

Sassaquin Pond Water Quality Improvements Projects

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The logo for CDM Smith, featuring the company name in a bold, white, sans-serif font on a dark blue background. The 'C' and 'M' are stacked vertically, with 'Smith' to the right.

**CDM
Smith**

A horizontal decorative bar at the bottom of the slide. It consists of a light green bar on the left, followed by four dark blue rectangular blocks of varying widths, and a square on the right containing a close-up image of water bubbles. Below this bar is a white horizontal line with the text 'WATER + ENVIRONMENT + TRANSPORTATION + ENERGY + FACILITIES' in a light blue, sans-serif font. The word 'WATER' is in a darker blue color.

WATER + ENVIRONMENT + TRANSPORTATION + ENERGY + FACILITIES

Presentation Contents



Background

Alum Treatment
Phragmites Removal
Impervious Removal

Wetland Resource Area
Impacts and
Compliance with
Performance Standards

Proposed Water Quality Improvements

- New Bedford DPI and Sassaquin Pond Betterment Alliance developed a watershed-based management approach to address water quality
- Presented in Watershed Management Plan (WMP), September 2021

Initial Water Quality Improvements in 2022:

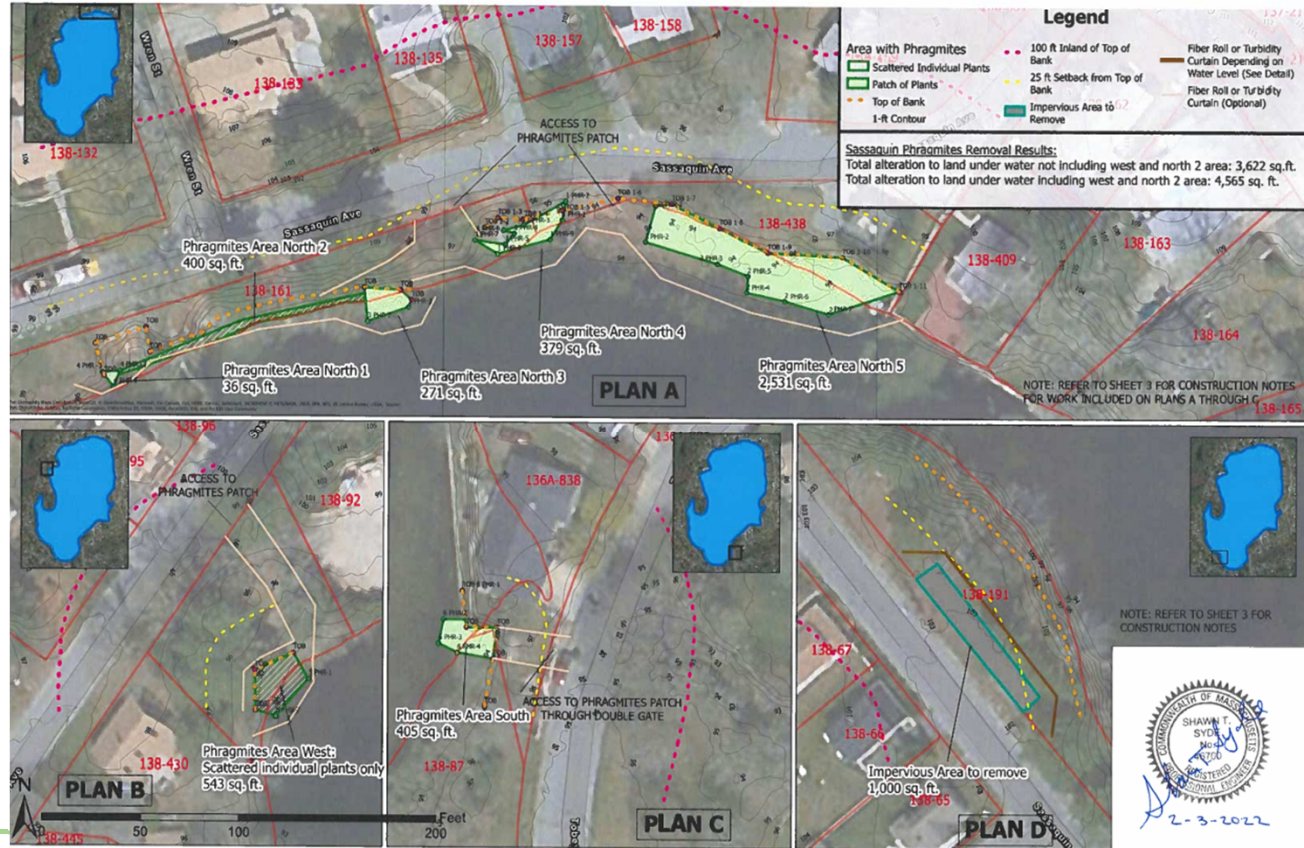
- Alum Treatment
- Phragmites Removal and Management
- Limited Impervious Area Removal

Alum Treatment

- Reduce internal phosphorus release
- Liquid aluminum sulfate and liquid sodium aluminate using spray boat equipped with a calibrated pumping system
- Apply in spring when algae concentrations are lower and focus on areas with pond depths > 3 ft
- Treat 22 acres of Sassaquin Pond (roughly 58 percent)
- Monitoring before, during, and after treatment (pH/conductivity/temperature/dissolved oxygen, total phosphorus and orthophosphate)

Phragmites Removal and Management

- Vegetation Survey conducted on December 3, 2021



Methodology: Herbicide Spray followed by Cut

- Clearcast (imazamox) systemic herbicide by foliar treatment for 2 consecutive years
- Concentration: 2.0 qts./ac. in a 2.0% solution
- Selectively applied using low volume backpack sprayer
- Labor Day – Mid October (plants reached full inflorescence)
- Cut stalks using hedge trimmer after 1st year of treatment, dispose off-site
- Repeat treatment 2nd year
- Follow up monitoring and hand cut removal by City DPI

Ongoing O&M: Phragmites Removal

- Conduct annual survey of the shoreline for years 3 - 5 after start of treatment (target mid/late summer)
- If phragmites plants are present, DPI or a vendor under DPI supervision will:
 - Remove individual/small clusters of several plants by hand digging
 - If larger group, hand cut at end of growing season. Monitor for recurrence next year, hand cut again. If phragmites continue to appear, contract with certified herbicide applicator to treat and cut as described in the original NOI for year 1 - 2 treatments.
- If phragmites are present in years 3 - 5, continue with annual surveys until 3 years have passed without finding phragmites
- If phragmites not found after year 5, survey shoreline every 3 years

Impervious Area Removal

- Remove two asphalt drainage swales and replace with naturalized bioswales
- Plant with sedges, buttonbush (*Cephalanthus occidentalis*), and inkberry (*Ilex glabra*)
- Reduce velocity of stormwater runoff into the pond and improve water quality



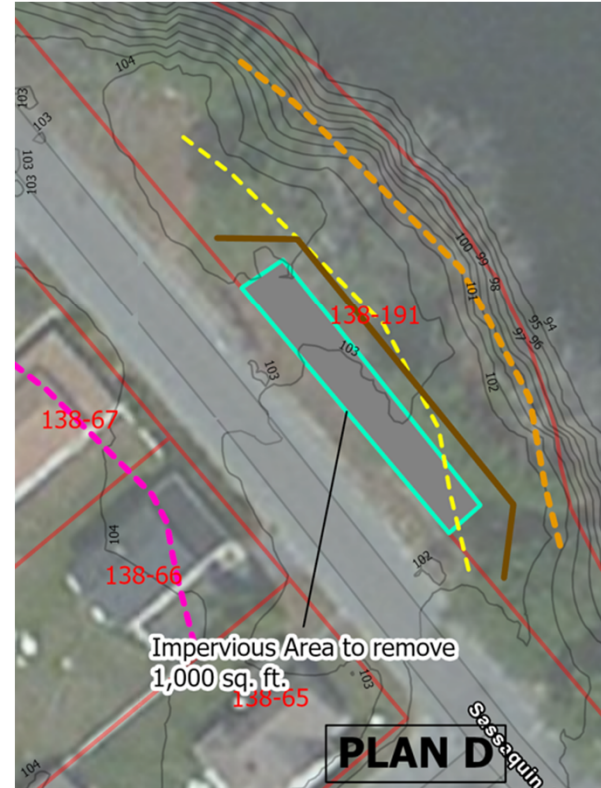
SW-1 (Sassaquin Ave. at Thrush St.)



SW-2 (1288-1926 Sassaquin Ave.)

Impervious Area Removal

- Remove 1,000 sf of old paved roadway
- Restore to grassy field
- Reduce velocity of stormwater runoff into the pond and improve water quality, and provide groundwater recharge



Wetland Resource Area Impacts

Wetland Resource Area	Temporary Impacts (sf) from Water Quality Improvements Projects			
	Alum Treatment	Phragmites Removal	Impervious Area Removal	Total Temporary Alteration
Land Under Water (LUW)		4,565 sf (total including scattered individual plants areas)		4,565 sf (total including scattered individual plants areas)
Inland Bank	20 linear feet (for access)	0	14 linear feet	34 linear feet

- Designed in compliance with performance standards for Land Under Water and Inland Bank