

## Description

At the intersection of three watershed headwaters (North River, Jones River and the Taunton River) lie the Monponsett Ponds. Split into a “west” and “east” basin by Route 58, the ponds play a unique role in these three watersheds due to a long history of man-made manipulations and interventions. The ponds are relatively shallow water bodies (approximately 13 feet at the deepest) that serve several public interests including drinking water supply, fisheries and wildlife habitat (for three state-listed protected species), flood control, and recreation.

Over the last several years, an alarming decline in water quality, especially in the West Monponsett Pond, has become a critical issue for residents, Town officials, and

those who have a vested interest in the pond. Recent algal blooms have been recorded at over 27x the closure limit of 70,000 cells/mL (DPH’s safety threshold). Additionally there are repeated fish kills and reports of foul and noxious odors as a result of the algal blooms. There are several known reasons for the decline in water quality, including the damming of Stump Brook that drains West Monponsett Pond toward the Taunton River. The dam has resulted in idled and intermittent flows, creating stagnant water conditions. Other causes of decline include nutrient intake from pond-side septic systems, and untreated storm-water runoff.



Recent aerial photo showing West (left) Monponsett Pond and East (right) Monponsett Pond.



9<sup>th</sup> Ave Outfall, one source of stormwater pollution into the ponds.



Algal blooms like this cover West Monponsett causing beach closures for the entire summer.

## Goal

The goal of this project is to identify the sources of untreated storm-water runoff that may be a source of storm-water pollution contributing pathogens and excess nutrients (nitrogen and phosphorus) to the ponds.



Porous asphalt installed in Provincetown, MA has virtually eliminated beach closures due to stormwater runoff.



Constructed wetlands offer a more naturalistic approach for stormwater remediation, as constructed in Orleans, MA.



Where field conditions allow, traditional sub-surface leaching is a proven approach for stormwater treatment.

## Overall Objective

Identifying and mapping the existing storm-water outfalls to the Monponsett Ponds will allow us to prioritize and develop engineered solutions to mitigate the impacts of storm-water pollution. Numerous technologies exist that will be considered for each of the outfalls given the field conditions. Permit ready designs for the three top priority catch-basins will be submitted. Subsurface leaching, constructed wetlands, and low-impact-development technologies such as porous asphalt will all be considered for implementation to help reduce storm-water pollution to the ponds. The above images represent some of the recent success stories across Southeastern MA.

## Acknowledgments

The project team would like to thank the Town of Halifax Board of Selectmen for their ongoing support for projects like this that seek to improve the water quality to the Ponds. And also we’d like to thank the New England Interstate Water Pollution Control Commission and the Environmental Protection Agency for this opportunity.

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