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MEMO

To: Members of the Council
From: Eric Hindinger, Program Manager
Date: February 04, 2019
Subject: Resolution – R-16-24

Pursuant to Resolution – R-16-24, the Engineering Division presents the following updates relevant to the City's on-going stormwater management:

1. MS4 Annual Report – The City has received the template for the 2018 Annual Report from RI DEM. Engineering will complete the report for submission by March 10th.
2. Mapping – Mapping is complete in all sections of City. Some documentation associated with the mapping project is available for public viewing at the Warwick Library, 600 Sandy Lane. Additional information will be compiled and made available.
3. Cleaning and Inspections of stormwater infrastructure. The City, with the assistance of its consultant BETA Group has completed all cleaning and inspection requirement associated with the Consent Agreement.
4. Projects:
 - a. Edgewater Drive Roadway Abandonment – Roadway closed to through traffic per RIDEM Consent requirements.
 - b. Midgely Avenue Roadway Abandonment– Roadway closed to through traffic per RIDEM Consent requirements.
 - c. Suburban Parkway – Construction completed. Also, the City has completed the final closeout of the project.
 - d. Rocky Point – Impervious surface removal. The City has completed the removal of the impervious areas this past winter.
 - e. Buckeye Brook –The City's consultant, EA Engineering, Science, & Technology, Inc., PBC (EA), has responded to two rounds of comments from RI DEM. Revised plans are being review by RI DEM staff. Limited funding is still

available through the Office of Housing & Community Development; therefore the remediation work will be bid once final RI DEM approval has been obtained.

- f. Tuscatucket Brook – The Engineering Division has met with RIAC regarding installation of best management practices (BMPs) associated with this water body. We are discussing expanding existing easements to accommodate BMPs in areas where RIAC acquisitions overlap with the City's drainage infrastructure.
 - g. Lippitt School Demonstration Project – The City is required to construct a demonstration project in the vicinity of Lippitt School. The City is reviewing the possibility of a rain garden to treat surface runoff near the intersection of Almy Street and Gulf Street.
5. Public Outreach – Through its consultant, Southern Rhode Island Conservation District (SRICD) with the assistance to the Northern Rhode Island Conservation District (NRICD), the City has distributed informational mailing stuffers for the last three water/sewer billing cycles. A “**Slow The Flow**” bill stuffer regarding directing your downspouts areas where it can be infiltrated was sent out with the latest billing. Informational materials have also been installed on the BigBelly trashcans located on the Oakland Beach Common. NRICD held two workshops on “**Gardening to Protect Warwick's Waters**” on April 26, 2018 at the Oakland Beach Branch of the Boys and Girls Club of Warwick and on May 9, 2018 at the Warwick Public Library. The Conservation Districts have also created a website to deliver stormwater related information to the Public; the website can be found on the following link - <https://simplestepswarwick.com/>. A final report has been prepared by SRICD and is attached.
6. IDDE Services – Crossman Engineering (CE) has performed the first round of dry-weather screening. Based upon this screening, there are 13 outfalls that will require further investigation. CE has met with RI DEM regarding revising the City's Illicit Discharge Detection and Elimination (IDDE) Plan and will prepare a report on the screenings for submission with the 2018 RIDEM Annual Report.

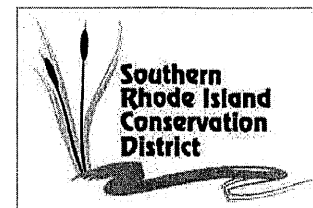
Please feel free to contact me with any questions.

cc: Mathew Solitro, DPW –Director
William DePasquale, Mayor's Office/Chief of Staff

Simple Steps Warwick



Simple Steps Warwick, RI
Reference Document & 2017-2018 Report
Oakland Beach and Warwick Pond
Prepared by: www.sricd.org



Executive Summary

The City of Warwick and the Southern Rhode Island Conservation District have partnered to engage stakeholder groups and develop a public outreach program called Simple Steps Warwick. The project's goal is to encourage the general public to take simple steps in their yards and neighborhoods which can help improve the water quality of Warwick Pond and Oakland Beach. Learn more about the project at SimpleStepsWarwick.com.



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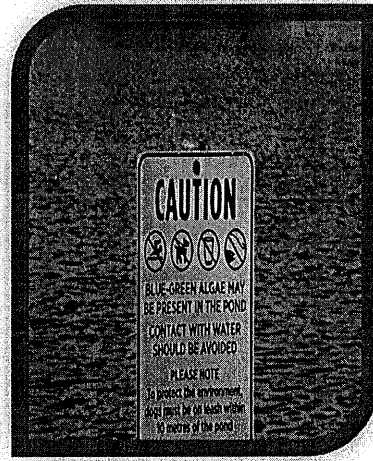
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Overview

Freshwater ponds and beaches along Narragansett Bay are part of life in the City of Warwick. Residents and visitors flock to Warwick's waters for boating, fishing, swimming, and ocean-side hiking at public parks and waterways. Many Warwick residents have the unique opportunity to make their home by the water and many more utilize private marinas.

Like other waterbodies around the country, Warwick's ponds, streams, and beaches are all showing signs of being impacted by **stormwater pollution**. Stormwater pollution or is any pollution carried by rain or melting snow. **Eutrophication**, or a buildup of nutrients which can lead to harmful algae blooms, is plaguing many of the city's freshwater ponds. Warwick's saltwater beaches experience frequent closures as a result of **bacteria**.



The City of Warwick is taking steps to address these issues at the planning and engineering scale, and the goal of the Simple Steps Warwick project is to let residents and property owners know about the small changes they can make at home to help improve the health of Warwick's waters. The project is designed to communicate small, manageable steps that can add up to a big impact on Warwick's waters. So many Warwick residents are drawn to the City by their love of the water, and by working together we can keep Warwick a wonderful city to live in for years to come. The Simple Steps project is a partnership between the City of Warwick, the Southern Rhode Island Conservation District and citizens.

The focus of this project is two very different waterbodies which are exhibiting signs of stress from stormwater pollution-Warwick Pond and Oakland Beach. However, following the Simple Steps will help all waterbodies in Warwick and beyond.

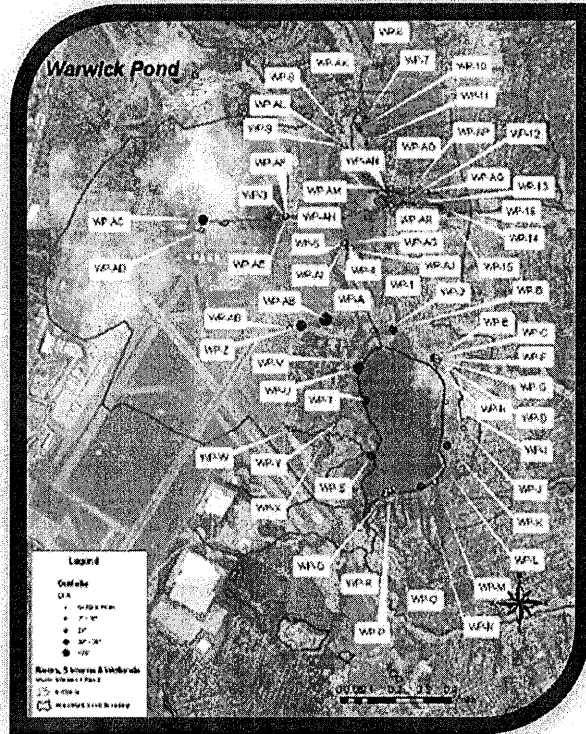
Warwick Pond Background

Warwick Pond is a freshwater waterbody located in the Upper Narragansett Bay watershed in Warwick, RI. Land surrounding the pond includes T.F. Green Airport, medium-high density residential neighborhoods, and deciduous forest, as well as a small public park (Stanmore Park) with boat access. The Warwick Pond **watershed**, or the area of land that drains to Warwick Pond, is approximately 346 hectares in area and is sewered, with most homes connected to the sewer system.

Warwick Pond is one of 9 **eutrophic**, or nutrient-rich, ponds addressed in a September, 2007 Total Maximum Daily Load (TMDL) document prepared by the Rhode Island Department of Environmental Management. A TMDL functions as a "diet" for a waterbody, or a plan to reduce the pollution entering the waterbody so that it can be restored to health. Two additional ponds in Warwick, Gorton Pond and Sand Pond, were also included in this document. The TMDL aims

to reduce the input of phosphorus, a nutrient that can be found in fertilizer and animal waste into the waterbodies. Ponds like Warwick Pond that are high in phosphorus may have overgrowths of aquatic plants and harmful algae blooms that reduce their value as both a wildlife habitat and for human recreation.

The TMDL for Warwick Pond identified 44 storm drains and sixteen areas of concentrated stormwater discharging to the pond, and also noted threats to water quality such as dense residential development, lawns that extend to the pond's edge along the western and southern shores, and large quantities of waterfowl such as Canada Geese. Stormwater and waterfowl were identified as the most significant contributors of phosphorus to Warwick Pond.



Public education and involvement efforts recommended by the TMDL include minimizing lawn fertilizer use, proper pet waste disposal, discouraging Canada Geese, and proper disposal of waste, including yard waste. Public involvement programs recommended include posting signs to reduce waterfowl feeding, marking storm drains, (which has since been completed by local group Friends of Warwick Ponds), and assembling pet waste bag distribution stations.

Cyanobacteria blooms have been observed at Warwick Pond in recent years. Cyanobacteria is a type of algae that when it "blooms," or grows in large concentrations, produces a thick, green,

scummy film on the pond. Because cyanobacteria sometimes produces toxins that are dangerous to humans and pets, ponds experiencing a cyanobacteria bloom are not safe for swimming or fishing. On August 18, 2017, a no-contact recommendation was issued for the waters of Warwick Pond by the RI Department of Health. Similar events occurred in 2015 and 2016. Recreational use of the pond is common, so these warnings have an adverse impact on pond users. Multiple groups of area residents, such

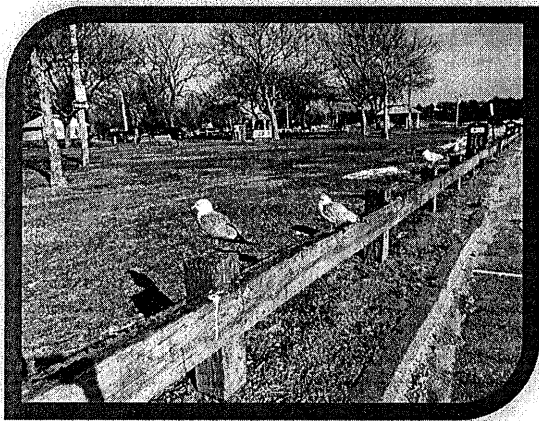


as the Buckeye Brook Coalition and Friends of Warwick Ponds, are actively advocating for the health of Warwick Pond using a variety of outreach and advocacy methods.

Oakland Beach Background

Oakland Beach is a public beach located in the northeast corner of Greenwich Bay that abuts Warwick Cove on the east and Brush Neck Cove on the west. The Oakland Beach neighborhood is a peninsula where the primary land uses are high density residential and medium-high density residential. The neighborhood includes the Oakland Beach Elementary School, a public park adjacent to the beach parking area, churches, the Boys and Girls Club, several small businesses, and a popular seafood restaurant, Iggy's Doughboys and Chowder House. The Oakland Beach area is sewered, but other areas of land abutting Warwick Cove are not.

The water quality at Oakland Beach is addressed in the 2005 TMDL for bacteria for waters adjacent to Greenwich Bay, prepared by the RI Department of Environmental Management.



Waterfowl, wildlife, and domestic pets were all identified as pollution sources for waters in the TMDL. On a typical visit to Oakland Beach, large numbers of birds, particularly gulls, can be found, as well as residents and visitors walking dogs. Educating the public about how pets and wildlife can impact Greenwich Bay was recommended in the document. The TMDL also recommended educating homeowners about how they can minimize the stormwater leaving their properties by using techniques like rain gardens, rain barrels, and other landscaping choices to

encourage water to infiltrate or soak into the ground instead of running down the street.

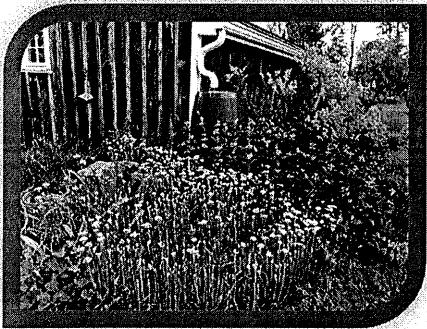
In the summer, Rhode Island's saltwater beaches are tested for a type of bacteria called Enterococci, which is considered an indicator of contamination by human or animal waste. According to the RI Department of Health, Oakland Beach was closed on two days in the summer of 2017 for Enterococci bacteria in excess of 60 cfu/100 ml. Beach closures were common in prior years as well.

The Simple Steps

The Simple Steps program encourages homeowners to help protect and improve the water quality in Warwick Pond, at Oakland Beach, and throughout Warwick by focusing on four key areas:

Every Lawn Counts!

A healthy lawn or garden can help water to soak into the ground instead of becoming runoff, but lawn care choices are also a large contributor to stormwater pollution. Residents can minimize their impact by taking steps like allowing their lawn to grow to 3" or higher so that it will have a robust root system, choosing a phosphorus free fertilizer or an organic or low-chemical fertilizer such as compost, having their soil tested to make sure they aren't using more fertilizer than they need, using a drop spreader so any chemicals used remain on the lawn instead of the sidewalk, and watering once a week to a depth of 1" instead of smaller daily waterings. Even better, replacing pieces of lawn with wildflower or native perennial gardens that require lower chemical inputs to stay healthy can beautify your property while also helping Warwick's waters.



Slow The Flow!

Homeowners can minimize the amount of runoff from their roof which becomes stormwater by channeling downspouts to a rain garden or rain barrel instead of into the street. Waterfront homeowners can also plant a beautiful buffer, either natural or landscaped, between their lawn and the water to help absorb stormwater pollution. The wider the buffer, the better!

Grab Your Bags!

Dog waste contributes both nutrients and bacteria to Warwick's waterbodies, and it often carries pathogens that can make people sick. Cleaning up after your dog on every walk, in every park or public area you visit, and even in your own backyard makes a big difference, as does observing and respecting "no dogs allowed" signs at certain parks and beaches.



Ban The Bread!

Many nature lovers and waterfront residents enjoy feeding geese, ducks, and other waterfowl, but feeding these birds old bread or other kitchen scraps can cause many problems. Feeding encourages resident Canada geese to move into an area in large groups, and these flocks are a leading contributor to phosphorus pollution. It is also not good for the birds' health, since it fills them up instead of the healthy aquatic plants that their stomachs are designed for. Enjoying birds through binoculars only is best for them and for Warwick's waters. Waterfront residents can also help discourage resident Canada geese by planting a buffer between their yards and the water, which acts as a natural barrier to discourage the birds.



Local Stakeholder Groups

Several existing groups were engaged as part of the development of Simple Steps Warwick project and the continued work of improving water quality within the watersheds. Representatives of the following organizations were notified at the start of the project and invited to participate.

Buckeye Brook Coalition: State-designated watershed council for the Buckeye Brook watershed, 501 (c)(3) organization. Efforts include advocacy for the Buckeye Brook watershed as well as facilitating volunteer water quality monitoring efforts.

Friends of Warwick's Ponds: Small but vocal nonprofit that does not yet have 501 (c)(3) status which advocates for Warwick Pond while also completing other outreach and education projects.

Oakland Beach Neighborhood Association: Neighborhood association representing Oakland Beach area.

Rhode Island Airport Corporation (RIAC): Quasi-public organization that manages T.F. Green Airport in the Warwick Pond watershed.

Project Activities 2017-2018

Tasks	Discussion Of Deliverables Provided
Research community priority issues	Approached 11 individuals recommended by the City to provide guidance and feedback for the duration of the Project. Individuals included natural resources professionals, City staff, City Counsellors, and representatives from local nonprofits and NGOs. Seven individuals responded positively to the invitation to participate. Researched existing information about Warwick Pond and Oakland Beach and compiled it into two reference documents, one tri-fold geared toward the general public and this Reference Document & Annual Report 2017-2018 geared toward professionals and City staff.
Design messages & outreach materials	Designed a series of outreach materials including 1) The simplestepswarwick.com website, 2) A series of four “stuffers” to be included in Warwick Water utility bills, and 3) A series of four educational signs to be installed on the Big Belly trash cans at Oakland Beach. Materials were reviewed by the individuals in the guidance and feedback group and edited accordingly before printing and distribution.
Finalize messages & outreach materials	Twenty educational signs were installed on the Big Belly trash cans at Oakland Beach. A bill stuffer, each addressing an additional educational topic, was included with the Warwick Water bills in March, June, and September, 2018. Each bill stuffer was delivered to approximately 28,000 homes per quarter.
Present to Community	Two Water-Friendly gardening workshops were held on April 26, 2018 at Oakland Beach Boys and Girls Club, and on May 9, 2018 at Warwick Public Library adjacent to the Warwick Pond neighborhood. Mailers publicizing the events were sent to 887 addresses in the watershed of Oakland Beach and 557 addresses in the watershed of Warwick Pond. Molly Allard also attended a Friends of Warwick Ponds meeting to discuss the project in February 2018. 27 people signed up to join an educational email list about the project at SimpleStepsWarwick.com . SimpleStepsWarwick.com had received 611 unique visitors through September 25, 2018. The greatest number of unique visitors, 171, visited the site in July after the site was linked from the City of Warwick homepage and featured in a Warwick Beacon article about the Project. 218 visitors found the site from warwickri.gov , while 184 were direct visitors, suggesting that they visited after encountering an additional outreach material.
Overall Project Management / Final Report	SRICD staff corresponded with Warwick Division of Engineering professionals throughout the life of the Project to ensure that efforts were consistent with the City’s needs and priorities. Final report was submitted in September, 2018.

