Summary of Old Town Pond & Wickapogue Pond Management Recommendations

The Old Town Pond & Wickapogue Pond 2020 Management Plan, created by the Southampton Village Clean Water Committee, was approved and adopted by the Southampton Village Mayor and Trustees on December 10, 2020.

Old Town Pond Overview

The New York State Department of Environmental Conservation (DEC), Shinnecock Bay/Atlantic Ocean Watershed report, includes a fact sheet for Old Town Pond, an 8.5-acre pond which is assessed as an impaired waterbody. Recreational uses are considered to be impaired by frequent to persistent occurrences of harmful algal blooms. Aquatic life may also be impacted by resulting low dissolved oxygen in the pond. Nonpoint stormwater runoff, agricultural activity and residential onsite septic systems are suspected sources of pollutants.

Old Town Pond was sampled in 2015 by SUNY Stony Brook as part of a harmful algae bloom collaborative with the DEC, Division of Water. Nonpoint stormwater runoff, agricultural activity and residential onsite septic systems are suspected sources of nutrients that are thought to be contributing to the algal blooms and could be resulting in low dissolved oxygen in the pond.

Old Town Pond is included on the current (2016) NYS Section 303(d) List of Impaired Waters, among the waters listed in Appendix B – Waters Not Meeting Dissolved Oxygen Standards. This part of the List recognizes waterbodies where low dissolved oxygen in lake bottom waters may be the result of natural conditions in thermally stratified lakes. A listing for phosphorus may be appropriate but there is insufficient data to justify such a listing.

The DEC has an online interactive mapping tool to view DEC's environmental quality data. The DECinfo Locator lets users see water quality reports; in the link below select Old Town Pond in the search function, select DEC information layers, check all under Environmental monitoring, which brings up a Fact Sheet for Old Town Pond: https://gisservices.dec.ny.gov/gis/dil/

Due to the prevalence and toxicity of widespread blue-green algal blooms in Old Town Pond, the discharge of untreated water from the pond to the ocean poses a serious potential health risk to the public including bathers, surfers, and fishermen. Pets and marine life may also be put at risk. Bacteria and other unmonitored pollutants in the pond are also discharged during these events. Ocean discharge occurs when deemed needed to prevent property flooding. The installation of bioswales in the Old Town Pond watershed under the Old Town Pond Green Infrastructure project and the addition of buffers by residents at Old Town Pond will increase stormwater capture and could reduce the need to use the discharge pipe.

Wickapogue Pond Overview

The New York State Department of Environmental Conservation (DEC), Shinnecock Bay/Atlantic Ocean Watershed report, includes a fact sheet for Wickapogue Pond, a 10.5 acre pond, which is assessed as an impaired waterbody due to recreational uses that are considered to be impaired by frequent to persistent occurrences of harmful algal blooms. Aquatic life may also be impacted by resulting low dissolved oxygen in the pond. Nonpoint stormwater runoff, agricultural activity and residential onsite septic systems are suspected sources of pollutants.

Wickapogue Pond was sampled in 2015 by SUNY Stony Brook as part of a harmful algae bloom (HAB) collaborative with the DEC, Division of Water. Nonpoint stormwater runoff, agricultural activity and residential onsite septic systems are suspected sources of nutrients that are thought to be contributing to the algal blooms and could be resulting in low dissolved oxygen in the pond.

Wickapogue Pond not included on the current (2016) NYS Section 303(d) List of Impaired/Total Maximum Daily Load Waters. Although it is assessed as an impaired water, it is categorized as an IR Category 4c water that is not listed because the cause of the impairment (harmful algal blooms) is not a pollutant for which a TMDL can be developed. A listing for phosphorus may be appropriate but there is insufficient data to justify such a listing at this time.

The DEC has an online interactive mapping tool to view DEC's environmental quality data. The DECinfo Locator lets users see water quality reports; in the link below select Wickapogue Pond in the search function, select DEC information layers, check all under Environmental monitoring, which brings up a Fact Sheet for Wickapogue Pond:
https://gisservices.dec.ny.gov/gis/dil/

Improve Water Quality

Conduct water quality study of Old Town Pond and Wickapogue Pond to update the 2017 Village Water Quality study by Stony Brook University; continue water quality and cyanobacteria monitoring to track trends in water quality. Table 4 on page 54 of the 2017 Village Water Quality study by Stony Brook University shows the annual nitrogen loading rates from all sources to Old Town Pond and Wickapogue Pond. Figure 18 on page 73 shows the relative contribution of various nutrient loading processes to the total nitrogen load to Old Town Pond and Wickapogue Pond:
https://www.southamptonvillage.org/DocumentCenter/View/188/Lake-Agawam-Water-Quality-Study-Feb-2017PDF?bidId=

Nitrogen loading models were constructed that considered nitrogen delivered to Old Town Pond and Wickapogue Pond from three types of fertilizers, septic systems, the atmosphere, surface-run-off, storm drains, pond sediments, and birds. The models demonstrated that wastewater was the largest source of nitrogen to Old Town Pond, at 73% of total nitrogen load. Fertilizer emanating from homes was the second largest source of nitrogen to Old Town Pond at 15% of the total nitrogen load. Initial study indicates that only 10% of available excess nitrogen in Old Town Pond comes from flux/disturbance of its sediments. Fertilizer emanating from homes was the largest source of nitrogen to Wickapogue Pond at 35% of the total nitrogen load. Wastewater was the second largest source of nitrogen to Wickapogue Pond at 33% of the total nitrogen load and sediment in Wickapogue Pond represented 17% of the nitrogen load.

Monitoring determines the effectiveness of management recommendations for water quality improvement and tracks trends in water quality. Note the Southampton Town Community Preservation Fund Plan, Village Water Quality Improvement Project plan, Village of Southampton map on page 53, showing Village lake, ponds & creeks:
http://www.southamptontownny.gov/DocumentCenter/View/7318/Water-Quality-Improvement-Plan-CPF-Referendum-PDF?bidId=

The New York State Department of Environmental Conservation (DEC), has a Harmful Algal Bloom notifications online webpage, which includes results for Old Town Pond and Wickapogue Pond, including an archive webpage. Since 2014, water sampling results at Old Town Pond have confirmed the presence of harmful algal blooms, and at Wickapogue Pond in 2014, 2016 and 2018.
https://www.dec.ny.gov/chemical/83310.html
https://www.dec.ny.gov/docs/water_pdf/habsextentsummary.pdf

See also, Surfrider Foundation web site for Old Town beach bacteria testing data:
https://www.surfrider.org/blue-water-task-force/beach/588
https://www.theswimguide.org/beach/8500

Dredging of Sediments: Old Town Pond and Wickapogue Pond experience high nitrogen and phosphorus loading which results in Harmful Algal Blooms (HABs) and low dissolved oxygen, which impair the water body. Removal of soft sediments could remove a significant pollution source. This will also improve the water column profile by maintaining cooler temperatures, improving conditions for the pond fish population.

An Old Town Pond and Wickapogue Pond dredging feasibility study is needed to provide a plan for dredging as a Best Management Practice for in-waterbody control of nutrients, funded by a New York State Department of Environmental Conservation, Non-agricultural Nonpoint Source Planning grant. The feasibility study will compile information on the pond, outline alternative material removal technologies, and arrive at a recommended method to facilitate final design, project permitting and implementation.

In order to better understand the nutrient load created by sediment flux that could be contributing to HABs and whether historical runoff and sedimentation in Old Town Pond and Wickapogue Pond has included particular concentrations of organic nutrients, metals, or other harmful (complex/advanced) chemicals, a sediment survey is recommended. A successful management plan will require understanding the location, depth, composition, chemistry, and biological activity of its sediments.

A New York State Department of Environmental Conservation, Non-agricultural Nonpoint Source Planning Grant Program award, of $30,000 approved in December 2019 for a Lake Agawam Dredging Feasibility Study. An application to DEC should be made for a grant to include Old Town Pond and Wickapogue Pond in the Lake Agawam dredging feasibility study.

The archives of the meetings of Town Trustees on page 2568, November 18, 1974, refer to dredging by the Village of Lake Agawam and Old Town Pond, removing 10,000 cubic yards of fill with one week of dredging at each body of water. Old Town Pond's dredging were placed to the north of the pond.

Algae Harvester: Old Town Pond and Wickapogue Pond have been plagued by recurrent toxic blue-green algal blooms, which most commonly occur between the months of May - November. These blooms tend to be most concentrated in surface waters due to their tendency to float and are fueled by pollutants including fertilizer runoff and nitrogen entering the pond through groundwater. Governor Cuomo and officials from the New York State Department of Environmental Conservation (DEC) announced a pilot program conducted from October 5, 2019 to October 19, 2019 in Lake Agawam using new algae harvesting technology to combat Harmful Algal Blooms (HABs).

The harvester draws algae from the surface of the water, and it is disposed of at a Suffolk county treatment facility. The remaining water is treated for toxins and returned. The DEC pilot program results to combat HABs at Lake Agawam should be reviewed to evaluate an algae harvester pilot program at Old Town Pond and Wickapogue Pond to determine next steps.

A 2020 and 2019 Stony Brook University report shows Long Island water quality impairments and HABs:
https://www.newsday.com/long-island/environment/long-island-water-quality-toxic-report-1.50037558
https://content.govdelivery.com/accounts/NYSDEC/bulletins/2658400

Floating Islands: Floating islands are platforms that hold plants so that the roots can grow into the water and improve water quality. The wetland islands are made of recycled plastic material and covered with soil and wetland plants. The plants and the microorganisms that grow around their roots take up phosphorus and nitrogen from the water. Native plants with roots growing on floating island structures could be deployed on Old Town Pond and Wickapogue Pond to create floating wetlands. These islands would provide valuable surface area for beneficial microbes to proliferate and the vegetation would remove nutrients from the water. In addition, the floating islands would provide a wildlife habitat. Floating islands are used and approved by U.S. Environmental Protection Agency for nutrient removal:
https://www.epa.gov/sciencematters/epa-uses-floating-vegetated-islands-remove-excess-nutrients-water

Air Bubblers & Water Circulation Equipment: Install air bubblers and other water circulation equipment to improve oxygen levels.

Fish Populations: Native fish populations (bass, perch & blue gill) will be stocked in when water quality and overall health of Old Town Pond improves.

Increase Stormwater Management and Reduce Nutrient Pollution to the Watershed

Old Town Pond stormwater drainage improvements: establish bioswales in the Old Town Pond Watershed, Old Town Pond Green Infrastructure project. This project will install green stormwater infrastructure on Village rights of way in the Old Town watershed in order to increase stormwater capture and filtration. The surface run-off from paved surfaces and lawns is a significant source of nitrogen and phosphorus to Old Town Pond. Bioswales with protective vegetation and naturally occurring plants, including shrubs and tall, coarse grasses will reduce harmful pollutants flowing into Old Town Pond after a rainfall. Additionally, the bioswales provide food and habitat for a variety of wildlife, including birds and butterflies. The installation of bioswales in the Old Town Pond watershed will increase the capture and infiltration of stormwater and help remediate the water quality of Old Town Pond.

In 2020, sampling performed by SUNY Stony Brook confirmed the presence of new cyanobacteria blooms, more commonly known as blue–green algae, Harmful Algal Blooms (HABs) in Old Town Pond. Due to these findings, health officials have asked residents not to use or swim or wade in these waters and to keep their children and pets away from the area. Wastewater plays a large role in the degradation of groundwater and surface waters that support HABs in Old Town Pond, and Wickapogue Pond. Confirmed HABs occurred in Old Town Pond from 2014 - 2020 and in Wickapogue Pond in 2014, 2016 and 2018.

Although Old Town Pond has benefited from the installation of stormwater retention structures over the past 15 years, additional action is needed to further mitigate the flow of untreated stormwater to the pond, in order to limit the nutrients and pollutants that contribute to the algae blooms.

The Old Town Pond stormwater drainage improvements will establish bioswales in the Old Town Pond watershed for the Old Town Pond Green Infrastructure project:

- A 150+ foot long bioswale within a 6,000 SF planting area will be installed for Old Town Pond – North, the Dock/Walkway will also be repaired.
- A 220+ foot long bioswale placed within a 2,640 SF planting area will be installed for Old Town Pond – South.
- Two 600 SF Grass-PAVE2 permeable parking areas will be constructed near current parking areas for Old Town Pond - East. Grass-Pave2 is a 100% recycled plastic structure that sits below a real grass surface, allowing for vehicular and pedestrian traffic.

Old Town Pond Water Quality Project: Constructed Treatment Wetland with groundwater collection trench (pumped), aerated gravel nitrification zone, woodchip denitrification zone and in-pond re-aeration zone. The Village will apply for New York State Green Innovation Grant Program (GIGP) funding, provided through the Clean Water State Revolving Fund, which is administered by the New York State Environmental Facilities Corporation.

Roux Environmental Engineering design proposal for Constructed Treatment Wetland approved in an amount not to exceed $16,300 by Mayor/Board of Trustees in December 2020. In January 2021, Roux will install 6 temporary groundwater monitoring wells at three locations (two monitoring wells per location) in the area north of Old Town Pond to confirm nitrogen impacted groundwater was flowing into Old Town Pond. Based on the groundwater sampling results, Roux confirmed that nitrogen loading is at significant concentrations to negatively impact Old Town Pond. The wetland will:

- Provide sustainable nitrogen treatment for Old Town Pond;
- Reduce nitrogen inputs from groundwater flowing into Old Town Pond; and
- Remove nitrogen already in Old Town Pond.

Wickapogue Pond stormwater drainage improvements: establish bioswales in the Wickapogue Pond Watershed. Bioswales with protective vegetation and naturally occurring plants, including shrubs and tall, coarse grasses will reduce harmful pollutants flowing into Wickapogue Pond after a rainfall. Additionally, the bioswales provide food and habitat for a variety of wildlife, including birds and butterflies. The installation of bioswales in the Wickapogue Pond watershed will increase the capture and infiltration of stormwater and help remediate the water quality of Wickapogue Pond. The New York State Department of Environmental Conservation has a Harmful Algal Bloom notifications online webpage, which includes results for Wickapogue Pond and an archive webpage. Wickapogue Pond has been documented as having blue-green algae blooms in 2014, 2016 and 2018:
https://www.dec.ny.gov/chemical/83310.html
https://www.dec.ny.gov/docs/water_pdf/habsextentsummary.pdf

Southampton Village Sewer District: The proposed Village Sewer District area encompasses properties located within the core commercial area of the Village, which is impacted by shallow groundwater. H2M is developing a Village 2020 Wastewater Management and Sewer District study. Because the proposed Village sewer district is completely within the Village core commercial area, it would not affect Old Town Pond and Wickapogue Pond. The Village will explore whether currently unused capacity at the Southampton Hospital Sewage Treatment Plant might be available to use for the creation of a separate, mini-sewer district that could encompass portions of Old Town Road and the area near Wickapogue Pond.

Encourage residents to upgrade to Innovative/Alternative septic systems in the Old Town Pond High Priority Area: The Suffolk County "Reclaim Our Water" initiative aims to turn the tide on nitrogen pollution and protect our waters. The common link between water quality damage on Long Island is nitrogen, primarily the result of poorly treated sewage from outdated cesspools and septic tanks. Significantly, many of the toxic blue green algae impairments are located in Southampton Town & Village - see the 2020 Long Island water quality impairments chart, which lists Old Town Pond as having toxic blue-green algae blooms:
https://www.newsday.com/long-island/environment/long-island-water-quality-toxic-report-1.50037558

Since 2014, water sampling results at Old Town Pond have confirmed the presence of harmful algal blooms and at Wickapogue Pond in 2014, 2016 and 2018. Reversing the degradation of water quality will depend on replacement of existing systems with new, individual Innovative and Alternative Onsite Wastewater Treatment Systems (I/A OWTS). To make the cost of I/A systems - with an average total cost of $19,200 more affordable for homeowners, Suffolk County has developed the Septic Improvement Program. Homeowners who decide to replace their cesspool or septic system with the new technologies will be eligible for a grant of up to $30,000 from Suffolk County and New York Stake to offset the cost of one of the new systems. In addition to the grant, homeowners can qualify to finance the remaining cost of the systems via a loan, payable over 15 years at a low 3% fixed interest rate. The purpose of the loan is to provide "gap" funds to finance the difference between the grant to be provided by Suffolk County and the contract amount needed to install the replacement septic system. Financing up to $10,000 is available.

Town of Southampton Community Preservation Fund & Suffolk County Department of Health services rebates, Town Code Chapter 123, are available to homeowners for upgrading septic systems at little or no cost. The Town has a rebate brochure:
http://southamptontownny.gov/DocumentCenter/View/15534/IA-OWTS-Brochure-PDF

Suffolk County has a Reclaim Our Water web site for Homeowners about septic improvement program grants & Frequently Asked Questions:
https://www.reclaimourwater.info/homeowners.aspx
https://reclaimourwater.info/Portals/60/docs/SepticImprovementProgramFAQ-021919.pdf

Reduce Use of Fertilizers/Chemicals; Promote Sustainable, Green Landscaping Methods:
Homeowners should consider using nitrogen & phosphorous-free fertilizers. Legislation regulating Southampton Village landscaper contractors, including requirements to inform homeowners of fertilizers and pesticides used, Village Ord. No.4-2019, was adopted on April 11, 2019. Businesses that use chemicals, pesticides or fertilizers must provide certificates from the New York State Department of Environmental Conservation (DEC) and for fertilizer, proof of a certificate of completion of a Suffolk County Nitrogen Fertilizer Turf Management Course. Workshops on the legislation were held in January 2020 with Village landscapers and homeowners. In February 2020, Southampton Village officials postponed a March 1, 2020 effective date for the landscaper registration law.
The law requires that a landscaper shall submit proof of a valid and current Suffolk County Home Improvement License. The Village Board of Trustees will work to enact its own home improvement contractor law and pursue an intermunicipal agreement with Southampton Town to enforce licenses instead of Suffolk County.

Fertilizer is the second leading source of nitrogen contamination of Long Island waters. The Long Island Nitrogen Action Plan (LINAP) recommends that residents' balance the desire for a healthy lawn with the need to significantly reduce nitrogen loads to Long Island's waterbodies. New York State is leading the way by calling for lower nitrogen application rates and fertilizers with a large fraction of slowly available nitrogen to minimize nitrogen leaching to groundwater. When these recommendations are implemented, there will be up to a 40 percent reduction in fertilizer-sourced nitrogen entering the environment. See the LINAP recommendations for more details: https://www.dec.ny.gov/docs/water_pdf/linapfertilizer.pdf

Suffolk County has launched a Healthy Lawns, Clean Water campaign to reduce nitrogen pollution to groundwater and surface waters through the overall reduction and better management of fertilizer applications; Suffolk County Local Law No. 41-2007:
https://www.suffolkcountyny.gov/Departments/Economic-Development-and-Planning/Planning-and-Environment/Water-Quality-Improvement/-Healthy-Lawns-Clean-Water-Fertilizer-Reduction-Program
https://apps2.suffolkcountyny.gov/legislature/resos/resos2007/i2117-07.htm

New York homeowners are encouraged to practice sustainable lawn care and to choose native plants and grasses, which are adapted to the local climate and soil conditions. Organic lawn care can easily be implemented on any lawn and safe and effective alternatives exist for most chemical pesticides and fertilizers. Organic lawn care treatments promote deep root systems, natural photosynthesis, and longer grass growth. See the DEC website for more details on sustainable landscaping and go chemical free: http://www.dec.ny.gov/public/44290.html

New York's nutrient runoff law prohibits the use of phosphorus lawn fertilizers unless a new lawn is being established or a soil test shows that the lawn does not have enough phosphorus. Generally, only newly established lawns or those with poor soil need phosphorus. Phosphorus applied to existing lawns should not be used and can cause water pollution.

Regardless of the location, excess phosphorus from lawns can wash off and pollute lakes and streams, harming fish, pets, or people that use these waters for recreating and a source of revenue for towns that must close beaches or boating areas. DEC is encouraging consumers to review bag labels for phosphorus content when shopping for fertilizer. The fertilizer bag label has a set of three numbers showing the percentage of nitrogen, phosphorus and potassium. The number in the middle is the percentage of phosphorus in the product, such as: 22-0-15. Homeowners should buy a fertilizer bag with a "0" in the middle. See the DEC "Look for the Zero" website and brochure to get more information about going phosphorus-free when using lawn fertilizer:
http://www.dec.ny.gov/chemical/67239.html
http://www.dec.ny.gov/docs/water_pdf/fertbrochure15.pdf

Another suggestion is to allow grass to grow to three inches and then cut no more than one inch off the top. This is the "one-third" rule and helps to develop a deeper root system, which is a natural defense against weeds, disease, and drought. See DEC's lawn care website:
http://www.dec.ny.gov/chemical/8816.html

Post Old Town Pond & Wickapogue Pond 2020 Management Plan on Village Website: The Village Clean Water Committee posted the Old Town Pond & Wickapogue Pond 2020 Management Plan on the Village website. Representatives of the Village Clean Water Committee will consult with Old Town Pond and Wickapogue Pond homeowners to obtain feedback on the management plan, receive comments and suggestions for a final plan.

This should raise general awareness of water quality and promote homeowner "best practices" with respect to reduced nutrient generation from landscaping and other activities. The Clean Water Committee will develop environmental signage, educational pamphlets, Village newsletter articles and public information media.

Accelerate Enhancements to Shoreline & Natural Buffer Areas

Establish Waterfront Natural Buffer Areas Among Residents: Surface run-off from paved surfaces and lawns is a significant source of nitrogen and phosphorus to Old Town Pond. Buffers are a band of protective vegetation along the edge of a body of water.
Naturally occurring plants usually include trees, shrubs and tall, coarse grasses. This stretch of vegetation "buffers" the vulnerable pond and its water from harmful pollutants flowing across the landscape after a rainfall or snow melt.

Additionally, buffers provide food and habitat for a variety of wildlife, including birds, butterflies, and even fish when the plants drape over into the water. Planted buffers of up to 50 feet are strongly encouraged and fertilization of lawns within 125 feet of the pond is discouraged. Buffers will help remediate the water quality of Old Town Pond and Wickapogue Pond.

Remove Invasive Vegetation: Promote natural habitat areas under controlled re-vegetation restoration programs.

Environmental Signage. The Clean Water Committee will consult with Old Town Pond and Wickapogue Pond homeowners to develop, plan and arrange the installation of environmental signage.

Control Waterfowl Populations: Discourage lawns fronting Old Town Pond and Wickapogue Pond shore areas and feeding of waterfowl populations by posted signage.