



Town of Sudbury

Community Preservation Committee

cpc@sudbury.ma.us

Flynn Building
278 Old Sudbury Road
Sudbury, MA 01776
978-639-3387
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www.sudbury.ma.us/cpc

PROJECT SUBMISSION FORM

Applicant:

Submission Date:

Group or Committee Affiliation (if any):

Applicant Address:

Purpose (please select all that apply):

☐ Open Space & Recreation

☐ Community Housing

☐ Historic Resource

Applicant Email & Phone Number:

Project Manager Email & Phone Number:

Project Name:

Project Description:

Costs:

Fiscal Year	Total Project Cost	CPC Funds Requested	Other Funding Sources (Amount and Source)
2027			
2028			
2029			
2030			
2031			
Total			

How does this project meet the General Criteria and Category Specific Criteria for Community Preservation Committee projects (see attached)?

Does this project fall within the jurisdiction or interest of other Town Boards, Committees, Commissions, or Departments? If so, please list the boards, committees, commissions, or departments, whether applications and/or presentations have been made, and what input or recommendations have been given.

For Community Preservation Committee Use:

Form Received On: _____

Project Presented to CPC On: _____

Reviewed By: _____

Determination: _____

Project Name: Hop Brook Water Chestnut Remediation (FY2027-2028)

Categories: Open Space & Recreation

The Sudbury portion of the Hop Brook watershed includes a series of three connected ponds with a history of environmental degradation. As a result of prior phosphorus loading (now significantly reduced), uncontrolled vegetative overgrowth, and stagnation, these lakes have become highly eutrophic. Compounding this problem, water chestnut emerged as a dominant invasive species 30 years ago, entirely covering the ponds each summer. They produce seeds with sharp, dangerous barbs, and plants that provide breeding grounds for mosquitoes carrying dangerous viruses. When the water chestnuts die each fall, they fall to the bottom of the ponds. One acre of water chestnut plants produces over 40 cubic yards of biomass each year, further degrading water quality. These plants effectively suppress all native plant species growing in the ponds.

Prior attempts to control these plants with mechanical harvesting and hand-pulling were ineffective. Thanks to a CPC grant in 2019, the HBPA initiated a program of chemical treatment that has been very effective, resulting in significant reductions in the amounts of water chestnut. We use an environmentally-friendly, rapidly-decaying chemical treatment, applied multiple times annually, in decreasing amounts over a number of years. The safety and effectiveness of this approach has been well-documented by successive aerial photographs and in-pond surveys. This treatment is used successfully in Framingham, Wayland, Concord, Acton, and elsewhere. We previously investigated other approaches (vacuuming, ultrasound, benthic barriers) and found them to be ineffective or impractical.

We are requesting funding for two additional years of treatment. The program is going well, but it can take 10 years to completely eradicate this invasive, and if we stop before we're done, it will grow back, wasting all prior effort. Still, because of our success so far, less treatment is needed each year.

This treatment is a key component of a comprehensive multi-modal approach to improving water quality in the Hop Brook watershed, with the goal of restoring water quality in the ponds and stream to class B (suitable for recreational purposes). Since the historical source of phosphorus pollution (the Marlboro Easterly waste water treatment plant) is now in compliance with strict EPA discharge limits, we now can focus on solving problems in Sudbury that contribute to excess nutrients in the stream and ponds.

To that end, a separate 2023 CPC grant (along with a 2025 supplemental grant) has allowed us to work with a consultant to develop a comprehensive watershed-based plan, which will provide Sudbury with guidance on how to achieve this goal. The plan will provide an integrated, multi-year plan for water quality remediation, of which water chestnut removal will be only a part. However, that plan won't be available until 2026, and in the meantime, we must continue our annual treatment of water chestnut so that we do not throw away the progress we have made. Accordingly, with this application we are requesting funds for an additional two years (years 6 & 7) of water chestnut treatment.

The treatment program allows us to preserve the essential character of the town by preventing these otherwise-threatened recreational waterways from turning into smelly swamps. This is especially important for Grist Mill Pond as the Wayside Inn complex is Sudbury's largest tourist attraction.

Attached is a quote from our vendor. (Note, the quote includes some items for FY 2026 which will be paid out of existing HBPA funds). In addition to this quote, we have budgeted \$700/year for drone photos of the ponds. We have found that taking these photos before and after each treatment makes it much easier for ourselves, and the vendor, to assess the effectiveness of treatment resulting in more effective follow-up treatments. We have also added \$2500 to cover the initial costs of a 2028 treatment (since our next application for CPC funds, in 2 years, will cover only the expenses after 7/1/28).

The breakdown of funding sources and expenses is in the table below.

	CY 2026 treatment	CY 2027 treatment	CY 2028 treatment	photos	Project Total	CPC Total
FY 26 Funding (HBPA)	1700				1700	
FY 27 Funding (CPC)	23400	2500		700	26600	26600
FY 28 Funding (CPC)		20000	2500	700	23200	23200
Totals	25100	22500	2500	1400	51500	\$49800

This program has the strong support of the Wayside Inn, the Sudbury Conservation Commission, and Lori Capone, the Conservation Coordinator (letters of support attached). The initial 5-year grant request also had the explicit support of the Selectboard and the Ponds and Waterways Committee.

Please give this application serious consideration. The Hop Brook Pond system is an essential part of Sudbury's character and a valuable town asset. Without control and eventual eradication of this invasive species, 80 acres of ponds and wetlands currently used for recreation and wildlife would be turned into a stagnant and unattractive bog. We hope CPC will support our efforts.

-HBPA Board of Directors

Shannon Hache, Glenn Pransky, Chris Moran, Lori Moran,
Elyse Rayney, Terry Snyder, Jeff Winston, Kathy Winston

ESTIMATE



Prepared For

Hop Brook Protection Association
PO Box 707
Sudbury, MA 01776
(978) 558-0110

Water & Wetland, A Jones Lake Management Partner

PO Box 142
South Grafton, MA 01560
Phone: (888) 493-8526
Email: joe@waterandwetland.com
Web: www.waterandwetland.com

Estimate # 2026-150
Date 08/25/2025
Business / Tax ID: 61-1151608, CT
Tax # Bus Reg #: PMBR.03620

Description	Total
2026 - Prepare and File State Pesticide Use Permit (WM04) (FY2026)	\$200.00
In February/March 2026, Water & Wetland will prepare and file the required State Pesticide Use Permits (WM04) with Massachusetts Department of Environmental Protection (MA-DEP). As required in the Order of Conditions, copies of the WM04 Permits will be provided to Sudbury Conservation Commission and all work will be performed in accordance with the permits. Price includes filing fees paid to the State.	
2026 - Pre-Management Survey & Water Quality Collection (FY 2026)	\$1,500.00
In early-mid June 2026, Water & Wetland will conduct a pre-management survey of the ponds. The pre-management survey will be conducted from a motored jon-boat and will utilize visual observation and a standard throw-rake, as necessary. GPS will be used to document locations of the species within the ponds. The purpose of the pre-management survey is to determine native and non-native plant populations and their abundances throughout each of the three waterbodies. Additionally, the pre-management survey is used to determine effects of the management activities on both native and non-native populations.	
During the pre-management survey, water quality data will be collected. As required in the Order of Conditions, each pond will be sampled (one sample per pond) for: nitrate nitrogen, total kjeldahl nitrogen (TKN), ammonia, total phosphorus, dissolved phosphorus, algae ID and enumeration, E. coli enumeration, turbidity, true color, apparent color, alkalinity. These samples will be sent to the appropriate laboratories for analysis. Additionally, secchi disk clarity will be measured, temperature and dissolved oxygen profiles, and pH will be measured on-site using calibrated meters.	

2026 - Work Plan Preparation and Submittal (FY 2026) \$0.00

Following the 2026 pre-management survey, prior to the commencement of vegetation control, Water & Wetland will prepare and submit a 2026 work plan to Sudbury Conservation Commission. The work plan will show the expected treatment areas via polygon maps. A letter will also be included addressing potential impacts on non-target native vegetation, water quality, fish, invertebrate and aquatic life that could result from the 2026 work.

2026 - Pre-Work Site Visit Attendance (FY 2026) \$0.00

Prior to 2026 chemical treatment, Water & Wetland will set a pre-work site visit with the Sudbury Conservation Coordinator (if elected). The purpose of the pre-work site visit is to review the scope of work, access points, and conditions contained in the Order of Conditions.

2026 - Water Chestnut Management (FY 2027) \$18,650.00

In early July 2026, Water & Wetland will initiate the initial treatment of water chestnut in all three waterbodies. Clearcast (imazamox) herbicide will be paired with a non-ionic surfactant and applied directly to the water chestnut in the ponds. An airboat or other most appropriate boat will be launched in the ponds. The herbicide mixture will be applied to the water chestnut plants through foliar application from the airboat/treatment boat, which is equipped with a calibrated pump/spray system. Treatment will occur once the leaves of the water chestnut plants have reached the surface.

Later in the season (late July/early August 2026), a return visit to each of the ponds will be conducted to target remaining water chestnut. Due to a reduction in water chestnut growth over the course of the program, we anticipate incorporating hand-pulling into this visit. We anticipate that the follow-up visit will rely on hand-pulling at Stearns Millpond and a follow-up treatment will only occur if densities and cover warrant. For Grist Millpond and Carding Millpond, we anticipate the likely potential need for some follow-up treatment; however, we anticipate hand-pulling will also occur in areas where densities and cover do not warrant follow-up treatment. If follow-up treatment is not warranted at either of these water bodies, then only hand-pulling will occur during the follow-up visit.

Prior to treatment(s), brightly colored posters will be hung around the shoreline noting the treatment, affiliated water-use restrictions, and Water & Wetland's contact information. The Conservation Commission will be notified a minimum of 48 hours in advance of any treatments.

*All equipment will be inspected and cleaned prior to being launched within any of the Hop Brook Ponds. No treatment will occur during periods of heavy winds and/or with precipitation forecasted during the day of treatment.

**Notwithstanding the foregoing, all services provided by Water & Wetland, will be performed in compliance with The Massachusetts Department of Environmental Protection – Form 5 – Order of Conditions (“OOC”) as attached hereto and marked as Exhibit A and as incorporated by reference into this Agreement. The OOC outlines all services to be provided to Hop Brook Protection Association (“HBPA”) by Water & Wetland.

***The cost breakdown for each treatment is \$11,190 for the initial treatment, and \$7,460 for the follow-up treatment and/or hand-pulling.

2026 - Post-Management Survey & Water Quality Collection (FY 2027)	\$3,750.00
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In September 2026, Water & Wetland will conduct a post-management survey of the ponds. The post-management survey will be conducted from a motored jon-boat and will utilize visual observation and a standard throw-rake, as necessary. GPS will be used to document locations of the species within the ponds. The purpose of the post-management survey is to determine native and non-native plant populations and their abundances throughout each of the three waterbodies. Additionally the post-management survey is used to determine effects of the management activities on both native and non-native populations.

During the post-management survey, water quality data will be collected. As required in the Order of Conditions, each pond will be sampled (one sample per pond) for: nitrate nitrogen, total kjeldahl nitrogen (TKN), ammonia, total phosphorus, dissolved phosphorus, algae ID and enumeration, E. coli enumeration, turbidity, true color, apparent color, alkalinity. These samples will be sent to the appropriate laboratories for analysis. Additionally, secchi disk clarity will be measured, temperature and dissolved oxygen profiles, and pH will be measured on-site using calibrated meters.

2026 - Year-End Reporting (FY 2027)	\$1,000.00
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Prior to December 1st, 2026 Water & Wetland will submit a year-end summary report to both Hop Brook Protection Association and Sudbury Conservation Commission. The year end report will meet the specifications required in the Order of Conditions and will include a summary of all work conducted, area/acreage treated, chemicals and quantity used, relative effectiveness of treatments, monitoring results, water quality summary, impacts of the treatment, and 2027 recommendations.

2027 - Prepare and File State Pesticide Use Permit (WM04) (FY 2027)	\$400.00
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In February/March 2027, Water & Wetland will prepare and file the required State Pesticide Use Permits (WM04) with Massachusetts Department of Environmental Protection (MA-DEP). As required in the Order of Conditions, copies of the WM04 Permits will be provided to Sudbury Conservation Commission and all work will be performed in accordance with the permits. Price includes filing fees paid to the State.

2027 - Pre-Management Survey & Water Quality Collection (FY 2027)	\$1,900.00
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In early-mid June 2027, Water & Wetland will conduct a pre-management survey of the ponds. The pre-management survey will be conducted from a motored jon-boat and will utilize visual observation and a standard throw-rake, as necessary. GPS will be used to document locations of the species within the ponds. The purpose of the pre-management survey is to determine native and non-native plant populations and their abundances throughout each of the three waterbodies. Additionally, the pre-management survey is used to determine effects of the management activities on both native and non-native populations.

During the pre-management survey, water quality data will be collected. As required in the Order of Conditions, each pond will be sampled (one sample per pond) for: nitrate nitrogen, total kjeldahl nitrogen (TKN), ammonia, total phosphorus, dissolved phosphorus, algae ID and enumeration, E. coli enumeration, turbidity, true color, apparent color, alkalinity. These samples will be sent to the appropriate laboratories for analysis. Additionally, Secchi disk clarity will be measured, temperature and dissolved oxygen profiles, and pH will be measured

on-site using calibrated meters.

2027 - Work Plan Preparation and Submittal (FY 2027) \$200.00

Following the pre-management survey, prior to the commencement of vegetation control, Water & Wetland will prepare and submit a 2027 work plan to Sudbury Conservation Commission. The work plan will show the expected treatment areas via polygon maps. A letter will also be included addressing potential impacts on non-target native vegetation, water quality, fish, invertebrate and aquatic life that could result from the 2027 work.

2027 - Pre-Work Site Visit Attendance (FY 2027) \$0.00

Prior to 2027 chemical treatment, Water & Wetland will set a pre-work site visit with the Sudbury Conservation Coordinator (if elected). The purpose of the pre-work site visit is to review the scope of work, access points, and conditions contained in the Order of Conditions.

2027 - Water Chestnut Management (FY 2028) \$15,250.00

In early July 2027, Water & Wetland will initiate the initial treatment of water chestnut in all three waterbodies. Clearcast (imazamox) herbicide will be paired with a non-ionic surfactant and applied directly to the water chestnut in the ponds. An airboat or other most appropriate boat will be launched in the ponds. The herbicide mixture will be applied to the water chestnut plants through foliar application from the airboat/treatment boat, which is equipped with a calibrated pump/spray system. Treatment will occur once the leaves of the water chestnut plants have reached the surface.

Later in the season (late July/early August 2027), a return visit to each of the ponds will be conducted to target remaining water chestnut. Due to a reduction in water chestnut growth over the course of the program, we anticipate incorporating hand-pulling into this visit. We anticipate that the follow-up visit will rely on hand-pulling at Stearns Millpond and a follow-up treatment will only occur if densities and cover warrant. For Grist Millpond and Carding Millpond, we anticipate the likely potential need for some follow-up treatment; however, we anticipate hand-pulling will also occur in areas where densities and cover do not warrant follow-up treatment. If follow-up treatment is not warranted at either of these water bodies, then only hand-pulling will occur during the follow-up visit.

Prior to treatment(s), brightly colored posters will be hung around the shoreline noting the treatment, affiliated water-use restrictions, and Water & Wetland's contact information. The Conservation Commission will be notified a minimum of 48 hours in advance of any treatments.

*All equipment will be inspected and cleaned prior to being launched within any of the Hop Brook Ponds. No treatment will occur during periods of heavy winds and/or with precipitation forecasted during the day of treatment.

**Notwithstanding the foregoing, all services provided by Water & Wetland, will be performed in compliance with The Massachusetts Department of Environmental Protection – Form 5 – Order of Conditions (“OOC”) as attached hereto and marked as Exhibit A and as incorporated by reference into this Agreement. The OOC outlines all services to be provided to Hop Brook Protection Association (“HBPA”) by Water & Wetland.

***The cost breakdown for each treatment is \$9,150 for the initial treatment, and \$6,100 for

the follow-up treatment and/or hand-pulling.

2027 - Post-Management Survey & Water Quality Collection (FY 2028)	\$3,750.00
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In September 2027, Water & Wetland will conduct a post-management survey of the ponds. The post-management survey will be conducted from a motored jon-boat and will utilize visual observation and a standard throw-rake, as necessary. GPS will be used to document locations of the species within the ponds. The purpose of the post-management survey is to determine native and non-native plant populations and their abundances throughout each of the three waterbodies. Additionally the post-management survey is used to determine effects of the management activities on both native and non-native populations.

During the post-management survey, water quality data will be collected. As required in the Order of Conditions, each pond will be sampled (one sample per pond) for: nitrate nitrogen, total kjeldahl nitrogen (TKN), ammonia, total phosphorus, dissolved phosphorus, algae ID and enumeration, E. coli enumeration, turbidity, true color, apparent color, alkalinity. These samples will be sent to the appropriate laboratories for analysis. Additionally, secchi disk clarity will be measured, temperature and dissolved oxygen profiles, and pH will be measured on-site using calibrated meters.

2027 - Year-End Reporting (FY 2028)	\$1,000.00
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Prior to December 1st, 2027 Water & Wetland will submit a year-end summary report to both Hop Brook Protection Association and Sudbury Conservation Commission. The year end report will meet the specifications required in the Order of Conditions and will include a summary of all work conducted, area/acreage treated, chemicals and quantity used, relative effectiveness of treatments, monitoring results, water quality summary, impacts of the treatment, and 2028 recommendations.

Subtotal	\$47,600.00
Total	\$47,600.00

Notes:

Work will be invoiced upon completion according to the costs provided above. The quoted price does not include crane costs, if applicable (unlikely).

- Water & Wetland encourages timely permitting to avoid delays in management. For this reason, we respectfully ask that this proposal be signed and returned within 30 days following the date of this proposal. Following this date, Water & Wetland reserves the right to review program scope and pricing.

Please Fill Out Below When Returning:

Who should be notified prior to service events?

Name/ Email/ Phone:

_____	_____	_____
_____	_____	_____
_____	_____	_____

Who should invoices be sent to?

Name/ Email/ Phone:

_____	_____	_____
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Who should reports be sent to?

Name/ Email/ Phone:

_____	_____	_____
_____	_____	_____
_____	_____	_____

Special Requests:

1) The Parties acknowledge that the existence and the terms of this Agreement and any oral or written information exchanged between the Parties in connection with the preparation and performance this Agreement are regarded as confidential information. Each Party shall maintain confidentiality of all such confidential information, and without obtaining the written consent of the other Party, it shall not disclose any relevant confidential information to any third parties, unless required by law.

2) Water & Wetland will maintain general liability insurance coverage for the term of this agreement in a sufficient amount given the scope and nature of its services under this Agreement. Water & Wetland will be responsible for all damages, claims, causes of action, injuries and/or legal costs to the extent of its own negligence or misconduct in performing the services under this Agreement. In addition, as required under Section 11c. of the OOC, Water & Wetland is jointly liable with HBPA for any violation of the OOC resulting from a failure to adhere to its conditions. To the extent that Water & Wetland is responsible through any act or omission for a violation of the OOC, Water & Wetland will indemnify HBPA for any losses resulting from such violation.

3) Unless otherwise specified in writing, all payments for permitting, surveys, water quality, and reporting are due within thirty (30) days of receiving an invoice. All payments for herbicide treatments are due within (60) days of receiving an invoice.

4) Water & Wetland and HBPA agree that HBPA will assess the quality of Services performed by Water & Wetland following each task. In the event any service is deemed unsatisfactory by HBPA, this shall be brought to the attention of Water & Wetland immediately. No invoice will be paid by HBPA until the task has been performed at an acceptable level as determined by HBPA. Water chestnut treatments shall be deemed "acceptable" based on the "actual control provided".

"Actual control provided" will be determined as follows:

a) Water & Wetland will provide to HBPA a pre-treatment map identifying those areas of each pond to be treated. The pre-treatment map will be provided by Water & Wetland to HBPA no later than 2 weeks in advance of each treatment to permit HBPA sufficient time to capture drone footage of the treatment area prior to the initial treatment.

b) HBPA will, at its own expense, take drone footage of the areas to be treated before the first treatment each year and within approximately 7 days following each of the first and second treatments in each year.

c) Treatment will be considered "acceptable" if the "actual control provided" in each pond, as determined by a comparison of the pre-treatment and post-treatment drone footage, is at least 80% of water chestnuts killed before viable seeds have developed.

In the event that HBPA has paid for services and "effective control" of at least 80% is not achieved in each pond, Water & Wetland will provide an additional year of treatment to HBPA for each pond in which "effective control" was not achieved, at no additional cost.

- 5) Any alteration or deviation from the provided scope of services that may involve extra costs will be executed only upon written change orders and will become an extra charge over the final contract price determined by mutual agreement between the parties.
- 6) The provided pricing shall expire 30 days from the date submitted unless extended in writing by Water & Wetland.
- 7) Water & Wetland will not be held liable for delays that may be caused by weather, site conditions, or regulatory process. We are committed to timely filing of any necessary permits, as provided in the scope of services. The Customer understands that by signing, once filed the permit review process is solely dependent on the State or local municipality responsible for issuance.
- 8) Unless specified in the scope of services, all quotes provided include labor and materials, as well as any equipment necessary to complete the quoted project in a timely and safe manner.
- 9) By signing, the Customer understands that some products that may be used hold restrictions on irrigation. It is the Customer's responsibility to notify Water & Wetland of any irrigation uses of the pond or lake.
- 10) Herbicides and algaecides used by Water & Wetland are both EPA and State approved. Although there is no direct toxicity to fish and wildlife, the Customer understands that fish kills can occur naturally due to lack of dissolved oxygen, spawning stress, or otherwise. In this case, Water & Wetland shall not be held responsible.

Water & Wetland

Hop Brook Protection Association