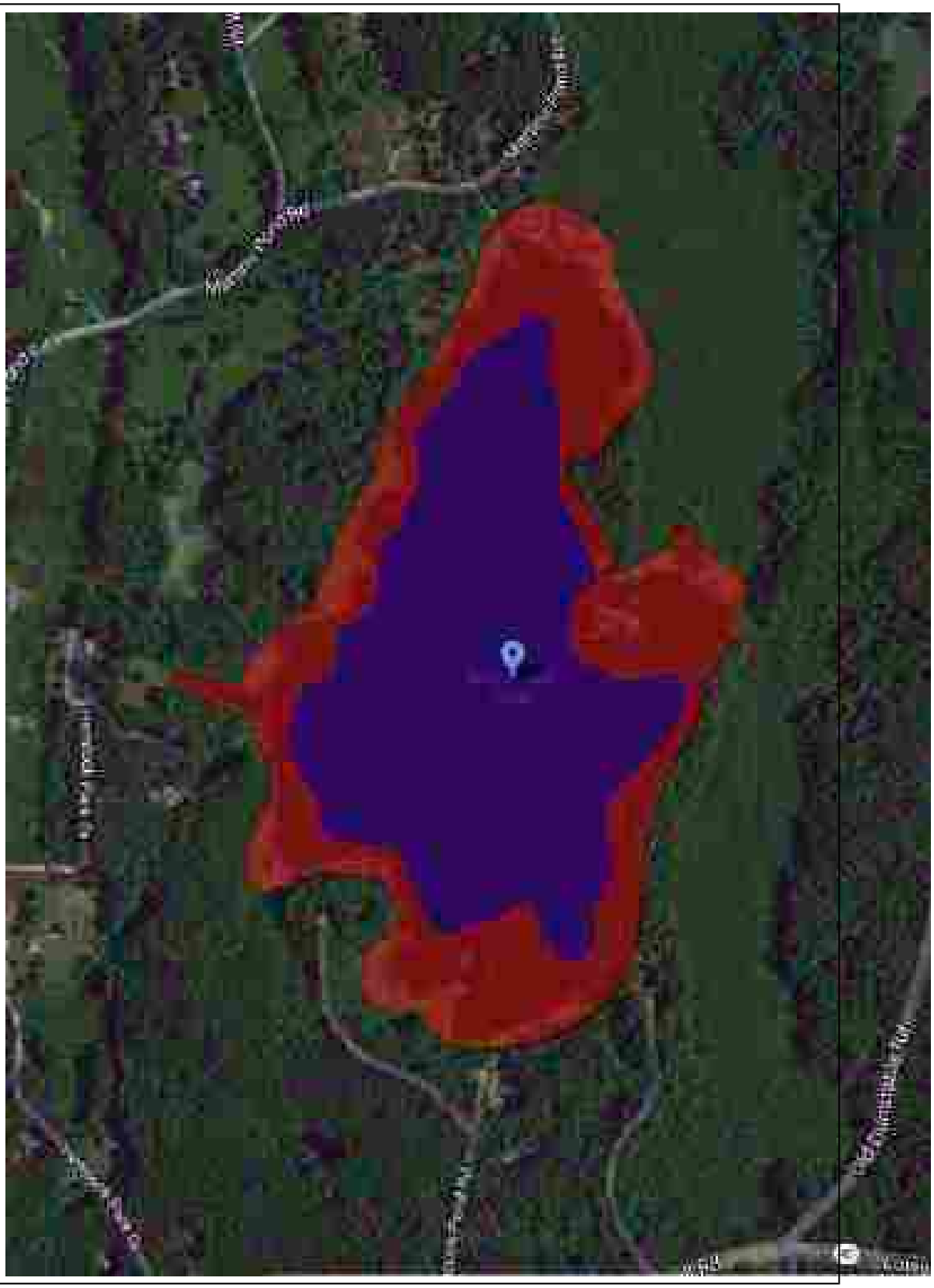
2-1 Baddacook Pond Depths



2-2 Baddacook Pond from Google earth showing weed growth 8-24-2015

2-3 Fanwort invasive taking over noninvasive floating heart

2-4 Floating Island



2-5 Baddacook pond areas covered with vegetation

CPC Project and Description

This is CPC funding to environmentally restore the littoral the areas (shallow shoreline areas) of Baddacook Pond and to test management of invasive weeds, using mechanical methods. This funding will be for the third and final year of the pilot program. The Selectmen and Water Department have agreed to consider funding the on going maintenance if this pilot is successful.

Background

The aggressive growth of non-native, invasive weeds has negatively impacted Baddacook ecologically and dramatically diminished its recreational use (fishing, boating, swimming). As of August 2013, the weeds covered 35 acres or 45% of the total surface of the pond, including the entire littoral zone which impedes pond access.

Baddacook Pond is a natural pond of glacier origin. It is surrounded by mostly town owned conservation land and water department property which leads to its character as a ecologically diverse open space. The water rights are also owned by the town (held by the Water Department) and Baddacook is identified as a zone 2 recharge source for town water. There are also a few sparse residential properties. For well over 100 years, the lake has been a popular recreational resource, for boating, fishing and swimming. Baddacook has a public boat ramp which is the property of Division of Fisheries & Wildlife. It is a very popular fishing destination and is stocked several times a year by the state. Motor boats, canoes and kayaks can be seen in the summer. Ice fisherman and ice skaters use the pond in the winter. Swimmers use the lake however these weeds do present a danger of drowning by weed entanglement.

Baddacook Pond is 76 acres with a maximum depth of 45 ft (14 meters) however significant portions of the pond are quite shallow. These shallow areas provide an optimal environment for non-native invasive weeds to quickly spread and fill in.

Cabomba caroliniana (Fanwort) and myrophyllum heterophyllum (variable milfoil) are the two invasive aquatic species which have spread to the point of impacting the current health and long term viability of Baddacook. For boaters, the weeds are navigational impediment and fowl their propellers. For fishermen, the weeds destroy the fish habitat and snag their lines. For swimmers, the weeds over grow access areas and present a risk of drowning, especially for young children. For the town and home owners, the value of the abutting property drops as the lake deteriorates.

Project

The goal of this 3 year project would be two fold. 1) To restore portions of Baddacook Pond that have filled with biomass by using hydro-raking. 2) To implement aggressive mechanical weed harvesting to reduce available plant starch which will help control invasive weed infestation. And, test year over year harvesting to see if it effectively controls the weeds.

At the end of each year, an “End of year report” will summarize the progress made to date and recommendation for the path forward.

Funding

This is a 3 year program. Funds for year 1 and 2 were already encumbered by the CPC. Year 1 was successfully executed and we are preparing to execute year 2. However, the third year of funding necessary to complete this project has not been allocated yet. FY2019 funding is be sought to ensure the project has continuous funding for the 3 years years required to determine the effectiveness of this approach. If we wait to pursue FY2020 funding, this project is put at considerable risk. This is a large project and each year CPC funding is getting tighter and tighter. If there isn’t funding for the Baddacook project this year, the likelihood is even lower next year. If we do not receive funding to execute in the summer of 2019, we won’t have the data necessary to determine the effectiveness of this solution. The Selectmen and Water Department voted to fund continued mechanical operations, contingent on the successful conclusion of this 3 year pilot. Without the third year of funding, future support to maintain Baddacook is at great risk.

Hydro-Raking

Hydro-Raking is basically a back hoe on a barge. Biomass is dredged up and placed onto a support barge which runs the debris back to shore. At the shore, debris is transferred to an appropriate composting location. In this case, the composting location is the town transfer station.

Many areas of Baddacook’s littoral zone have filled in with debris from internal as well as external sources. Internal sources include weeds, root mass and floating islands. External sources include branches and leaves. The hydro-rake will address all areas that are too dense for the weed harvester to manage. After initially clearing the areas with the hydro-rake, the weed harvester will be used to maintain them, year after year.

Weed Harvesting

Weed Harvesting is accomplished using a Weed Harvester. A weed harvester is essentially a lawn mower. However does nothing to eradicate the weeds. The machine has three cutting blades, right, left and bottom, on the bow. These blades cut weeds onto a conveyor where they are move back, until the harvester is full. When full, the harvester transports the weeds to shore. The weeds are off loaded and moved to a composting location, the Groton transfer station.

This would be a three year program which would include an evaluation of the effectiveness each year. If deemed successful weed harvesting will have to be continued by the town indefinitely.

Other alternatives

Other methods of weed control are not applicable at this time. Many, such as benthic barriers and diver assisted suction harvesting (DASH) are not effective for a infestation of this magnitude. Draw down has been effectively used for weed control in man-made lakes however Baddacook is natural with no way to control the lake level. Herbicide treatment would be very effective. However, the Water Department has not approved the use of herbicides in Baddacook Pond.

Financial Estimate

Description	Hours	Unit Price	Price
Weed Harvesting	170	$170	$28,981
Harvesting equipment Mobilization / Demobilization	1	$3,120	$3,120
Repairs	1	$5,200	$5,200
Hydro-raking	155.2	$560	$86,978
Hydro-raking equipment mobilization	1	$7,800	$7,800
Permitting help and final report	1	$7,800	$7,800
	Year 3 funding required..		**$139,880**
	CPC request		$140,000

Year-End Report for the 2017 Management of:

Baddacook Pond

Groton, MA

Submitted: December 15, 2017

SOLitude Lake Management
590 Lake Street
Shrewsbury, MA 01545
Phone: (508) 480-5253
FAX: (888) 358-0088
info@solitudelake.com
www.solitudelakemanagement.com

Table of Contents

INTRODUCTION

Below is a summation of the Baddacook Pond 2017 aquatic management project. This report details all aspects of this program including: surveys, harvesting/hydro-raking data, and ArcGIS mapping of the management areas. This project was performed for and funded by the Town of Groton, with the objective of reducing plant biomass and restoring open-water areas throughout the littoral zone of Baddacook Pond.

PRE-MANAGEMENT ASSESSMENT

The Pre-Management Assessment was performed on May 24, 2017 by a SŌLitude Aquatic Specialist. The waterbody's littoral zone was surveyed using two techniques: throw-rake tosses and hydro-acoustic sonar. Throw-rake tosses were performed periodically to assess the distribution and density of the aquatic vegetation assemblage. Hydro-acoustic sonar provides the ability to determine the extent of growth within the pond. Approximately 36% of the waterbody exhibited some degree of vegetation growth, mostly found in water depths less than 10-feet. The submersed macrophyte community was co-dominated by two invasive species, variable water milfoil (*Myriophyllum heterophyllum*) and fanwort (*Cabomba carolinana*). Other beneficial native species included large-leaf pondweed (*Potamogeton amplifolius*), with stonewort (*Nitella sp.*) and other pondweed species (*Potamogeton sp.*) less frequently encountered. Shallow areas of the pond, with water depths less than 4-feet, and a mucky substrate were densely populated with white waterlily (*Nymphaea odorata*), yellow waterlily (*Nuphar variagata*), and watershield (*Brasenia schreberi*) that were beginning to have surface leaves. Please refer to **Figure 1**, for a map of the Pre-management acoustic sonar map, exhibiting the biovolume data within Baddacook Pond.

MECHANICAL HARVESTING PLAN AND OPERATIONS

Prior to harvesting operations, SOLitude Lake Management (SOLitude) applied for a Special Use Permit to use the boat launch during operations. Once this was obtained (Permit #10990), it was determined that mechanical harvesting would begin the week of July 31, 2017. To that end, on July 31st, the container service and loader rental were prepared at the Baddacook Pond Boat Launch and operations commenced utilizing the town's aquatic weed harvester.

Seventeen (17) days of mechanical harvesting ensued, concluding on August 29. During operations, all collected material was off-loaded into a skid steer loader at the designated off-loading area. The plant material was then placed into a container to properly de-water **(Image 1)**. Once full the containers were transported to the local landfill/composting site. During operations the harvester operator started south and then proceeded around the pond in a counter clockwise fashion, focusing on invasive species removal and recouping open water space. Please refer to **Figure 2** for a map of the harvested areas during this management period.

Image 1: Photo of the dumpster at the off-loading area

In sum, the 2017 harvesting effort totaled 136 hours and collected a total of 6 containers, equating to 180 cubic yards of plant material. This comprised of a combination of invasive aquatic vegetation including Fanwort and Variable Milfoil.

MECHANICAL HYDRO-RAKING PLAN AND OPERATIONS

Prior to mechanical hydro-raking services the loader and container service were placed at the Baddacook Boat Launch. Once complete, mechanical hydro-raking services commenced on September 22, 2017. Nineteen (19) days of mechanical hydro-raking ensued, concluding on October 18, 2017. During operations, the hydro-rake off-loaded the collected organic material onto the harvester conveyor. Once full the harvester operator transported the material to the designated off-loading site. From there, the same process took place as the previous harvesting operation.

Hydro-raking services were performed on select areas of Baddacook Pond, including both common areas as well as private shoreline areas. Please refer to **Figure 3** for a map of the designated hydro-raking areas, as well as **Appendix A** for a chart of the areas Hydro-raked each day. The collected organic material comprised of a combination of accumulated organic matter, floating islands, emergent vegetation, floating-leaf vegetation, and submersed vegetation.

In sum, the 2017 hydro-raking effort totaled 160 hours and collected a total of 52 containers, equating to 780 cubic yards of plant material, root systems and organic

matter. Please refer to **Image 1** and **2** for photos of before and after hydro-raking around the boat launch.

Image 1: Photo of the Baddacook Pond boat launch before the hydro-raking operation

Image 2: Photo of the Baddacook Pond boat launch after the hydro-raking operation

POST MANGMENT SURVEY SUMMARY

The Post-Management Survey was performed by a SŌLitude Aquatic Specialist on October 25, 2017. A similar survey methodology to the Pre-Management Assessment was performed utilizing throw-rake tosses and hydro-acoustic sonar. While variable watermilfoil and fanwort continued to be the co-dominant vegetation observed in the waterbody, neither species were topped-out; both were commonly observed 1-2 feet below the water's surface. The most prevalent areas of their growth were just south of the boat ramp on the western shoreline and the two southern-most coves. Again, large-leaf pondweed was the most common

native species, growing along the western shoreline. Other species observed in trace and sparse densities included stonewort, coontail (*Ceratophyllum demersum*), and other pondweed species. Floating-leaf species growth was senescing, but significant reductions were observed along the portions of the shoreline and high-use areas of the pond. Please refer to **Figure 4** for a map of the collected hydro-acoustic data. As shown, the majority of hydro-raked areas showed a large decrease in collected biovolume in the post management survey. The most prominent reductions were shown in the northern cove area as well as the western cove. These areas contained 80-90% biovolume in the pre-management survey which reduced to about 40-50% in the post management survey.

SUMMARY AND ONGOING MANAGEMENT RECOMMENDATIONS

Overall, the 2017 program ran smoothly, effectively maintaining Baddacook Pond and reducing a total of 960 cubic yards of plant biomass within the open water space. The harvesting effort successfully controlled the variable watermilfoil and fanwort infestation for two months, with the plants still shown 1 to 2 feet under the water's surface in the post management survey at the end of October. The hydro-raking effort also showed positive results as shown in the attached biovolume maps. Our objective of reducing plant biomass and restoring open-water areas throughout the littoral zone of Baddacook Pond was achieved.

Keeping the objectives of this project in mind, SOLitude is recommending the same management approach next year encompassing both mechanical harvesting and hydro-raking methods. Based on next year's results, we will be able to precisely examine the success of these two management techniques. Looking ahead to 2018, SOLitude recommends coordinating the pre-management survey in close proximity to the commencement of the mechanical harvesting efforts; this will enhance the accuracy of the data regarding the success of the harvesting efforts.

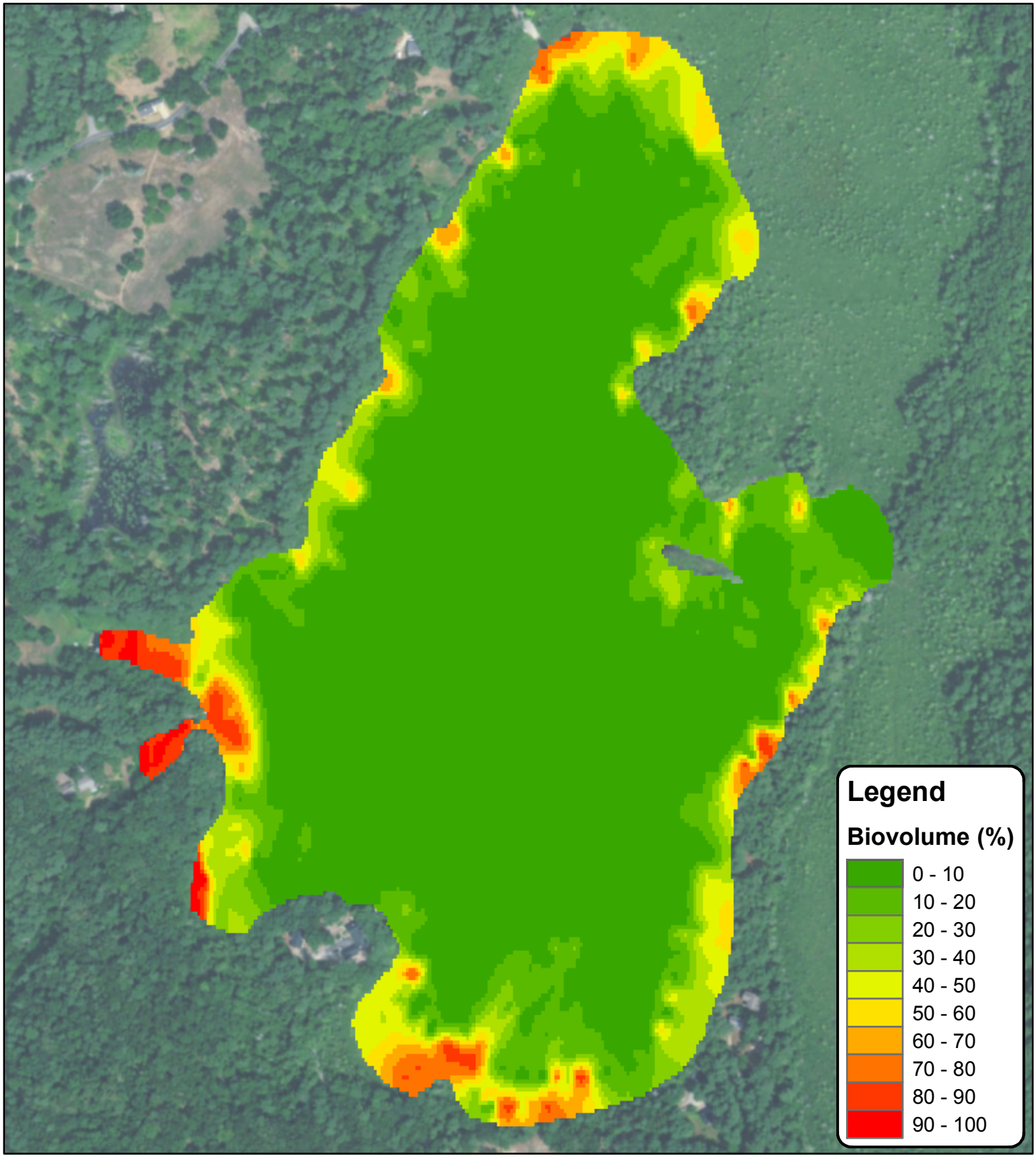
Appendix A:

A chronology of this past year's management events follows:

Date	Area Hydro-raked
9/22/2017	Area 1
9/25/2017	Area 1
9/26/2017	Area 1
9/27/2017	Area 1 & 2
9/28/2017	Area 4
9/29/2017	Area 5
10/2/2017	Area 5
10/3/2017	Area 5
10/4/2017	Area 6
10/5/2017	Area 6
10/6/2017	Area 7
10/9/2017	Area 8
10/10/2017	Area 8
10/11/2017	Area 8 & 9
10/12/2017	Area 9
10/13/2017	Area 2
10/16/2017	Area 2
10/17/2018	Area 2
10/18/2017	Area 2

FIGURE 1: Pre-management Biovolume (May 2017)

SOLITUDE
LAKE MANAGEMENT
888.480.5253
solitudelakemanagement.com



Baddacook Pond
Groton, MA
Middlesex County
42.620853°, -71.530631°

Baddacook Pond

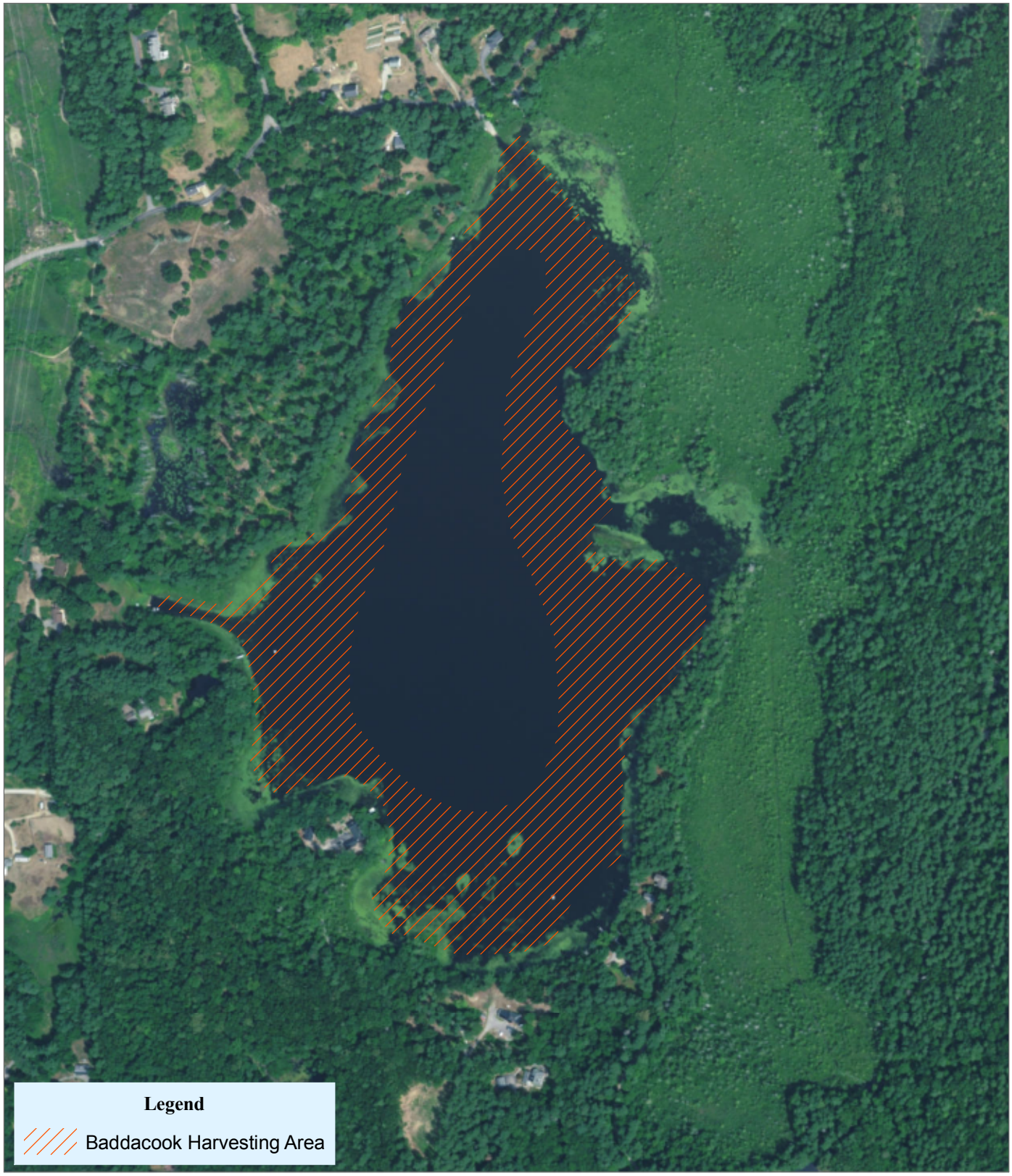
0 250 500 Feet

1:4,500

N

Map Date: 12/4/17
Prepared by: MS
Office: SHREWSBURY, MA

Figure 2: 2017 Harvested Areas



Baddacook Pond
Groton
Massachusetts

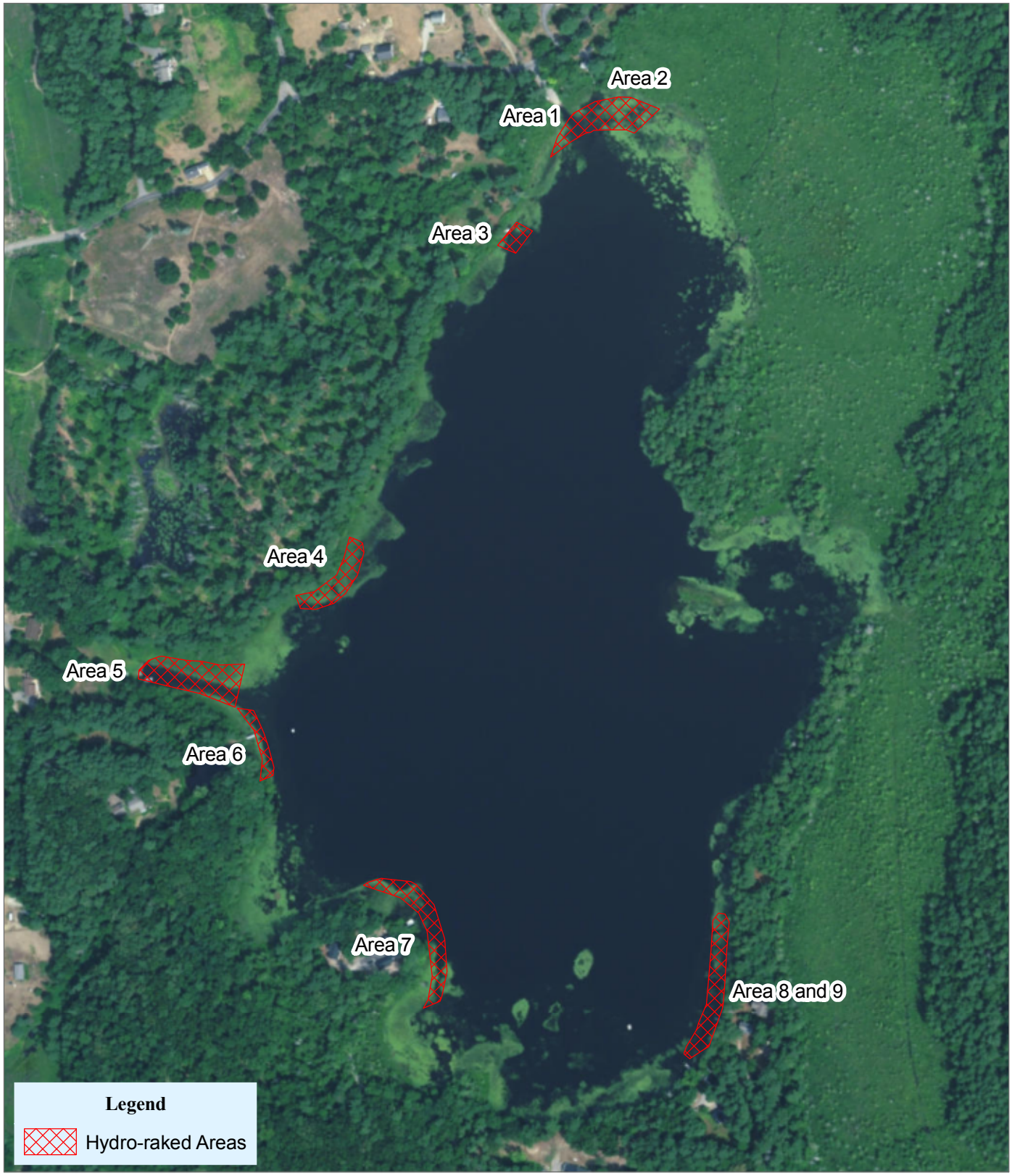
Map Prepared:08/23/17
Basemap © 2013 Esri

0 250 500
1:6,050 Feet

N

SOLITUDE LAKE MANAGEMENT

Figure 3: 2017 Hydro-raked Areas



Baddacook Pond
Groton
Massachusetts

Map Prepared:10/8/17
Basemap © 2013 Esri

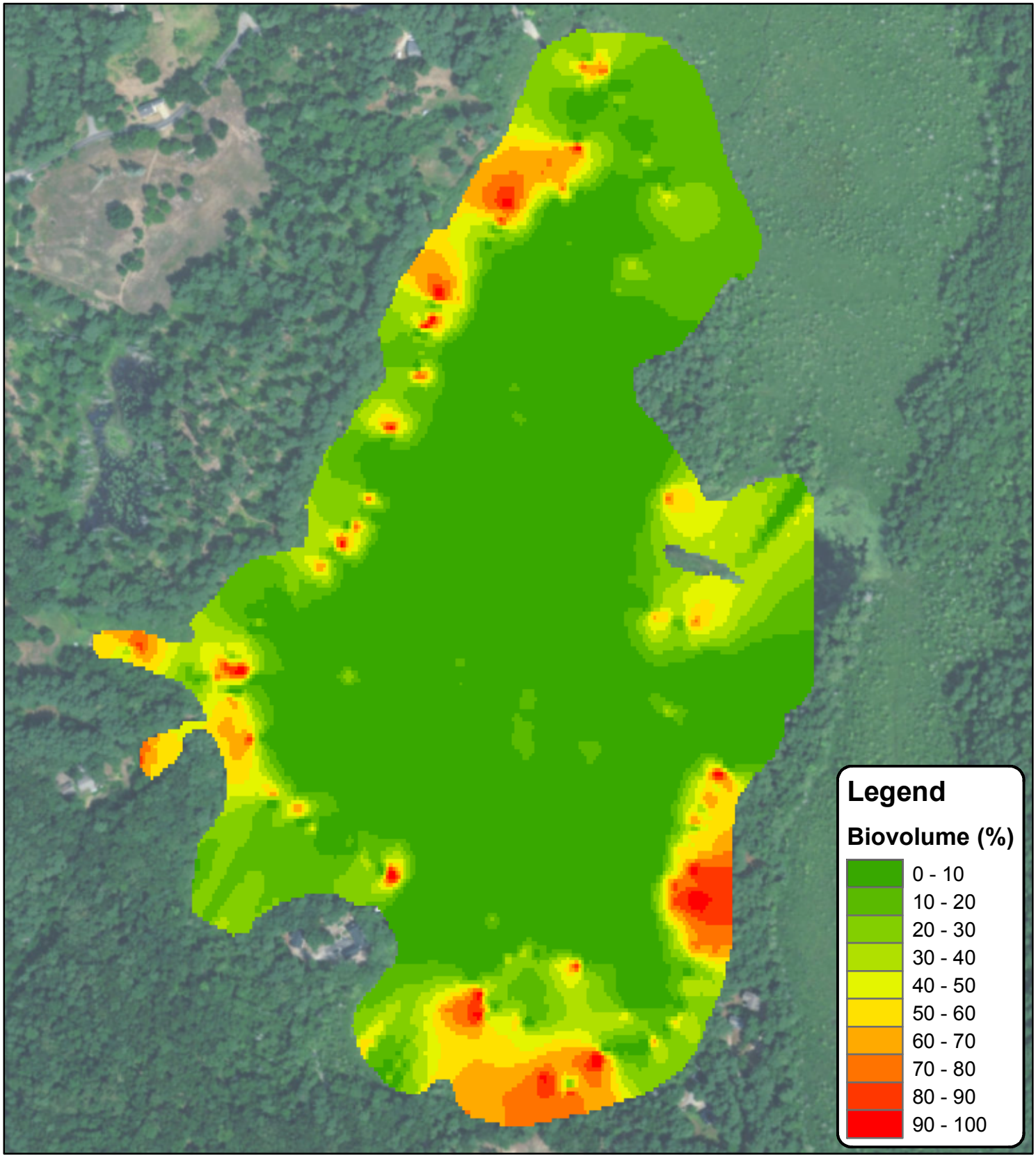
0 250 500
1:5,000 Feet

N

SOLITUDE LAKE MANAGEMENT

FIGURE 4: Post-management Biovolume (October 2017)

SOLITUDE LAKE MANAGEMENT
888.480.5253
solitudelakemanagement.com



Baddacook Pond
Groton, MA
Middlesex County
42.620853°, -71.530631°

Baddacook Pond

0 240 480 Feet

1:4,500

N

Map Date: 12/12/17
Prepared by: MS
Office: SHREWSBURY, MA

TOWN OF GROTON
Board of Health
173 Main Street
Groton, MA 01450

BOARD OF HEALTH
Robert J. Fleischer, Chairman
Susan Horowitz, Member
Jason Weber, Member

MINUTES

Date:	Monday, December 19, 2016
Time:	7:00 PM
Location:	2nd Floor Meeting Room, Town Hall, 173 Main Street
Members Present:	Robert Fleischer, Chairman; Dr. Susan Horowitz, Member; Jason Weber, Member
Others Present:	Ira Grossman, Nashoba Associated Board of Health Agent Robin Eibye, Executive Assistant

---

Chairman Fleischer called the meeting to order at 7:00 p.m.

202 Pepperell Road – SDS Variance Request

Homeowner, Richard Doyle was present. Jonathan Markey presented on behalf of Mr. Doyle. Mr. Markey provided copies of the plan to the Board for review. Mr. Markey requested the following variances:

1. **315-1a Percolation Testing.** This regulation requires a minimum of 2 percolation tests be performed on a lot. A variance is requested to allow construction of the reserve area utilizing one percolation test. The area for the proposed disposal system contained consistent soil characteristics in all testing areas.

2. **315-1b Deep Hole Observation Testing.** This regulation requires that deep hole observation pits conducted in Class I soils be performed in the months of March and April. Unfortunately, the existing system is in hydraulic failure, and therefore, waiting for in season testing is not possible. A variance is requested to allow construction of the system based on high water mottling which was observed in both test pits at approximately the same elevation.

3. **315-5f Leaching System-Roadway Setback.** This regulation requires the system be constructed no closer than 35 to the existing roadway. Due to site constraints consisting of wetlands, grading, poorly drained soils, and abutting wells, the system can only be constructed in the area proposed. A variance is request to allow construction of the system 10’ from the roadway sideline.

4. **315-5g Leaching System-Property Line Setback.** This regulation requires the system be constructed no closer than 20 to any existing property line. Due to site constraints
consisting of wetlands, grading, poorly drained soils, and abutting wells, the system can only be constructed in the area proposed. A variance is request to allow construction of the system 10’ from the front property line (also the roadway sideline).

5. **315-5i Wall and Impervious Barrier prohibition.** This regulation prohibits the use of walls and impervious barriers to meet breakout grading requirements. Due to site constraints, the only location for the location of the proposed repair system is within the grading of the existing driveway, which accesses a garage under. A variance is requested to allow the use of an impervious barrier along a portion of the system. The use of the barrier will allow the driveway as constructed to remain in use.

Mr. Weber asked Mr. Markey why the proposed system's location could not be moved to the opposite side of the property. Mr. Markey said it was not an option due to land elevations. Mr. Weber asked Mr. Grossman for his opinion on the variance request. A brief discussion ensued and Mr. Grossman said he had no objections to the proposed plan.

Mr. Weber moved to accept the following variances subject to the BOH Standard Conditions and prior to occupancy:

1. **315-1a Percolation Testing.** This regulation requires a minimum of 2 percolation tests be performed on a lot. A variance is requested to allow construction of the reserve area utilizing one percolation test. The area for the proposed disposal system contained consistent soil characteristics in all testing areas.

2. **315-1b Deep Hole Observation Testing.** This regulation requires that deep hole observation pits conducted in Class I soils be performed in the months of March and April. Unfortunately, the existing system is in hydraulic failure, and therefore, waiting for in season testing is not possible. A variance is requested to allow construction of the system based on high water mottling which was observed in both test pits at approximately the same elevation.

3. **315-5f Leaching System-Roadway Setback.** This regulation requires the system be constructed no closer than 35 to the existing roadway. Due to site constraints consisting of wetlands, grading, poorly drained soils, and abutting wells, the system can only be constructed in the area proposed. A variance is request to allow construction of the system 10' from the roadway sideline.

4. **315-5g Leaching System-Property Line Setback.** This regulation requires the system be constructed no closer than 20 to any existing property line. Due to site constraints consisting of wetlands, grading, poorly drained soils, and abutting wells, the system can only be constructed in the area proposed. A variance is request to allow construction of the system 10' from the front property line (also the roadway sideline).

5. **315-5i Wall and Impervious Barrier prohibition.** This regulation prohibits the use of walls and impervious barriers to meet breakout grading requirements. Due to site constraints, the only location for the location of the proposed repair system is within the grading of the existing driveway, which accesses a garage under. A variance is requested to allow the use of an impervious barrier along a portion of the system. The use of the barrier will allow the driveway as constructed to remain in use.

Groton Board of Health Standard Conditions

1. The applicant must submit any proposed change in the above referenced plans to the Board of Health for its review and approval before the change is implemented.

2. The applicant is responsible for obtaining any other permits (including but not limited to) those required by the Board of Selectmen, Conservation Commission, Building

Inspector, DPW Director, Planning Board, Stormwater Advisory Committee, and Zoning Board of Appeals.

3. Any construction (or related activity) within 100 ft. of a wetland or resource protection area requires approval of the Groton Conservation Commission.

4. It is the applicant's responsibility to ensure that the contents of this approval are made known to all contractors who perform work at this site.

5. It is the applicant's responsibility to contact Dig Safe prior to the commencement of any work at the site.

6. Compliance with Title 5 shall occur by September 30, 2018. The applicant must comply with the requirements of Title 5 for a "failed" system pursuant to section 15.305.

7. Any change in use or increased sewage flow is not to be made without prior approval of the Board of Health and any other applicable Board or Commission.

8. The existing 3-bedroom house is to remain a 3-bedroom house with no increase in the number of bedrooms, unless expansion plans are reviewed and approved by the Groton Board of Health.

9. This variance shall not be in effect until a certified copy of a Notice of Decision is recorded at the Middlesex South Registry of Deeds. Evidence of such recording shall be submitted to the Board of Health by the applicant.

Dr. Horowitz seconded and the motion carried. 3:0.

---

37 BOATHOUSE ROAD – Non-compliance Discussion

Homeowner, Mr. Pickol was not present. However, the Board received a letter from Mr. Pickol on December 9, 2016, in which Mr. Pickol authorized Mr. Don Black to serve as his agent. Don Black introduced himself as Mr. Pickol's agent, and presented on behalf of Mr. Pickol. Mr. Black acknowledged the property is littered with trash and debris, and requested a six-month period to clean up the property. Mr. Fleischer asked Mr. Black if he believed the resources were available for the clean-up. Mr. Black said there are volunteers willing to help remove the debris and to clean up the property. The Board asked Mr. Grossman for his opinion. Mr. Grossman said that rubbish and debris were scattered throughout the property, and from what he could see the debris was not usable. A discussion ensued about timelines, and the Board agreed that June 1, 2017, should allow Mr. Pickol and/or his agent(s) sufficient time to clean up the property. Mr. Black agreed to work with Mr. Pickol to ensure the property is cleaned up prior to June 1, 2017.

Dr. Horowitz moved to accept that 37 Boathouse Road, owned by Mr. Pickol, be cleaned up by June 1, 2017. Mr. Weber seconded and the motion carried. 3.0.

Mr. Weber seconded and the motion carried. 3:0.

---

33 RIDGEWOOD AVENUE / 38 RIDGEWOOD AVENUE – Consideration of Certificate of Compliance

A discussion ensued about the water analysis report for 33 Ridgewood Ave. This has been undertaken as part of the Order of Conditions for approval of Title 5 compliance for 38

Ridgewood Avenue. The tests results received by the Board both [1] indicated a failure in water quality (for 33 Ridgewood) and [2] were not done in full compliance with Groton's regulations.

A discussion of the test results, and the consequences thereof for the properties involved ensued. The Board agreed the current water quality tests for 33 Ridgewood should be retested in full compliance with Groton's regulations. The current tests indicate a health issue with the well for 33 Ridgewood and this is not expected to change. However, the Board was reluctant to take any further action based on the current test.

It was agreed that the Certificate of Compliance for 38 Ridgewood Avenue should not be issued until [1] the water (for 33 Ridgewood) is retested per Groton's Well Water Sampling and Quality Testing Requirements, and [2] meets Groton's Quality Testing Requirements.

RAISE TOBACCO SALES AGE TO 21 Discussion

A discussion ensued about raising the tobacco sales age to 21.

The Board agreed to hold a public hearing on Monday, February 6, 2017, to adopt new tobacco regulations.

BADDACOOK POND – BOH Support Discussion

Dr. Howoritz said she is concerned about the health and survival of Baddacook Pond and asked the Board to support the removal of weeds from the pond. A discussion ensued about saving the pond and acceptable treatments.

Mr. Weber moved to support the removal of weeds from Baddacook Pond by any method that is both safe and effective. Dr. Horowitz seconded and the motion carried. 3.0

The Board discussed and agreed to meet on Monday, January 9, 2017, due to the fact that the first and third Mondays in January are holidays.

Dr. Horowitz moved to approve the minutes dated September 19, 2016, as written.

Mr. Fleischer seconded and the motion carried 2:0. (Jason Weber, abstained)

Mr. Weber moved to accept the minutes dated December 5, 2016, as amended.

Dr. Horowitz seconded and the motion carried 3.0.

Mr. Weber moved to accept the minutes dated November 7, 2016, as written.

Dr. Horowitz seconded and the motion carried 3.0.

Dr. Horowitz moved to adjourn the meeting at 8:40 p.m.

The meeting adjourned at 8:40 p.m.

Respectfully submitted by Robin Eibye, Executive Assistant

APPROVED:

David and Lucy Alexander
59 Baddacook Pond Road
Groton, MA 01450

January 6, 2017

Mr. James Luening, Chair
Great Pond Advisory Committee

Dear Mr. Luening:

Thank you for your e-mail regarding the Community Preservation application.

As an abutter of Baddacook Pond, I am in support of the Community Preservation Application. This is a good start to a long overdue problem.

Thank you for your time and effort on this project.

Very truly yours,

Dave Alexander

To Whom it may concern,

This letter is in strong support for Hydro-raking and Mechanical Weed Harvesting on all of Baddacook Pond. Baddacook has severe issues with various kinds of invasive weeds and this infestation grows worse each year. Over the last 15 years, I have seen the last sandy areas almost completely succumb to the muck brought in by the dense weeds and a significant area of the pond become more and more shallow due to this muck that is made up largely of the bio-mass of the weeds. Swimming and boating has become far more dangerous and considerably less attractive.

Clearing out as much of the weeds as possible has become an imperative for the continued safe use of the pond not to mention its overall health.

Sincerely,

Christopher L. Forbes
Resident abbuting Baddacook Pond

To whom it may concern,

The Great Ponds advisory Committee voted unanimously in support of the CPC application for a 3 year pilot of hydro-raking and weed harvesting on Baddacook Pond. Baddacook is too precious a resource to lose. The GPAC sees this as a vital step towards addressing Baddacook's deteriorated condition. In a joint meeting with the GPAC and the Selectmen (Dec. 19th, 2016), the plan was approved by the Selectmen.

James Luening
Chair, Great Ponds Advisory Committee

January 23, 2017

To whom it may concern,

The Groton Lakes Association supports the hydro-raking and/or Weed Harvesting of Baddacook Pond as a method of weed control. Baddacook Pond is a valuable town resource and a Zone 2 recharge for our town water supply. We can't afford to keeping losing more and more of Baddacook at this rate.

The GLA does not view this as the best or most cost effective approach. Previously recommended approaches to properly and cost effectively control invasive aquatic weeds have been rejected by the Town, primarily due to strong opposition from the Water Department. Left with limited available options we feel this plan of mechanical harvesting and hydro raking will provide Baddacook some relief from the invasive weeds, even if temporary.

We appreciate your continued support of this plan and look forward to working towards a more permanent solution for Baddacook in the future.

Sincerely,

Brad Harper
President, Groton lakes Association

09 Jan. 2017

To Whom It May Concern:

When we built our house on Baddacook Pond 45 years ago we achieved a dream we had both inherited from childhood: living on water.

The dream's fulfillment became extraordinary we discovered that the former town beach was across the pond from us. The sand of that beach was still there and it was a pleasure to take care of it for our first 40 years. We also built a sailboat and moored it about 50 yards out in the pond.

Early in our life on the pond a local forester advised us that the pond would be a swamp in about 100 years.

The swamp has not arrived as yet but evidence that it is coming is all around us. For example I moored the sailboat about 10 yards from the left shore. That was the edge of the lillypad growth. That edge is now about 25 yards out and probably would be further without the harvesting... The area of the beach has now been reduced by an arc of weeds 20 yards out. In the years we cared for the beach, the weeds never grew high or thick enough to interfere with swimming strokes. Even with harvesting they are too high.

We have canoed around the edge of the pond for many years. Much of the pond is waist deep and over time the basic evidence of a coming swamp is clear. With care and attention the ultimate fate can be avoided. We have learned that harvesting is helpful but not the answer.

I would think that Baddacook Pond is one of those lovely woodland New England spots that make the Northeast so attractive. It would seem to be an attractive town investment.

Peter Macy Claire Macy

716 Martins Pond Rd.