PROJECT NARRATIVE

Revised January 28, 2026

1.0 Introduction

The applicant is seeking approval to initiate a vegetation management plan at 9 Porters Cove Road in Hingham (the site). The objective of the management program is to control the growth of non-native invasive Common Reed (*Phragmites australis*), to improve and maintain wildlife habitat, maintain water quality, and promote growth of less pervasive native plant species. Based on the distribution and density of Common Reed growth within portions of the site, it has been concluded the restoration goals of the applicant can best be achieved through the prudent use of USEPA/MA DAR registered herbicides. When unmanaged, dense Common Reed growth can degrade water quality, fish, and wildlife habitat, and reduce recreational access to the coast. This proposed project will protect the interests of the Wetland Protection Act by controlling a nuisance species, which has spread into the native community of the Weir River and caused significant degradation.

This Notice of Intent is limited exclusively to ecological restoration and non-native invasive plant management activities. No grading, construction, site development, or land alteration associated with future development is proposed or authorized under this submittal. Any future work would be subject to separate permitting.

2.0 Site Description:

The Town of Hingham Assessors Department references the site as Parcel ID #855 (Mblu 30-0-25). The site is located to the southeast of Porters Cove and is surrounded by a Salt Marsh system associated with the Weir River located east of the site. The site also contains Land Subject to Coastal Storm Flowage, a portion of the Riverfront Area associated with the Weir River, and the 100-foot buffer zone associated with the Salt Marsh. The project is proposed to remove and manage the Common Reed found within the Salt Marsh onsite.

A significant portion of the upper Salt Marsh at the site is dominated by Common Reed, which is a non-native invasive plant species. The upper limit of the Salt Marsh was delineated by Environmental Consulting & Restoration, LLC (ECR) on December 2, 2025 as identified on the Conservation Plan. The general limits of the Common Reed have been identified and highlighted on the Conservation Plan included with this application. In the areas where Common Reed is found onsite, it exists as nearly 100% of the total vegetative community. For more information, please refer to the Conservation Plan attached, which indicates the location of the Salt Marsh, Common Reed, and management area.

ECR has estimated that the Common Reed treatment area is approximately 18,450 square feet in area. ECR estimates that Common Reed accounts for nearly 100% of the Salt Marsh vegetation within the identified treatment area. Common Reed growth consists of dense monoculture stands within the upper limits of the Salt Marsh. Although the site contains approximately 46,430 square feet of Riverfront Area, the proposed vegetation management and ecological restoration activities are limited strictly to the delineated treatment areas shown on the Conservation Plan. No work is proposed within the remaining Riverfront Area outside of these defined locations.

This Notice of Intent is limited exclusively to ecological restoration and invasive species management activities. No grading, construction, site development, or land alteration associated with future development is proposed or authorized under this filing. Any future work will be subject to separate permitting.

3.0 Management Recommendations:

3.1 Program Overview:

A multiple-year approval is requested for the implementation of a Common Reed management program at this site. The goal of the management program is to control Common Reed growth, improve and maintain habitat, promote growth of less pervasive plant species, and provide safe recreational access to the coast with the use of USEPA/MA DAR registered herbicides. Based on the chemistry of the proposed products, along with the chemical dose, timing, and method of application, these herbicides can be reasonably selective for the targeted plant species with a negligible risk to non-target organisms when used in accordance with their USEPA approved labels. The management program has been developed to be compatible with the goals of the Applicant, keeping in mind the regulatory responsibilities of the Hingham Conservation Commissions and the MA DEP.

Specifically, we are requesting approval for use of glyphosate (AquaPro or equivalent), imazapyr (Habitat), and imazamox (ClearCast), along with a non-ionic surfactant to control Common Reed growth. Use of glyphosate herbicide is proposed for the initial year of treatment to limit impact to non-target plants. In subsequent years, a tank-mix of glyphosate and imazpyr/imazamox may be considered to enhance control. Common Reed plants require a total of seven amino acids for survival. For example, glyphosate and imazapyr each affect the synthesis of three different amino acids; therefore, the combination of these two products effectively inhibits six of the seven amino acids. As a result, the potential for Common Reed survival following application is further reduced. The other advantage to this herbicide combination, is the overall reduction in herbicide usage over long-term due to its 'synergistic' effect on the plant metabolism. The proposed products specifically affect the target plant species to be controlled and have a negligible effect on the non-target species and wildlife when applied in accordance with the label directions. All chemicals are applied at or below suggested doses according to the product label. The herbicide treatments would be performed during the growing season, when the plant is storing starches in their root systems.

Cutting/mulching of the dead Common Reed stems is another component to integrated management. This often improves access for follow-up management, increases the rate of recolonization of more desirable native species, and removes biomass and a potential fire hazard. Larger stands will be mulched by a mechanical mower deck, while smaller patches will be cut by hand using mechanical hedge trimmers. This typically occurs between November and March depending on weather and ground conditions.

No significant alteration to wetland resources areas will occur as a result of the proposed management program; instead the resource areas will be enhanced by controlling non-native, invasive plant species, and improving wildlife habitat. No heavy equipment is proposed within wetland resource areas or Riverfront Area. All work will be conducted in a manner that minimizes soil disturbance, rutting, and impacts to existing native vegetation.

Please note that coordination with Massachusetts Natural Heritage & Endangered Species Program (NHESP) is required as part of this submittal. All work will be conducted in accordance with NHESP requirements. Activities will be scheduled outside of sensitive breeding seasons where practicable, or otherwise performed in a manner consistent with NHESP guidance and best management practices.

3.2 Proposed Products

Glyphosate (AquaPro® - EPA # 62719-324-67690, Rodeo – EPA # 62719-324 or equivalent)
Glyphosate is used to control waterlilies, watershield and emergent plants such as purple loosestrife and Common Reed. It is typically applied in August/September for control of emergent species. Glyphosate would be applied at the recommended Federal/State concentration of 3 quarts/acre. There are no water-use restrictions associated with the use of glyphosate other than use in the vicinity of potable water intakes, but prudent practice calls for restriction of water usage on the day of treatment as an additional

safeguard. These restrictions are consistent with good practice and Massachusetts guidelines for herbicide treatments.

Glyphosate is a systemic herbicide and is foliar active. This means the herbicide is active only on contact with the plant. It has no activity in surrounding soil or water. The herbicide is applied to the leaves of the target plant and is translocated down into the rhizomes or roots of the plant. Glyphosate is absorbed by plant foliage and moves throughout plant tissues. Once inside the plant, the active ingredient interrupts the plant's ability to produce a protein it needs to live. The protein that glyphosate targets is found only in plants. It does not exist in humans, wildlife or fish. Glyphosate binds tightly to most types of soil particles and is unavailable for root uptake. There is low potential for leaching or contamination of groundwater with glyphosate herbicide. Microorganisms in the soil and water break down into its natural components.

Impacts Specific to the Wetlands Protection Act using Glyphosate[1]

- Protection of public and private water supply – Protection of public and private water supply – Detriment (prohibition within one quarter mile of surface drinking water supplies due to toxicity), but generally neutral where allowed
- Protection of groundwater supply – Neutral (no interaction)
- Flood control - Neutral (no significant interaction)
- Storm damage prevention – Neutral (no significant interaction)
- Prevention of pollution – Generally neutral (no significant interaction), but could be a detriment if plant die-off causes low oxygen at the bottom of the lake
- Protection of land containing shellfish - Neutral (no significant interaction)
- Protection of fisheries - Possible benefit (habitat enhancement) and possible detriment (food source alteration, loss of cover)
- Protection of wildlife habitat – Possible benefit (habitat enhancement) and possible detriment (food source alteration, loss of cover)

Imazapyr (Habitat – EPA #241-426-67690)

Imazapyr is used to control riparian and emergent plants such as purple loosestrife, Common Reed and cattail. A complete list of species controlled can be found on the product label. Imazapyr would be applied at or below the label rate of 2 quarts/acre. Temporary water use restrictions for imazapyr are: 1.) No irrigation for 120 days after application or until concentrations are below 1.0 ppb. 2.) No product application directly to water within 0.5 miles upstream of active potable water intake. There are no restrictions on swimming, boating, fishing, watering of livestock, or domestic use, but prudent herbicide/algaecide management suggest that we close the area on the day of treatment. The management areas will be posted with signs warning of these temporary water use restrictions prior to treatment.

Imazapyr is a systemic herbicide. When applied as a foliar spray, uptake is primarily through the foliage and roots and rapidly translocated to growing points, where it inhibits amino acid synthesis required for protein synthesis and cell growth. With application, the plant cannot produce necessary components for growth and will slowly die. The protein synthesis inhibited by imazapyr is not present in mammals, birds, fish, or insects.

Impacts Specific to the Wetlands Protection Act using Imazapyr

- Protection of public and private water supply – Generally neutral, but may have detriment at high doses (setback of treatment required, with distance based on dose and area treated)
- Protection of groundwater supply – Neutral (no interaction)
- Flood control - Neutral (no significant interaction)
- Storm damage prevention – Neutral (no significant interaction)
- Prevention of pollution – Generally neutral (no significant interaction), but could be a detriment if plant die-off causes low oxygen at the bottom of the lake

[1] Commonwealth of Massachusetts Executive Office of Environmental Affairs. *Practical Guide to Lake Management*: 2004. 128 p.

- Protection of land containing shellfish - Generally neutral (no significant interaction)
- Protection of fisheries - Possible benefit (habitat enhancement) and possible detriment (food source alteration, temporary loss of cover)
- Protection of wildlife habitat – Possible benefit (habitat enhancement) and possible detriment (food source alteration, temporary loss of cover)

Imazamox (Clearcast – EPA # 241-437-67690)
Recently registered by the MA Department of Agricultural Resources, the USEPA/MA registered herbicide Imazamox will be applied to the area at or below the permissible label dose. It has been registered for multiple years by the USEPA and utilized outside of the state to manage submersed, floating-leaf, and emergent vegetation. Imazamox would be applied as a foliar spray to control invasive Common Reed growth at the application rate of 1.5 lbs ae/acre, if necessary. Temporary water use restrictions for Imazamox are now: 1) No drinking or cooking until residue testing results are below 50 ppb, 2) No irrigation until concentrations are below 50 ppb. There are no restrictions on swimming, boating, fishing, watering of livestock, or domestic use, but prudent herbicide management suggest that we close the area on the day of treatment. The surrounding area will be posted with signs warning of these temporary water use restrictions prior to treatment.

Imazamox is a systemic herbicide. When applied as a foliar spray, it is quickly absorbed by foliage and rapidly translocated to the growing points stopping growth. The concentrated herbicide is diluted with water and applied to the Common Reed leaves via a low-volume pumping system or backpack sprayers. A spray adjuvant will be mixed with the diluted herbicide to improve efficacy.

Impacts Specific to the Wetlands Protection Act using Imazamox

- Protection of public and private water supply – Generally neutral, but may have detriment at high doses (setback of treatment required, with distance based on dose and area treated)
- Protection of groundwater supply – Neutral (no interaction)
- Flood control - Neutral (no significant interaction)
- Storm damage prevention – Neutral (no significant interaction)
- Prevention of pollution – Generally neutral (no significant interaction), but could be a detriment if plant die-off causes low oxygen at the bottom of the lake
- Protection of land containing shellfish - Generally neutral (no significant interaction)
- Protection of fisheries - Possible benefit (habitat enhancement) and possible detriment (food source alteration, loss of cover)
- Protection of wildlife habitat – Possible benefit (habitat enhancement) and possible detriment (food source alteration, loss of cover)

Proper herbicide application allows for targeted plant control without posing an unreasonable, adverse risk to non-target species and wildlife. Written approval from the Commission will be sought should alternate products be considered in future years. All products proposed for use will be registered for wetland use in Massachusetts

Chemical Descriptions

Detailed information on all the products proposed in this NOI can be found at the **Massachusetts Department of Conservation and Recreation, Lakes and Ponds Program website**. There are links under the Publications tab to the "Generic Environmental Impact Report for Eutrophication and Lake Management in Massachusetts" and the "Practical Guide to Lake Management in Massachusetts." Additional information on these herbicides can be found at the **Massachusetts Department of Agricultural Resources website**:

Pre-management inspections will be conducted in order to finalize the treatment areas and assess the growth phase of the target plant species. Post-management inspections will be conducted in order to assess the efficacy of the management efforts and any impacts on non-target species so future applications can be properly adjusted to minimize non-target impacts.

4.0 Alternative Analysis:

Alternatives to the proposed vegetation management plan were considered and all available strategies for control of the Common Reed at the site were evaluated. Findings and recommendations were based on direct experience and discussions found in the *Eutrophication and Aquatic Plant Management in Massachusetts Final Generic Environmental Impact Review* (FGEIR, EOEA 2004). Alternatives such as the following were evaluated to

Bottom Weed Barriers: Not Recommended

Physical controls, such as the use of bottom weed barriers (i.e. Aquatic Weed Net or Palco) can be effective for small dense patches of nuisance vegetation but are not cost effective or feasible due to Common Reed's rhizomatous growth and propagation. Weed barriers are expensive to install and maintain at ~$1.75/ft^2 (material & installation). Semi-annual maintenance to retrieve, clean and re-deploy the barriers would be expensive and time consuming. Additionally, covering expansive areas may also have detrimental impacts on invertebrates or other types of wildlife.

Hydro-Raking: Not Recommended

The mechanical Hydro-Rake can best be described as a "floating backhoe" with a York Rake attachment. The barge is paddlewheel driven to facilitate operation in shallow water (<2 feet) and it can effectively work to depths of about 12 feet. It works from the water, thereby avoiding damage to sensitive shoreline habitat and property. This machine "rakes" the upper sediment layer, collecting plants and their root systems. The Hydro-Rake is well suited for the removal of plants large rhizome structures and in that case can provide multiple years of control. Hydro-Raking is currently not being proposed because most of the growth is located within BVW. It can be used to remove dense, in-water rhizome systems after herbicide treatments.

Harvesting/Cutting: Not Recommended

Harvesting and cutting of Common Reed is not recommended due to its ability to propagate through rhizomatous growth. Hearty and extensive rhizome systems outcompete native species trying to establish within developed stands. This method would be akin to mowing a lawn; it would be managed but would not provide lasting control.

Biological: Not Recommended

There are no proven biological controls available or approved by the State for the control of Common Reed. Attempts to use goats to graze and manage Common Reed have been tried with no avail as the herbivores eat what they choose to and prefer other vegetation.

Sediment Excavation/Dredging: Not Recommended

Excavating sediment containing Common Reed rhizomes can provide effective management, but complete removal is required, as one viable rhizome can repopulate an area. Also, the disturbed area is prime habitat for the introduction of new Common Reed or other invasive species. This technique could require the expenditure of tens of thousands of with no guarantee of success.

Do Nothing: Not Recommended

If the invasive plant growth is allowed to continue unabated, dense monocultures will continue to outcompete native species. This will cause a loss of wildlife habitat, as Common Reed is not suitable for most wildlife species. Stands in water will accelerate eutrophication as water flows will be reduced and sediments settle out. Areas of reduced water flow would provide extensive mosquito breeding habitat. The site's ecological, recreational, and aesthetic value would be significantly degraded.

5.0 Compliance:

Massachusetts Wetlands Protection Act:

The objective of this project is to control invasive species through use of USEPA / MA DAR registered herbicides.

Controlling densities of non-native species will typically not adversely affect wildlife habitat and will not negatively impact other interests of the Massachusetts Wetlands Protection Act. No significant alteration to wetland resources areas will occur as a result of the proposed management program; instead, the resource areas will be enhanced by controlling the nuisance plant growth. The proposed management activities are consistent with the guidelines in the following documents:

- Final Generic Environmental Impact Report: Eutrophication and Aquatic Plant Management in Massachusetts (June 2004)
- Guidance for Aquatic Plant Management in Lakes and Ponds: As it Relates to the Wetlands Protection Act (April 2004 – DEP Policy/SOP/Guideline # BRP/DWM/WW/G04-1)
- The Practical Guide to Lake Management in Massachusetts (2004)

DEP License To Apply Chemicals:

All chemical applications will be performed by MA DAR Licensed Applicators. The USEPA/MA registered herbicides will be applied at recommended label rates, in accordance with the "Order of Conditions" and DEP "License to Apply Chemicals" permits (BRP WM04). Prior to treatment, the shoreline and surrounding treatment areas will be posted with signs, warning of all temporary water use restrictions. A site specific "License to Apply Chemicals" for the proposed treatment will be filed with Massachusetts DEP, Office of Watershed Management.

Massachusetts Environmental Policy Act:

The strategies proposed in this NOI are options approved under the Massachusetts Environmental Protection Act (MEPA) process that was approved in 2004 with the issuance of the FGEIR and the *Practical Guide to Lake and Pond Management in Massachusetts*. These approaches do not require individual MEPA review.

Massachusetts Endangered Species Act:

According to the most recent Natural Heritage maps provided by MA GIS (Attachment C - Figure 4), the proposed project area is within an area designated as Priority Habitats of Rare Species as determined by the Massachusetts Natural Heritage & Endangered Species Program (NHESP).

6.0 Impacts of the Proposed Management Plan Specific to the Wetlands Protection Act:

Protection of public and private water supply – The Weir River area is not used as a drinking water supply. Herbicide treatment along the coastal resource areas will not have any adverse impacts on the public or private water supply, when used in accordance with the product label and conditions of the MA DEP License to Apply Chemicals.

Protection of groundwater supply – According to available studies, there is no reason to believe that the groundwater supply will be adversely impacted by the application of the chemicals at the proposed rates, when used in accordance with the product label. Contamination of groundwater by herbicides is limited by their low rate of application, rapid rate of degradation, and uptake by target plants. State licensed applicators take all necessary precautions when mixing and disposing of all chemical containers.

Flood control and storm damage prevention – No construction, dredging or alterations of the existing floodplain and storm damage prevention characteristics of the site are proposed. However, in some instances, abundant and excessive plant growth can contribute to high water and flooding. Most commonly this occurs in the vicinity of waterbody outlets or water conveyance channels and structures. The unmanaged, annual growth and decomposition of abundant plant growth is also known to increase sediment deposition at an accelerated rate. Therefore, the application of herbicides may increase the capacity of the resource area over the long-term to provide flood protection.

Prevention of pollution – No degradation of water quality or increased pollution is expected by the application of the herbicides. The proposed herbicides are relatively slow acting in controlling the nuisance vegetation. This results in a slow release of nutrients from the decaying plants, reducing the potential for increases in nutrients that can cause algae blooms. Removal of the excessive growth of vegetation will contribute to improved water circulation and a reduction in the potential for anoxic conditions. The post-treatment decrease in plant biomass will help to decrease the rate of eutrophication currently caused by the decomposing of excessive plant material.

Protection of fisheries and shellfisheries – Contiguous, dense beds of invasive vegetation provide poor habitat for most species of fish and wildlife habitat. Dense plant cover frequently results in significant diurnal fluctuations in dissolved oxygen as well as oxygen depletion during certain times of the year. While temporary effects on some desirable submersed and floating-leafed species may occur following the application of an herbicide, non-target plants typically rebound quickly. Shoreline emergent plants will not be impacted following the use of herbicides.

Protection of wildlife and wildlife habitat – In general, excessive and abundant plant growth, especially non-native plants, provides poor wildlife habitat for fish and other wildlife. The proposed management plan is expected to help prevent further degradation through excessive weed growth and improve the wildlife habitat value in the long-term. Maintaining a balance of open vegetated area is intended.

7.0 Methods & Schedule:

The methods and schedule for the treatment and removal of Phragmites is described below. Please note that all activities would be scheduled during low tide events.

2026 Task 1. Cutting/Mowing. Dormant season 2025/2026. Cutting/mowing of all phragmites in the project area in preparation for foliar treatment in the summer. Mowing will be done with a low-ground-pressure mower that will cut the phragmites low, mulching the stems.

Task 2. Initial foliar treatment. June. Initial foliar treatment to all phragmites within the project area. Timing based on re-growth to ensure optimal height for treatment.

Task 3. Follow up foliar treatment. September. Follow-up foliar to any resurgent phragmites growth within the project area. Hand-wiping to isolated stems and those in proximity to limits of project area, and/or in proximity to desirable returning plant species.

Task 4. Mowing (second mowing after treatment) November. Cleanup of treated phragmites to allow native plants the opportunity and resources to recolonize the area. Mowing will be done with a low-ground-pressure mower that will cut the phragmites low, mulching the stems.

Prepare and submit an annual monitoring report to the Conservation Commission at the end of the growing season to document the tasks above.

2027 Task 5. Follow up foliar treatment. Summer. Follow-up spot foliar treatment to any new phragmites growth within the project area. Hand-wiping to isolated stems and those in proximity to limits of project area, and/or in proximity to desirable returning plant species.

Prepare and submit an annual monitoring report to the Conservation Commission at the end of the growing season to document the tasks above.

2028 Task 6. Follow up foliar treatment. Summer. Follow up spot foliar to any new phragmites growth within the project area. Hand-wiping to isolated stems and those in proximity to limits of project area, and/or in proximity to desirable returning plant species.

Task 7. Monitoring Report. Prepare a final monitoring report for the Conservation Commission to document progress made after the third growing season on the project in support of a Certificate of Compliance to close out the permit.

Objective: 80% phragmites control resulting from 2026 series of treatments; 90% resulting from 2027 follow-up methods; and 95 to 100% control from 2028 follow-up. The treated areas will be monitored for new invasive species regrowth during the growing seasons following completion of work. If invasive species re-establish, follow-up management will be performed as necessary to support the success of the ecological restoration project.