TOWN OF SOUTHAMPTON COMMUNITY PRESERVATION FUND
WATER QUALITY IMPROVEMENT PROGRAM

VILLAGE OF SOUTHAMPTON
WEST MAIN STREET GREEN INFRASTRUCTURE

APPLICATION ATTACHMENTS

VILLAGE OF SOUTHAMPTON
WEST MAIN STREET GREEN INFRASTRUCTURE
APPLICATION NARRATIVES

PROJECT SUMMARY

The Village of Southampton will install green stormwater infrastructure in its public parking lot on West Main Street in the center of Southampton Village. The project will improve water quality by removing nutrients, oils, sediment, and pesticides from road runoff prior to stormwater discharge in Agawam Lake. The project is comprised of four (4) areas of improvements:

- Reducing the overall impervious area of the existing parking lot
- Construction of bio-infiltration/retention areas that will reduce non-point pollution by filtering the road runoff while creating a natural aesthetically pleasing view
- Increasing the stormwater storage capacity by installing several leaching structures
- Tree trench on the west end of the parking lot

These improvements will maximize opportunities to leverage the multiple benefits of green stormwater infrastructure, spur innovation in the field of stormwater management, build capacity to construct and maintain green stormwater infrastructure, and facilitate the transfer of new technologies and practices to other areas of the state.

The project implements a recommendation of the Lake Agawam Harmful Algal Bloom Action Plan (2020) and is identified as a priority green infrastructure project in the Village's Water Quality Improvement Project Plan (2022).

This project received a grant award of $986,916 NYS Department of Environmental Conservation awarded the Village under its Water Quality Improvement Program (WQIP) in 2021. This application is requesting support for grant match.

3. PROJECT DESCRIPTION

3a. Existing conditions of applicable groundwater/sub-watershed/waterbody and most recent and relevant data available (provide sources).

Lake Agawam appears on the NYS List of TMDL waters. NYSDEC reports that Harmful Algal Blooms (HABs) have been confirmed with High Toxins every year from 2013-2021. NYSDEC PWL and TMDL listings as well as the Lake Agawam Comprehensive Management Plan (CMP) (2009) and Lake Agawam Harmful Algal Bloom Action Plan (2020) identify stormwater runoff as a key contributor of the excess nutrients that have led to hypereutrophic conditions and past fish kills. The CMP and HAB plan recommend that the Village identify all possible land opportunities for recharge facilities in the watershed including rain gardens where feasible.

3b. How the proposed solution addresses the issue in the context of Reduction, Remediation and/or Restoration as per the CPF Water Quality Project Plan. Note all remediation and restoration projects must assure that reduction measures are also addressed.

The proposed practices are designed to reduce pollutants from stormwater runoff that ends up in the groundwater especially during high storm events. Currently, stormwater from West Main Street collects in the West Main Parking Lot and stores in leaching structures that allow the runoff to seep into the ground. Along the route, the stormwater picks up debris, salt, sand and oils from the roadway. The parking lot is located within the Lake Agawam watershed just north of the lake by a quarter of a mile. The pollutants eventually end up in lake Agawam as evident in the high pollutant levels and frequency of Harmful Algal Blooms.

The proposed project will make use of existing grass medians which section off the parking lot. These areas will be used to install bio-infiltration areas. These bio-infiltration areas will provide both infiltration and storage which will capture and treat the stormwater. After being treated, the cleaned stormwater will be conveyed to leaching structures where it will infiltrate into the groundwater.

This technology conforms to the 2015 NYSDEC Stormwater Management Design Manual. Eastern Long Island native plants will be used for the bio-infiltration systems which will provide an aesthetic appearance. Additional leaching structures will be installed to increase the storage capacity.

Please see attached feasibility study and design plan.

3c. Describe the proposed technology and its demonstrated efficacy in similar settings. May include published data.

Bioretention systems are often referred to by a variety of names such as bioinfiltration areas, biofilters, rain gardens, bioswales, or recharge gardens, and are recognized by the NYSDEC and other agencies as practices that are very effective at removing pollutants and reducing stormwater runoff. Properly designed bioretention practices mimic natural ecosystems through species diversity, density and distribution of vegetation, and the use of native species. This allows for the bioretention system to be resistant to insects, disease, pollution, and climatic stresses.

3d. How the project supports Town of Southampton, Suffolk County, NYSDEC, Long Island Nitrogen Action Plan (LINAP) or other adopted goals/policies (provide references with pages numbers).

Town of Southampton Water Quality Improvement Project Plan[1]
The plan indicates that stormwater collection/abatement initiatives meet State Law Chapter 551 definition of "water quality improvement project" and "wastewater treatment improvement project." Stormwater Best Management Practices and treatment fall within the category of mitigation initiatives for nitrogen pollution (p. 21). Agawam Lake is shown in the Plan as being situated in a High Priority area. See attached map.

Lake Agawam Harmful Algal Blooms Action Plan (2020)[2]
The proposed project is listed as a short-term priority project on page 33 under item 6, "7b. - Examine Village/Town owned land opportunities for recharge facilities."

Long Island South Shore Estuary Reserve Draft Comprehensive Management Plan (SSER CMP)[3]
The NYSDEC Priority Waterbodies List (PWL) indicates that the waterbody is included within the South Shore Estuary Reserve (SSER). The SSER CMP is an element of the LI Nitrogen Action Plan. The project is supported by SSER implementation action 1-1: *Construction of stormwater abatement projects in significant nonpoint source contributing areas associated with closed shellfish beds, impaired living resources, and bathing beaches that experience periodic closures due to water quality concerns.*

Long Island Nitrogen Action Plan[4]
The project aligns with stormwater management options outlined in the Action Plan scope, which discusses the benefits of bioretention on page 31, Section 6.13.

Suffolk County Subwatershed Plan[5]
Agawam Lake is discussed as a water body that has experienced freshwater Harmful Algal Blooms (HABs), and is indicated as a Priority 1 subwatershed for nitrogen reduction via wastewater management (p. 2-74). While the Village is actively planning a sewer system, stormwater inputs are a near-term action that will improve water quality.

The Lake Agawam Compreshensive Management Plan (CMP)[6]
The plan supports this project under recommendation 7, "*Intercept and recharge stormwater runoff in higher elevations of the watershed*," (page 22) and 7b, "*Examine Village/Town owned land opportunities for recharge facilities*" (page 22).

[1] https://www.southamptontownny.gov/DocumentCenter/View/7318/Water-Quality-Improvement-Plan-CPF-Referendum-PDF?bidId=
[2] https://www.dec.ny.gov/docs/water_pdf/habapagawam.pdf
[3] https://dos.ny.gov/system/files/documents/2021/10/draft-li-sser-cmp-update-2021.pdf
[4] https://www.dec.ny.gov/docs/water_pdf/linapscope.pdf
[5] https://suffolkcountyny.gov/Portals/0/formsdocs/planning/CEQ/2020/RevisedComplete%20SWP2-21-20.pdf
[6] http://lakeagawam.com

Southampton Village Water Quality Improvement Project Plan (2022)
This plan was funded by Southampton Village and completed April 2022. It lists this project as #SV-01A, Parking Lot – West Main Street. The plan identifies 51 potential green infrastructure projects Village-wide, and ranks them according to nitrogen reduction benefits. This project ranks #1 for nitrogen reduction at 67 lbs/year as shown in the application attachments (p. 163).

4. WATER QUALITY BENEFIT

4a. Identify Nitrogen, Pathogen or Pollutant of Concern (POC) including Existing Condition and Target Reduction.

POC reduction estimates were prepared by the Nelson, Pope & Voorhis and use the 2013 Watershed Treatment Model by the Center for Watershed Protection. This is an approved methodology by NYSDEC.

The 10,760 square feet of bio-infiltration basins and the 2,725 square feet of tree trench area will be designed to capture the water quality volume of water from the 137,649 square feet of 3.16 acres of parking lot, road and surrounding impervious surfaces. The full watershed to the parking lot is nearly 4.2 acres of watershed (211,180 sf). The water quality volume is the 1.2" – 24 hour storm event. Additional drywells along the south side of the parking lot and near the bioinfiltration basins will have a capacity to capture the larger 2 year storm event. Reductions in POCs have been modeled as follows:

- Total Phosphorous (TP) is 7.0 lbs/year
- Total Nitrogen (TN) is 67.0 lbs/year
- Total Suspended Solids (TSS) is 4,034 lbs/year
- Fecal Coliform is 2,845 billion/year
- Runoff Reduction is 12 acre-ft./year

Phosphorous reduction has been shown to have a significant water quality benefit in freshwater ponds. In general, one pound of phosphorous reduction equals 500 pounds of algae growth that will be avoided.

4b. Describe plans for collecting and reporting on water quality over time.

The Village will continue to work with Dr. Gobler of the NYS Center for Clean Water Technology for ongoing water quality monitoring.

4c. Indicate useful life of proposed technology (must meet or exceed five years).

The expected useful life of the proposed improvements is 20+ years.

5. COST FACTORS

5a. Explain how you have confirmed that the proposed budget is reasonable, appropriate and necessary. If available, provide third party estimates or other documentation of how costs were determined.

Village consulting engineer Nelson, Pope & Voorhis has prepared the watershed analysis, conceptual design, cost estimate and pollutant load reduction estimate for this project, and will be responsible for all remaining design tasks. See attached feasibility study, engineer's cost estimate and conceptual plans. CVs of representative personnel are attached. The project cost is estimated using knowledge of current market conditions. No extraneous or unnecessary costs are included in the budget.

5b. Describe any matching funds to be provided.

The Village has received funding approval from the NYS Department of Environmental Conservation (NYSDEC) Water Quality Improvement Program (WQIP). This application requests matching share for this grant as shown below:

$1,233,645	Total estimated project cost
$986,916	NYSDEC WQIP Award (2021 Consolidated Funding Application)
$246,729	2022 CPF Request

The Village will self-fund engineering costs including design and construction administration/ inspection, estimated at $123,364, estimated at 15% of total construction cost.

We also note that the Village has self-funded its recently completed Water Quality Improvement Project Plan at a cost of $17,500.

5c. Explain: i. Why project cannot proceed and intended benefits cannot be achieved without external funding. ii. if funds are awarded at a lower level than requested, or if there are cost overruns, explain how the project will proceed.

The Village has invested substantial funding to complete numerous stormwater remediation and other water quality improvement initiatives throughout the Village. It is also currently working toward design and engineering for a sewer district. Becase its funding needs far outweigh available local resources, the Village has attempted to leverage SCWQPRP, Community Preservation Fund (CPF), NYS, local, and other sources whenever possible. If funds are not awarded by CPF, or are awarded at a lower level than requested, the project may be delayed while funding for the balance of the project budget is identified.

Cost overruns are not anticipated. This is because the Village's consulting engineer has carefully designed the project and prepared a detailed budget estimate. Project management by the

Village Superintendent of Public Works will include careful monitoring of field conditions to proactively address projected cost overruns by modifying the design as necessary to stay within funding limitations. Significant overruns or design changes will be discussed with the CPF program leadership in advance to ensure conformance with terms of a funding award.

6. MANAGEMENT, EXPERIENCE, ABILITY

6a. Describe applicant's experience in completing similar projects.

Gary Goleski, Superintendent of Public Works, oversaw the engineering consultant's work to design the project and secure the NYSDEC grant funding. He has a degree in Public Sector Management from Cornell University and has been with the Village for more than 30 years. Under Mr. Goleski's direction, the Village has successfully administered several prior CPF and other grant awards in compliance with granting agency requirements.

Design services are provided by the firm Nelson, Pope & Voohis (NPV). Curricula Vitae of project staff are provided with the application attachments.

Village Administrator Charlene Kagel-Betts, CPA has more than 20 years of experience in municipal finance, and before joining the Village in 2020, worked as Chief Internal Auditor for East Hampton Town, served as the Southampton Town comptroller, and was chief fiscal officer for the Town of Brookhaven. She began her career as an agent for the Internal Revenue Service in New York City, before going into public accounting and government auditing. Leveraging her depth of experience in municipal management and finance, Ms. Kagel-Betts will provide overight of the procurement process and payment applications submitted by consultants and contractors.

6b. Describe community support or opposition to project. If there is opposition, explain how this is to be addressed.

The Village community is supportive of projects that will improve the health of Lake Agawam and lead to HAB reduction. No opposition is noted.

6c. Describe any permits needed and time frame/status of approvals. If permits are approved, indicate same.

Village of Southampton Right of Way permit will be secured during Summer 2022.

7. MAINTENANCE, MONITORING, EVALUATION

Estimate ongoing maintenance costs and explain how these will be supported. Explain stewardship and monitoring activities planned for ensuring sustainability of the project.

Maintenance is required for all of the Green Infrastructure practices to maintain the function and viability of the practice. Frequency of maintenance will be monthly in the first year after installation, then on to bi-monthly maintenance in year two and three times annually from year three and beyond. Existing staff and equipment resources will be used for maintenance activities, and the activities listed below will be incorporated into the Village's ongoing routine maintenance schedule. Any associated costs will be addressed in the Village's annual operating budget. The following is recommended for long-term maintenance.

Inspections
The Village will need to inspect the Green Infrastructure locations annually to ensure their functionality. Bio-infiltration basins will be considered functional if no standing water is present 24-48 hours after a rainfall event, pre-treatment chambers are operational, no erosion is present, minimal weeds are present, and plants are well-established.

Maintenance
Maintenance activities may include:

A. *Pre-Treatment Chamber Inlet:* Inspect pre-treatment chamber inlet periodically and remove debris from the grate surface as needed (an estimated 3-4 times per year). Remove any sediment that makes it into the rain garden.

B. *Mulch:* Inspect mulch coverage annually and add double shredded hardwood mulch in order to maintain an average 3" layer. Adequate mulch coverage will suppress weeds and ensure adequate moisture availability for plants. Once plants are established and the mulch is not visible, mulch replenishment can be stopped.

C. *Edging:* Inspect the edging every spring for damage, including edging that has lifted up from the freeze/thaw cycle. If the edging has lifted, remove a few inches of soil underneath and reinstall the edging. The top of the edging must be flush with the grass to minimize potential damage during lawn maintenance and to ensure that runoff can enter the rain garden from a maximum amount of area, depending on the design of the individual rain garden.

D. *Watering:* During the first growing season, add a minimum of 1" of water per week if no rainfall occurs. This amount should be adjusted based on observed plant stress. Once established, rain gardens generally do not require any water unless several weeks have passed without rain.

E. Weeding: Weeding must be performed a minimum 3 times a growing season during the first three seasons. Weeding may be increased to monthly to maintain the desired appearance.

F. Replacement Plants: Replace plants as needed to maintain intended plant coverage within the rain garden. Use plant species from the approved rain garden plan. If a large percentage of plants require replacement, determination of the cause will be required and development of a replacement planting plan.

G. Pest Maintenance: If severe pest damage is noted, treat as appropriate.

8. DURATION OF PROJECT

8a. Provide a projected project timeline.

The Engineering Team will conduct a survey and soil borings in Summer of 2022 after the grant is awarded and design contract is complete to provide on-site technical information to be used in refining the conceptual plans in late Summer to early Fall of 2022. The Village will conduct a public outreach and education session in Fall of 2022 with neighbors and landowners adjacent to the parking lot. Once the final conceptual plans are approved the Engineering Team will commence with construction documents and prepare for a bid process over the late Fall of 2022 leading to an award to construct the project. The bid package will be reviewed by the Village and approved within the Board's bid process prior to bid requests and submission late Fall of 2022. Construction would commence by Winter of 2022 or early Spring of 2023, depending on weather conditions. The project would be complete before summer 2023.

8b. If project is multi-year or phased, provide a breakdown of budget and milestones for each year and phase.

N/A

Village of Southampton

23 MAIN STREET
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Resolution
2022-824
4/12/2022

Information: RESOLVED, that the Village of Southampton hereby authorizes the Mayor or his designee to execute any and all documents pertaining to the 2022 Town of Southampton Community Preservation Fund Water Quality Improvement Program application to support estimated project costs associated with the following projects:

1. **West Main Street Bioswales - $246,729**
2. **Gin Lane Phase 2 Stormwater Mitigation**
3. **Old Town Pond dredging design/implementation 4,161,597**
4. **Lake Agawam Algae Harvesting**
5. **Old Town Pond Watershed Bioswales - $741,197**
6. **Wickapogue Watershed Bioswales - $361,405**
7. **Phillips Pond Watershed Bioswales - $282,040**

Department:	Village Hall	**Sponsors:**
Category:	Resolutions	**Functions:**

Financial Impact

Body

Voting

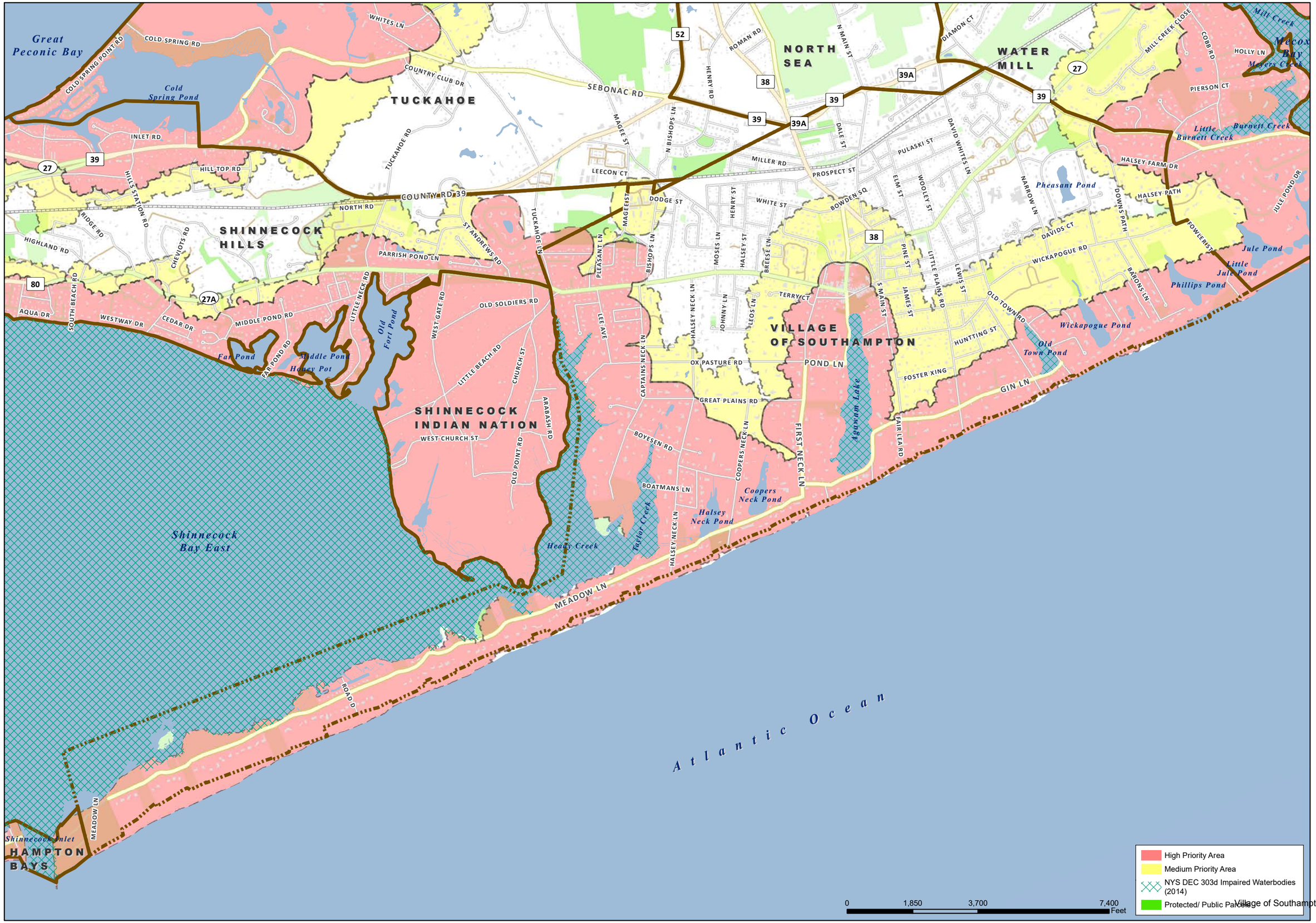
Motioned: Jesse Warren
Seconded: Joseph McLoughlin
Y: Jesse Warren, Gina Arresta, Joseph McLoughlin, Robin Brown, Roy Stevenson
N: None
A: None
N/A:

Certified By:

Cathy M. Sweeney
Village Clerk
Incorporated Village of Southampton

Town of Southampton CPF Water Quality Improvement Project Plan

VILLAGE OF SOUTHAMPTON



Village of Southampton 11

Prepared By:The Town of Southampton Dept of Geographic Information Systems Date: 7/5/2016 - MAP ID: 2514

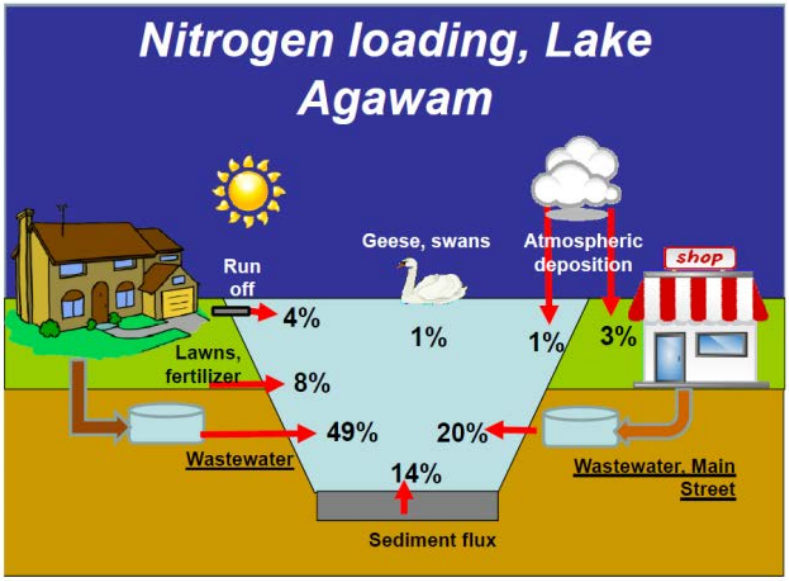
VILLAGE OF SOUTHAMPTON
AGAWAM LAKE

EXISTING CONDITIONS

Lake Agawam existing conditions – harmful algal bloom.

Lake Agawam Water Quality

Lake Agawam is located within the South Shore Estuary Reserve and is included on the 2016 NYS Section 303(d) List of Impaired/TMDL waters.[1] The Lake Agawam Comprehensive Management Plan (2009) identified groundwater outflows as a key contributor of the excess nutrients that have led to hypereutrophic conditions and past fish kills.[2]



Source: SOMAS, 2017

According to the report, the main sources of nitrogen loading entering the Lake Agawam watershed, are as follows:

- Wastewater from sanitary/septic systems = 70%
- Fertilizer = 8%
- Atmospheric deposition = 4%
- MS4 drain at the north-end of Lake Agawam = 4%

In September 2018, scientists from Stony Brook University reported that a toxic algae bloom in the lake was the densest growth ever recorded in a Long Island water body.[3] Public health warnings have been issued by the Suffolk County Health Department to urge community members, especially children and pets, to avoid the contaminated water.

[1] New York State November 2016 Section 303(d) List of Impaired Waters Requiring a TMDL/Other Strategy. https://www.dec.ny.gov/docs/water_pdf/303dListfinal2016.pdf

[2] Lake Agawam Comprehensive Management Plan (2009). Accessed at https://www.southamptonvillage.org/DocumentCenter/View/187/Lake-Agawam-Management-Plan-2009-PDF

[3] http://www.27east.com/news/article.cfm/East-End/570094/Lake-Agawam-Coated-By-Worst-Algae-Bloom-Ever-Recorded-On-Long-Island

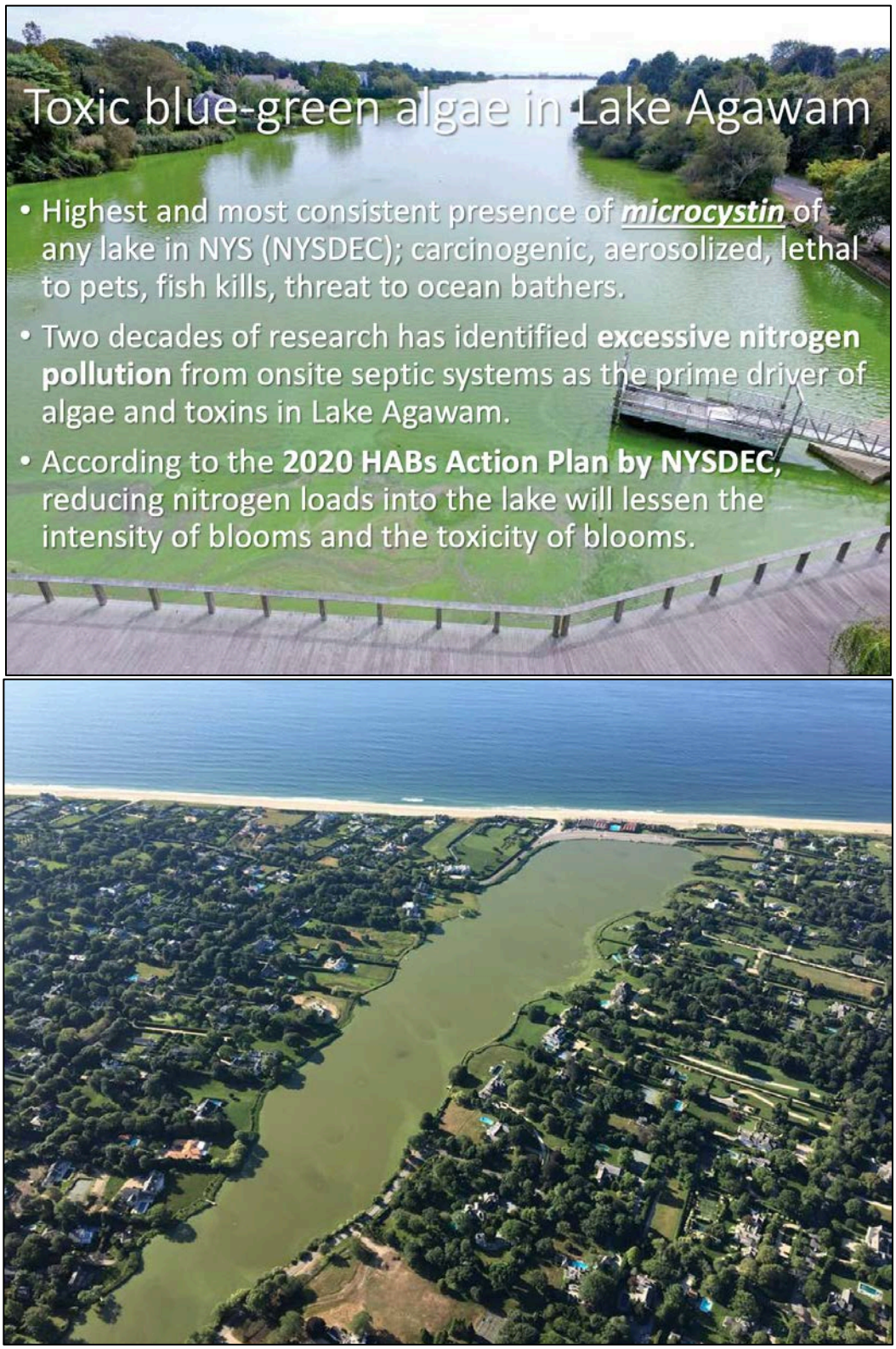
The Lake Agawam Harmful Algal Bloom Action Plan,[4] adopted April 2020, documents the historic frequency and severity of Harmful Algal Blooms (HABs) from 2013-2019:

Year	Earliest Sample Date	Latest Sample Date	Average of BGA Chlorophyll	Average of microcystin	Number of Confirmed	Number of Confirmed with High Toxins
2013	7/15/2013	10/8/2013	48	15	6	3
2014	5/28/2014	10/14/2014	52	14	15	3
2015	5/3/2015	10/22/2015	218	56	15	8
2016	4/27/2016	1/5/2017	1770	150	17	11
2017	5/8/2017	12/26/2017	270	70	15	17
2018	5/7/2018	10/16/2018	4492	316	7	17
2019	6/17/19	10/30/19	1086	1090	18	18

In 2020, the NYSDEC recorded 28 reports of HABs between May 22 and November 11, the highest annual count to date.[5] As of July 30, 2021 There have been 24 HABs notifications.

The following photos depict existing conditions of the lake.

[4] https://www.dec.ny.gov/docs/water_pdf/habapagawam.pdf
[5] https://www.dec.ny.gov/docs/water_pdf/habsarchive2020.pdf



Lake Agawam. Source: Dr. Christopher Gobler.

NYS DEC WATER QUALITY IMPROVEMENT PROGRAM AWARDS - 2021 (excerpt)

Applicant	Project Name	Project Description	County	Project Type	Award
Village of Canisteo	Village of Canisteo Wastewater Treatment Facility Disinfection	The Village of Canisteo will install ultraviolet effluent disinfection at the village's wastewater treatment plant. This project will improve water quality by reducing pathogens in the plant's discharge to the Canisteo River.	Steuben	Wastewater Treatment Improvement	$1,000,000
Village of Painted Post	Village of Painted Post Wastewater Treatment Facility Disinfection	The Village of Painted Post will install an effluent disinfection system at the village's wastewater treatment plant. This project will improve water quality by reducing pathogens in the plant's discharge to the Chemung River.	Steuben	Wastewater Treatment Improvement	$455,206
Village of Patchogue	Village of Patchogue Wastewater Treatment Facility Improvements	The Village of Patchogue will upgrade its wastewater treatment plant to increase capacity and reduce the amount of nitrogen entering Patchogue Bay. This project supports the goals of the Suffolk County Subwatersheds Wastewater Plan.	Suffolk	Wastewater Treatment Improvement	$7,763,456
Suffolk County	Suffolk County Open Space Land Acquisition	Suffolk County will acquire a 149 acre golf course located in the Central Pine Barrens region of Long Island. Once acquired, golf course infrastructure will be removed so the property can revert back to its natural habitat to protect the sole source aquifer providing the county's drinking water.	Suffolk	Land Acquisition Projects for Source Water Protection	$4,000,000
Village of Westhampton Beach	Village of Westhampton Beach Sewer Expansion	The Village of Westhampton Beach will make improvements at their wastewater treatment plant, which will include retrofitting the existing treatment process with an AquaSBR system. This project supports the goals of the Suffolk County Subwatersheds Wastewater Plan and will improve water quality in the Moniebogue Bay.	Suffolk	Wastewater Treatment Improvement	$3,321,520
Village of Southampton	Village of Southampton-West Main Street Parking Lot Green Stormwater Improvements	The Village of Southampton will install green stormwater infrastructure in the parking lot on West Main Street in the center of Southampton Village. The project will improve water quality by removing nutrients, oils, sediment, and pesticides from road runoff prior to stormwater discharge in Agawam Lake.	Suffolk	Non-agricultural Nonpoint Source Abatement and Control	$986,916
Town of Rockland	Livingston Manor Sewage Treatment Plant Disinfection	The Town of Rockland will install an ultraviolet effluent disinfection system at the Livingston Manor Sewage Treatment Plant. This project will improve water quality by reducing pathogens in the plant's discharge to the Willowemov Creek.	Sullivan	Wastewater Treatment Improvement	$1,000,000
Town of Thompson	Town of Thompson Kiamesha Lake Wastewater Treatment Plant Disinfection	The Town of Thompson will install an ultraviolet effluent disinfection system at the Kiamesha Lake Wastewater Treatment Plant. This project will improve water quality by reducing pathogens in the plant's discharge to the Kiamesha Creek.	Sullivan	Wastewater Treatment Improvement	$1,000,000
Town of Rockland	Town of Rockland - Roscoe Wastewater Treatment Facility Disinfection	The Town of Rockland will install an effluent disinfection system at the Roscoe Sewage Treatment Plant. This project will improve water quality by reducing pathogens in the plant's discharge to the Beaver Kill.	Sullivan	Wastewater Treatment Improvement	$585,000
Town of Thompson	Town of Thompson Emerald Green Wastewater Treatment Facility Improvements	The Town of Thompson will make general improvements to its wastewater treatment plant serving the Emerald Green-Lake Louise Marie & Rock Hill Sewer Districts. The project includes installation of a new ultraviolet disinfection system to improve water quality in McKee Brook.	Sullivan	Wastewater Treatment Improvement	$416,800
Town Newfield	Town of Newfield Wastewater Collection System Improvements	The Town of Newfield will make general improvements to its wastewater collection system including enhanced flow metering and manhole construction.	Tompkins	Wastewater Treatment Improvement	$377,609

For full list, see: https://www.dec.ny.gov/docs/water_pdf/wqip2021awards.pdf

Village of Southampton

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Resolution
2022-828
4/12/2022

WHEREAS, the Village of Southampton is applying for funding to the Town of Southampton 2022 Community Preservation Fund Water Quality Improvement Program for West Main Street Bioswales; and
WHEREAS, the Village Board has reviewed the provisions of the New York State Environmental Quality Review Act (SEQRA), as related to the proposed action; and
WHEREAS, the proposed action is classified as an Unlisted Action; and
WHEREAS, the Village Board has conducted a review of the information contained in the SEQRA documentation consisting of a Short Environmental Assessment Form (SEAF) prepared by Nelson, Pope & Voorhis, LLC; and
WHEREAS, the potential impacts and the magnitude and importance of potential impacts and benefits have been considered and a Negative Determination was recommended.
NOW, THEREFORE, BE IT RESOLVED, the Village Board hereby adopts a Negative Declaration pursuant to the State Environmental Quality Review Act for the West Main Street Bioswales water quality improvement project.

Department:	Village Hall	**Sponsors:**
Category:	Resolutions	**Functions:**

Financial Impact

Body

Voting

Motioned: Jesse Warren
Seconded: Gina Arresta
Y: Jesse Warren, Gina Arresta, Joseph McLoughlin, Robin Brown, Roy Stevenson
N: None
A: None
N/A:

Certified By:

Cathy M. Sweeney
Village Clerk
Incorporated Village of Southampton

Short Environmental Assessment Form
Part 1 - Project Information

Instructions for Completing

Part 1 – Project Information. The applicant or project sponsor is responsible for the completion of Part 1. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification. Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information.

Complete all items in Part 1. You may also provide any additional information which you believe will be needed by or useful to the lead agency; attach additional pages as necessary to supplement any item.

Part 1 – Project and Sponsor Information

Village of Southampton Village Board

Name of Action or Project:

West Main Street Green Infrastructure Project

Project Location (describe, and attach a location map): SEE ATTACHED

The West Main Street Municipal Lot.

Brief Description of Proposed Action:

Bioswale and tree trench infrastructure will be installed throughout the municipal parking lot at west main street to treat stormwater that would otherwise flow directly into catch basin to inlets of Lake Agawam through existing infrastructure. All technologies will conform to the NYSDEC Stormwater Management Design Manual and, where necessary, will be enhanced to improve pre-treatment and inlet control as well as outlet control. Long Island native plants will be used. The bioswale and tree trenches will be designed to reduce discharges of pollutants from stormwater runoff into Lake Agawam.

Name of Applicant or Sponsor:	Telephone: 631-283-0247
Village of Southampton	E-Mail: ggoleski@southamptonvillage.org

Address:

23 Main Street

City/PO:	State:	Zip Code:
Southampton	NY	11968

	NO	YES
1. Does the proposed action only involve the legislative adoption of a plan, local law, ordinance, administrative rule, or regulation? If Yes, attach a narrative description of the intent of the proposed action and the environmental resources that may be affected in the municipality and proceed to Part 2. If no, continue to question 2.	☑	☐
2. Does the proposed action require a permit, approval or funding from any other government Agency? If Yes, list agency(s) name and permit or approval: No permits. Funding is requested from Town of Southampton CPF	☐	☑

3. a. Total acreage of the site of the proposed action? 4.85 acres
   b. Total acreage to be physically disturbed? 0.31 acres
   c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 0.5 acres Village road system

4. Check all land uses that occur on, are adjoining or near the proposed action:

☐ Urban ☐ Rural (non-agriculture) ☐ Industrial ☑ Commercial ☐ Residential (suburban)

☐ Forest ☐ Agriculture ☐ Aquatic ☑ Other(Specify): Institutional

☐ Parkland

	NO	YES	N/A	
5. Is the proposed action,				
a. A permitted use under the zoning regulations?	☐	☐	☑	
b. Consistent with the adopted comprehensive plan?	☐	☑	☐	

	NO	YES	
6. Is the proposed action consistent with the predominant character of the existing built or natural landscape?	☐	☑	

	NO	YES	
7. Is the site of the proposed action located in, or does it adjoin, a state listed Critical Environmental Area?			
If Yes, identify: _____	☑	☐	

	NO	YES	
8. a. Will the proposed action result in a substantial increase in traffic above present levels?	☐	☐	N/A
b. Are public transportation services available at or near the site of the proposed action?	☐	☑	
c. Are any pedestrian accommodations or bicycle routes available on or near the site of the proposed action?	☐	☑	

	NO	YES	
9. Does the proposed action meet or exceed the state energy code requirements?			
If the proposed action will exceed requirements, describe design features and technologies:			
N/A - project is a bioswale (green infrastructure) installation; no energy will be used other than for construction.	☐	☐	N/A

	NO	YES	
10. Will the proposed action connect to an existing public/private water supply?			
If No, describe method for providing potable water: _____			
N/A - project is a bioswale (green infrastructure) installation; no water supply will be used other than temporary irrigation from a water truck (if needed) during establishment of plantings.	☐	☐	N/A

	NO	YES	
11. Will the proposed action connect to existing wastewater utilities?			
If No, describe method for providing wastewater treatment: _____			
N/A - project is a bioswale (green infrastructure) installation; no wastewater will be generated.	☑	☐	N/A

	NO	YES
12. a. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on the National or State Register of Historic Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places? Southampton Village Historic District	☐	☑
b. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory?	☑	☐

	NO	YES
13. a. Does any portion of the site of the proposed action, or lands adjoining the proposed action, contain wetlands or other waterbodies regulated by a federal, state or local agency?	☑	☐
b. Would the proposed action physically alter, or encroach into, any existing wetland or waterbody?	☑	☐
If Yes, identify the wetland or waterbody and extent of alterations in square feet or acres: _____		

14. Identify the typical habitat types that occur on, or are likely to be found on the project site. Check all that apply:

☐ Shoreline ☐ Forest ☐ Agricultural/grasslands ☐ Early mid-successional

☐ Wetland ☑ Urban ☑ Suburban

	NO	YES
15. Does the site of the proposed action contain any species of animal, or associated habitats, listed by the State or Federal government as threatened or endangered?	☑	☐
16. Is the project site located in the 100-year flood plan?	☑	☐
17. Will the proposed action create storm water discharge, either from point or non-point sources?	☑	☐
If Yes,		
a. Will storm water discharges flow to adjacent properties?	☑	☐
b. Will storm water discharges be directed to established conveyance systems (runoff and storm drains)?	☐	☑
If Yes, briefly describe: Bio-swale infrastructure will be installed to divert stormwater from an existing conveyance system and add temporary detention and treatment. Stormwater will be returned to the conveyance system post-detention/treatment.		
18. Does the proposed action include construction or other activities that would result in the impoundment of water or other liquids (e.g., retention pond, waste lagoon, dam)?	☐	☑
If Yes, explain the purpose and size of the impoundment: Bio-swale infrastructure will be installed to divert stormwater from an existing conveyance system and add temporary detention and treatment. Stormwater will be returned to the conveyance system post-detention/treatment.		
19. Has the site of the proposed action or an adjoining property been the location of an active or closed solid waste management facility?	☑	☐
If Yes, describe:		
20. Has the site of the proposed action or an adjoining property been the subject of remediation (ongoing or completed) for hazardous waste?	☑	☐
If Yes, describe: A review of NYSDEC's Environmental remediation & spills databases for the past 5-yrs did not identify any remediation or hazard waste conditions at the project site.		

I CERTIFY THAT THE INFORMATION PROVIDED ABOVE IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE

Applicant/sponsor/name: NPV on behalf of Village of Southampton Date: 4/12/2022

Signature:  Title: **Village Environmental Planner**

PRINT FORM

Agency Use Only [If applicable]

Project: W. Main Bioswale

Date: 4/12/22

Short Environmental Assessment Form
Part 2 - Impact Assessment

Part 2 is to be completed by the Lead Agency.
Answer all of the following questions in Part 2 using the information contained in Part 1 and other materials submitted by the project sponsor or otherwise available to the reviewer. When answering the questions the reviewer should be guided by the concept "Have my responses been reasonable considering the scale and context of the proposed action?"

	No, or small impact may occur	Moderate to large impact may occur
1. Will the proposed action create a material conflict with an adopted land use plan or zoning regulations?	☑	☐
2. Will the proposed action result in a change in the use or intensity of use of land?	☑	☐
3. Will the proposed action impair the character or quality of the existing community?	☑	☐
4. Will the proposed action have an impact on the environmental characteristics that caused the establishment of a Critical Environmental Area (CEA)?	☑	☐
5. Will the proposed action result in an adverse change in the existing level of traffic or affect existing infrastructure for mass transit, biking or walkway?	☑	☐
6. Will the proposed action cause an increase in the use of energy and it fails to incorporate reasonably available energy conservation or renewable energy opportunities?	☑	☐
7. Will the proposed action impact existing: a. public / private water supplies?	☑	☐
b. public / private wastewater treatment utilities?	☑	☐
8. Will the proposed action impair the character or quality of important historic, archaeological, architectural or aesthetic resources?	☑	☐
9. Will the proposed action result in an adverse change to natural resources (e.g., wetlands, waterbodies, groundwater, air quality, flora and fauna)?	☑	☐
10. Will the proposed action result in an increase in the potential for erosion, flooding or drainage problems?	☑	☐
11. Will the proposed action create a hazard to environmental resources or human health?	☑	☐

PRINT FORM

Agency Use Only [If applicable]

Project: W. Main Bioswale

Date: 4/12/22

Short Environmental Assessment Form
Part 3 Determination of Significance

For every question in Part 2 that was answered "moderate to large impact may occur", or if there is a need to explain why a particular element of the proposed action may or will not result in a significant adverse environmental impact, please complete Part 3. Part 3 should, in sufficient detail, identify the impact, including any measures or design elements that have been included by the project sponsor to avoid or reduce impacts. Part 3 should also explain how the lead agency determined that the impact may or will not be significant. Each potential impact should be assessed considering its setting, probability of occurring, duration, irreversibility, geographic scope and magnitude. Also consider the potential for short-term, long-term and cumulative impacts.

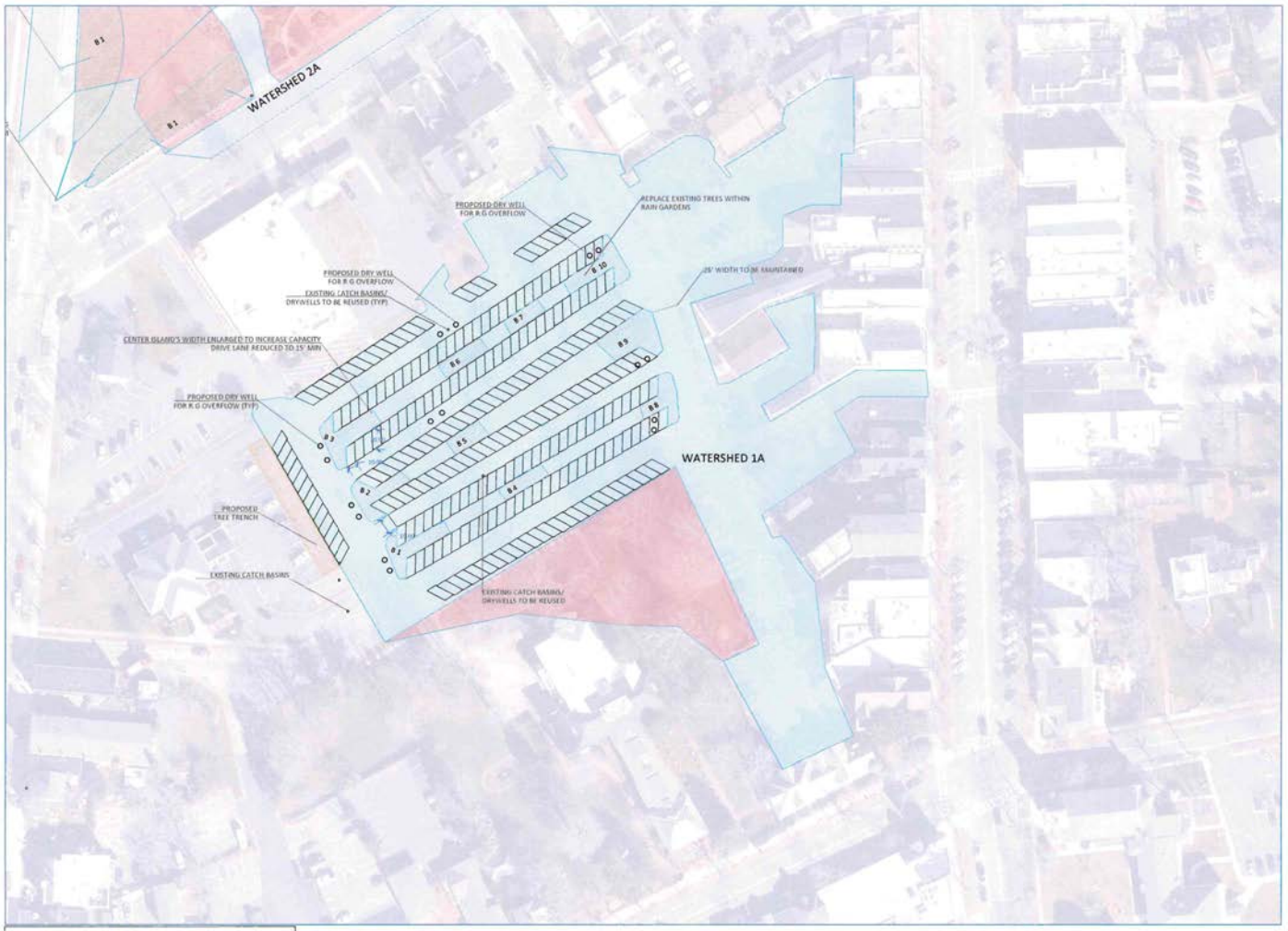
Based on the Part 1 and 2 of the Short Environmental Assessment Form, no moderate or large impacts have been identified. The project will create bio-swale infrastructure along the ROW to add temporary detention of stormwater to be treated to reduce discharges of pollutants from the stormwater into the water body.

☐ Check this box if you have determined, based on the information and analysis above, and any supporting documentation, that the proposed action may result in one or more potentially large or significant adverse impacts and an environmental impact statement is required.

☑ Check this box if you have determined, based on the information and analysis above, and any supporting documentation, that the proposed action will not result in any significant adverse environmental impacts.

Village of Southampton	4/12/22
Name of Lead Agency	Date
Mayor Warren	Mayor
Print or Type Name of Responsible Officer in Lead Agency	Title of Responsible Officer
Signature of Responsible Officer in Lead Agency	Signature of Preparer (if different from Responsible Officer)

PRINT FORM



WATERSHED 1A: WEST MAIN STREET MUNICIPAL LOT
1.5" WQv (90TH PERCENTILE STORM)

IMPERVIOUS AREA:

AREA = 183,857 SF

REQUIRED STORAGE VOL. (AREA X INCH/FEET X RUNOFF COEF.)
(183,857 SF X .125 FT X .98) = 18,017.99 CF (SAY 18,020 CF)

PERVIOUS AREA:

AREA = 27,323 SF

REQUIRED STORAGE VOL. (AREA X INCH/FEET X RUNOFF COEF.)
(27,323 SF X .125 FT X .98) = 819.69 CF (SAY 820 CF)

TOTAL REQUIRED STORAGE= SAY 18,840 CF

PROPOSED BIOSWALE AREA

BIOSWALE 1:
AREA = 1265 SF
PONDING DEPTH 12"
TOTAL VOLUME = 1265 CF

BIOSWALE 2:
AREA = 1145 SF
PONDING DEPTH 12"
TOTAL VOLUME = 1145 CF

BIOSWALE 3:
AREA = 1465 SF
PONDING DEPTH 12"
TOTAL VOLUME = 1465 CF

BIOSWALE 4:
AREA = 670 SF
PONDING DEPTH 12"
TOTAL VOLUME = 670 CF

BIOSWALE 5:
AREA = 645 SF
PONDING DEPTH 12"
TOTAL VOLUME = 645 CF

BIOSWALE 6:
AREA = 730 SF
PONDING DEPTH 12"
TOTAL VOLUME = 730 CF

BIOSWALE 7:
AREA = 610 SF
PONDING DEPTH 12"
TOTAL VOLUME = 610 CF

BIOSWALE 8:
AREA = 1025 SF
PONDING DEPTH 12"
TOTAL VOLUME = 1025 CF

BIOSWALE 9:
AREA = 1855 SF
PONDING DEPTH 12"
TOTAL VOLUME = 1855 CF

BIOSWALE 10:
AREA = 1350 SF
PONDING DEPTH 12"
TOTAL VOLUME = 1350 CF

PROPOSED TREE TRENCH AREA

T.T AREA 1:
AREA = 2725 SF
TRENCH DEPTH TILL OVERFLOW 6'-12"
TOTAL VOLUME = 2725 CF

TOTAL STORMWATER STORAGE PROVIDED = 13,485± CF

*STORMWATER STORAGE CAPACITY TO BE INCREASED WITH THE ADDITION OF NEW DRY WELLS

WATERSHED 1A ESTIMATED TREATMENT FROM MODELING:
TP: 67 LBS/YEAR
TN: 7 LBS/YEAR
TSS: 4034 LBS/YEAR
FC: 2845 BILLION/YEAR
RUNOFF: 12 ACRE-FT/YEAR

GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 INCH = 50 FEET

1	XX/XX/2019	XXX XXX	XX
No.	DATE: 7/16/2021	REVISION	BY

WEST MAIN STREET MUNICIPAL LOT (1A)
27 W MAIN ST
SITUATED AT
SOUTHAMPTON
VILLAGE OF SOUTHAMPTON, SUFFOLK COUNTY, NEW YORK

DWN. BY: XX
DATE: XX/XX/2019
CHK'D BY: XX
DATE:
JOB No: 0620
FILE No:
CADD-IN: _STORMWATER
SCALE: 1" = 50'
SHEET: 1 OF 1

NELSON POPE VOORHIS
environmental • land use • planning
10 Mewata Road, Melville, NY 11747 • 631.427.5665 • nelsonpopevoorhis.com

Village of Southampton - Watershed Projects - Top 10 Nitrogen Reduction Projects

Excerpt, Southampton Village Water Quality Improvement Project Plan 2022

Project #	Location	Ownership	BMP Type	Impervious Treatment Area (SF)	Size Required - 1.2" Rain (CF)	Size Required - 1.5" Rain (CF)	Size of Practice (SF)	Volume Captured (CF)	TP (lbs/yr.)	TN (lbs/yr.)	TSS (lbs/yr.)	Bacteria (billion/ yr.)	Runoff (acre-feet/yr.)	Unit Price	Estimated Cost *	Cost/lb. of Nitrogen
SV-01A	Parking Lot - West Main Street	Village	Bioswale, Tree Trench & Drywells	183,857	18,020	22,522	10,760	10,760	7.0	67.0	4,034	2,845	12.0		$1,233,645	$18,412.61
SV-06E	ROW at corner of Old Town Rd and Meeting House Ln	ROW of Village	ROW Raingarden	53,540	3,650	8,950	5,380	5,380	4.7	44.0	5,645	1,797	7.3	$35.00	$188,300	$4,279.55
SV-09A	Boatsman Lane	Roadend of Village	ROW Raingarden and Roadend potential permeable parking	27,026	5,470	6,835	5,925	5,925	5.1	24.9	4,826	860	3.5	$40.00	$237,000	$9,518.07
SV-02B	Open space along Windmill Lane	Village	Stormwater to surface in Bioswale	52,193	5,845	6,394	5,930	5,930	2.7	22.2	5,792	838	3.4	$50.00	$296,500	$13,355.86
SV-06D	ROW at corner of Old Town Rd and Herrick Road	ROW of Village	ROW Raingarden	28,651	3,650	4,557	2,515	2,515	2.2	22.2	4,820	863	3.3	$35.00	$88,025	$3,965.09
SV-16	Wickapogue Park	ROW of Village	ROW Raingarden and Bioswale	38,841	5,547	6,933	5,569	5,569	2.0	16.6	4,884	629	2.5	$25.00	$139,225	$8,387.05
SV-02A	Open space along Nugent St.	Village	Stormwater to surface in Bioswale	38,580	4,355	4,726	4,500	4,500	2.0	16.3	4,864	615	2.5	$50.00	$225,000	$13,803.68
SV-13B	Downs Family Rec. Area	Village	Landscape Raingardens	26,142	2,560	3,202	2,605	2,605	1.3	11.1	4,576	419	1.7	$40.00	$104,200	$9,387.39
SV-19C	ROW along Edwards Lane	ROW of Village	ROW Raingarden	23,630	3,883	4,853	3,895	3,895	1.2	10.1	3,852	354	1.5	$25.00	$97,375	$9,737.50
SV-15	ROW along Narrow Lane	ROW of Village	ROW Raingarden	22,285	3,802	4,752	3,864	3,864	1.1	9.4	4,484	356	1.4	$25.00	$96,600	$10,276.60
SV-07D	ROW along Wickapogue Rd	ROW of Village	ROW Raingarden	6,900	1,920	2,402	1,945	1,945	2.0	9.0	4,226	300	1.2	$25.00	$48,625	$5,402.78

Charles J. Voorhis, AICP, CEP

NELSON, POPE & VOORHIS, LLC
ENVIRONMENTAL • PLANNING • CONSULTING

Title

Managing Partner of Firm, Nelson, Pope & Voorhis, LLC; Melville, New York

Education & Training

- SUNY at Stony Brook; Master of Science in Environmental Engineering, concentration in Water Resource Management, 1984
- Princeton Associates; Groundwater Pollution and Hydrology Short Course, Princeton, New Jersey, 1983
- New York State Health Department, Environmental Health Training Course, Hauppauge, New York, 1982
- Southampton College of Long Island University; Bachelor of Science in Environmental Geology, 1977
- OSHA 10-Hour Construction Industry Training
-

Professional Affiliations, Certifications & Training

- American Planning Association, Washington, D.C.
- National Association of Environmental Professionals, Alexandria, VA
- Environmental Assessment Association, Scottsdale, Arizona
- American Water Resources Association, Syracuse, New York
- New York Water Pollution Control Association, Riverdale, NY
- Water Pollution Control Federation, Washington, D.C.
- Long Island Seaport & EcoCenter, Inc., Director, Port Jefferson, NY
- Boy Scouts of America, Trained Scoutmaster, Nathanial Woodhull District,
- Historical Society of Port Jefferson, Trustee, Port Jefferson, NY
- Environmental Conservation Board, Village of Port Jefferson, NY
- Port Jefferson Village, Waterfront Advisory Committee, Port Jefferson, NY
- Town of Brookhaven Mount Sinai Harbor Advisory Committee, Medford, NY
- Brookhaven Conservation Advisory Council, Medford, NY

Professional Experience

Charles Voorhis is a professional planner (AICP) and a certified environmental professional (CEP) with both private sector and public sector experience. Mr. Voorhis has managed municipal projects including regional and local planning studies, wetlands and shoreline restoration, environmental impact statements, permit compliance and environmental analysis. Charles Voorhis has over 39 years of professional environmental planning experience, including the position of Director of Environmental Protection of the Town of Brookhaven, supervising the environmental implementation of the Town of Brookhaven Comprehensive Plan Update and secured grants under the Local Waterfront Revitalization Program. As a private consultant for over 23 years, Mr. Voorhis has managed environmental planning and analysis of large scale planning and development projects throughout Nassau and Suffolk Counties. Recent projects include a study to eradicate aquatic invasive/nuisance species in upper and lower Canaan Lakes, Yaphank, stormwater management studies on the north and south shores for the Town of Brookhaven and Town of Islip, completion of the Water Supply Management & Watershed Protection Strategy for the Town of Southold, completion of the Suffolk County North Shore Embayments Watershed Management Plan, and completion of the Lake Agawam Comprehensive Management Plan, as well as numerous environmental impact statements, wetland and shoreline feasibility analyses and management plans.

Project Experience

- Great Cove Watershed Management Plan, 2011
- Town of Southold Comprehensive Plan Update, Economic Chapter, 2010
- Beaver Dam Creek Watershed Management Plan, 2009
- Lake Agawam Comprehensive Management Plan, 2009
- Southold TDR Planning Report and GEIS, 2008
- The Residences at North Hills, DEIS and FEIS, 2005-06
- Town of Southold Comprehensive Implementation Strategy, 2003
- Southampton Agricultural Opportunities Subdivision, DEIS, FEIS and Findings, 2001
- Old Orchard Woods, DEIS and FEIS, 2000
- Town of Smithtown Armory Park, DEIS, 2000
- Town of Southold Water Supply Management & Water Protection Strategy, 2000
- Knightsbridge Gardens, DEIS and FEIS, 1997
- Camelot Village @ Huntington, DEIS, 1997
- Airport International Plaza, DEIS and FEIS, 1996
- Price Club @ New Rochelle, DEIS and FEIS, 1995
- Commack Campus Park @ Commack DEIS and FEIS, 1994
- Water Mill Shops @ Water Mill DEIS, 1993
- Town of Brookhaven Land Use Plan, 1987

Rusty Schmidt

NELSON, POPE & VOORHIS, LLC
ENVIRONMENTAL • PLANNING • CONSULTING

Title
Landscape Ecologist

Education & Training
- University of MN at Twin Cities, Masters Degree in Landscape Architecture, 2000
- University of MN at Duluth, Bachelor of Science Biology, Art and Chemistry, 1993
- Certified Professional in Erosion and Sediment Control (CPESC)
- Certified Wetland Delineator from University of MN Qualifications.

Professional Affiliations, Certifications & Training
- MN American Society of Landscape Architects.
- MN Stormwater Assessments and Maintenance with the St. Anthony Falls Research Center.
- Invasive Plant Sub-Committee, Town of Huntington.
- Board Member, Long Island Native Plant Initiative
- LI Horticultural Society.

Professional Experience

Prior to becoming a Long Island resident, Mr. Schmidt was a Landscape Ecologist with the Washington Conservation District in Minnesota where he designed and built over 100 projects dedicated to improving water quality annually. Prior to the District, Mr. Schmidt conducted EIS, wetland delineations, wetland restoration and alternative storm water designs and, site planning for new and renovated developments and habitat restorations for URS Corporation.

Mr. Schmidt is a wildlife biologist and landscape ecologist with over 20 years of natural resource experience. Mr. Schmidt has expertise in designing and constructing alternative methods for managing storm water runoff in an environmentally conscious way. He has created designs for habitat restorations, raingardens, bio-infiltration swales, bio-retention basins and stormwater ponds for many different sized sites and locations ranging from small backyard raingardens to a large 500-foot long raingarden for a commercial property.

Mr. Schmidt has assisted in the design of raingardens, such as the “10,000 Rain Garden Initiative” in Kansas City, Missouri and the Metro Blooms and Blue Thumb Programs in Minnesota. Mr. Schmidt is a co-author of three books on plant selections for stormwater management applications entitled, "Plants for Stormwater Design" Volumes 1 and 2, and the “Blue Thumb Guide to Raingardens”.

Project Experience

- Over 1,000 Infiltration and Green Infiltration Systems have been designed and built of various sizes throughout the US.
- Raingarden Projects on public land from design through construction and maintenance for the cities of Burnsville, Maplewood, Bloomington, Plymouth, Arden Hills and Minnetonka MN.
- Commercial infiltration projects for IKEA, Target, USPS, Stillwater Country Club, various religious institutions, colleges and universities.
- Green Initiative Report for the city of Minneapolis, MN, determining where to implement city’s green initiatives, such as green roofs, raingardens, bio-infiltration practices and pervious pavements.
- Cliff Fen Park, Burnsville, MN, designed and implemented a project to improve water quality by restoring a historic wetland using surface water that bypassed the area.
- MAC (Minnesota Airport Commission) Storm Water Pond, Minneapolis, MN. The MSP Airport directed stormwater to a low land area. A restoration plan and a 40 acre stormwater pond facility for treatment was created.
- Sergeant’s Lake Project, Minneapolis, MN created a floodplain forest wetland along the Mississippi River for the MAC.
- Wetland Delineations at multiple locations throughout the Midwest and the State of Virginia.

Ashley Crespo

NELSON, POPE & VOORHIS, LLC
ENVIRONMENTAL • PLANNING • CONSULTING

Title
Assistant Landscape Ecologist

Education & Training
- Bachelor of Arts Degree in Architecture and Earth Science (double major), Landscape Studies (minor), University of Pennsylvania, 2017

Computer Skills
- Proficient in AutoCAD and SketchUp, GIS
- Proficient in Adobe Creative Suite (Illustrator, Photoshop, InDesign, Lightroom)
- Proficient in Autodesk Revit, Rhino, Grasshopper, Rhino VRay,
- Experience in 3D printing (MakerBot and Powder Prints)
- Experience in Laser Cutting

Language Skills
- Fluent in Spanish

Professional Experience
Ashley Crespo holds a Bachelor of Arts Degree with a double major in Architecture and Earth Science, and a minor in Landscape Studies and has recently joined NP&V. Ms. Crespo contributes professional planning and graphic expertise for NP&V's sustainable landscape design services. Her skills are used to bring redevelopment concepts to life creating 3D views, photo simulations, and shadow studies. Ms. Crespo integrates the existing environment and proposed landscaping with the built environment through site analysis, model making and preparation of graphic illustrations. Ms. Crespo has created rain garden designs and wetland buffer restorations ranging in size and location from small backyard gardens to a large 700-foot long median. She also designs promotional, educational and environmental signage for raingardens, solar arrays, parks and institutional properties.

Ms. Crespo regularly assists with environmental monitoring visits focusing on habitat composition, delineation and field assessments for a variety of terrestrial and marine habitats across Long Island.

Relevant Experience
- **Asst. Landscape Ecologist, Nelson, Pope & Voorhis, LLC, Melville NY**:
  Ecological and Environmental Analysis
  - Southern Pine Beetle Surveys
  - Preparation of ecological sections of EIS documents

  Wetland Restoration Plan Design and Review:
  - Lake Agawam Restoration Plan
  - The Meadows Restoration Plan

  Environmental Signage:
  - Ronkonkoma Train Station Rain Garden Signage
  - Manorhaven Park and Preserve

  Shadow Studies and Visual Assessment:
  - New Rochelle Downtown Overlay Zone
  - Village of Woodsburgh Planning and Zoning Analysis
  - 2016 Arthur Ave CEQR EAS
- **Architectural Intern, N2Design and Architecture (Pt Washington, NY)**: Daily tasks included drafting, expediting contract administration responsibilities, and site surveys. Ms. Crespo was also responsible for the set up of all construction drawings for the current projects, as well as the input of all redline changes and revisions.
- **Summer Institute Intern, NYC Parks and Recreation (NYC, NY):** Through the NYC Parks Initiative, she worked with a group of teenagers who were interested in sustainable design. She was responsible for creating and teaching weekly lessons that explored the local landscape and human dynamics through site analysis, model making, graphic presentations and SketchUp tutorials.
- **Soil Biogeochemistry Research Assistant, University of Pennsylvania (Philadelphia, PA):** Assisted with the processing and packaging of soil samples from the Luquillo CZO plot in Puerto Rico to be analyzed by the Carbon-Nitrogen elemental analyzer. In summer, partnered with the US Forest Service to conduct soil pit extractions in the Delaware River Basin.

NELSON & POPE
ENGINEERS & SURVEYORS

Russell Z. Scott, P.E.

Transportation & Municipal Site Department

Education:
BSCE, Rensselaer Polytechnic Institute

Registration/Certifications:
Professional Engineer: New York

Certified Nuclear Moisture/Density Equipment Operator

Years with This Firm: 17

Affiliations:
American Society of Civil Engineers (ASCE)

New York State Association of Transportation Engineers (NYSATE)

Continuing Education Coursework:
Designing and Implementing Roundabouts
University of Wisconsin at Madison (2007)
Work Zone Safety Inspection, National Highway Institute (2001)
Techniques for Pavement Rehabilitation, ASCE/FHWA (2002)
Roadside Design, ASCE (2003)
Certificate in Traffic Engineering, Polytechnic University (2006)

Professional Profile

Mr. Scott has 17 years' experience in traffic engineering and civil engineering fields. His responsibilities have included the project management of various traffic signal and roadway projects for the New York State Department of Transportation, Nassau County Department of Public Works, Suffolk County Department of Public Works, private development clients, local Towns and Villages. Tasks have included conceptual layout, alignment computations, drainage design, traffic signal design, grading design and quantity take-off and estimating.

Experience:

Town of Islip

Streetscape Improvement Projects, Town of Islip

Mr. Scott is project manager for this streetscape improvement contracts that encompasses three projects for the downtown revitalization along NY27A in which N&P is to provide Final Design Plans and obtain a New York State Department of Transportation Highway Work Permit.

Nassau County Department of Public Works

Long Island Motor Parkway Mixed-Use Trail

Project Manager for the Motor Parkway Trail Vision Plan, an initiative to restore and enhance important transportation connections through Nassau County and adapting to new environmentally-friendly and healthy forms of transportation.

Town of Brookhaven

Stony Brook Road Traffic Improvements

Project Manager overseeing the necessary engineering services for the implementation of traffic improvements along Stony Brook Road, from North Country Road (NYS 25A) to Smithtown Bypass (NYS 347), excluding the area between Development Drive and Oxhead Road, approximately 10,000 feet)

North County Road Complete Streets Miller Place, NY

Project Manager for this design and construction inspection services safety improvement project that encompasses a one-mile segment of North Country Road between Honey Lane and Rolling Road, in the hamlet of Miller Place.

Governor's Office of Storm Recovery Projects (GOSR)

Project Manager for Master Drainage Study projects awarded to Nelson and Pope under NY Rising Community Reconstruction Program of the Governor's Office of Storm Recovery. They included the following:

- Survey, inventory, and drainage infrastructure upgrade plan for the Bellmore/Merrick and Seaford/Wantagh South of Merrick road outfalls, storm

drains and bulkhead in the Town of Hempstead.

- Development of a comprehensive drainage infrastructure master plan for the Village of Lindenhurst
- Prepare a Hydrologic and Hydraulic (H&H) drainage improvement study and plan to gain a watershed understanding of the hydrology and hydraulics affecting the Village of East Rockaway and the Hamlet of Bay Park in the Town of Hempstead.

Roundabout Design

Locations: Lower Sheep Pasture Road Intersections, Town of Brookhaven
NYS Route 9A, Village of Ardsley, Town of Greenburgh

N&P was retained by the Town of Brookhaven to analyze and develop modern roundabout designs for two STOP controlled intersections on Lower Sheep Pasture Road in Setauket and a major signalized intersection on NYS Route 9A for the Town of Greenburgh's Ridgehill Study/Roadway Improvement Project. Mr. Scott assisted in this project which included capacity analysis utilizing VISSIM software; conceptual design; topographic survey and mapping; community outreach; preliminary and final design; construction inspection & support services and construction survey stakeout.

Town of Brookhaven

Mastic Beach Municipal Parking Lot
Project Manager for this Town of Brookhaven Department of Housing and Human Services project for the preparation of decorative lighting plans and sidewalk for the parking lot in compliance with Town Code and the Illuminating Engineering Society of North America standards. Plans included the electrical distribution system and connection to LIPA's system for service. N&P also prepared landscaping plans for trees, shrubs, and grass at the perimeter of the parking lot and at interior islands and provided construction phase services.

Town of Brookhaven Aquatic Center Parking Lot, Mastic Beach
Project Manager for this Town of Brookhaven Department of Housing and Human Services project which includes the construction of a new parking lot. Project components include survey and mapping; construction plans, bid specifications; bid review and award assistance and construction inspection.

Multi-Use Court at Town of Brookhaven Aquatic Center, Mastic Beach
Project Manager for this Town of Brookhaven Department of Housing and Human Services project for a multi-purpose court. Project components include topographic surveying and mapping; construction plans; bid review and award assistance and construction inspection.

Municipal Parking Lot on Broadway, Rocky Point

Project Manager for this Town of Brookhaven Department of Housing and Human Services project which includes soil borings; survey and mapping; detailed design and construction plans; bid specifications and assistance with award; grant application and construction inspection.

Traffic Signal/Pedestrian Improvements at Neighborhood Road @ Mastic Road and Bayview Drive @ Cranberry Drive, Mastic Beach
Project Manager for this Town of Brookhaven Department of Housing and Human Services project which includes survey and mapping; traffic signal plans; intersection improvement plans; pavement marking & signing plans; cost estimates; bid specifications; bid review and award assistance.

Shore Road Stormwater Infrastructure Improvements, Mt. Sinai
Project Manager for this NYSDOT grant funded project to progress stormwater infrastructure improvements along Shore Road between Mt. Sinai-Coram Road and Rocky Hill Road in Mt. Sinai. The project area is adversely impacted by stormwater runoff and by erosion of Shore Road where it borders Mt. Sinai Harbor. The goal of the project is to provide working solutions through green infrastructure stormwater management practices and shoreline stabilization using a combination of structural and natural techniques in order to establish a more appropriate and functional interface between the natural resources of Mt. Sinai Harbor and the transportation linkage provided by Shore Road. The overall project is expected to have significant benefits in reducing pollutant load to Mt. Sinai Harbor, and will improve aesthetics and function of the existing road infrastructure.

Energy Efficient Street Lighting Study – Town of Brookhaven
Project Manager for the study of potential energy efficient street lighting alternatives to the existing high pressure sodium (HPS) and low pressure sodium (LPS) street light fixtures being used throughout the Town. The objective of the study was to compare the life-cycle cost over a 20-year period for each type of technology versus the current. The life cycle cost included the initial capital cost, as well as applicable yearly energy and maintenance costs.

Amagansett Drive Storm Drainage
Design Engineer for this project which involved studying and improving the storm drainage facilities in the vicinity of Amagansett Drive in the Sound Beach area. The study consisted of defining tributary areas and different alternatives for water quality treatment of stormwater runoff. This project also included the design of water quality drainage devices, slope stabilization of an existing washed out bluff, and outfall protection, preparation of construction documents, procuring NYSDEC permits, and assisting the Town of Brookhaven during the bid phase.

West Meadow Creek Stormwater Management for Various Roadways
Design Engineer on this project which involved stormwater mitigation improvements for a tributary area of approximately 24 acres in the Old Stony Brook area. This

project entailed the design and preparation of mitigation plans which included water quality drainage design, roadway demolition and restoration, erosion control plans and details, procurement of NYSDEC permits, and assisting the Town of Brookhaven during the bid phase.

Town of Islip

Connetquot Stormwater Project
Project Manager for this Town of Islip project for design of stormwater and road improvements on Middlesex Avenue between Shore Avenue and east to the street end at Grand Canal in Oakdale. The streets in this area experience flooding during significant rainfall events making it difficult for residents to access their properties. N&P identified and developed alternatives to address the storm water quantity/quality issues. Project components included survey and mapping; test holes; drainage investigation; environmental permitting; preparation of conceptual plans; detailed design & construction plans; bid specifications and bid award assistance.

Suffolk County

Improvements at the Intersections of CR 51 @ CR 94 and CR 63 @ CR 104/NYS 24, Riverhead, Suffolk County
Mr. Scott provided engineering assistance for the initial three concepts on this Suffolk County Department of Public Works intersection improvement project which entails the reconfiguration of the existing traffic circle into a modern roundabout along with other related traffic improvements. He is now serving as the Project Manager to develop additional concept, perform additional analysis and will progress the preliminary and final design. The project will entail analyzing traffic counts and data, creating and applying growth factors to the traffic data and, using VISSIM software, determining the lane configurations needed to achieve an acceptable level of service for a modern roundabout in an effort to address traffic congestion and safety concerns in the downtown Riverhead area.

Town of Oyster Bay

Syosset Streetscape & Walkability Improvement Project
Nelson & Pope has been retained by the Town of Oyster Bay for a project to improve pedestrian walkability, accessibility and safety in the heavily congested downtown Syosset commercial area. Mr. Scott served as the Project Manager for this TEP project which included the preparation of the Design Approval Document, design of new pedestrian crosswalks and upgrade of existing pedestrian crossings; installation of decorative pavers at pedestrian crossings; creation of pedestrian safe havens; installation of decorative lighting; creation of green spaces through the planting of street trees and planters; replacement of large areas of concrete sidewalk with

decorative paving stones and the installation of benches, trash receptacles & directional signage.

Massapequa Park Drainage, Massapequa
Mr. Scott was a project engineer involved in the study and design of drainage improvements for Park Avenue located in the Village of Massapequa. A range of alternatives was developed in an effort to reduce the volume of runoff diverted to the Village street network at Park Lane/ Pennsylvania Avenue. The project also consisted of the design and preparation of the roadway improvement plans which included roadway plan and profile sheets, along with the preparation of detailed construction quantity takeoff and construction bid documents.

Colony Lane Area Roadway Improvements, Syosset
This project entailed the study of existing storm drainage systems, topographic survey of existing conditions and a comprehensive design report for approximately eight miles of Town owned roadways in Syosset along with three Nassau County owned recharge basins. Mr. Scott's tasks include organizing and coordinating the field personnel in collection of storm drainage system as-built information, creating a drainage study plan, developing a preliminary design for drainage improvements, analysis of existing recharge basins, preparation of a comprehensive design report including description of typical existing roadway features and conditions and identification of non-standard or deficient design elements. Also included in the report are alternative solutions and recommendations to address deficiencies in the existing drainage system and roadway construction.

Town of Hempstead

Coes Neck Park, Baldwin
Mr. Scott was Project Manager for this project which entailed the preparation of contract drawings, bid documents and engineering cost estimate for Coes Neck Park. Project components included sports field layouts (handball, tennis, basketball), electrical service analysis and upgrades, surveying and mapping, lighting and other miscellaneous site improvements.

Bedford Avenue Area Drainage and Roadway Improvements, Hempstead
The project entailed the study and analysis of the existing drainage system within a mile of a residential neighborhood in conjunction with the development of a project design report and preparation of contract documents and specifications. Mr. Scott's responsibilities included analyzing the existing drainage system to determine the need for modifications, generating new roadway profiles to improve storm drainage flow and determining the amount of restoration necessary outside the roadway section.

Bay Drive Area Drainage and Roadway Improvements, Hempstead

This project entailed the study and analysis of the existing drainage system within a residential neighborhood in conjunction with the development of a project design report that described existing conditions such as geometry, pavement condition, traffic control devices, etc. Mr. Scott's tasks included analyzing the existing drainage system to ascertain any necessary modifications, generating new roadway profiles to improve storm drainage flow, developing an improved centerline profile, preparing construction plans, contract documents and specifications.

Town of Islip

Connetquot Stormwater Project
Mr. Scott was Project Manager for this Town of Islip project to implement storm water and road improvements on Middlesex Avenue between Shore Avenue and east to the street end at Grand Canal in Oakdale. The streets in this area experience flooding during significant rainfall events making it difficult for residents to access their properties. N&P identified and developed alternatives to address the storm water quantity/quality issues. Project components included survey and mapping; test holes; drainage investigation; environmental permitting; preparation of conceptual plans; detailed design & construction plans; bid specifications and bid award assistance.

Nassau County

Meadow Lane/Marbridge Road Flooding Mitigation
Mr. Scott was Project Manager for this Nassau County Department of Public Works project which entailed performing a detailed investigation and report for recommendations to mitigate significant flooding conditions on Meadow Lane in the vicinity of Marbridge Road in Lawrence which occurred during storm events. The Meadow Lane/Marbridge Road/Causeway Road drainage area is located in the Incorporated Village of Lawrence in the vicinity of the Larwence Golf Club and Bannister Creek, which discharges into Reynolds Channel near the Atlantic Beach Bridge. N&P inventoried the existing drainage system within the project limits and identified potential drainage issues, and subsequently developed and evaluated feasible corrective alternatives including related costs and implementation requirements and constraints.

New York State Department of Transportation

Various Roadway Improvement Plans for NYSDOT, Nassau and Suffolk Counties
Mr. Scott's responsibilities included various design tasks including typical sections, MPT details, pavement widening, traffic signal plans, grading, pavement markings and drainage. He was also responsible for the preparation of plans in AutoCAD.

Various SCDPW, NCDPW and Town Roadway Improvement Permit Plans, Nassau and Suffolk Counties

Mr. Scott was involved with the preparation and design of traffic signal and traffic signal modification plans for private developers and municipalities in Suffolk County.

Traffic Signal Projects, Various Locations
(NYSDOT, Nassau County, Suffolk County, Town of Brookhaven)

These projects include the design of traffic signals from modifications to existing traffic signals to completely new traffic signals throughout Long Island. Mr. Scott's tasks include developing construction plans illustrating the proposed improvements with appropriate State, County or Town item numbers and details, including the location of traffic signal poles, pedestrian signal poles, pullboxes, detector loops, proper signal head placement, sizing of steel conduit, wiring diagrams, spacing diagrams, sequence diagrams. Traffic signal as-builts were prepared once the construction of the traffic signal was complete.

Feasibility Study

West Main Street Parking Lot Stormwater Improvements

West Main Street, Village of Southampton, New York

July 2021

N+P Job No.06013

Feasibility Study:
Parking Lot Stormwater Improvements
West Main Street
Southampton, NY

Prepared for:

Village of Southampton
23 Main Street
Southampton, NY 11968
Contact: Gary Goleski

Prepared by:

Nelson + Pope
Nelson Pope Voorhis
70 Maxess Road
Melville, New York 11747
Contact: Russell Scott
(631) 427-5665

Date Issued: July 29th, 2021

Design Engineer: Russell Scott, P.E.

Professional Seal

Feasibility Study for the
Main Street Parking Lot Stormwater Improvements

1. Executive Summary.

Southampton is a village on the east end of Long Island that is steeped in history. With the extension of the Long Island Railroad in 1872, Southampton became an escape for the wealthy in New York City. Large estates were built and Southampton transformed into the resort community it is today, but it has retained its small-scale country village that has made it very unique. As such, Southampton attracts a monumental number of tourists and during the summer months, the population during the day is extremely high and parking is at a premium.

This study examines the stormwater improvements in the parking lot on West Main Street in the center of Southampton. The project will incorporate green stormwater abatement designs that will improve water quality by removing nutrients, oils, sediment, and pesticides from road runoff.

The project is comprised of four (4) area of improvements which include:

- Reducing the overall impervious area of the existing parking lot,
- Construction of bio-infiltration/retention areas that will reduce non-point pollution by filtering the road runoff while creating a natural aesthetically pleasing view,
- Increasing the stormwater storage capacity by installing several leaching structures, and
- Tree trench on the west end of the parking lot.

These improvements will incorporate green stormwater infrastructure that maximizes opportunities to leverage the multiple benefits of green stormwater infrastructure, spur innovation in the field of stormwater management, build capacity to construct and maintain green stormwater infrastructure, and facilitate the transfer of new technologies and practices to other areas of the state.

Figure 1- Downtown Southampton

2. Project Objectives.

The proposed practices are designed to reduce pollutants from stormwater runoff that ends up in the groundwater especially during high storm events. Stormwater from West Main Street collects in the West Main Parking Lot and stores in leashing structures that allow the runoff to seep into the ground. Along the route, the stormwater picks up debris, salt, sand and oils from the roadway. The parking lot is located within the Lake Agawam watershed just north of the lake by a quarter of a mile. The pollutants eventually end up in lake Agawam as evident in the high pollutant levels.

Grass medians section off the parking lot which will be used to install bio-infiltration areas. These bio-infiltration areas will provide both infiltration and storage which will capture and treat the stormwater. After being treated, the cleaned stormwater will be conveyed to leaching structures where it will infiltrate into the groundwater. This technology conforms to the NYSDEC Stormwater Management Design Manual. Eastern Long Island native plants will be used for the bio-infiltration systems which will provide an aesthetic appearance. Additional leaching structures will be installed to increase the storage capacity

3. Existing Conditions.

A. The current land use is mainly commercial with numerous buildings adjacent to paved parking lots.
B. West Main Street is a two-lane roadway which varies in width from 30 feet to 40 feet.
C. Runoff flows into the parking lot from West Main Street and the buildings and parking lots located to the east.
D. West Main Street parking lot is an asphalt lot approximately 380 feet by 265 feet with approximately 240 parking stalls.
E. There are four rows of angled parking with one-way aisles. Between the aisles are curbed, grass medians that vary in width with trees of various sizes and ages.
F. Three (3) leaching structures are located in both the middle of the northern most aisle and the third aisle from the north
G. Lake Agawam is located approximately 1,100 feet from the southwest edge of the parking lot.
H. From the USGS Long Island Depth to Water Viewer, groundwater elevation is approximately 14 feet below the ground surface in the middle of the parking lot.
I. The property for the parking lot is owned by the Village of Southampton.
J. USGS Soil Classification across the parking lot are as follows: the eastern quarter of the site is a Bridgehampton silt loam (BgA) which is a hydrologic soil group B with high infiltration rate. The middle half of the parking lot is a Haven Loam (HaB) which also is a hydrologic soil group B with well-drained soil classification. The western portion of the parking lot is a Plymouth loamy sand (PlC) which is a Hydrologic Soil Group A and Excessively Drained soil classification. The soil borings near the site confirmed the soil classification of fill near the surface, though has shown to be primarily sandy loam soils to groundwater levels.
K. The parking lot is within the FEMA zone X, which is determined to be outside the 0.2% annual chance floodplain or outside the 500-year flood and protected zone and should have minimal risk for flooding.
L. No wetlands are within the area though all of the treated or untreated stormwater goes to the receiving waterbody of Agawam Lake. No known hotspots, brownfield or other soils contaminations are present at this location. A contingency will be prepared as part of the plan if soil issues arise during construction.
M. Infiltration tests and additional shallow soil borings were conducted in the locations of the bio-retention areas. The top 12-inches of the soil was a mix of soils types with a sandy loam soil below that top fill area to groundwater. Groundwater was observed at 5 to 8 feet. Infiltration testing at boring hole “A” had a 2-inch per hour infiltration rate. Infiltration testing at boring hole “B” had a

9-inch per hour infiltration rate. Infiltration testing at boring hole "C" had a 10-inch per hour infiltration rate. All of these infiltration test support a green infrastructure practice.

4. Project Description.

A. Recommended Green Infrastructure Practices.

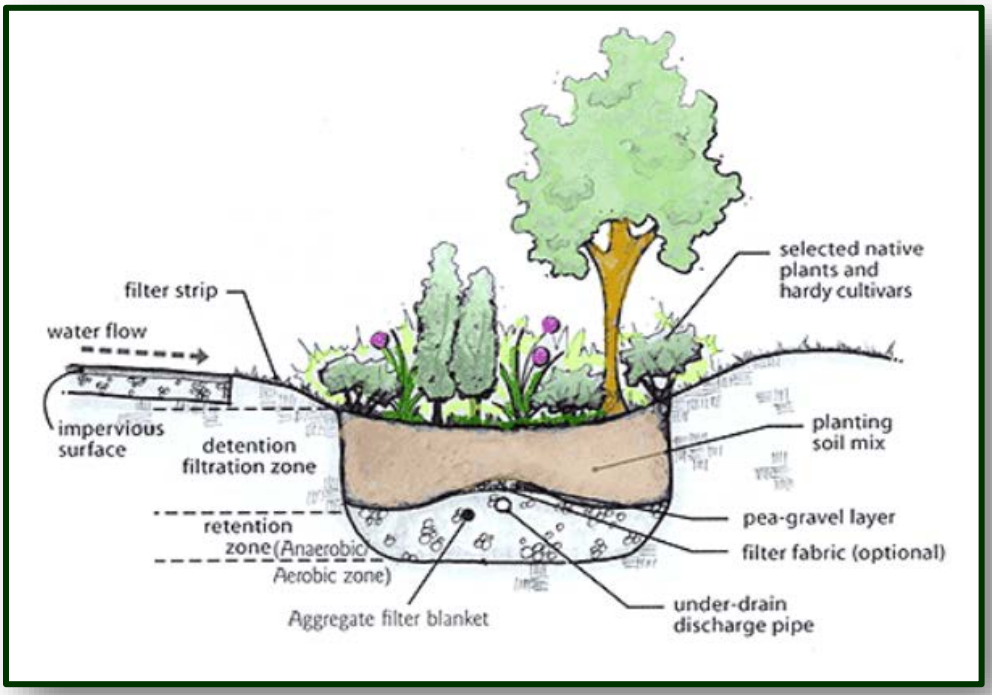
The Village requested Nelson + Pope and Nelson Pope Voorhis to review and prepare a Feasibility Study to determine drainage improvement that will use green infrastructure that would otherwise flow into an existing leaching structure located in the parking lot and discharge via leaching into the groundwater and eventually reaching Agawam Lake.

West Main Street is a secondary roadway in the center of the Village that connects Nugent Street with Meeting House Lane running generally north south with older drainage systems that is not consistent with current best management practices. During rain events the parking lot collects the road runoff from a large area to the east and conveys the runoff to Agawam Lake with minimal stormwater treatment.

The project is comprised of the following improvements:

1. Widening of the existing grass medians and construction of bio-infiltration areas within these grassed medians in the parking lot,
2. Treating the runoff in these bio-infiltration areas and conveying the runoff to proposed leaching structures, supplementing the existing leaching structures,
3. Create a tree trench along the western end of the parking lot and
4. Resurfacing of the parking lot to efficiently direct the runoff to the bio-swale areas.

Bio-infiltration areas are depressions in the existing ground that capture runoff and remove nutrients, pollutants, contaminants and sedimentation from the runoff. The bio-infiltration area consists of native deep-rooted vegetation, a ponding area, an organic layer of mulch layer, planting soil and a suspended draintile to promote more anaerobic conditions. The planting bed is a sand/organic composition that reduces the velocity, filters particulates, and spreads flow over the length of the bio-retention area. Aeration and drainage of the planting soil are provided by the planting soil that infiltrates quickly and the deep-rooted plants. The ponding area provides a temporary storage location for runoff prior to its evaporation or infiltration. The organic or mulch layer also filters pollutants, the combination of the organic layer and the planting soil create a "Healthy" soil that not only provides an environment conducive to the growth of plants but also microorganisms, which degrade petroleum-based products, eliminate harmful bacteria, accumulates heavy metals and other organic material.



Typical Bio Infiltration Area

We currently envision the construction of 10 bio-infiltration areas located in the three (3) grass medians of the parking lot as shown on the concept plans in Figure 2 below. The cost of this work is estimated at $1,233,645.25.

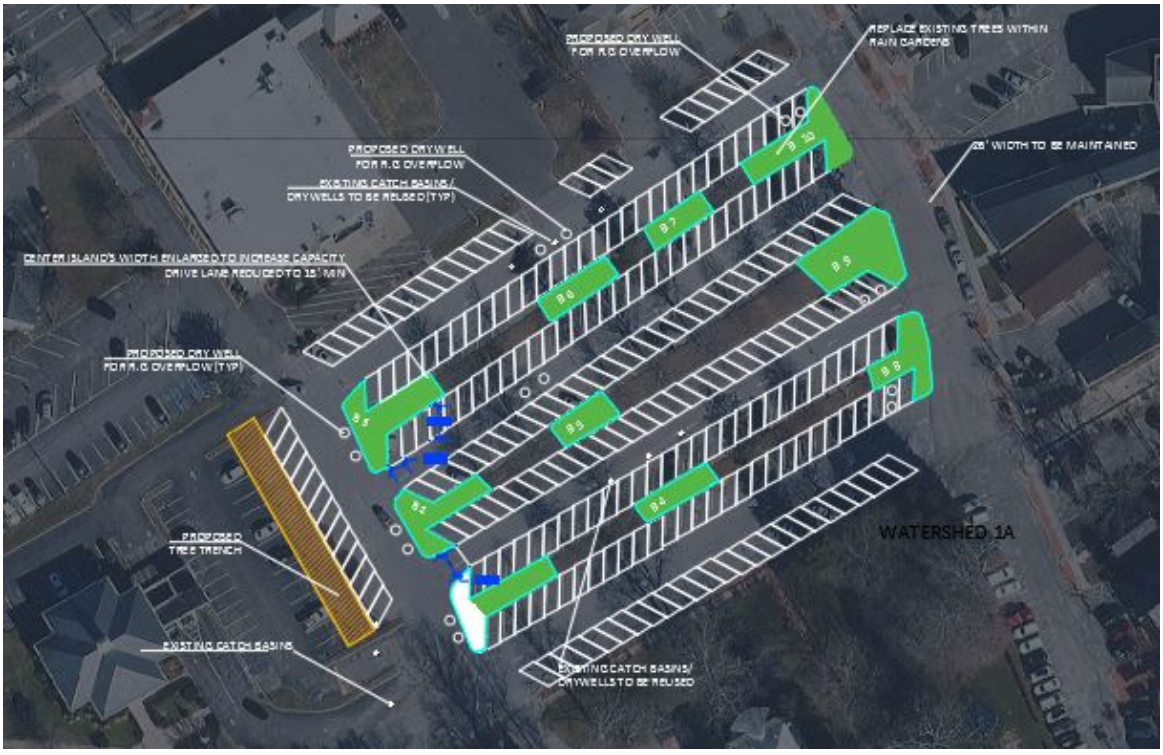


Figure 2 Concept Plan

B. Water quality volume to be managed

Estimated treatment for all project locations is summarized below. The reduction estimates were modeled using the 2013 Watershed Pollution Model by NYS DEC.

The 10,760 square feet of bio-infiltration basins and the 2,725 square feet of tree trench area will be designed to capture the water quality volume of water from the 137,649 square feet of 3.16 acres of parking lot, road and surrounding impervious surfaces. The full watershed to the parking lot is nearly 4.2 acres of watershed (211,180 sf). The water quality volume is the 1.2" – 24 hour storm event. Additional drywells along the south side of the parking lot and near the bio-infiltration basins will have a capacity to capture the larger 2 year storm event.

Pollutant load reduction estimates:
Total Phosphorous (TP) is 7.0 lbs/year
Total Nitrogen (TN) is 67.0 lbs/year
Total Suspended Solids (TSS) is 4,034 lbs/year
Fecal Coliform is 2,845 billion/year
Runoff Reduction is 12 acre-ft./year

5. Proposed Project schedule

The Engineering Team will conduct a survey and soil borings in Spring of 2022 after the grants are awarded and the design contracts are complete to provide on-site technical information to be used in refining the conceptual plans in late Spring to early Summer of 2022. The Village will conduct a public outreach and education session in Summer of 2022 with neighbors and landowners adjacent to the parking lot. Once the final conceptual plans are approved the Engineering Team will commence with construction documents and prepare for a bid process over the late summer of 2022 leading to an award to construct the project. The Bid package will be reviewed by the Village and approved within the Board's bid process prior to bid requests and submission late Summer of 2022 and construction to commence by Fall of 2022 or early Spring of 2023.

6. Anticipated Regulatory Approval and Permits.

Village Right-of-Way Permit is the only anticipated permit required.

7. Project Cost Estimate

Please see attached cost estimate tables.

8. Maintenance policy and procedures.

Maintenance for Green Infrastructure

Maintenance is required for all of the Green Infrastructure practices to maintain the function and viability of the practice. Frequency of maintenance will be monthly in the first year after installation, then on to bi-monthly

maintenance in year two and three times annually from year three and beyond. The following is recommended for long-term maintenance.

Inspections
The Village will need to inspect the Green Infrastructure locations annually to ensure their functionality. Bio-infiltration basins will be considered functional if no standing water is present 24-48 hours after a rainfall event, pre-treatment chambers are operational, no erosion is present, minimal weeds are present, and plants are well-established.

Maintenance
Maintenance activities may include:

A. *Pre-Treatment Chamber Inlet:* Inspect pre-treatment chamber inlet periodically and remove debris from the grate surface as needed (an estimated 3-4 times per year). Remove any sediment that makes it into the rain garden.

B. *Mulch:* Inspect mulch coverage annually and add double shredded hardwood mulch in order to maintain an average 3" layer. Adequate mulch coverage will suppress weeds and ensure adequate moisture availability for plants. Once plants are established and the mulch is not visible, mulch replenishment can be stopped.

C. *Edging:* Inspect the edging every spring for damage, including edging that has lifted up from the freeze/thaw cycle. If the edging has lifted, remove a few inches of soil underneath and reinstall the edging. The top of the edging must be flush with the grass to minimize potential damage during lawn maintenance and to ensure that runoff can enter the rain garden from a maximum amount of area, depending on the design of the individual rain garden.

D. *Watering:* During the first growing season, add a minimum of 1" of water per week if no rainfall occurs. This amount should be adjusted based on observed plant stress. Once established, rain gardens generally do not require any water unless several weeks have passed without rain.

E. Weeding: Weeding must be performed a minimum 3 times a growing season during the first three seasons. Weeding may be increased to monthly to maintain the desired appearance.

F. Replacement Plants: Replace plants as needed to maintain intended plant coverage within the rain garden. Use plant species from the approved rain garden plan. If a large percentage of plants require replacement, determination of the cause will be required and development of a replacement planting plan.

G. Pest Maintenance: If severe pest damage is noted, treat as appropriate.

Attachments

A. Project Cost Estimate
B. Existing Conditions Graphic
C. Conceptual Site Plans
D. Site Photographs keyed to site plan

PRELIMINARY ENGINEERS ESTIMATE - JULY 2021

DRAINAGE IMPROVEMENTS FEASIBILITY STUDY

WEST MAIN STREET PARKING LOT

SOUTHAMPTON, NEW YORK

ITEM NO.	DESCRIPTION	UNIT	QTY	UNIT PRICE	AMOUNT
1	Unclassified Excavation	CY	790	$60.00	$47,400.00
2	Trench and Culvert	CY	1,650	$55.00	$90,750.00
3	Asphalt Concrete Top Course	TON	860	$125.00	$107,500.00
4	Asphalt Concrete Binder Course	TON	90	$125.00	$11,250.00
5	Subbase Course	CY	70	$60.00	$4,200.00
6	Asphalt Concrete Sawcut	LF	4,170	$3.00	$12,510.00
7	Asphalt Milling	SY	9,740	$5.00	$48,700.00
8	Concrete Curb	LF	2,790	$40.00	$111,600.00
9	Reinforced Concrete Pipe, Class IV, 15 Inch Diameter	LF	300	$75.00	$22,500.00
10	Leaching Structure	EA	16	$10,000.00	$160,000.00
11	Adjusting Manholes	EA	6	$1,500.00	$9,000.00
12	Furnish and Install Frame and Grate	EA	16	$1,250.00	$20,000.00
13	Silt Protection for Surface Inlet	EA	22	$250.00	$5,500.00
14	Topsoil (Roadside)	CY	30	$65.00	$1,950.00
15	Turf Establishment (Roadside)	SY	240	$5.00	$1,200.00
16	Planting	EA	4,810	$35.00	$168,350.00
17	Sand Compost Mix	CY	440	$50.00	$22,000.00
18	Mulch	CY	100	$35.00	$3,500.00
19	Rain Guardian	EA	10	$3,000.00	$30,000.00
20	Tree - move and replace	EA	15	$2,000.00	$30,000.00
21	Tree Planting	EA	10	$600.00	$6,000.00
22	Epoxy Reflectorized Pavement Markings (White)	LF	5,350	$2.00	$10,700.00
23	Epoxy Reflectorized Pavement Markings Arrows	EA	15	$125.00	$1,875.00
24	Furnish and Install Sign Posts	EA	30	$225.00	$6,750.00
25	Furnish and Install Sign	EA	30	$75.00	$2,250.00
26	Soil for Tree Trench	CY	50	$45.00	$2,250.00
27	Survey Operations	LS	1	$35,000.00	$35,000.00
28	Work Zone Traffic Control	LS	1	$50,000.00	$50,000.00
29	Mobilization	LS	1	$50,000.00	$50,000.00
				Subtotal	**$1,072,735.00**
				Contingency 15%	**$160,910.25**
				SUBTOTAL ALTERNATIVE 1	**$1,233,645.25**

GRAPHIC SCALE

30 0 15 30 60

(IN FEET)
1 INCH = 30 FEET

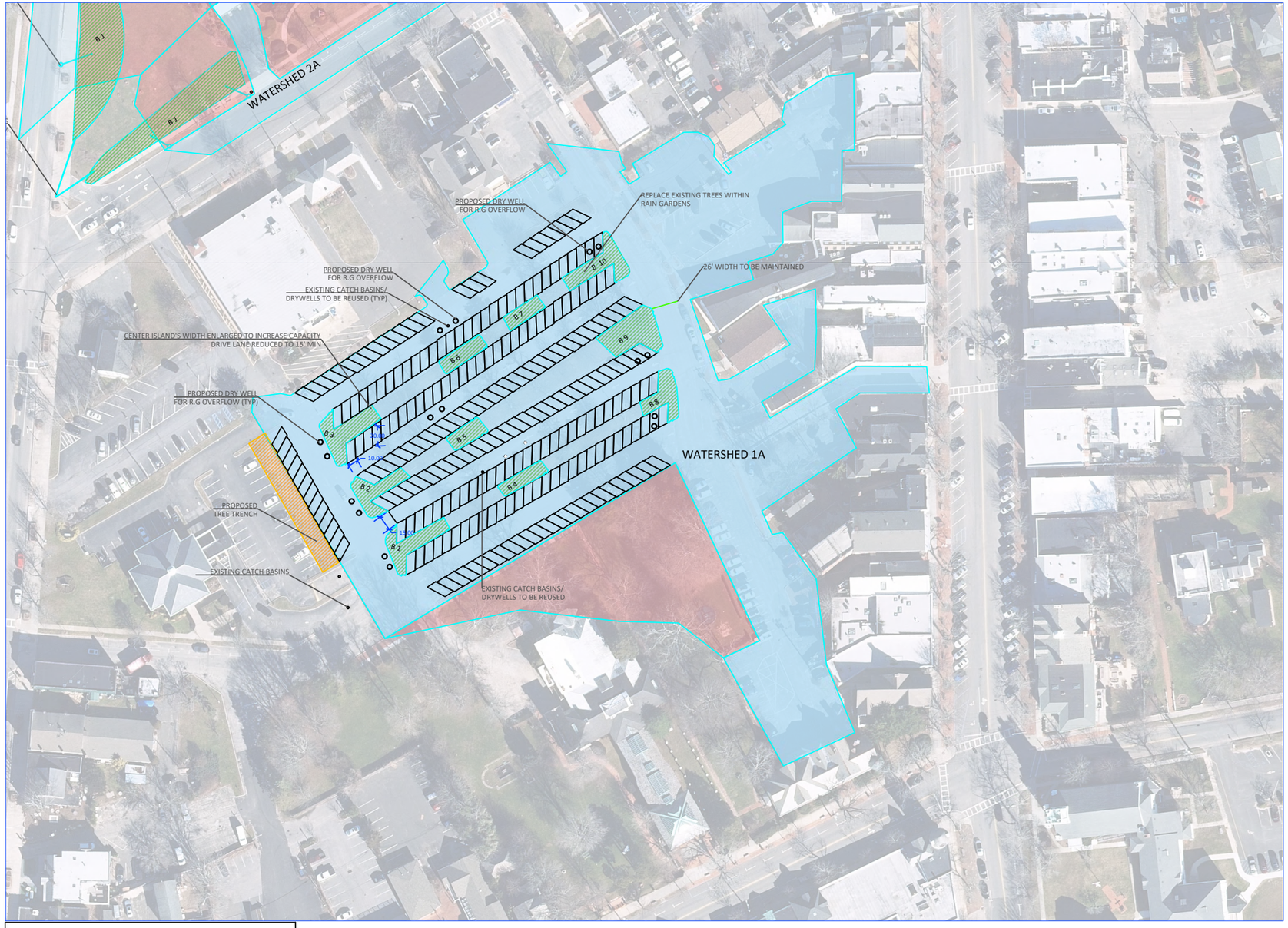
NORTH

1	XX/XX/2020	XXX XXX	XX
No.	DATE 7/19/2021	REVISION	BY

WEST MAIN STREET MUNICIPAL LOT EXISTING CONDITION
27 W MAIN ST
STRATED AT
SOUTHAMPTON
VILLAGE OF SOUTHAMPTON, SUFFOLK COUNTY, NEW YORK

NPV

DWN BY	XX
DATE	XX/XX/2020
CHKD BY	XX
DATE	
JOB No	0000
FILE No	
CADD/M_STORMWATER	
SCALE	1" = 60'
SHEET	1 OF 15



GRAPHIC SCALE

-50 0 25 50 100

(IN FEET)
1 INCH = 50 FEET

NORTH

WATERSHED 1A: WEST MAIN STREET MUNICIPAL LOT
1.5" WQv (90TH PERCENTILE STORM)

IMPERVIOUS AREA:

AREA = 183,857 SF

REQUIRED STORAGE VOL. (AREA X INCH/FEET X RUNOFF COEF.)
(183,857 SF X .125 FT X .98) = 18,017.99 CF (SAY 18,020 CF)

PERVIOUS AREA:

AREA = 27,323 SF

REQUIRED STORAGE VOL. (AREA X INCH/FEET X RUNOFF COEF.)
(27,323 SF X .125 FT X .98) = 819.69 CF (SAY 820 CF)

TOTAL REQUIRED STORAGE= SAY 18,840 CF

PROPOSED BIOSWALE AREA

BIOSWALE 1:
AREA = 1265 SF
PONDING DEPTH 12"
TOTAL VOLUME = 1265 CF

BIOSWALE 2:
AREA = 1145 SF
PONDING DEPTH 12"
TOTAL VOLUME = 1145 CF

BIOSWALE 3:
AREA = 1465 SF
PONDING DEPTH 12"
TOTAL VOLUME = 1465 CF

BIOSWALE 4:
AREA = 670 SF
PONDING DEPTH 12"
TOTAL VOLUME = 670 CF

BIOSWALE 5:
AREA = 645 SF
PONDING DEPTH 12"
TOTAL VOLUME = 645 CF

BIOSWALE 6:
AREA = 730 SF
PONDING DEPTH 12"
TOTAL VOLUME = 730 CF

BIOSWALE 7:
AREA = 610 SF
PONDING DEPTH 12"
TOTAL VOLUME = 610 CF

BIOSWALE 8:
AREA = 1025 SF
PONDING DEPTH 12"
TOTAL VOLUME = 1025 CF

BIOSWALE 9:
AREA = 1855 SF
PONDING DEPTH 12"
TOTAL VOLUME = 1855 CF

BIOSWALE 10:
AREA = 1350 SF
PONDING DEPTH 12"
TOTAL VOLUME = 1350 CF

PROPOSED TREE TRENCH AREA

T.T AREA 1:
AREA = 2725 SF
TRENCH DEPTH TILL OVERFLOW 6"-12"
TOTAL VOLUME = 2725 CF

TOTAL STORMWATER STORAGE PROVIDED = 13,485± CF

*STORMWATER STORAGE CAPACITY TO BE INCREASED
WITH THE ADDITION OF NEW DRY WELLS

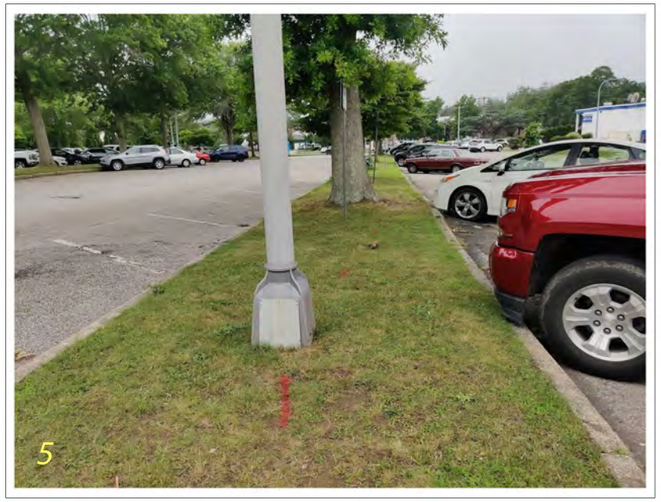
No.	DATE	REMARKS	BY
1	XX/XX/2023	XXX XXX	XX
No.	DATE 7/19/2021	REMARKS	BY

WEST MAIN STREET MUNICIPAL LOT (1A)
27 W MAIN ST
SITUATED AT
SOUTHAMPTON
VILLAGE OF SOUTHAMPTON, SUFFOLK COUNTY, NEW YORK

NPV

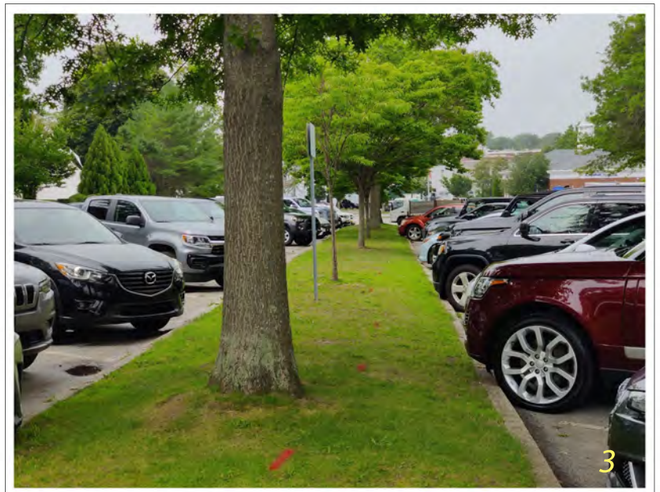
DWN. BY	XX
DATE	XX/XX/2023
CHKD BY	XX
DATE	
JOB No	0808
FILE No	
CADD/BY_STORMWATER	
SCALE	1" = 50'
SHEET	1 OF 15

TAKEN FROM SOUTH WEST END OF LOT- LOOKING EAST

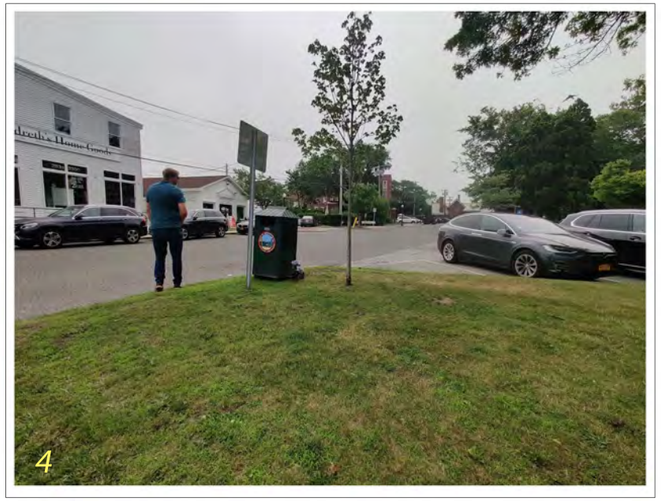


TAKEN FROM NORTH EAST END OF LOT- LOOKING SOUTH WEST

TAKEN FROM SOUTH WEST END OF LOT- LOOKING SOUTH WEST



TAKEN FROM SOUTH EAST END OF LOT- LOOKING SOUTH WEST



TAKEN FROM EAST END OF LOT- LOOKING EAST

NELSON POPE VOORHIS

WEST MAIN STREET LOT
CURRENT CONDITIONS

LOT 904-6-2-17/15-1-24.1
27 W Main St
Southhampton,NY,11968
Aerial Photo