July 2023

# Walker Pond Improvements

## Latest news and bulletin updates

## Water Quality Treatment

***"All water has a perfect memory and is forever trying to get back to where it was."*** ~ Toni Morrison


The Walker Pond Improvement project continues to progress keeping this important resource accessible and available for the benefit of the surrounding community and environment. The activities in the next phase are targeted at addressing water quality.

Ponds are an important part of our natural landscape providing a habitat for diverse aquatic flora and fauna and wildlife. Good water quality is vital for a balanced pond ecosystem. While all ponds experience natural changes in nutrient cycling, plant productivity, and water levels over time, the unintended consequences of land development, use of fertilizers, improperly disposal of pet waste, and residual pollutants from human activities in all communities have expanded and accelerated threats to pond health. Needham strives to balance the impact of development needs of our community and the care and conservation of the natural environment.

The prior phases of the project were aimed at reducing potential sources of contaminants from entering the pond and negatively affecting the water quality. The installation of contributary area runoff control, treatment features and the sewer main extension support the overall improvement of water flowing into the pond from the greater watershed. The structural and nature-based measures included drainage structures, a vegetated filter strip and educational signage. These measures are designed to improve drainage, promote nutrient uptake and give runoff a greater opportunity for infiltration. Providing house connection to the Town's sanitary sewer through the sewer main extension aids in reducing nutrients that may leach to surrounding waterbodies from septic systems. Preventing nutrients from entering the water to more closely mimic pre-development conditions is the most sustainable way to improve the ability of the pond to naturally ward off deterioration and support the long-term health of wildlife and the surrounding community.

Addressing the condition of the existing pond water quality is the focus of the final phase of this multi-phase project. Included in this phase we are also tackling the overflow structure that needs replacement and has been temporarily fortified until an assessment and final design can be developed.

## Project Activity

Over the past several months BETA has been performing data collection tasks including the delineation of resource areas at the end of March, survey in April and development of a sediment sampling plan. A Request for Determination of Applicability (RDA) will be submitted to the Conservation Commission by mid-July to request approval of the delineation and to conduct the sediment sampling based on the prepared plan.

A consultant (Water & Wetland) is scheduled to perform pond management assessments of the pond weeds at the end of July. The sediment sampling by BETA is anticipated in mid-August, pending RDA approval. The sediment sampling and weeds assessment will provide data as a basis for the Pond Management Plan strategy and future permitting efforts. Delineation and surveying activities were performed around the pond outlet control structure, pond inlets at Walker Lane and the anticipated pond access point for sampling and treatment work at Walker Gordon Field. Upon receipt of the existing conditions plan from the survey or the concept design for the new outlet control structure is anticipated by the end of summer.

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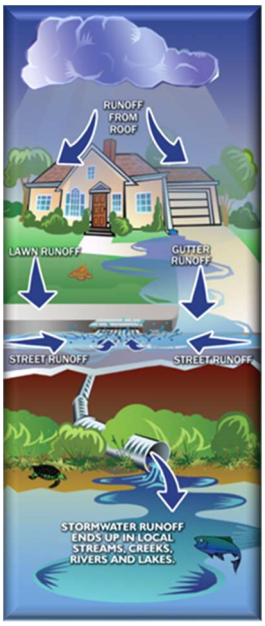
### Volunteer Opportunity




Education of the community is an important component in the sustainable maintenance and care of Walker Pond. Understanding how the watershed is interconnected and how actions of individuals can make positive impacts on our waterbodies increases the ability to maintain these resources effectively and responsibly.

Nonpoint Source (NPS) pollution is triggered when rainfall and snowmelt carry debris and pollutants over land to waterways such as streams, rivers, ponds and wetland areas and eventually to the Charles River. We all contribute to NPS many times without meaning to. NPS pollution may consist of fertilizers, grease, oil, gasoline, antifreeze, road salt, paint solvents, animal waste and even grass clippings and fallen leaves. NPS may also consist of atmospheric deposition, sediment and erosion control and seepage of sewerage from septic systems. The drainage system is designed to receive stormwater runoff from pavement, sidewalks, lawn areas into the drainage system via catch basins which discharge to nearby waterbodies.

Marking storm drains is a great way to make people aware that dumping into a catch basin is not allowed because the stormwater drains from the catch basin to the Charles River. The storm drain marking is an educational tool to remind people of the connection between the storm drain and local waterways.

To facilitate this event, we are looking for a community member to serve as a liaison and assist with coordination for this important effort. If you or someone you know is interested, please email kdonovan@needhamma.gov for more information.

### New Educational Signage Installed


*Custom sign to educate visitors to Walker Pond about the history, pond rules and stormwater improvements.*

Educating visitors about the wildlife in Walker Pond and raising awareness about pollution and mitigation practices is a vital component to the Walker Pond Improvement Project. By installing educational signage along the pathway at Walker Gordon Field, the community is communicating valuable information to the public in a location where it is more likely to be observed.

Placing the signage at Walker Gordon Field instead of Walker Lane at Russell Road was a strategic decision to maximize visibility and encourages the information to reach a larger audience. The new location was also approved by Conservation.

By providing accessible information about local wildlife, the effects of pollution, and mitigation practices, it empowers visitors to make more informed decisions and encourages them to become stewards of the environment. The goal is to promote greater environmental awareness and conservation among the public.

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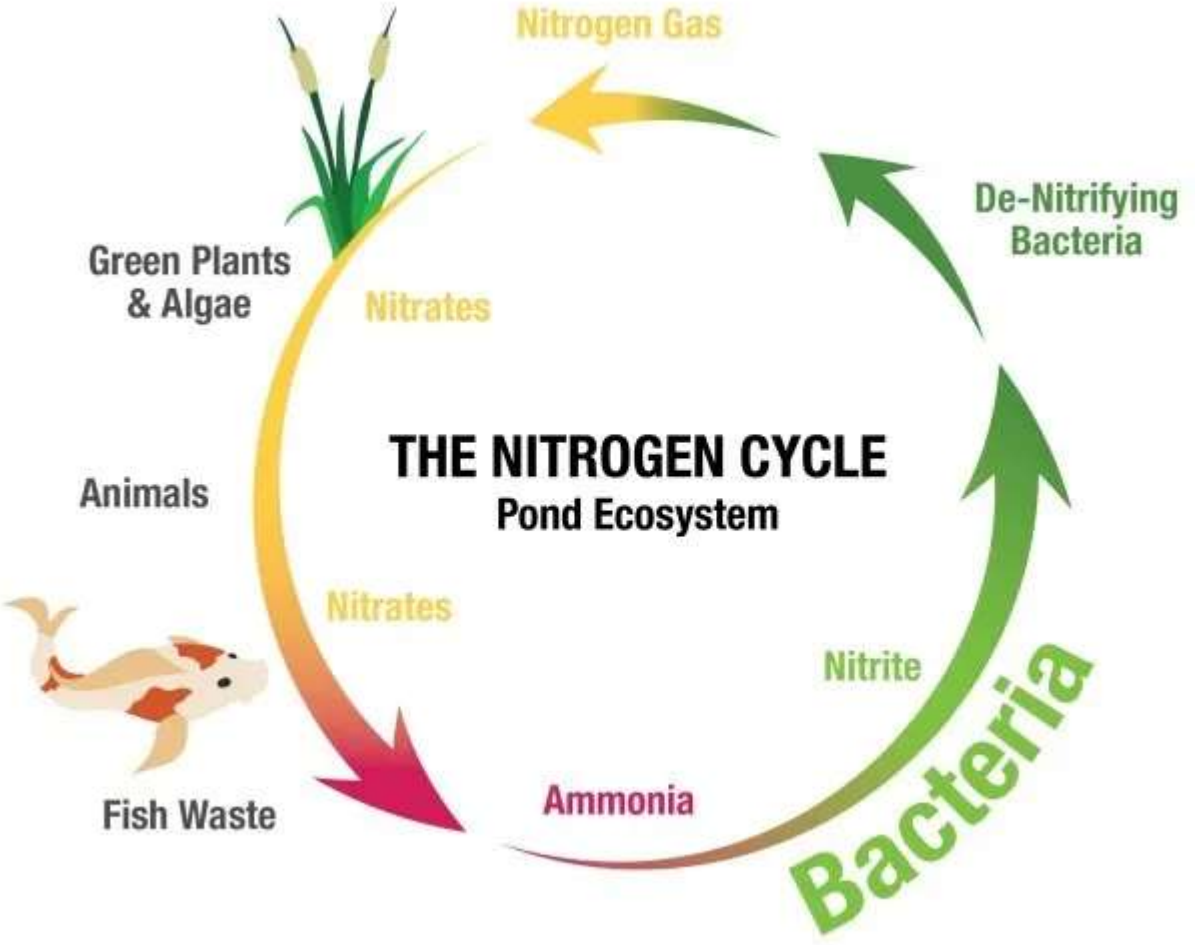
To achieve the goals of this improvement effort, Needham has undertaken a measured approach to overall pond management. This approach is intended to support the long-term health and enjoyment of Walker Pond.

Herbicides in many cases are the most effective and the most economical solution to managing invasive species. Many factors go into choosing the appropriate herbicide including target plant(s), minimizing impact to non-target native species, and duration of control.

The following page provides the list of tasks and activities anticipated during this phase of the Walker Pond Improvement Project.

**Next Steps**

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| Category | Description |
|---|---|
| **Data Collection** | ▪ Inspection and wetland resource area delineation<br>▪ Prepare a report the wetland resource areas delineated and/or identified and methodology used to include but not limited to wetland boundary delineation field data sheets and representative photographs.<br>▪ Identify potential entrance and exit locations for weed control treatment, as well as the existing conditions of the likely impacted areas to inform restoration and mitigation design.<br>▪ Field Survey: Detail and Topographic survey<br>Compile Right-Of-Way Information<br>Collect Underground Utilities Information<br>Electronically Plot Survey Information<br>Perform field check of the survey against existing conditions<br>▪ Site Observations: Perform a field visit to take measurements of the control structure and observe its existing condition to the extent possible, and to observe the outfall.<br>▪ Sediment Sampling: Prepare a Sampling and Analysis Plan for submittal to the Massachusetts Department of Environmental Protection (MassDEP) using a combination of composite and grab samples. Up to eight (8) sediment samples will be submitted for analyses.<br>Prepare a memorandum with a site plan and tables summarizing analyzed data and provide recommendations regarding any detected compounds as they relate to the proposed construction activities and off-site management alternatives.<br>Collect flow and turbidity readings from the inlet and outlet during sediment sampling. |
| **Structural Evaluation and Design** | ▪ Review the results of site observations and propose options for repairs and functional improvements to the outlet control structure and inlet headwall. Design consideration will include max flow capacity of existing downstream system and capability to pass the 100-yr storm under future conditions and consider pedestrian safety improvements such as guardrails or fencing.<br>▪ Design and provide construction plans for structure repairs or replacement, technical specifications, and an estimate of potential construction costs. |
| **Pond Management & Treatment** | ▪ Subcontractor, Water & Wetland (specializing in lake, pond and wetland management) to review the ESS 2017 report, review the current condition of the pond through visual survey, collect updated water quality sampling data, compare results and current conditions to the 2017 ESS study and provide recommendations for management and treatment.<br>▪ Use collected information to create a 5-year Pond Management Plan for review by the Needham Conservation Commission during the Notice of Intent Process.<br>▪ Utilizing the results of Year 1 efforts of management, treatment, monitoring to determine revisions to the pond management plans. |
| **Environmental Permitting** | ▪ Prepare a Notice of Intent (NOI) under M.G.L Chapter 131, Section 40 and the Town of Needham Wetlands Bylaw.<br>▪ Prepare and file a Pre-construction Notification Form (PCN) to the US Army Corps of Engineers (USACE) for authorization under the Massachusetts General Permit due to the proposed impacts to Waters of the United States. |
| **Construction** | ▪ Prepare contract documents for construction of the Outlet Control Structure and Headwall.<br>▪ Advertise the project, distribute the contract documents and addenda to potential bidders, evaluate bid results, award contract. |
| **Mechanical Harvesting/Hydroraking** | Mechanical Harvesting (Hydroraking) is an invasive method of removing plants using mechanical equipment and depositing onshore for disposal or composting. This process is similar in nature to dredging due to the amount of soil removed and requires extensive permitting with multiple agencies in addition to internal departments for approval.<br>Hydroraking was discussed but not specifically recommended previously due to higher cost and the types of weeds observed in the 2017 ESS report; however, the process will be reconsidered following year-1 results, assessments, and the approval of the Conservation Commission. |