July 2022

Walker Pond Improvements

Latest news and bulletin updates

Why Improve Walker Pond?

Walker Pond has the potential to support boating and fishing as well as skating in the winter months, but due to nutrient and sediment loading from the pond's watershed, the waterbody has significantly deteriorated in recent years. The primary recreational uses of the pond have been fishing, skating, bird watching, and quiet contemplation.

Walker Pond is choked with excessive aquatic vegetation that needs to be removed for the health of the pond. A three-phase capital improvement project was proposed and approved by the Select Board in 2021.

Walker Pond dominated by watermeal and duckweed (water surface), and native coontail and filamentous algae (submerged). Photo taken by ESS Group, Inc. during the Walker Pond Lake Management Study 2017.

Selection of animals observed during wildlife survey of Walker Pond 2017. Left: green heron. Middle: great blue heron. Right: female bullfrog. Photos by ESS Group, Inc.

A Phased Project Strategy

The Walker Pond Improvement Project is a multi-phased project broken into three (3) categories of activities to address the water quality of Walker Pond.

Category I involves an analysis of the contributary area providing runoff to the pond. Nature based solutions will be installed to encourage infiltration and promote nutrient uptake and soil activity resulting in stormwater quality improvements. Sediment and litter removal will be increased with the installation of drainage manholes and sumps. Public education and participation via pamphlets and media, catch basin disk placement, and educational signage will support the continued improvement of water quality.

Category II involves treatment options for waterbody conditions. A report conducted by ESS Group, Inc. in 2017 provided recommendations to improve the health of the pond. Conservation has endorsed hydro raking, the mechanical removal of vegetative overgrowth and will consider the application of chemicals, herbicides, and algicides to the pond if deemed necessary. Improvements to the outlet structure, including the overflow grate and wooden stop-log replacements will be assessed.

Category III involves the extension of the sewer main in Walker Lane. Although not specifically a part of the Walker Pond Capital Improvement Project, the extension of the sewer main would allow additional properties abutting the pond to redirect their sewage flow from entering septic system and leach fields in the ground and directing it toward the sewer main where it is treated at the sewer treatment plant prior to discharge.

Category I Update:

- Educational Information/Pamphlets
- Public Participation Activities
- Drainage Manholes
- Wildflower/Tall Grass
- Tree Infiltration System

Page 3-4

Category II Update:

- Hydro Raking
- Chemicals, Herbicides, and Algicides
- Outlet Structure

Page 5

Category III Update:

- Sewer Main Extension

Page 6

July 2022

Walker Pond Improvements

Latest news and bulletin updates

Project Funding

The Walker Pond Improvement Project will not only benefit residents and visitors alike, but also promote environmental stewardship and provide opportunities to include beneficial BMPs and further our NPDES efforts.

October 4, 2020: Special Town Meeting, $270,000 was approved for Walker Lane Sewer work. (Category III of Walker Pond Improvements)

May 1, 2021: 2021 Special Town Meeting, $125,000 was approved for Category I of Walker Pond Improvements

February 16, 2022: American Rescue Plan Act (ARPA), $356,000 was approved for Category II of Walker Pond Improvements

Plan Design

Final plan design was achieved March 28, 2022. The design involves the reduction of impervious pavement and the addition of stormwater treatment through landscape filter strips and infiltration trenches.

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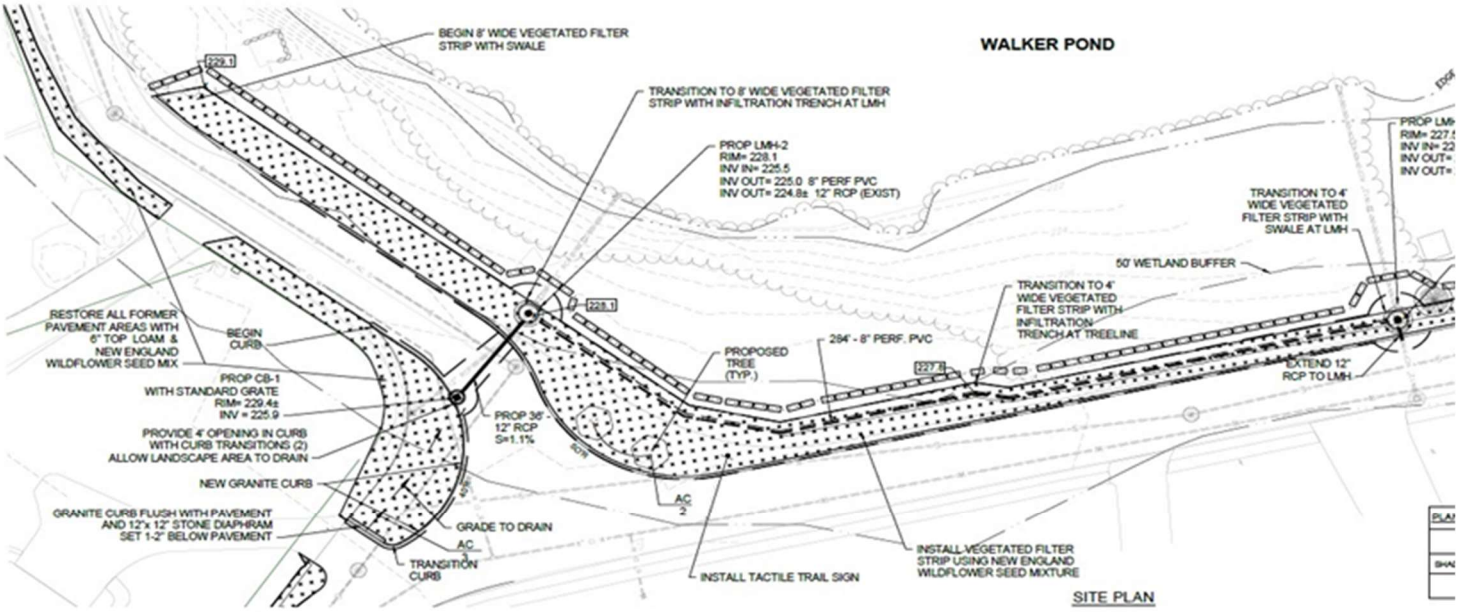


July 2022

Walker Pond Improvements

Latest news and bulletin updates

Category I Update

Educational Information/Pamphlets

A mailing list was generated based on the watershed area was generated and 200 brochures were printed and distributed via mail on January 24, 2022.

An educational article was also created and will be distributed via The News You Need(ham) newsletter.

Educational signage has been incorporated into the final design. The messaging will be customized to educate visitors about Walker Pond wildlife, effects of pollution and mitigation practices.

Drainage Manholes

The addition of two Leaching Manhole structures is part of the design to facilitate inspections of the stormwater system as well as maintenance of the stormwater line.

- Reduction of Total Suspended solids into Walker Pond.
- Reduction of weed growing nutrients such as Phosphorous into Walker Pond

Wildflower/Tall Grass

BMPs are included in the design to help replicate or restore the natural replenishment of groundwater via infiltration. By reducing the volume of runoff, as the result of impervious cover, leaving specific properties through infiltration, pathogens and phosphorus (and nitrogen) are reduced from direct discharges into nearby waterbodies. Please see the final plan design on Page 2 for locations of this feature.

Tree Infiltration System

Comparable to the wildflower and tall grass BMPs, a tree infiltration system is another nature-based component included in the proposed design that offers aesthetic benefits in addition to infiltration.

The initial proposed design of the Walker Pond Improvements has evolved during the preliminary activities during Phase II and reflects Conservation Department feedback and the overall desire to maintain the view of the pond. The changes resulted in greater infiltration capacity through the expansion of the wildflower and tall grass BMP in lieu of initially proposed tree infiltration systems.

While the final design does not include a specific tree infiltration system, the plan does include the addition of two (2) trees to be planted within the vegetated filter strip area.

Public Participation Activities (Catch Basin Disks)

The storm drain marking is an educational tool to remind people of the connection between the storm drain and local waterways.

A community event is in development to provide volunteers an opportunity to participate. We will communicate details when the date, time, materials, and personnel are identified and confirmed. More to come!

Construction

Needham has contracted with Woodall Construction Co.

Construction activities are anticipated to begin this summer and continue for approximately 5 weeks.

An overview construction schedule is included on Page 4.

July 2022

Walker Pond Improvements

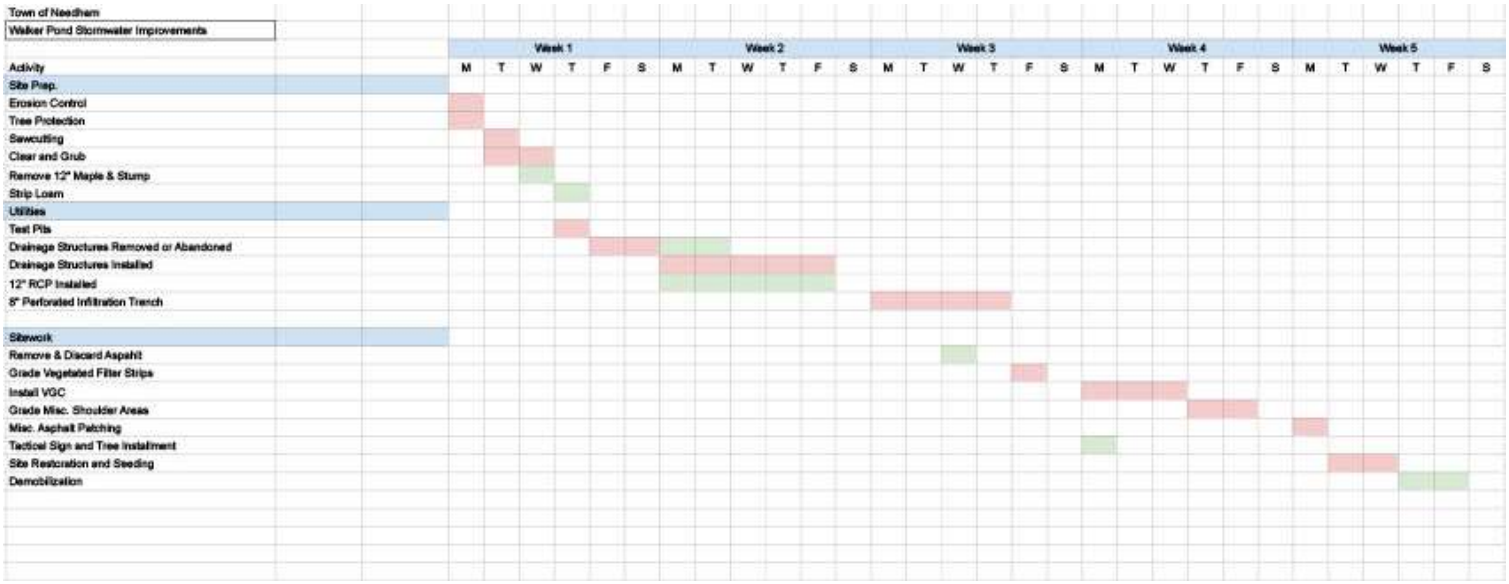
Latest news and bulletin updates

Category I Update (cont.)

Overview Construction Schedule

*It is important to note that all construction schedules are subject to change without notice based on weather delays or unforeseen site conditions.

Due to supply chain delivery delays, the contractor is currently awaiting material delivery to begin construction activities. The following schedule is categorized by task and week to illustrate the anticipated duration of the project.



July 2022

Walker Pond Improvements

Latest news and bulletin updates

Hydro Raking

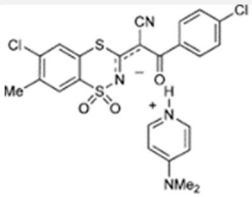
Hydro-raking is a method employed to control non-native invasive and native nuisance plants in freshwater ponds and lakes.

Walker Pond will benefit from this treatment with improved water quality, increased water volume, reduction of odors, and creating a healthier, more balanced aquatic ecosystem. Needham has exercised this option at other waterbodies within town and have had success in preserving the appearance and useability of our natural resources.

The scope of this task is currently being evaluated during the construction activities of Category I. Once a fully developed plan has been approved, we will communicate the anticipated next steps. The evaluation includes:

- Assessment of conditions
- Permitting (if necessary)
- Conservation input
- Scope of Work
- Identify contractors
- Bid preparation
- Proposed schedule

Chemicals, Herbicides, and Algicides



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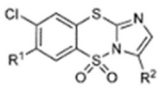

272: R^1 = CN; R^2 = H
273: R^1 = Me; R^2 = Me

Taking care of our ponds in Needham can help keep the environment, local recreation and overall aesthetics in balance. It can become necessary to undergo a treatment program that includes aquatic chemicals to control aquatic weeds and correct undesirable water quality problems.

Walker Pond was treated previously with positive results and has provided the community with years of pond usage and enjoyment. Given the current conditions and quality today, it is prudent to consider restarting a chemical treatment course.

Further information on the treatment course and consultant will be shared during the next phase of the improvements.

Outlet Structure

The outlet structure at the intersection of Walker Lane and Central Ave is a poured-in-place concrete structure and has been in operation since the mid-1990's. The stop logs that are utilized for controlling the pond elevation have deteriorated to the point that they are no longer functioning. They have been replaced by a temporary fabricated steel plating for now but it is still allowing water to release necessitating the sandbags currently in place.

Engineering is working diligently with our consultant to develop a plan for replacement of the structure with one that also gives the Town the ability to perform discharge sampling from the pond. The new structure would also take into consideration longevity, operations and maintenance ease and safety.

The initial stage of this plan includes engineering and market research of outlet structure options and costs for the final solution. As the planned solution is further defined, we will share the appropriate information at that time.

June 2022

Walker Pond Improvements

Latest news and bulletin updates

Sewer Main Extension on Walker Lane

The Town of Needham began installing the overall municipal sewer system in 1920's and the Walker Pond area in the 1960's. As Walker Lane is a private way, it was not included in the initial installation of public sewer.

The Walker Lane Sewer Extension went out to bid in February of 2021 and awarded to CN Corporation in April 2021. Construction began in May 2021 and final completion was reached in June 2022. The following tasks were a part of the overall project:

- Approximately 550ft of sewer line was added
- 2 additional sewer manhole structures
- The ability for 4 residential locations to tie-in to the Town Sewer system

The project was initiated due to known septic system issues in the area and residents who were requesting help to facilitate connections to the Town Sewer system. With the extension complete, it has allowed residents to no longer require a separate septic system. Walker Pond will realize the benefits of this improvement with the potential reduction of nutrients into the Pond system as residents interconnect to the main line.

All activities in and around the Walker Pond area contribute to the health of the water, including runoff from lawn maintenance. With residents interconnected with Town Sewer, it helps to minimize the nutrients that may be leaching from a less efficient septic systems and in time, may help to improve the water quality and diminish excessive vegetation.