NOTICE OF INTENT TO INACTIVATE PHOSPHORUS IN FIVE PONDS IN WELLESLEY, MASSACHUSETTS

ON BEHALF OF

WELLESLEY NATURAL RESOURCES COMMISSION

BY WATER RESOURCE SERVICES, INC.

APRIL 2018

Contents

April 16, 2018

Wellesley Wetlands Protection Committee
525 Washington Street
Wellesley, MA 02482

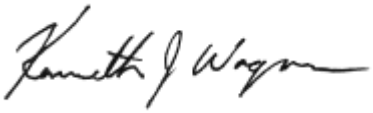
Dear Committee Members:

This submission covers phosphorus inactivation in 5 ponds in Wellesley: Abbott's, Bezanson, Duck, Farms Station, and Rockridge. These and 3 other ponds were the subject of a comprehensive study and management plan development effort in 2016 on behalf of the NRC. The 5 ponds named here all suffer from algae blooms and could benefit from treatment with aluminum compounds to inactivate phosphorus, much as is done at Morses Pond in late spring and early summer. The success of the Morses Pond project led to the idea that a single application to these small ponds in late spring or early summer might be enough to maintain clarity and healthier conditions through the summer. Duck Pond has high throughflow, and may need more treatment following storms, but the other 4 ponds have slow turnover of water and might need only one, or possibly two, treatments per summer. Some experimentation and adaptive management is needed, and this project will provide necessary localized experience.

A detailed report on these ponds was written in 2017 and planning for pond improvements has been underway since. The full report is available through the NRC for those interested in this extensive study and development of the management plan. A small harvester is being constructed to allow control of rooted plants in some of these ponds, an activity addressed separately in the permitting process. This NOI addresses just the inactivation of phosphorus in the 5 named ponds, and excerpts from the 2017 report are provided as part of the narrative following the appropriate WPA forms to support the project and supply essential background info to the WPC.

Please contact me with any questions.

Sincerely yours,



Kenneth J. Wagner, Ph.D., CLM
Water Resources Manager, WRS INC.
144 Crane Hill Road, Wilbraham, MA 01095
413-219-8071
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Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

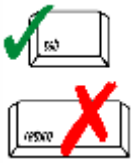
Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Wellesley
City/Town

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Note: Before completing this form consult your local Conservation Commission regarding any municipal bylaw or ordinance.

A. General Information

1. Project Location (**Note:** electronic filers will click on button to locate project site):

Abbotts, Bezanson, Duck, Farms Station and Rockridge Ponds (a. Project Location) | Wellesley (b. City/Town) | 02482 (c. Zip Code)

Latitude and Longitude: N 42.30878 (see list) (d. Latitude) | W 71.28632 (e. Longitude)

(f. Assessors Map/Plat Number) | (g. Parcel /Lot Number)

2. Applicant:

Brandon (a. First Name) | Schmitt (b. Last Name)

Wellesley Natural Resources Commission (c. Organization)

525 Washington Street, lower level (d. Street Address)

Wellesley (e. City/Town) | MA (f. State) | 02482 (g. Zip Code)

(781) 431-1019, ext. 2294 (h. Phone Number) | (781) 237-6495 (i. Fax Number) | nrc@wellesleyma.gov (j. Email Address)

3. Property owner (required if different from applicant): ☐ Check if more than one owner

Town of Wellesley (a. First Name) | (b. Last Name)

(c. Organization)

(d. Street Address)

(e. City/Town) | (f. State) | (g. Zip Code)

(h. Phone Number) | (i. Fax Number) | (j. Email address)

4. Representative (if any):

Kenneth (a. First Name) | Wagner (b. Last Name)

Water Resource Services (c. Company)

144 Crane Hill Road (d. Street Address)

Wilbraham (e. City/Town) | MA (f. State) | 01095 (g. Zip Code)

413-219-8071 (h. Phone Number) | (i. Fax Number) | kjwagner@charter.net (j. Email address)

5. Total WPA Fee Paid (from NOI Wetland Fee Transmittal Form):

0 (a. Total Fee Paid) | (b. State Fee Paid) | (c. City/Town Fee Paid)

A. General Information (continued)

6. General Project Description:

Inactivation of phosphorus using an aluminum compound sprayed onto 5 ponds: Abbotts, Bezanson, Duck, Farms Station and Rockridge as needed to prevent algae blooms and reduce turbidity

7a. Project Type Checklist: (Limited Project Types see Section A. 7b.)

1. ☐ Single Family Home
2. ☐ Residential Subdivision
3. ☐ Commercial/Industrial
4. ☐ Dock/Pier
5. ☐ Utilities
6. ☐ Coastal engineering Structure
7. ☐ Agriculture (e.g., cranberries, forestry)
8. ☐ Transportation
9. ☒ Other

7b. Is any portion of the proposed activity eligible to be treated as a limited project (including Ecological Restoration Limited Project) subject to 310 CMR 10.24 (coastal) or 310 CMR 10.53 (inland)?

1. ☒ Yes ☐ No

If yes, describe which limited project applies to this project. (See 310 CMR 10.24 and 10.53 for a complete list and description of limited project types)

Other - prevention of eutrophication
2. Limited Project Type

If the proposed activity is eligible to be treated as an Ecological Restoration Limited Project (310 CMR10.24(8), 310 CMR 10.53(4)), complete and attach Appendix A: Ecological Restoration Limited Project Checklist and Signed Certification.

8. Property recorded at the Registry of Deeds for:

a. County
b. Certificate # (if registered land)
c. Book
d. Page Number

B. Buffer Zone & Resource Area Impacts (temporary & permanent)

1. ☐ Buffer Zone Only – Check if the project is located only in the Buffer Zone of a Bordering Vegetated Wetland, Inland Bank, or Coastal Resource Area.
2. ☒ Inland Resource Areas (see 310 CMR 10.54-10.58; if not applicable, go to Section B.3, Coastal Resource Areas).

Check all that apply below. Attach narrative and any supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

For all projects affecting other Resource Areas, please attach a narrative explaining how the resource area was delineated.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Bank	1. linear feet	2. linear feet
b. ☐ Bordering Vegetated Wetland	1. square feet	2. square feet
c. ☒ Land Under Waterbodies and Waterways	278,800 (6.4 ac) 1. square feet 3. cubic yards dredged	None lost 2. square feet

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. ☐ Bordering Land Subject to Flooding	1. square feet 3. cubic feet of flood storage lost	2. square feet 4. cubic feet replaced
e. ☐ Isolated Land Subject to Flooding	1. square feet 2. cubic feet of flood storage lost	3. cubic feet replaced
f. ☐ Riverfront Area	1. Name of Waterway (if available)	

2. Width of Riverfront Area (check one):

☐ 25 ft. - Designated Densely Developed Areas only

☐ 100 ft. - New agricultural projects only

☐ 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project: _____ square feet

4. Proposed alteration of the Riverfront Area:

a. total square feet _____ b. square feet within 100 ft. _____ c. square feet between 100 ft. and 200 ft. _____

5. Has an alternatives analysis been done and is it attached to this NOI? ☐ Yes ☐ No

6. Was the lot where the activity is proposed created prior to August 1, 1996? ☐ Yes ☐ No

3. ☐ Coastal Resource Areas: (See 310 CMR 10.25-10.35)

B. Buffer Zone & Resource Area Impacts **(temporary & permanent)** (cont'd)

Check all that apply below. Attach narrative and supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

Online Users: Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Designated Port Areas	Indicate size under Land Under the Ocean, below	
b. ☐ Land Under the Ocean	1. square feet 2. cubic yards dredged	
c. ☐ Barrier Beach	Indicate size under Coastal Beaches and/or Coastal Dunes below	
d. ☐ Coastal Beaches	1. square feet	2. cubic yards beach nourishment
e. ☐ Coastal Dunes	1. square feet	2. cubic yards dune nourishment

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
f. ☐ Coastal Banks	1. linear feet	
g. ☐ Rocky Intertidal Shores	1. square feet	
h. ☐ Salt Marshes	1. square feet	2. sq ft restoration, rehab., creation
i. ☐ Land Under Salt Ponds	1. square feet 2. cubic yards dredged	
j. ☐ Land Containing Shellfish	1. square feet	
k. ☐ Fish Runs	Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above 1. cubic yards dredged	
l. ☐ Land Subject to Coastal Storm Flowage	1. square feet	

4. ☐ Restoration/Enhancement

If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.2.b or B.3.h above, please enter the additional amount here.

a. square feet of BVW

b. square feet of Salt Marsh

5. ☐ Project Involves Stream Crossings

a. number of new stream crossings

b. number of replacement stream crossings

C. Other Applicable Standards and Requirements

☒ This is a proposal for an Ecological Restoration Limited Project. Skip Section C and complete Appendix A: Ecological Restoration Notice of Intent – Required Actions (310 CMR 10.11).

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

1. Is any portion of the proposed project located in **Estimated Habitat of Rare Wildlife** as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage and Endangered Species Program (NHESP)? To view habitat maps, see the *Massachusetts Natural Heritage Atlas* or go to http://maps.massgis.state.ma.us/PRI_EST_HAB/viewer.htm.

   a. ☐ Yes ☐ No

   If yes, include proof of mailing or hand delivery of NOI to:

   Natural Heritage and Endangered Species Program
   Division of Fisheries and Wildlife
   1 Rabbit Hill Road
   Westborough, MA 01581

   b. Date of map

   If *yes*, the project is also subject to Massachusetts Endangered Species Act (MESA) review (321 CMR 10.18). To qualify for a streamlined, 30-day, MESA/Wetlands Protection Act review, please complete Section C.1.c, and include requested materials with this Notice of Intent (NOI); *OR* complete Section C.1.f, if applicable. *If MESA supplemental information is not included with the NOI, by completing Section 1 of this form, the NHESP will require a separate MESA filing which may take up to 90 days to review (unless noted exceptions in Section 2 apply, see below).*

   c. Submit Supplemental Information for Endangered Species Review*

      1. ☐ Percentage/acreage of property to be altered:

         (a) within wetland Resource Area _____ percentage/acreage

         (b) outside Resource Area _____ percentage/acreage

      2. ☐ Assessor's Map or right-of-way plan of site

2. ☐ Project plans for entire project site, including wetland resource areas and areas outside of wetlands jurisdiction, showing existing and proposed conditions, existing and proposed tree/vegetation clearing line, and clearly demarcated limits of work **

   (a) ☐ Project description (including description of impacts outside of wetland resource area & buffer zone)

   (b) ☐ Photographs representative of the site

* Some projects **not** in Estimated Habitat may be located in Priority Habitat, and require NHESP review (see http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/regulatory-review/). Priority Habitat includes habitat for state-listed plants and strictly upland species not protected by the Wetlands Protection Act.

** MESA projects may not be segmented (321 CMR 10.16). The applicant must disclose full development plans even if such plans are not required as part of the Notice of Intent process.

C. Other Applicable Standards and Requirements (cont'd)

(c) ☐ MESA filing fee (fee information available at http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/mesa/mesa_fee_schedule.htm). Make check payable to "Commonwealth of Massachusetts - NHESP" and ***mail to NHESP*** at above address

*Projects altering **10 or more acres** of land, also submit:*

(d) ☐ Vegetation cover type map of site

(e) ☐ Project plans showing Priority & Estimated Habitat boundaries

(f) OR Check One of the Following

1. ☐ Project is exempt from MESA review.
Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14, http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/mesa/mesa_exemptions.htm; the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59.)

2. ☐ Separate MESA review ongoing. a. NHESP Tracking # _____ b. Date submitted to NHESP _____

3. ☐ Separate MESA review completed.
Include copy of NHESP "no Take" determination or valid Conservation & Management Permit with approved plan.

3. For coastal projects only, is any portion of the proposed project located below the mean high water line or in a fish run?

a. ☐ Not applicable – project is in inland resource area only b. ☐ Yes ☐ No

If yes, include proof of mailing, hand delivery, or electronic delivery of NOI to either:

South Shore - Cohasset to Rhode Island border, and the Cape & Islands:

Division of Marine Fisheries -
Southeast Marine Fisheries Station
Attn: Environmental Reviewer
1213 Purchase Street – 3rd Floor
New Bedford, MA 02740-6694
Email: DMF.EnvReview-South@state.ma.us

North Shore - Hull to New Hampshire border:

Division of Marine Fisheries -
North Shore Office
Attn: Environmental Reviewer
30 Emerson Avenue
Gloucester, MA 01930
Email: DMF.EnvReview-North@state.ma.us

Also if yes, the project may require a Chapter 91 license. For coastal towns in the Northeast Region, please contact MassDEP's Boston Office. For coastal towns in the Southeast Region, please contact MassDEP's Southeast Regional Office.

C. Other Applicable Standards and Requirements (cont'd)

Online Users: Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

4. Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?

   a. ☐ Yes ☐ No If yes, provide name of ACEC (see instructions to WPA Form 3 or MassDEP Website for ACEC locations). **Note:** electronic filers click on Website.

   b. ACEC

5. Is any portion of the proposed project within an area designated as an Outstanding Resource Water (ORW) as designated in the Massachusetts Surface Water Quality Standards, 314 CMR 4.00?

   a. ☐ Yes ☐ No

6. Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L. c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L. c. 130, § 105)?

   a. ☐ Yes ☐ No

7. Is this project subject to provisions of the MassDEP Stormwater Management Standards?

   a. ☐ Yes. Attach a copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q) and check if:

      1. ☐ Applying for Low Impact Development (LID) site design credits (as described in Stormwater Management Handbook Vol. 2, Chapter 3)

      2. ☐ A portion of the site constitutes redevelopment

      3. ☐ Proprietary BMPs are included in the Stormwater Management System.

   b. ☐ No. Check why the project is exempt:

      1. ☐ Single-family house

      2. ☐ Emergency road repair

      3. ☐ Small Residential Subdivision (less than or equal to 4 single-family houses or less than or equal to 4 units in multi-family housing project) with no discharge to Critical Areas.

D. Additional Information

☒ This is a proposal for an Ecological Restoration Limited Project. Skip Section D and complete Appendix A: Ecological Restoration Notice of Intent – Minimum Required Documents (310 CMR 10.12).

Applicants must include the following with this Notice of Intent (NOI). See instructions for details.

Online Users: Attach the document transaction number (provided on your receipt page) for any of the following information you submit to the Department.

1. ☐ USGS or other map of the area (along with a narrative description, if necessary) containing sufficient information for the Conservation Commission and the Department to locate the site. (Electronic filers may omit this item.)

2. ☐ Plans identifying the location of proposed activities (including activities proposed to serve as a Bordering Vegetated Wetland [BVW] replication area or other mitigating measure) relative to the boundaries of each affected resource area.

D. Additional Information (cont'd)

3. ☐ Identify the method for BVW and other resource area boundary delineations (MassDEP BVW Field Data Form(s), Determination of Applicability, Order of Resource Area Delineation, etc.), and attach documentation of the methodology.

4. ☐ List the titles and dates for all plans and other materials submitted with this NOI.

a. Plan Title

b. Prepared By

c. Signed and Stamped by

d. Final Revision Date

e. Scale

f. Additional Plan or Document Title

g. Date

5. ☐ If there is more than one property owner, please attach a list of these property owners not listed on this form.

6. ☐ Attach proof of mailing for Natural Heritage and Endangered Species Program, if needed.

7. ☐ Attach proof of mailing for Massachusetts Division of Marine Fisheries, if needed.

8. ☐ Attach NOI Wetland Fee Transmittal Form

9. ☐ Attach Stormwater Report, if needed.

E. Fees

1. ☒ Fee Exempt: No filing fee shall be assessed for projects of any city, town, county, or district of the Commonwealth, federally recognized Indian tribe housing authority, municipal housing authority, or the Massachusetts Bay Transportation Authority.

Applicants must submit the following information (in addition to pages 1 and 2 of the NOI Wetland Fee Transmittal Form) to confirm fee payment:

2. Municipal Check Number

3. Check date

4. State Check Number

5. Check date

6. Payor name on check: First Name

7. Payor name on check: Last Name

F. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Notice of Intent and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the wetlands regulations, 310 CMR 10.05(5)(a).

I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made by Certificate of Mailing or in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

1. Signature of Applicant	2. Date
3. Signature of Property Owner (if different)	4. Date
5. Signature of Representative (if any)	6. Date

For Conservation Commission:
Two copies of the completed Notice of Intent (Form 3), including supporting plans and documents, two copies of the NOI Wetland Fee Transmittal Form, and the city/town fee payment, to the Conservation Commission by certified mail or hand delivery.

For MassDEP:
One copy of the completed Notice of Intent (Form 3), including supporting plans and documents, one copy of the NOI Wetland Fee Transmittal Form, and a **copy** of the state fee payment to the MassDEP Regional Office (see Instructions) by certified mail or hand delivery.

Other:
If the applicant has checked the “yes” box in any part of Section C, Item 3, above, refer to that section and the Instructions for additional submittal requirements.

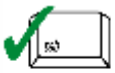
The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A. Applicant Information

1. Location of Project:

Abbotts, Bezanson, Duck, Farms Station and Rockrdige Ponds	Wellesley
a. Check number	b. City/Town
	0 (municipal project)
c. Check number	d. Fee amount

2. Applicant Mailing Address:

Brandon		Schmitt
a. First Name		b. Last Name
Wellesley Natural Resources Commission		
c. Organization		
525 Washington Street		
d. Mailing Address		
Wellesley	MA	02482
e. City/Town	f. State	g. Zip Code
(781) 431-1019, ext. 2294	(781) 237-6495	nrc@wellesleyma.gov
h. Phone Number	i. Fax Number	j. Email Address

3. Property Owner (if different):

a. First Name		b. Last Name
c. Organization		
d. Mailing Address		
e. City/Town	f. State	g. Zip Code
h. Phone Number	i. Fax Number	j. Email Address

B. Fees

To calculate filing fees, refer to the category fee list and examples in the instructions for filling out WPA Form 3 (Notice of Intent).

Fee should be calculated using the following process & worksheet. ***Please see Instructions before filling out worksheet.***

Step 1/Type of Activity: Describe each type of activity that will occur in wetland resource area and buffer zone.

Step 2/Number of Activities: Identify the number of each type of activity.

Step 3/Individual Activity Fee: Identify each activity fee from the six project categories listed in the instructions.

Step 4/Subtotal Activity Fee: Multiply the number of activities (identified in Step 2) times the fee per category (identified in Step 3) to reach a subtotal fee amount. Note: If any of these activities are in a Riverfront Area in addition to another Resource Area or the Buffer Zone, the fee per activity should be multiplied by 1.5 and then added to the subtotal amount.

Step 5/Total Project Fee: Determine the total project fee by adding the subtotal amounts from Step 4.

Step 6/Fee Payments: To calculate the state share of the fee, divide the total fee in half and subtract $12.50. To calculate the city/town share of the fee, divide the total fee in half and add $12.50.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee

Step 5/Total Project Fee: 0

Step 6/Fee Payments:

Total Project Fee: 0
a. Total Fee from Step 5

State share of filing Fee:
b. 1/2 Total Fee **less $**12.50

City/Town share of filling Fee:
c. 1/2 Total Fee **plus** $12.50

C. Submittal Requirements

a.) Complete pages 1 and 2 and send with a check or money order for the state share of the fee, payable to the Commonwealth of Massachusetts.

Department of Environmental Protection
Box 4062
Boston, MA 02211

b.) **To the Conservation Commission:** Send the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and the city/town fee payment.

To MassDEP Regional Office (see Instructions): Send a copy of the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and a **copy** of the state fee payment. (E-filers of Notices of Intent may submit these electronically.)

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent
Appendix A: Ecological Restoration Limited Project Checklists

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File Number

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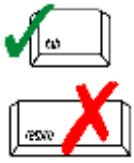
Eligibility Checklist

This Ecological Restoration Limited Project Eligibility Checklist guides the applicant in determining if their project is eligible to file as an Inland or Coastal Ecological Restoration Limited Project (310 CMR 10.53(4) or 310 CMR 10.24(8) respectively). These criteria must be met when submitting the Ecological Restoration Limited Project Notice of Intent to ensure that the restoration and improvement of the natural capacity of a Resource Area(s) to protect and sustain the interests identified in the WPA is **necessary** to achieve the project's ecological restoration goals.

Important:
When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Note:
Before completing this form consult your local Conservation Commission regarding any municipal bylaw or ordinance.

Regulatory Features of All Coastal and Inland Ecological Restoration Limited Projects

(a) May result in the temporary or permanent loss of/or conversion of Resource Area: An Ecological Restoration Limited Project that meets the requirements of 310 CMR 10.24(8) may result in the temporary or permanent loss of Resource Areas and/or the conversion of one Resource Area to another when such loss is necessary to the achievement of the project's ecological restoration goals.

(b) Exemption from wildlife habitat evaluation: A NOI for an Ecological Restoration Limited Project that meets the minimum requirements for Ecological Restoration Projects and for a MassDEP Combined Application outlined in 310 CMR 10.12(1) and (2) is exempt from providing a wildlife habitat (310 CMR 10.60), but still must meet the general performance standards for Bank [310 CMR 10.54(4)(a)5]; Land Under Water Bodies and Waterways [310 CMR 10.56(4)(a)4], and Wildlife Habitat Evaluation [310 CMR 10.60].

(c) The following are considerations for applicants filing an Ecological Restoration Limited Project NOI and for the issuing authority approving a project as an Ecological Restoration Limited Project:

☒ The condition of existing and historic Resource Areas proposed for restoration.

☒ Evidence of the extent and severity of the impairment(s) that reduce the capacity of the Resource Areas to protect and sustain the interests identified in M.G.L. c. 131, § 40.

☒ The magnitude and significance of the benefits of the Ecological Restoration Project in improving the capacity of the affected Resource Areas to protect and sustain the other interests identified in M.G.L. c. 131, § 40.

☐ The magnitude and significance of the impacts of the Ecological Restoration Project on existing Resource Areas that may be modified, converted and/or lost and the interests for which said Resource Areas are presumed significant in 310 CMR 10.00, and the extent to which the project will:

a. avoid adverse impacts to Resource Areas and the interests identified in M.G.L. c. 131, § 40, that can be avoided without impeding the achievement of the project's ecological restoration goals.

b. minimize adverse impacts to Resource Areas and the interests identified in M.G.L. c. 131, § 40, that are necessary to the achievement of the project's ecological restoration goals.

c. utilize best management practices such as erosion and siltation controls and proper construction sequencing to avoid and minimize adverse construction impacts to resource areas and the interests identified in M.G.L. c. 131, § 40.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent
Appendix A: Ecological Restoration Limited Project Checklists

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

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Eligibility Criteria - Coastal Ecological Restoration Limited Projects (310 CMR 10.24(8))

Complete this Eligibility Criteria Checklist ***before*** filling out a Notice of Intent Application to determine if your project qualifies as a Coastal Ecological Restoration Limited Project. (310 CMR 10.24(8)) Sign the Eligibility Certification at the end of Appendix A, and attach the checklist with supporting documentation and the Eligibility Certification to your Notice of Intent Application.

General Eligibility Criteria for All Coastal Ecological Restoration Limited Projects

Notwithstanding the requirements of 310 CMR 10.25 through 10.35, 310 CMR 10.54 through 10.58, and the Wildlife Habitat evaluations in 310 CMR 10.60, the Issuing Authority may issue an Order of Conditions permitting an Ecological Restoration Project listed in 310 CMR 10.24(8)(e) as an Ecological Restoration Limited Project and impose such conditions as will contribute to the interests identified in the WPA M.G.L. provided that the project meets all the requirements in 310 CMR 10.24 (8).

☐ The project is an Ecological Restoration Project as defined in 310 CMR 10.04 and is a project type listed below [310 CMR 10.24(8)(e)].

☐ Tidal Restoration.

☐ Shellfish Habitat Restoration.

☐ Other Ecological Restoration Limited Project Type.

☐ The project will further at least one of the WPA (M.G.L. c. 131, § 40) interests identified below.

- ☐ Protection of public or private water supply.
- ☐ Protection of ground water supply.
- ☐ Flood control.
- ☐ Storm damage prevention.
- ☐ Prevention of pollution.
- ☐ Protection of land containing shellfish.
- ☐ Protection of fisheries.
- ☐ Protection of wildlife habitat.

☐ If the project will impact an area located within estimated habitat which is indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetlands, a NHESP preliminary written determination is attached to the NOI submittal that the project will not have any adverse long-term and short-term effects on specified habitat sites of Rare Species or the project will be carried out in accordance with an approved NHESP habitat management plan.

Eligibility Criteria - Coastal Ecological Restoration Limited Projects (310 CMR 10.24(8)) (Cont.)

General Eligibility Criteria for All Coastal Ecological Restoration Limited Projects (cont.)

☐ If the project is located in a Coastal Dune or Barrier Beach, the project avoids and minimizes armoring of the Coastal Dune or Barrier Beach to the maximum extent practicable.

☐ The project complies with all applicable provisions of 310 CMR 10.24(1) through (6) and 310 CMR 10.24(9) and (10).

Additional Eligibility Criteria for Specific Coastal Ecological Restoration Limited Project Types

These additional criteria must be met to qualify as an Ecological Restoration Limited Project to ensure that the restoration and improvement of the natural capacity of a Resource Area to protect and sustain the interests identified in the WPA is **necessary** to achieve the project's ecological restoration goals.

☐ This Ecological Restoration Limited Project application meets the eligibility criteria for Ecological Restoration Limited Project [310 CMR 10.24(8)(a) through (d) and as proposed, furthers at least one of the WPA interests is for the project type identified below.

☐ **Tidal Restoration Projects**

☐ A project to restore tidal flow that will not significantly increase flooding or storm damage impacts to the built environment, including without limitation, buildings, wells, septic systems, roads or other man-made structures or infrastructure.

☐ **Shellfish Habitat Restoration Projects**

☐ The project has received a Special Projects Permit from the Division of Marine Fisheries or, if a municipality, has received a shellfish propagation permit.

☐ The project is made of cultch (e.g., shellfish shells from oyster, surf or ocean clam) or is a structure manufactured specifically for shellfish enhancement (e.g., reef blocks, reef balls, racks, floats, rafts, suspended gear).

☐ **Other Ecological Restoration Projects** that meet the criteria set forth in 310 CMR 10.24(8)(a) through (d).

☐ Restoration, enhancement, or management of Rare Species habitat.

☐ Restoration of hydrologic and habitat connectivity.

☐ Removal of aquatic nuisance vegetation to impede eutrophication.

☐ Thinning or planting of vegetation to improve habitat value.

☐ Fill removal and re-grading.

☐ Riparian corridor re-naturalization.

☐ River floodplain re-connection.

Eligibility Criteria - Coastal Ecological Restoration Limited Projects (310 CMR 10.24(8)) (Cont.)

Additional Eligibility Criteria for Specific Coastal Ecological Restoration Limited Project Types

- ☐ In-stream habitat enhancement.
- ☐ Remediation of historic tidal wetland ditching.
- ☐ Eelgrass restoration.
- ☐ Invasive species management.
- ☐ Installation of fish passage structures.
- ☐ Other. Describe: _____

☐ This project involves the construction, repair, replacement or expansion of public or private infrastructure (310 CMR 10.24(9).

- ☐ The NOI attachment labeled _____ is an operation and maintenance plan to ensure that the infrastructure will continue to function as designed.
- ☐ The operation and maintenance plan will be implemented as a continuing condition in the Order of Conditions and the Certificate of Compliance.
- ☐ This project proposes to replace an existing stream crossing (310 CMR 10.24(10). The crossing complies with the Massachusetts Stream Crossing Standards to the maximum extent practicable with details provided in the NOI. The crossing type:
  - ☐ Replaces an existing non-tidal crossing that is part of an Anadromous/Catadromous Fish Run (310 CMR 10.35)
  - ☐ Replaces an existing tidal crossing that restricts tidal flow. The tidal restriction will be eliminated to the maximum extent practicable.
- ☐ At a minimum, in evaluating the potential to comply with the standards to the maximum extent practicable the following criteria have been consider site constraints in meeting the standard, undesirable effects or risk in meeting the standard, and the environmental benefit of meeting the standard compared to the cost, by evaluating the following:
  - ☐ The potential for downstream flooding;
  - ☐ Upstream and downstream habitat (in-stream habitat, wetlands);
  - ☐ Potential for erosion and head-cutting;
  - ☐ Stream stability;
  - ☐ Habitat fragmentation caused by the crossing;
  - ☐ The amount of stream mileage made accessible by the improvements;
  - ☐ Storm flow conveyance;

Eligibility Criteria - Coastal Ecological Restoration Limited Projects (310 CMR 10.24(8)) (Cont.)

Additional Eligibility Criteria for Specific Coastal Ecological Restoration Limited Project Types

- ☐ Engineering design constraints specific to the crossing;
- ☐ Hydrologic constraints specific to the crossing;
- ☐ Impacts to wetlands that would occur by improving the crossing;
- ☐ Potential to affect property and infrastructure; and
- ☐ Cost of replacement.

Eligibility Criteria - Inland Ecological Restoration Limited Project (310 CMR 10.53(4))

Complete this Eligibility Criteria Checklist ***before*** filling out a Notice of Intent Application to determine if your project qualifies as an Inland Ecological Restoration Limited Project. (310 CMR 10.53(4)) Sign the Eligibility Certification at the end of Appendix B, and attach the checklist with supporting documentation and the Eligibility Certification to your Notice of Intent Application.

General Eligibility Criteria for All Inland Ecological Restoration Limited Projects

Notwithstanding the requirements of any other provision of 310 CMR 10.25 through 10.35, 310 CMR 10.54 through 10.58, and 310 CMR 10.60, the Issuing Authority may issue an Order of Conditions permitting an Ecological Restoration Project listed in 310 CMR 10.53(4)(e) as an Ecological Restoration Limited Project and impose such conditions as will contribute to the interests identified in M.G.L. c. 131, § 40, provided that:

☒ The project is an Ecological Restoration Project as defined in 310 CMR 10.04 and is a project type listed below [310 CMR 10.53(4)(e)].

- ☐ Dam Removal
- ☐ Freshwater Stream Crossing Repair and Replacement
- ☐ Stream Daylighting
- ☐ Tidal Restoration
- ☐ Rare Species Habitat Restoration
- ☐ Restoring Fish Passageways
- ☒ Other (describe project type): Phosphorus inactivation to limit eutrophication

Eligibility Criteria - Inland Ecological Restoration Limited Project (310 CMR 10.53(4)) (cont.)

General Eligibility Criteria for All Inland Ecological Restoration Limited Projects

☒ The project will further at least one of the WPA (M.G.L. c. 131, § 40) interests identified below.

- ☐ Protection of public or private water supply
- ☐ Protection of ground water supply
- ☐ Flood control
- ☐ Storm damage prevention
- ☒ Prevention of pollution
- ☐ Protection of land containing shellfish
- ☒ Protection of fisheries
- ☒ Protection of wildlife habitat

☐ If the project will impact an area located within estimated habitat which is indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetlands, a NHESP preliminary written determination is attached to the NOI submittal that the project will have no adverse long-term and short-term effects on specified habitat sites of Rare Species or the project will be carried out in accordance with an approved NHESP habitat management plan.

☐ The project will be carried out in accordance with any time of year restrictions or other conditions recommended by the Division of Marine Fisheries for coastal waters and the Division of Fisheries and Wildlife in accordance with 310 CMR 10.11(3).

☐ If the project involves the dredging of 100 cubic yards of sediment or more or dredging of any amount in an Outstanding Resource Water, a Water Quality Certification has been applied for or obtained.

☒ The project complies with all applicable provisions of 310 CMR 10.53(1), (2), (7), and (8).

Eligibility Criteria - Inland Ecological Restoration Limited Project (310 CMR 10.53(4)) (cont.)

Additional Eligibility Criteria for Specific Inland Ecological Restoration Limited Project Types

These additional criteria must be met to qualify as an Ecological Restoration Limited Project to ensure that the restoration and improvement of the natural capacity of a Resource Area to protect and sustain the interests identified in the WPA is **necessary** to achieve the project's ecological restoration goals.

☒ This project application meets the eligibility criteria for Ecological Restoration Limited Project in accordance with [310 CMR 10.53(4)(a) through (d) and as proposed, furthers at least one of the WPA interests is for the project type identified below:

☐ **Dam Removal**

☐ Project is consistent with MassDEP's 2007 Dam Removal Guidance.

☐ **Freshwater Stream Crossing Repair and Replacement**. The project as proposed and the NOI describes how:

☐ Meeting the eligibility criteria set forth in 310 CMR 10.13 would result in significant stream instability or flooding hazard that cannot otherwise be mitigated, and site constraints make it impossible to meet said criteria.

☐ The project design ensures that the stability of the bank is NOT impaired.

☐ To the maximum extent practicable, the project provides for the restoration of the stream upstream and downstream of the structure as needed to restore stream continuity and eliminate barriers to aquatic organism movement.

☐ The project complies with the requirements of 310 CMR 10.53(7) and (8).

☐ **Stream Daylighting Projects**

☐ The project meets the eligibility criteria for Ecological Restoration Limited Project [310 CMR 10.53(4)(a) through (d)] and as proposed the NOI describes how the proposed project meets to the maximum extent practicable, consistent with the project's ecological restoration goals, all the performance standards for Bank and Land Under Water Bodies and Waterways.

☐ The project meets the requirements of 310 CMR 10.12(1) and (2) and a wildlife habitat evaluation is not included in the NOI.

☐ **Tidal Restoration Project**

☐ Restores tidal flow.

☐ the project, including any proposed flood mitigation measures, will not significantly increase flooding or storm damage to the built environment, including without limitation, buildings, wells, septic systems, roads or other man-made structures or infrastructure.

Eligibility Criteria - Inland Ecological Restoration Limited Project (310 CMR 10.53(4)) (cont.)

☒ **Other Ecological Restoration Projects** that meet the criteria set forth in 310 CMR 10.24(8)(a) through (d).

- ☐ Restoration, enhancement, or management of Rare Species habitat.
- ☐ Restoration of hydrologic and habitat connectivity.
- ☐ Removal of aquatic nuisance vegetation to impede eutrophication.
- ☐ Thinning or planting of vegetation to improve habitat value.
- ☐ Riparian corridor re-naturalization.
- ☐ River floodplain re-connection.
- ☐ In-stream habitat enhancement.
- ☐ Fill removal and re-grading.
- ☐ Flow restoration.
- ☐ Installation of fish passage structures.
- ☐ Invasive species management.
- ☒ Other. Describe: Prevention of algae blooms

☐ This project involves the construction, repair, replacement or expansion of public or private infrastructure. (310 CMR 10.53(7))

- ☐ The NOI attachment labeled _____ is an operation and maintenance plan to ensure that the infrastructure will continue to function as designed.
- ☐ The operation and maintenance plan will be implemented as a continuing condition in the Order of Conditions and the Certificate of Compliance.

☐ This project replaces an existing stream crossing (310 CMR 10.53(8)). The crossing type:

- ☐ Replaces an existing non-tidal crossing designed to comply with the Massachusetts Stream Crossing Standards to the maximum extent practicable with details provided in the NOI.
- ☐ Replaces an existing tidal crossing that restricts tidal flow. The tidal restriction will be eliminated to the maximum extent practicable.

Eligibility Criteria - Inland Ecological Restoration Limited Project (310 CMR 10.53(4)) (cont.)

☐ At a minimum, in evaluating the potential to comply with the standards to the maximum extent practicable the following criteria have been consider site constraints in meeting the standard, undesirable effects or risk in meeting the standard, and the environmental benefit of meeting the standard compared to the cost, by evaluating the following:

- ☐ The potential for downstream flooding;
- ☐ Upstream and downstream habitat (in-stream habitat, wetlands);
- ☐ Potential for erosion and head-cutting;
- ☐ Stream stability;
- ☐ Habitat fragmentation caused by the crossing;
- ☐ The amount of stream mileage made accessible by the improvements;
- ☐ Storm flow conveyance;
- ☐ Engineering design constraints specific to the crossing;
- ☐ Hydrologic constraints specific to the crossing;
- ☐ Impacts to wetlands that would occur by improving the crossing;
- ☐ Potential to affect property and infrastructure; and
- ☐ Cost of replacement.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent
Appendix A: Ecological Restoration Limited Project Checklists

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

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Required Actions (310 CMR 10.11)

Complete the Required Actions before submitting a Notice of Intent Application for an Ecological Restoration Project and submit a completed copy of this Checklist with the Notice of Intent.

☒ **Massachusetts Environmental Policy Act (MEPA) / Environmental Monitor**
http://www.mass.gov/eea/agencies/mepa/submitting-notices-to-the-environmental-monitor.html

For Ecological Restoration Limited Projects, there are no changes to MEPA requirements.

☒ Submit written notification at least 14 days prior to the filing of a Notice of Intent (NOI) to the Environmental Monitor for publication. A copy of the written notification is attached and provides at minimum:

- ☒ A brief description of the proposed project.
- ☒ The anticipated NOI submission date to the conservation commission.
- ☒ The name and address of the conservation commission that will review the NOI.
- ☒ Specific details as to where copies of the NOI may be examined or acquired and where to obtain the date, time, and location of the public hearing.

☐ **Massachusetts Endangered Species Act (MESA) /Wetlands Protection Act Review**

☐ Preliminary Massachusetts Endangered Species Act Review from the Natural Heritage and Endangered Species Program (NHESP) has been met and the written determination is attached.

☐ Supplemental Information for Endangered Species Review has been submitted.

1. ☐ Percentage/acreage of property to be altered:
   a. Within Wetland Resource Area _____ Percentage/acreage
   b. Outside Wetland Resource Area _____ Percentage/acreage
2. ☐ Assessor's Map or right-of-way plan of site
3. ☐ Project plans for entire project site, including wetland resource areas and areas outside of wetlands jurisdiction, showing existing and proposed conditions, existing and proposed tree/vegetation clearing line, and clearly demarcated limits of work.
4. ☐ Project description (including description of impacts outside of wetland resource area & buffer zone)
5. ☐ Photographs representative of the site
6. ☐ MESA filing fee (fee information available at http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/mesa/mesa_fee_schedule.htm)

Required Actions (310 CMR 10.11) (cont.)

Make check payable to "Commonwealth of Massachusetts - NHESP" and mail to NHESP:

Natural Heritage & Endangered Species Program
MA Division of Fisheries & Wildlife
1 Rabbit Hill Road
Westborough, MA 01581

7. Projects altering 10 or more acres of land, also submit:

   a. ☐ Vegetation cover type map of site

   b. ☐ Project plans showing Priority & Estimated Habitat boundaries

OR Check One of the Following:

1. ☐ Project is exempt from MESA review.

Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14, http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/regulatory-review/mass-endangered-species-act-mesa/; the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59 – see C4 below)

2. ☐ Separate MESA review ongoing.

a. NHESP Tracking # _____ b. Date submitted to NHESP _____

3. ☐ Separate MESA review completed. Include copy of NHESP "no Take" determination or valid Conservation & Management Permit with approved plan.

☐ **Estimated Habitat Map of State-Listed Rare Wetlands Wildlife**

If a portion of the proposed project is located in **Estimated Habitat of Rare Wildlife** as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage and Endangered Species Program (NHESP), complete the portion below. To view habitat maps, see the **Massachusetts Natural Heritage Atlas** or view the maps electronically at: http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/regulatory-review

☐ A preliminary written determination from Natural Heritage and Endangered Species Program (NHESP) must be obtained indicating that:

☐ Project will NOT have long- or short-term adverse effect on the actual Resource Area located within estimated habitat indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetlands Wildlife published by NHESP.

☐ Project will have long- or short-term adverse effect on the actual Resource Area located within estimated habitat indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetlands Wildlife published by NHESP. A copy of NHESP's written preliminary determination in accordance with 310 CMR 10.11(2) is attached. This specifies:

☐ Date of the map: _____

Required Actions (310 CMR 10.11) (cont.)

☐ If the Rare Species identified is/are likely to continue to be located on or near the project, and if so, whether the Resource Area to be altered is in fact part of the habitat of the Rare Species.

☐ That if the project alters Resource Area(s) within the habitat of a Rare Species:

☐ The Rare Species is identified;

☐ NHESP's recommended changes or conditions necessary to ensure that the project will have no short or long term adverse effect on the habitat of the local population of the Rare Species is provided; or

☐ An approved NHESP habitat management plan is attached with this Notice of Intent.

Send the request for a preliminary determination to:
Natural Heritage & Endangered Species Program
MA Division of Fisheries & Wildlife
1 Rabbit Hill Road
Westborough, MA 01581

☐ **Division of Marine Fisheries**

☐ If the project will occur within a coastal waterbody with a restricted Time of Year, [see Appendix B of the Division of Marine Fisheries (DMF) Technical Report TR 47 "Marine Fisheries Time of Year Restrictions (TOYs) for Coastal Alteration Projects" dated April 2011 http://www.nae.usace.army.mil/Portals/74/docs/regulatory/StateGeneralPermits/NEGP/MADMFTR-47.pdf].

☐ Obtain a DMF written determination stating:

☐ The proposed work does NOT require a TOY restriction.

☐ The proposed work requires a TOY restriction. Specific recommended TOY restriction and recommended conditions on the proposed work is attached.

☐ If the project may affect a diadromous fish run [re: Division of Marine Fisheries (DMF) Technical Reports TR 15 through 18, dated 2004: http://www.mass.gov/eea/agencies/dfg/dmf/publications/technical.html]

☐ Obtain a DMF written determination stating:

☐ The design specifications and operational plan for the project are compatible with the passage requirements of the fish run.

☐ The design specifications and operational plan for the project are not compatible with the passage requirements of the fish run.

Required Actions (310 CMR 10.11) (cont.)

Send the request for a written or electronic determination to:

South Shore – Cohasset to Rhode Island border, and the Cape & Islands:
Division of Marine Fisheries –
South Coast Field Station
Attn: Environmental Reviewer
1213 Purchase Street – 3rd Floor
New Bedford, MA 02740-6694
Email: DMF_EnvReview.South@state.ma.us

North Shore – Hull to New Hampshire border:
Division of Marine Fisheries –
North Shore Field Station
Attn: Environmental Reviewer
30 Emerson Avenue
Gloucester, MA 01930
Email: DMF_EnvReview.North@state.ma.us

☐ **Division of Fisheries and Wildlife –** http://www.mass.gov/eea/agencies/dfg/dfw/

☐ Projects that involve silt-generating, in-water work that will impact a non-tidal perennial river or stream and the in-water work will not occur between May 1 and August 30.

☐ Obtain a written determination from the Division of Fisheries and Wildlife (DFW) as to whether the proposed work requires a TOY restriction.

☐ The proposed work does NOT require a TOY restriction.

☐ The proposed work requires a TOY restriction. The DFW determination with TOY restriction and other conditions is attached.

☐ **MassDEP Water Quality Certification**

☐ Project involves dredging of 100 cubic yards or more in a Resource Area or dredging of any amount in an Outstanding Resource Water (ORW). A copy and proof of the MassDEP Water Quality Certification pursuant to 314 CMR 9.00 is attached to the NOI.

☐ This project is a Combined Permit Application for 401 Dredging and Restoration (BRP WW 26).

☐ **MassDEP Wetlands Restriction Order**

Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L. c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L. c. 130, § 105)?

☐ Yes ☐ No

☐ **Department of Conservation and Recreation**

Office of Dam Safety

☐ For Dam Removal Projects, obtain a written determination from the Department of Conservation and Recreation Office of Dam Safety that the dam is not subject to the jurisdiction of the Office under 302 CMR 10.00, a written determination that the dam removal does not require a permit under 302 CMR 10.00 or a permit authorizing the dam removal in accordance with 302 CMR 10.00 has been issued.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent
Appendix A: Ecological Restoration Limited Project Checklists

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

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Required Actions (310 CMR 10.11) (cont.)

Areas of Critical Environmental Concern (ACECs)

Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?

☐ Yes ☒ No If yes, provide name of ACEC (see instructions to WPA Form 3 or MassDEP Website for ACEC locations).

Name of ACEC

Minimum Required Documents (310 CMR 10.12)

Complete the Required Documents Checklist below and provide supporting materials before submitting a Notice of Intent Application for an Ecological Restoration Project.

☒ This Notice of Intent meets all applicable requirements outlined in for Ecological Restoration Projects in 310 CMR 10.12. Use the checklist below to insure that all documentation is included with the NOI.

At a minimum, a Notice of Intent for an Ecological Restoration Project shall include the following:

☒ Description of the project's ecological restoration goals;

☒ The location of the Ecological Restoration Project;

☒ Description of the construction sequence for completing the project;

☐ A map of the Areas Subject to Protection Under M.G.L. c. 131, § 40, that will be temporarily or permanently altered by the project or include habitat for Rare Species, Habitat of Potential Regional and Statewide Importance, eel grass beds, or Shellfish Suitability Areas.

☐ The method for BVW and other resource area boundary delineations (MassDEP BVW Field Data Form(s), Determination of Applicability, Order of Resource Area Delineation, etc.) is attached with documentation methodology.

☐ List the titles and dates for all plans and other materials submitted with this NOI.

NOI narrative
a. Plan Title

Water Resource Services, Inc.
b. Prepared by

c. Signed and Stamped by

April 16, 2018
d. Final Revision Date

e. Scale

f. Additional Plan or Document Title

g. Date

☐ If there is more than one property owner, attach a list of these property owners not listed on this form.

☒ Attach NOI Wetland Fee Transmittal Form.

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Minimum Required Documents (310 CMR 10.12)

- ☐ An evaluation of any flood impacts that may affect the built environment, including without limitation, buildings, wells, septic systems, roads or other man-made structures or infrastructure as well as any proposed flood impact mitigation measures;
- ☐ A plan for invasive species prevention and control;
- ☐ The Natural Heritage and Endangered Species Program written determination in accordance with 310 CMR 10.11(2), if needed;
- ☐ Any Time of Year restrictions and/or other conditions recommended by the Division of Marine Fisheries or the Division of Fisheries and Wildlife in accordance with 310 CMR 10.11(3), (4), (5), if needed;
- ☒ Proof that notice was published in the Environmental Monitor as required by 310 CMR 10.11(1;
- ☒ A certification by the applicant under the penalties of perjury that the project meets the eligibility criteria set forth in 310 CMR 10.13;
- ☐ If the Ecological Restoration Project involves the construction, repair, replacement or expansion of infrastructure, an operation and maintenance plan to ensure that the infrastructure will continue to function as designed;
- ☐ If the project involves dredging of 100 cubic yards or more or dredging of any amount in an Outstanding Resource Water, a Water Quality Certification issued by the Department pursuant to 314 CMR 9.00;
- ☐ If the Ecological Restoration Project involves work on a stream crossing, information sufficient to make the showing required by 310 CMR 10.24(10) for work in a coastal resource area and 310 CMR 10.53(8) for work in an inland resource area; and
- ☐ If the Ecological Restoration Project involves work on a stream crossing, baseline photo-points that capture longitudinal views of the crossing inlet, the crossing outlet and the upstream and downstream channel beds during low flow conditions. The latitude and longitude coordinates of the photo-points shall be included in the baseline data.
- ☐ This project is subject to provisions of the MassDEP Stormwater Management Standards. A copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q) is attached.
- ☐ Provide information as the whether the project has the potential to impact private water supply wells including agricultural or aquacultural wells or surface water withdrawal points.

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Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

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Certification that the Ecological Restoration Project Meets the Eligibility Criteria

I hereby certify under penalties of perjury that the Ecological Restoration Project Notice of Intent application does not meet the Eligibility criteria for an Ecological Restoration Order of Conditions set forth in 310 CMR 10.13, but does meet the Eligibility Criteria for a Ecological Restoration Limited Project set forth in 10.24(8) or 10.53(4) whichever is applicable. I certify that I am familiar with the information contained in the application, and that to the best of my knowledge and belief such information is true, complete, and accurate. I further certify that I possess the authority to undertake the proposed activities.

Signature of Applicant or Authorized Agent

Brandon Schmitt
Printed Name of Applicant or Authorized Agent

Date

The certification must be signed by the applicant; however, it may be signed by a duly authorized agent (named in Item 2) if this form is accompanied by a statement by the applicant designating the agent and agreeing to furnish upon request, supplemental information in support of the application.

1. Background

1.1 Project Location

This project involves five public ponds scattered throughout Wellesley (Figure 1). The ponds are focal points within parks, along trail systems, in residential areas and next to community facilities such as Town Hall. Most but not all have associated parking areas, with some street parking near those without designated parking spaces. All are within a mile of Rt 9, which bisects Wellesley on an east-west axis, but only Abbotts Pond can be seen from Rt 9. They are relatively small, ranging in area from 0.5 to 2.3 acres, but are visual amenities in their respective parks and neighborhoods.

1.2 Uses and Rehabilitation Needs

All targeted ponds suffer from algae blooms caused by excessive phosphorus, as documented in a 2016 comprehensive study. Algae blooms compromise uses, including habitat.

Abbotts Pond covers 1.8 acres and is mainly a visual amenity in a neighborhood. It has a narrow strip of public land most of the way around it, but this land is not really park and is uneven and overgrown. It is used for ice skating by local youth in the winter, but is largely inaccessible due to overgrowth of woody vegetation around the periphery, with fallen trees, vines, dense brush, and wet soils limiting access and even visibility. One home abuts the pond directly. The water is usually turbid, and there are few rooted plants in the open water part. Infilling over many years has facilitated establishment of a wooded wetland around most of the pond edge. It serves as a de facto wildlife preserve, given limited human access. One large and two small storm drainage discharges supply water to the pond, causing fluctuations in water level and quality. A former outlet structure indicates some water level control in the past, but there are no flashboards and water level is largely controlled by the elevation of the culvert under Rt 9. Outflow eventually reaches Fuller Brook. Enhancing the overall appearance of Abbott's Pond as a visual amenity is desired by the community, and lessening algae blooms would help support its use as habitat.

Bezanson Pond covers just half an acre in Centennial Park, and is better known as the dog pond. The park is extremely popular with residents for walking their dogs, and many canines choose to swim in this small pond after walking the wooded paths in warmer months. Bezanson Pond was dredged in 2003, and has a sandy periphery. Drainage comes from some peripheral residential area and the Sisters of Charity compound to the northeast, but much of the drainage area is park land. Ground water keeps a small channel from the Sisters of Charity area wet most of the year, and intermittent storm water inputs enter from another usually dry channel network in the park. Bezanson Pond has a concrete outlet structure with flashboards that raise the water level 14 inches. People would like the pond to be a visual amenity and want the

Figure 1. Locations of Wellesley ponds, including 5 targeted for phosphorus inactivation with red lines.

water quality to be healthy for dogs. This pond could be a fishing resource, but there does not seem to be any strong interest in active use other than by dogs. One concern from downstream residents is flooding, with a perception that past management of the pond and park has done nothing to abate possible flash flooding in a downstream neighborhood. Eventually water discharged from Bezanson Pond enters the stream system feeding Longfellow Pond.

Duck Pond is located next to Town Hall and is basically a wide channel between the railroad berm and the outlet structure with a backwater pool to the east, connected by small channels around an island. The total pond covers only 0.8 acre. Direct flow to the pool appears minimal, but the main inlet from the north handles a large developed area with high storm water flows, so water backs up into the pool area during storms. The outlet has flashboards that control the water level, with water flowing downstream and culverted under Washington Street and the town library to Fuller Brook. A population of "ornamental" ducks lives at Duck Pond and this pond is largely a visual amenity, with paths and bridges that allow people to stroll around the pond. Duck Pond was dredged in 1986 and 2006, but has newer accumulations of sediment and debris and is usually quite turbid. There appears to be no interest in active recreation on this pond, but a more appealing visual appearance is desired and requires water quality management and occasional clean out of accumulated sediment and debris.

Farms Station Pond is adjacent to the Farms Station of the railroad commuter line in northeastern Wellesley and covers one acre. It receives drainage from a large, mostly urbanized watershed, but has the larger Wights Pond just upstream to provide some purifying detention. A parking area for the rail station is adjacent to the pond and drains to it. Water overflows to a mostly closed drainage system that discharges to the Charles River. This pond tends to be green with algae or small floating plants, but has very few plants rooted in the sediment. It is mainly a visual amenity, although it offers ready access for recreation. Water quality management is perceived as the primary need.

Rockridge Pond covers 2.3 acres in a residential neighborhood with public land and a trail around most of it. It has a concrete dam with one 10.5-inch flashboard and a subsurface pipe that can lower the water level by 3 feet over the elevation at the top of the flashboard. Drainage is from a substantial and mostly residential area via storm water drains and channels. Most of the pond was dredged in 2003, but there are extensive summer growths of rooted plants and algae mats. Some private bass stocking has occurred and fishing is popular. There is a cleared access area on the northeast side and car-top boats can be carried in and launched. Users desire a more aesthetically pleasing appearance and easier fishing, both largely a function of plant and algae control.

1.3 Watershed Assessment

Overall, the watersheds (or drainage areas) of the Wellesley public ponds are predominantly developed as residential areas with some commercial uses and open space. Additionally, the ponds are small in comparison to the large drainage areas from which water flows into the ponds. Therefore, in-lake water quality is highly dependent upon storm water inputs that are typically greater when precipitation lands on impervious surfaces (for example, roads and roofs), and will carry more pollutants and nutrients into the ponds. Sampling of inlet streams and storm drainage discharges as part of the comprehensive study in 2016 documented elevated phosphorus in the incoming water.

1.4 In-Lake Phosphorus

Average total phosphorus values in the 5 ponds targeted for phosphorus reductions were elevated (Figure 2), with values <0.010 mg/L considered low and values between 0.010 and 0.025 mg/L considered moderate. Most values exceed 0.025 mg/L. Water quality condition with regard to this important nutrient do not appear stable in the targeted ponds, indicating the influence of storm water. However, internal recycling is also possible in most cases, as sediment accumulations may harbor substantial phosphorus. This source was evaluated and is discussed under Sediment Quality Assessment.

Average total phosphorus concentration divided by average total nitrogen concentration provides a rough indication of which of these key nutrients is most likely to limit algae growth. One could look at the ratio of dissolved phosphorus to dissolved nitrogen as well, which shows what is available for uptake at the time of sampling but does not reflect longer term availability. Ratios <10:1 tend to favor cyanobacteria that can fix dissolved nitrogen gas, which other algae cannot do, and cyanobacteria include many forms that cause blooms, taste, odor and even toxicity. Ratios much higher than 10:1 favor other algae, most often green algae in summer.

Ratios for the Wellesley Ponds are mostly >10:1 (Table 1). Abbotts Pond has a TN:TP ratio close to 10:1 but had few cyanobacteria in 2016. Overall, it appears that phosphorus is the limiting nutrient for algae in these ponds and the logical target of water quality management. Reducing P will raise N:P ratios and further limit the potential for cyanobacteria blooms.

1.5 Sediment Quality Assessment

The focus of sediment quality assessment for the Wellesley Ponds was on the fertility of the bottom sediment as a source of phosphorus for algae or rooted plants. Key features in that regard include solids content (solids vs water), organic content (organic material vs. inorganic sediment), total phosphorus, and iron-bound phosphorus, which is the portion of total phosphorus most likely to be released from the sediment under low oxygen conditions (Table

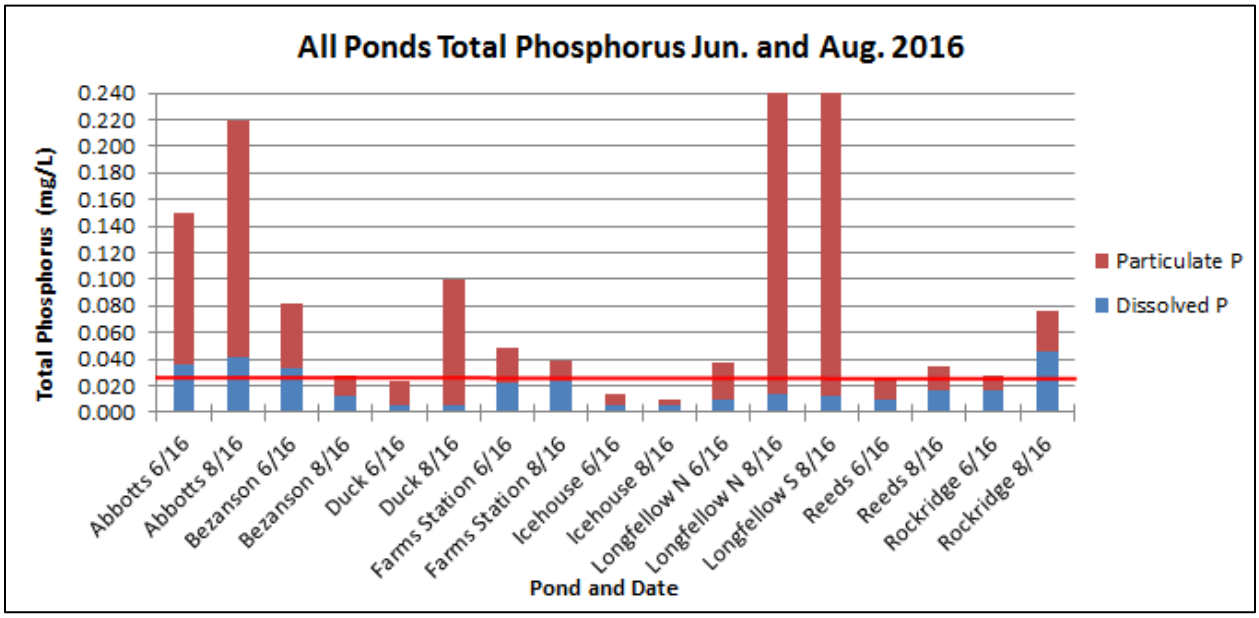


Figure 2. In-lake phosphorus levels for all ponds

Table 1. Ratio of mass of nitrogen to phosphorus for all ponds

Pond	TN/TP	DN/DP
Abbotts	9.6	6.4
Bezanson	11.4	5.8
Duck	25.0	187.0
Farms Station	26.5	13.9
Icehouse	45.1	30.7
Longfellow	7.2	17.5
Reeds	28.0	38.7
Rockridge	16.1	5.6

2). Total phosphorus values >500 mg/kg are considered high, but the availability of that phosphorus cannot be known from total phosphorus concentrations. Iron-bound phosphorus, the dominant available fraction, is considered elevated when >100 mg/kg and is very high when >500 mg/kg. Values for the Wellesley Ponds targeted for phosphorus control were elevated.

Calculating the mass of available phosphorus as the percent solids in the upper 10 cm (4 inches) of sediment times a specific gravity of 1.2 times the iron-bound phosphorus concentration, the amount of phosphorus likely to become available for uptake under low oxygen conditions ranges from 5.0 g/m^2 (Bezanson) to 31 g/m^2 (Duck) among ponds targeted for phosphorus inactivation.

Because most ponds have elevated masses of available phosphorus in their surficial sediment does not guarantee that the phosphorus will become available; that is a function of oxygen concentrations and direct uptake by algae or rooted plants near the sediment-water interface, which is itself partly dependent on light penetration. Yet the potential for high productivity is substantial in these ponds, even with past dredging of accumulated sediment.

Table 2. Sediment quality for all ponds

	Organic	Solids	Total Phosphorus	Iron Bound Phosphorus	Mass of P to be Treated
Pond	**%**	%	mg/kg dry weight	mg/kg dry weight	g/m2
Abbotts	92.4	16	779	665	12.8
Bezanson	71.4	35	1250	118	5.0
Duck	77.0	27	1715	994	31.6
Farms Station	90.1	18	1540	520	11.2
Icehouse	82.3	14	354	100	1.7
Longfellow	85.3	15	799	487	8.5
Reeds	90.1	16	956	440	8.5
Rockridge	80.8	21	1130	210	5.3

1.6 Plankton Analysis

Algae and small animals (mostly crustaceans) in the water column are an important part of the food web in ponds, but with short detention times it is possible to flush these organisms out of the pond with storm events, creating variation over time. Each pond was sampled twice during this study, just to get an overall impression of the types of algae (phytoplankton) and planktonic

animal life (zooplankton) in each pond. Seven divisions of algae were represented in the phytoplankton, with high variability in the amount and types of algae in the phytoplankton of each pond (Figure 3). This variability is further documented by concentrations of chlorophyll-a (Figure 4), a photosynthetic pigment common to all algae. All of the target ponds have algae issues at some point in most summers, but problems are not chronic.

Phytoplankton samples sometimes pick up some mat forming algae, but extensive mats are normally evaluated with the rooted plant community. In the Wellesley Ponds, phytoplankton is the dominant form of algae in only a few cases (Abbotts and Farms Station), while mat forming algae are more common in most. Observed mats included only green algae (Chlorophyta), with *Spirogyra* and *Rhizoclonium* as the most common forms. These can grow quite densely, often in association with rooted plants, and often start on the pond bottom but float to the surface after weeks of growth. Such mats interfere with boating and fishing, often to a greater extent that dense rooted plant assemblages.

2. Proposed Project

The first choice for reduced nutrient loading is always reduction in sources, but with virtually every pond receiving nutrients from a substantially developed watershed much larger than the ponds themselves, this is a major challenge. Modeling for most ponds suggests that the phosphorus threshold for productivity problems would be exceeded even under background conditions (undeveloped watershed), and feasible application of best management practices will not adequately reduce phosphorus loading to the target ponds. This is much the same problem faced by Morses Pond, a problem that has been largely solved with a phosphorus inactivation program in which an aluminum compound is injected into incoming storm water during late spring and occasionally during summer. A similar program for other Wellesley ponds is proposed, but with smaller size, it may be most advantageous to just treat the ponds sometime in June with a repeat later in summer if necessary. Duck Pond, with much more rapid flushing, may be an exception where more frequent treatments might be needed.

Treatment of ponds with aluminum compounds will also limit non-algal turbidity, generated mainly through resuspension of organic sediments within the ponds and by storm water inflow containing sediment. Treatment should increase the stability of sediments and reduce resuspension by wind, but it may take several water column treatments before such effects are evident. Gradual inactivation of surficial sediment phosphorus is also expected over time, and could be accelerated by higher dose treatments if desired. While the external load was dominant in all ponds, algae mats may be linked to sediment sources.

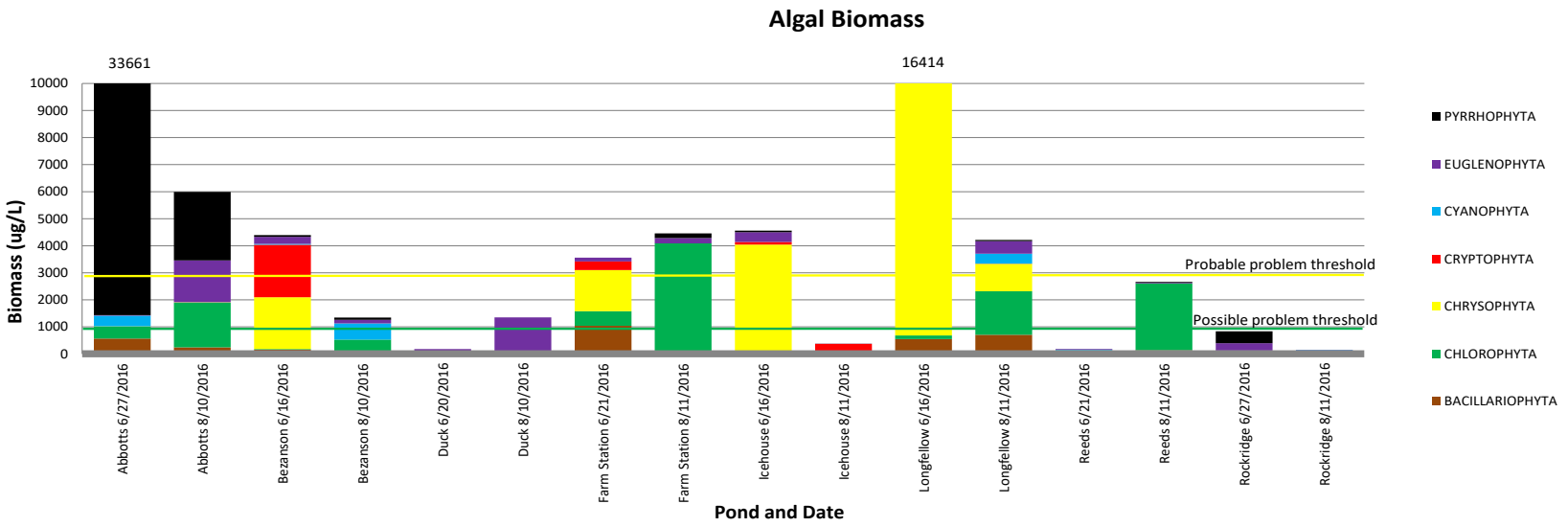


Figure 3. Phytoplankton biomass for all ponds

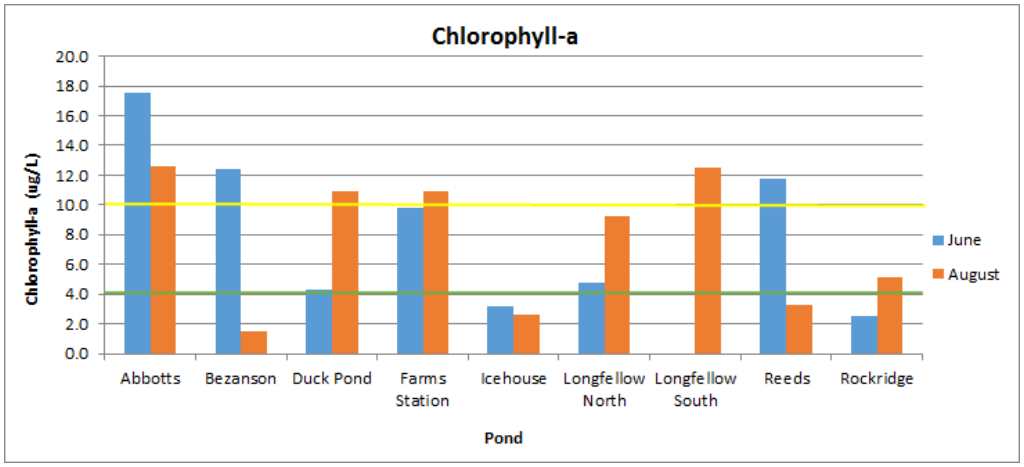


Figure 4. Chlorophyll-a for all ponds

This does not mean that all watershed management action should be abandoned. Wellesley already has ordinances in place to limit runoff and related loading, and the gradual minimization of phosphorus in lawn fertilizers (by manufacturers after enough states have required it) is also expected to reduce urban loading. Maintenance of drainage systems, encouragement of low impact development techniques for new construction or existing residential or commercial properties, and possible additional structural controls are all worthwhile. However, spending very large sums of money to get small reductions in loading will not achieve the goal, and the limitations imposed by urbanized watersheds should be acknowledged. The town's current program of nutrient control under the NPDES program should continue.

The easiest way to treat the Wellesley Ponds would be with a portable dosing system. The intent would be to supply enough aluminum to dose each targeted pond at a concentration of up to 3 mg/L. Using polyaluminum chloride, the same coagulant used at Morses Pond since 2014, the volume of applied solution for each pond (Table 3) ranges from 11 gallons for Duck Pond to 82 gallons for Longfellow Pond; a treatment of all 5 ponds would require 207 gallons of polyaluminum chloride.

The town has acquired a "tree sprayer" system, a package tank, pump and delivery hose with nozzle that mounts on a truck and can be moved from pond to pond (Figure 5). An eyewash for safety and small boat have been purchased to support this operation. Where spraying from shoreline is not practical, the small boat would be used to move the hose and nozzle around each pond to be treated, while polyaluminum chloride would be pumped from the truck-mounted system.

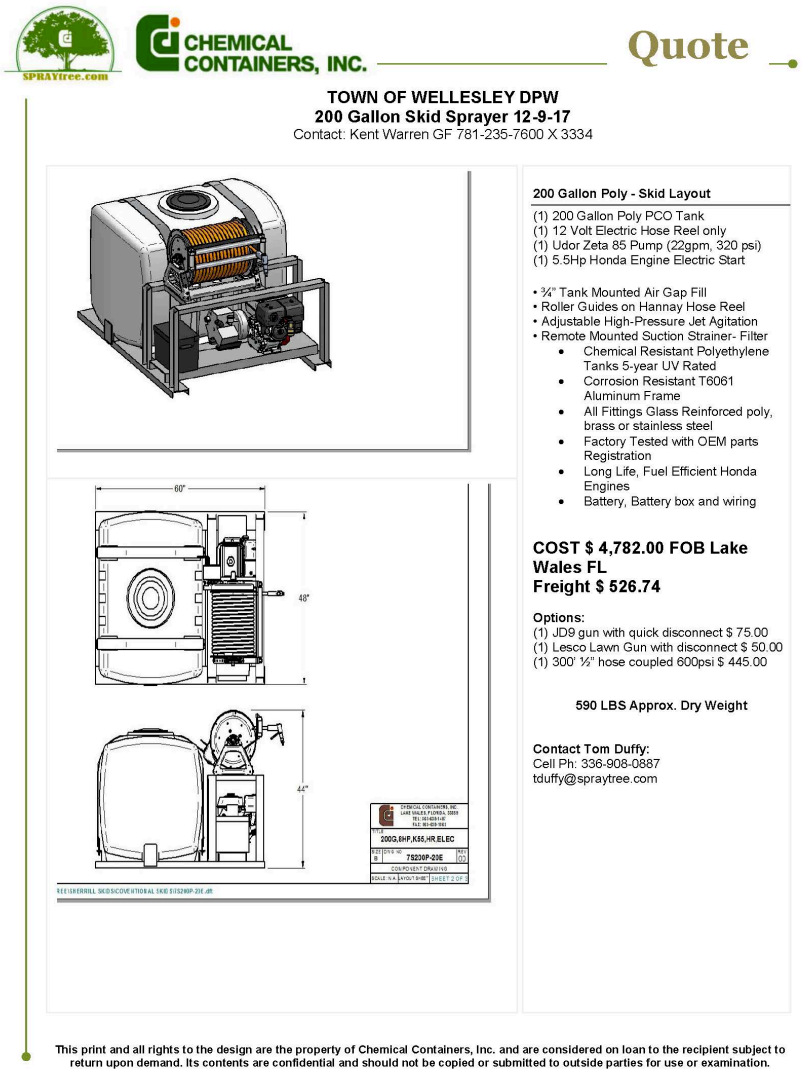
Ideally, treatment would occur in June, before plants and algae become dense, but if plant harvesting occurs then, it would be best to wait until that harvesting is complete, as it will generate turbidity that the treatment could address. There is no plan to harvest Abbotts, Duck or Farms Station Ponds, and these could be treated first. Bezanson, which has coontail as its dominant plant and takes most nutrition from the water column, might not need to be harvested if phosphorus inactivation was successful. It is mainly at Rockridge Pond where aluminum treatment timing needs to be coordinated with any harvesting.

Follow up treatment would be based on need, which would most likely depend on storm frequency and magnitude. It is assumed at this point that a second treatment will be needed, probably in late July or early August, and more frequent treatment may be necessary in Duck Pond, in which conditions can change rapidly with even minor storms. But Duck Pond requires only about 11 gallons of aluminum solution per treatment, so the applied amount is small. We

Table 3. Quantity of Polyaluminum Chloride Needed to Treat Ponds

Pond	Pond Area	Water Volume		PACL Mass for 3 mg/L	PACL Vol for 3 mg/L
	Acres	Acre-feet	m3	Kg	Gallons
Abbotts	1.8	2.7	3287	9.9	39.1
Bezanson	0.5	1.3	1647	4.9	19.6
Duck	0.8	0.8	938	2.8	11.1
Farms Station	1.0	3.8	4714	14.1	56.0
Rockridge	2.3	5.5	6840	20.5	81.3

Figure 5. Application equipment



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are assuming a total application over the 5 ponds of 500 gallons between June and August in an "average" summer. We may need to apply <300 gallons in a dry summer and closer to 1000 gallons in a wet summer. Again, some experimentation early in the program will help shape later management efforts.

3. Anticipated Project Impacts

The primary result from the proposed project will be clearer water in the ponds, with fewer algae mats and lower turbidity from algae and suspended sediment. Lower phosphorus availability will affect mainly algae, but floating plants like duckweed and watermeal may also be reduced, as they depend on nutrients in the water column. As most vascular plants have roots that extend into the sediment, enough phosphorus will be available to sustain those growths, which will be addressed by a separately permitted harvesting program.

Aluminum can be toxic to aquatic life at elevated concentrations of reactive forms when the pH is outside the range of 6-8 standard units. In this program, aluminum will be dosed at a concentration of no more than 3 mg/L, too low to cause toxicity even if the pH gets outside the normal range. Polyaluminum chloride does not greatly alter pH, so the pH is expected to be within the range where higher aluminum is tolerable. Reactions are fairly rapid, with aluminum expected to become inert and settle into the sediments within a day. No toxicity has been observed in 4 years of application to Morses Pond, and none is expected in this program.

4. Alternatives Analysis

The 2017 comprehensive management report goes through a substantial evaluation process to arrive at management recommendations. The appendix of that report contains extensive tables that cover management options and applicability, and the text explains the approach adopted as a result of that evaluation. Overall management focuses on rooted plant control with harvesting where needed and algae and related turbidity control with aluminum addition. The alternatives to aluminum addition include application of algaecides to directly kill nuisance algae, expensive watershed nutrient control efforts (that by modeling will not prevent nuisance algae growth), dredging (which is expensive and will not manage watershed inputs) and sonication (which requires multiple units carefully deployed and maintained). Feasibility assessment concluded that treatment with aluminum polychloride represented the most cost-effective solution.

Pond List and Locations

Pond	Closest Street	Latitude	Longitude	Map	Parcel	Book	Page
Abbotts	Fox Hill Rd/Rt 9	N 42.30883	W 71.28656		97-39	Land Court 185	
Bezanson	Oakland Street	N 42.30697	W 71.26322		46-2	5785	462
Duck	Washington Street	N 42.29844	W 71.29004		111-9	913	625
Farms Station	Croton Street	N 42.32245	W 71.27177		62-6	3177	338
Rockridge	Hundreds Circle	N 42.31864	W 71.28254		83-13	751	81