631 283-0247
FAX 631 283-4990

Village of Southampton

23 MAIN STREET
SOUTHAMPTON, NEW YORK 11968-4899
Website: www.southamptonvillage.org
Email: info@southamptonvillage.org

VILLAGE CLERK/TREASURER
STEPHEN FUNSCH
VILLAGE ATTORNEY
WAYNE BRUYN
BUILDING INSPECTOR
JONATHAN B. FOSTER

MAYOR
MICHAEL G. IRVING
TRUSTEES
KIMBERLY ALLAN
WILLIAM J. HATTRICK
NANCY C. McGANN
RICHARD W. YASTRZEMSKI

July 11, 2018

Mary C. Wilson, Esq.
Community Preservation Manager
Town of Southampton
24 W. Montauk Highway
Hampton Bays, NY 11946
Via email: mwilson@southamptontownny.gov

Re: Community Preservation Fund
Water Quality Improvement Project Plan (WQIPP)
Funding request for Lake Agawam Stormwater Improvements

Dear Ms. Wilson:

Please find enclosed documents required for proposal submission to the above referenced funding opportunity:

1. Completed WQIPP Checklist/Application
2. Proposal Attachments

If further information is needed, please contact Gary Goleski, Superintendent of Public Works, at 631-283-4269 or ggoleski@southamptonvillage.org; or Village Clerk Stephen Funsch at 631-283-0247 or sfunsch@southamptonvillage.org.

Sincerely yours,

Michael G. Irving
Mayor

TOWN OF SOUTHAMPTON
Department of Community Preservation
24 W Montauk Hwy, Hampton Bays, NY 11946
Ph: 631-287-5720 Fx: 631-728-1920
WWW.SOUTHAMPTONTOWNNY.GOV/CPF

COMMUNITY PRESERVATION FUND (CPF)
WATER QUALITY IMPROVEMENT PROGRAM
PROPOSAL SUMMARY

Project Proposal: Remediation
Project Applicant: Village of Southampton
Project Title: Lake Agawam Stormwater Remediation

Project Contact Information
Project Manager Name: Gary Goleski
Project Manager Title: Superintendent of Public Works
Project Manager Affiliation: Village of Southampton
Project Manager Address: 23 Main Street, Southampton NY 11968
Project Manager Phone: 631-283-4269
Project Manager Email: ggoleski@southamptonvillage.org

Property Owner Name: Village of Southampton
Property Owner Affiliation: same as above
Property Owner Mailing Address: same as above
Property Owner Phone: same as above
Property Owner Email: same as above

Project Location: Jobs Lane, O'Connell Drive, Meetinghouse Lane
Project Location SCTM #(S): N/A - Right of Way on Village Roads

Type of Project
Reduction
Remediation: X
Restoration

Project Summary (2-3 sentences): The proposed project will provide environmental remediation and improve water quality in and around Agawam Lake, which is included on the NYS Section 303(d) List of Impaired/TMDL Waters. The project is comprised of a series of improvements to an existing closed drainage system for the purposes improving capacity for capture and retention of first-flush runoff and improving water quality at the system outfall. The project is supported by recommendations contained in the Lake Agawam Comprehensive Management Plan.

Submittal date: 7/12/18

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1. PROJECT TYPE (check all that apply)

Meets at least one of the definitions of "Water Quality Improvement Project" per State Law Chapter 551 cited above

- ☑ **Wastewater Treatment Improvement Project**
- ☑ **Non-point source abatement and control**
- ☐ **Aquatic habitat restoration**
- ☑ **Pollution prevention**
- ☑ **Stormwater collecting system**
- ☐ **Vessel Pump out station**
- ☐ **Operation of Peconic Bay National Estuary Program (Grant Match)**

2. PRIORITY AREA(S) (check all that apply)

- ☑ **High**
- ☑ **303(d) Impaired**
- ☐ **Medium**
- ☐ **Outside High and Medium priority areas***

*Narrative must explain how project is relevant to Water Quality Improvement Project Plan (WQIPP) goals

See attached narrative.

3. PROJECT DESCRIPTION

- ☑ **Narrative describes in detail existing conditions of applicable groundwater/sub-watershed/waterbody and includes most recent and relevant data available (provide sources)**

See attached narrative.

- ☑ **Photos of exiting conditions are included** (Attach Photos)
- ☑ **Location map is included** (Attach Map)
- ☑ **Narrative describes in detail what the issue is and how the proposed solution addresses the issue in the context of Reduction, Remediation and/or Restoration as per the CPF Water Quality Project Plan**

See attached narrative.

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☑ **Narrative describes proposed technology in sufficient detail and includes information on its demonstrated efficacy in similar setting (may include published data)** (Attach pages as needed)

See attached narrative and plans.

☑ **Narrative indicates 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, etc.)** (Attach pages as needed)

See attached narrative.

☑ **A State Environmental Quality Review Act (SEQRA) Long or Short Environmental Assessment Form (EAF) is completed and included with application** https://www.dec.ny.gov/permits/6191.html

OTHER REQUIRED INFORMATION

☑ If Stormwater system or Drainage is proposed, the narrative and design specifications indicate compliance with the New York State Stormwater Design Manual (2015 and as updated)

☐ If project is related to farmland, the narrative addresses any Agricultural Stewardship Plan or other long term strategy for Nitrogen abatement

☑ If the project is for a municipal facility or infrastructure, information pertaining to Town or Village budgetary allocations for ongoing maintenance is provided

☐ If the project is for habitat restoration, the narrative addresses how underlying causes are being ameliorated and expected outcomes for local species populations or other ecological considerations are given

☐ If project is a Sewage Treatment Plant (STP) or cluster treatment system, fund allocation request is based on cost for reduction of pre-existing conditions and not for purpose of accommodating new density (describe pre-existing density and associated flow (gallons per day) and total projected nitrogen reduction in narrative). Include detailed information on how many homes the system would treat as well as potential for formation of Sewer District, if required by Suffolk County Health Department or Town Law

☐ If the project is requesting grant match for the Peconic Estuary Program, include information related to funding program source and purpose of application and any relevant items on this checklist. Note: A Town Board resolution will be required in order to encumber matching funds for grant applications

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4. WATER QUALITY BENEFIT

- ☒Yes ☐No ☐N/A **Nitrogen, Pathogen or Pollutant of Concern (POC) Existing Condition & Target Reduction is identified**
- ☒Yes ☐No ☐N/A **Anticipated reduction by proposed technology is provided by utilizing EPA's Spreadsheet Tool for Evaluating Pollutant Load (STEPL) http://it.tetratech-ffx.com/steplweb/ or similar standardized methodology (provide)**
- ☒Yes ☐No ☐N/A **Related to above, the narrative describes how data will be collected and reported over time**
- ☒Yes ☐No ☐N/A **Narrative indicates how the useful life of the proposed technology will meet or exceed five (5) years**
- ☒Yes ☐No ☐N/A **A total cost budget is included (see pages 6-7 for template) with a cost-benefit discussion and any details related to matching funds (e.g. in-kind services, pre-and post-monitoring, etc)**

5. DURATION OF PROJECT

- ☒ **Projected timeline is included (described any permits needed and time frame/status of required approvals)**
- ☒ **Narrative explains if project is multi-year or phased and includes budget/milestones for each year and Phase**

6. PROJECT READINESS

- ☒ **Narrative describes current stage of planning (e.g. conceptual, preliminary, full construction documents) and includes conceptual or sketch plans where applicable.**
- ☒ **Narrative describes community support for the project (attach letters of support, public hearing testimony, news coverage, community meeting minutes, other outreach as applicable) or addresses potential community opposition/educational needs.**

7. MANAGEMENT, EXPERIENCE, ABILITY

- ☒ **Narrative describes experience in completing similar projects**
- ☒ **Narrative describes project staffing, oversight and administration**
- ☒ **Narrative describes qualifications of project staff, consultants and contractors (as applicable)**
- ☐ **If Homeowner's Association or other community group, describe formal structure and responsibilities of members involved**
- ☑ **If private property (e.g. farmland), the narrative describes who is being contracted to do the work (qualifications, etc.)**

8. REQUIRED CERTIFICATIONS

- ☒ **Commitment is provided via Letter of Intent (LOI)* for non-municipal entities or adopted resolution for Incorporated Villages ***
  Note: A LOI template is provided in the application packet
- ☒ **Plans stamped by NYS licensed Engineer and/or surveyor, where applicable**
- ☒ **STEPL calculations or equivalent prepared by NYS licensed Engineer, where applicable**
- ☒ **Certify that request for proposed funding is not otherwise required by Local, State or Federal Law and intended benefits cannot be achieved without external funding**
- ☒ **Certify that the application will report on project outcomes, including monitoring results**

9. MAINTENANCE, MONITORING & EVALUATION

- ☑ **A plan related to ongoing maintenance, monitoring and evaluation (reporting to the Town) is provided**
- ☑ **The Monitoring Plan will provide water quality data at regular intervals for a minimum of five (5) years**

10. EDUCATIONAL COMPONENT

- ☒ **The project sponsor will erect signage displaying the intent and benefit of the project on site**
- ☒ **As part of the evaluation, the project sponsor will submit a write-up of lessons learned and future needs**

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COMMUNITY PRESERVATION FUND (CPF)
WATER QUALITY IMPROVEMENT PROGRAM
BUDGET PROPOSAL

PLANNING/ENGINEERING/DESIGN	Town CPF Request	Matching Funds Committed	Matching Funds Pending	Estimated Total Project Costs
In-house labor (provide separate sheet with calculations)				
Task 1-	$-	$-	$-	$-
Task 2-	$-	$-	$-	$-
Task 3-	$-	$-	$-	$-
Task 4-	$-	$-	$-	$-
Task 5-	$-	$-	$-	$-
Task 6-	$-	$-	$-	$-
	$-	$-	$-	$-
In House Labor Total	$-0	$-0	$-0	$-0

Materials/Supplies				
	$-	$-	$-	$-
	$-	$-	$-	$-
	$-	$-	$-	$-
	$-	$-	$-	$-
	$-	$-	$-	$-
	$-	$-	$-	$-
	$-	$-	$-	$-
Materials/Supplies Total	$-0	$-0	$-0	$-0

Contractual Services				
	$-	$-	$-	$-
	$-	$-	$-	$-
	$-	$-	$-	$-
	$-	$-	$-	$-
	$-	$-	$-	$-
	$-	$-	$-	$-
	$-	$-	$-	$-
Contractual Services Total	$-0	$-0	$-0	$-0

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CONSTRUCTION AND SITE IMPROVEMENTS	Town CPF Request	Matching Funds Committed	Matching Funds Pending	Estimated Total Project Costs
In-house labor (provide separate sheet with calculations)				
Task 1-	$-	$-	$-	$-
Task 2-	$-	$-	$-	$-
Task 3-	$-	$-	$-	$-
Task 4-	$-	$-	$-	$-
Task 5-	$-	$-	$-	$-
Task 6-	$-	$-	$-	$-
	$-	$-	$-	$-
In House Labor Total	$-0	$-0	$-0	$-0

Equipment/Materials/Supplies				
	$-	$-	$-	$-
	$-	$-	$-	$-
	$-	$-	$-	$-
	$-	$-	$-	$-
	$-	$-	$-	$-
	$-	$-	$-	$-
	$-	$-	$-	$-
Equipment/Materials/Supplies Total	$-0	$-0	$-	$-0

Contractual Services				
Task 1 - O'Connell Drive Segment	$-	$-166,495	$-	$-
Task 2 - Jobs Lane Segment	$-292,040	$-	$-	$-
Task 3 - Meetinghouse/Ambulance segment	$-	$-34,836	$-	$-
Task 4 - Meetinghouse/Oak Street Segment	$-	$-54,555	$-	$-
	$-	$-	$-	$-
	$-	$-	$-	$-
	$-	$-	$-	$-
Contractual Services Total	$292,040	$255,886	$-	$547,926
ENGINEERING TOTAL	$292,040	$255,886	$0	$0

Total Project Cost	$-547.926
Total CPF Funds Requested	$-292,040

Applicant matching funds committed	$-255,886
Applicant matching funds pending approval (e.g. grant request submitted pending determination)	$- 0

Source of matching funds	Amount
Village matching share expended for O'Connell Drive	166,495
Village matching share pending for Meetinghouse segments	89,391

VILLAGE OF SOUTHAMPTON
AGAWAM LAKE STORMWATER REMEDIATION

PROJECT LOCATION

Village of Southampton, vicinity of Agawam Lake: Meeting House Lane, Jobs Lane, O'Connell Drive.

EXISTING CONDITIONS

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. The Lake Agawam Comprehensive Management Plan (2009) identified stormwater runoff as a key contributor of the excess nutrients that have led to hypereutrophic conditions and past fish kills, and recommended that the Village identify all possible land opportunities for recharge facilities in the watershed. Accordingly, the Village has completed several stormwater remediation projects in the watershed over the past ten years, consisting primarily of new and upgraded drainage systems to capture and retain first flush stormwater before it can reach the lake, but resources continue to be needed to further reduce the flow of untreated stormwater into the lake. Cyanobacteria blooms have been reported by Stony Brook University in June 2016, May 2017 and May 2018, and public health warnings were issued by the Suffolk County Health Department to urge community members, especially children and pets, to avoid the contaminated water. As of July 3, 2018, Agawam Lake is listed on the NYS DEC Harmful Algal Blooms notification page with status updated to "confirmed with high toxins" for the entire lake.

In 2018, a report by Dr. Christopher Gobler of Stony Brook University indicated that a major source of N loading in Agawam is attributable to onsite septic systems. The Village is working to address this issue, however stormwater inputs continue to be a problem requiring remediation. The NYSDEC Priority Waterbody List for this Impaired waterbody indicates that the suspected major pollutant source is urban/storm runoff.

PROJECT DESCRIPTION

The proposed project is comprised of a series of improvements to an existing closed drainage system in accordance with recommendations contained in the Lake Agawam Comprehensive Management Plan (2009). The system begins at the intersection of Meeting House Lane and Oak Street with a series of catch basins that tie into a steel pipe/culvert. The pipe/culvert runs west from that intersection along the south side of Meeting House Lane, across Main Street and down Jobs Lane to the O'Connell Drive parking lot entrance where it turns south and terminates at an outfall at Agawam Lake. Currently the system does not provide adequate capacity for capture and retention of first-flush runoff, contributing to the degraded water quality in Lake Agawam. The proposed project will capture first-flush runoff and with it, a substantial portion of pollutants that are currently flowing into Lake Agawam.

Tasks are shown on the attached plans as follows:

Meeting House Lane: Remove existing catch basins at Oak St., which are in a state of disrepair and are curb inlets only with no grates, and replace with curb inlet catch basins with standard reticuline grates. Pipe the new basins to a manhole to be installed in line with the existing steel pipe/culvert. Install two (2) catch basins on either side of the Southampton Village Volunteer Ambulance driveway and two (2) 10' leaching structures. Total drainage area 46,174 SF.

Jobs Lane: Install a series of nineteen (19) 10' leaching pools along and offset from the existing steel pipe/culvert that runs along the south side of Jobs Lane. Replace two catch basins towards the eastern end of the street and one basin adjacent to the O'Connell Drive parking lot access. Remove two existing manhole structures that provide access to the pipe/culvert towards the west end of Jobs Lane, which are in a state of disrepair and are curb inlets only with no grates (except the westernmost inlet). Replace with curb inlet catch basins with standard reticuline grates. Tie all new catch basins into the existing steel pipe/culvert. Total drainage area 42,147.8 SF.

O'Connell Drive Parking Lot: This segment, completed January 2018, replaced a failing clay outfall pipe running between a catch basin on the south side of Jobs Lane adjacent to the O'Connell Drive access and a failing polyethylene pipe located approximately 30 feet north of the existing outfall to Agawam Lake. The replacement pipe runs south from the existing catch basin through the parking lot, and continues south through the southern portion of the park where it is connected to an existing polyethylene pipe. Catch basins and fourteen (14) 10' leaching pools are incorporated along the pipe. Total drainage area 15,197 SF.

Surface restoration includes but is not limited to asphalt roadway pavement, concrete curb, concrete sidewalk, and turf areas. All work will occur on Village property and rights of way. The system is designed to accommodate 2" of rainfall.

Demonstrated efficacy of technologies to be employed

The improvements utilize accepted technologies and are identified in the Lake Agawam Compreshensive Management Plan (CMP) under action items 7a (Install more street catch basins) and 7b (examine Village/Town owned land opportunities for recharge facilities). The CMP was prepared by a qualified engineering firm, Nelson, Pope and Voorhis.

Project design uses stormwater recharge structures that have been previously approved by Suffolk County DPW in connection with past County grant awards for prior phases of Agawam Lake improvements. The Village Department of Public Works has monitored the systems and observed that they are both effective and cost efficient.

Ownership commitment

All work is to occur within the Village of Southampton right of way. The attached resolution adopted by the Village Board for the purpose of submitting a proposal to the Suffolk County Water Quality Protection and Improvement Program demonstrates commitment by the Village to advance the project. Note the County grant was not approved. Informal feedback on the denial indicated that while the project is of high quality, there was interest in distributing funds to applicants that did not previously receive awards from the program.

The Village remains committed to completing the project. While the O'Connell Drive improvements have been completed, the remaining segments will only be advanced as funding availability allows.

WATER QUALITY IMPROVEMENT IMPACT

Remediation: The project will reduce the amount of untreated stormwater runoff that will discharge through the existing outfall pipe by increasing capture and retention of stormwater. STEPL calculations indicate the following POC reduction estimates:

- 28.2 lb/year reduction of N (42% reduction)
- 4.8 lb/year reduction of P (44%),
- 125.7 lb/yr reduction of BOD (54%)
- 2,593.72 tons/year reduction of sediment (78%reduction).

See attached STEPL model of POC reduction for proposed project prepared by VHB engineers.

The Village acknowledges the CPF requirement for collecting and reporting water quality data for a minimum period of five years. The Village and community partners including Stony Brook University and Lake Agawam Conservation Association have made past investments in water quality monitoring and testing is ongoing at existing sampling stations. Should CPF funds be awarded, and in order to comply with CPF requirements, a formal plan for data collection and reporting will be established in cooperation with the Town.

Support for Town of Southampton Water Quality Improvement Project Plan (WQIPP) and other plans

Town of Southampton Water Quality Improvement Project Plan (WQIPP):

- Project is located in a High Priority Area as defined in WQIPP maps (p. 53)
- The stormwater collection, infiltration and treatment structures will remediate nitrogen loading to Agawam Lake, a 303(d) waterbody. The WQIPP indicates that "the goal of remediation in terms of stormwater is to improve water quality by reducing contaminated stormwater runoff from entering surface water bodies, and to divert and treat stormwater through filtration practices from entering surface water bodies." (p. 58)

Suffolk County Water Resources Management Plan
The proposed stormwater collection, infiltration and treatment structures will support Recommendation 7.8.c, Continue to support municipal stormwater efforts (p. 14).
Section 9 (Implementation) link:
http://www.suffolkcountyny.gov/Portals/0/health/pdf/Section%209%20Plan%20Implementation.pdf

Suffolk County Harmful Algal Bloom Action Plan
A Top Strategic Priority in the Management Recommendations is: Actively endorse/promote green infrastructure projects that limit the discharge of nitrogen to surface waters via

stormwater runoff (p. 52). Link to plan:
http://reclaimourwater.info/Portals/60/docs/HABActionPlan.pdf

Lake Agawam Comprehensive Management Plan
These improvements are identified in the Lake Agawam Compreshensive Management Plan (CMP) under action items 7a (Install more street catch basins) and 7b (examine Village/Town owned land opportunities for recharge facilities). These are the highest priority watershed area recommendations in the CMP. See pages 22, 27 attached.
Link to plan: http://lakeagawam.com/LakeAgawamManagementPlan.pdf

COST FACTORS

- The Village has advanced the project to the extent that financial resources allow. The O'Connell Drive segment was completed in January 2018. Suffolk County Water Quality Protection and Restoration Program funds were requested in March 2018, but the project was not selected for an award. Consolidated Funding Application programs are currently being reviewed to identify whether any are a fit for the proposed project.

- The Village and the Lake Agawam Conservation Association invested in preparing the Lake Agawam CMP which documented the Lake's ongoing water quality issues and provided evidence based recommendations for corrective action. The CMP informs all water quality improvement efforts targeting the lake, including the proposed project.

- The project cost benefit is substantial reduction in pollutants of concern from entering the lake, as noted above.

- Cost estimates for project work are attached to this proposal.

- Leverage of funds
    - Funds expended to date: $166,495 for O'Connell Drive segment, plus design fees; and pending $89,391 local share for Meeting House Lane improvements
    - Grants awarded: None to date for this phase of improvements
    - Grant applications under development: potential NYS Consolidated Funding Application 2019 programs
    - Past leverage: CMP prepareation; four previously completed phases of stormwater remediation at other areas in the Lake Agawam watershed

- Cost overrun contingency: The Village has researched project costs based on recently completed projects to arrive at the most accurate cost estimate possible, however market conditions may affect final cost. Cost overruns are addressed through project phasing, such that each phase will not proceed unless sufficient funds are identified. Project design and/or timeline may be adjusted if needed to address funding shortfalls.

- See Section titled "Maintenance, Monitoring and Evaluation" for a discussion on maintenance costs.

MANAGEMENT, EXPERIENCE AND ABILITY

- Owner is a municipality (Village of Westhampton Beach)
- Project type is a WQIPP Standard (remediation)
- Project aligns with NYS Stormwater Design Manual (2015 and as updated)
- Project supports Town, County and other adopted goals (see Water Quality Improvement Impact section)
- Gary Goleski, Superintendent of Public Works, will perform the role of Project Manager. He has a degree in Public Sector Management from Cornell University and has been with the Village for more than 25 years. His educational and experiential background make him well qualified to oversee successful implementation of the proposed project.
- Under Mr. Goleski's direction, the Village has successfully administered three prior Suffolk County WQPRP grant awards and closed all projects in compliance with County requirements. Mr. Goleski will provide direction and oversight to the Village's grants coordinator who will assist with administration and grant compliance activities.
- Working under the supervision of Mr. Goleski, consulting engineer Ryan Winter of VHB 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 including final design and bid documents. VHB's statement of qualifications is provided with the application attachments.

PROJECT READINESS/DURATION OF PROJECT

- Community support: Lake Agawam Conservation Association
- Absence of community opposition: No community opposition noted
- Owner has committed to project. Village resolutions attached.
- Sources of funding not provided by CPF: Village matching share as indicated in budget form.
- Detailed topographic survey completed.
- Permitability: O'Connell Drive plans, survey, construction 100% complete January 2018. Jobs/Meetinghouse plan status is at preliminary design phase. No permits are required.
- Timeline is dependent on funding availability and may be adjusted accordingly:
    - October 2018 – Final design complete
    - November 2018 – Construction mobilization/construction start
    - April 2019 – Construction complete
    - June 2019 – Final reporting and project close-out
- Note: O'Connell segment complete January 2018. The above schedule reflects Jobs and Meeting House segments.

MAINTENANCE, MONITORING AND EVALUATION

- Post project maintenance will entail storm drain cleaning using the Village's existing vacuum truck and staffing resources. The infrastructure will be incorporated to the Village's existing maintenance schedule. The schedule will be established in line

with ongoing inspections by DPW staff under the direction of Gary Goleski, Superintendent of Public Works. No additional line item costs are anticipated.

- Stewardship, monitoring, enforcement protocols: To comply with CPF requirements, a formal plan for data collection and reporting will be established in cooperation with the Town should CPF funds be awarded. Existing ongoing water quality monitoring efforts will be leveraged to support this requirement.

Other required information

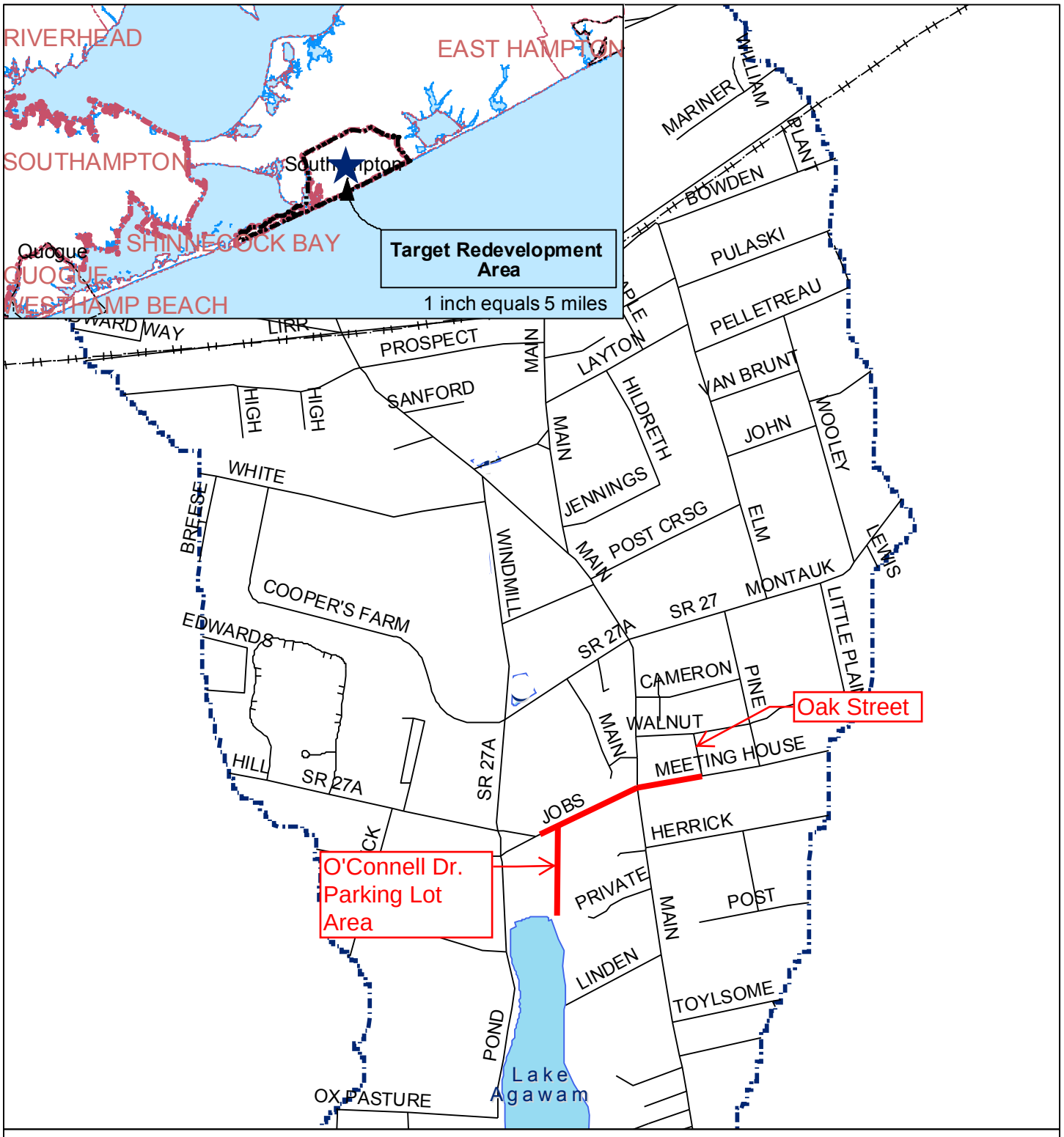
- Design specifications will conform with current NYS Stormwater Design Manual.

- Useful life of project meets or exceeds five years. Projected useful life exceeds 50 years.

Attachments

Location Map A-1
O'Connell Drive Plan A-2
Jobs Lane Drainage Concept Plan A-3
Meeting House Lane Drainage Concept Plan A-4
Cost O'Connell Drive A-5
Cost Jobs Lane A-6
Cost Meeting House Lane/Oak St A-8
Cost Meeting House Lane/Ambulance A-10
STEPL worksheet A-12
Type II letter A-16
Village resolutions supporting project A-18
Support Letter Lake Agawam Conservation Association
(prepared for prior proposal to Suffolk County for same scope of work) A-26
Profile of consulting engineer VHB A-27
Priority Waterbody Listing for Agawam Lake A-28
Lake Agawam Comprehensive Management Plan A-30
Suffolk County Health Services Cyanobacteria bloom notification A-65
NYS Harfmul Algal Bloom listing for Lake Agawam as of 7/3/18 .....A-66
Existing Conditions Photos A-69

VILLAGE OF SOUTHAMPTON DOWNTOWN AREA



Legend

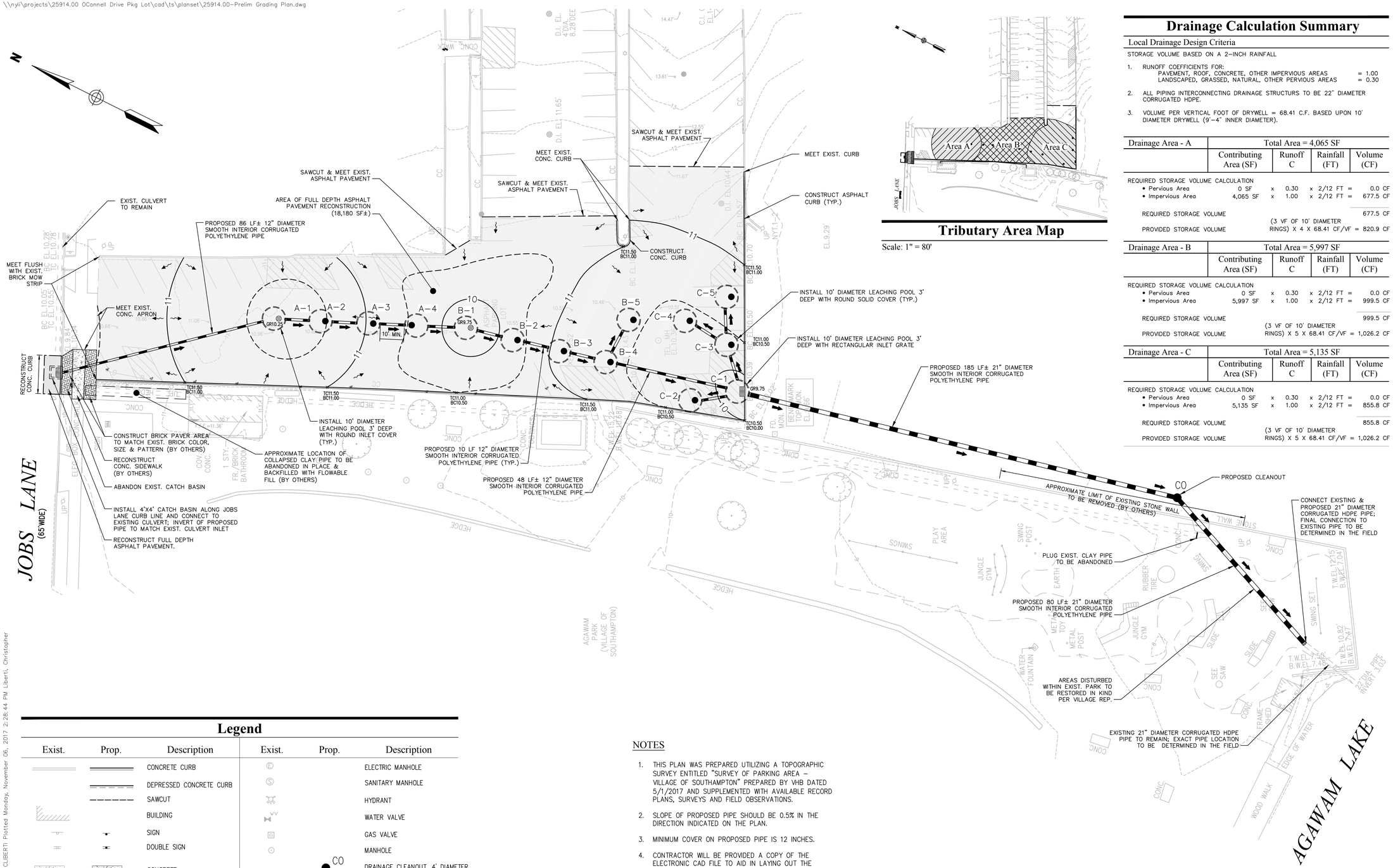
- Lake Agawam
- Roads
- General project area
- Town Boundary
- Village of Southampton
- Lake Agawam Watershed

FIGURE 1
LOCATION MAP

Source: Village of Southampton GIS
NPV GIS Library
Scale: 1 inch equals 1,000 feet

N

Village of Southampton
Mark Epley
Village Mayor



Tributary Area Map

Scale: 1" = 80'

Drainage Calculation Summary

Local Drainage Design Criteria

STORAGE VOLUME BASED ON A 2-INCH RAINFALL

1. RUNOFF COEFFICIENTS FOR:
   PAVEMENT, ROOF, CONCRETE, OTHER IMPERVIOUS AREAS = 1.00
   LANDSCAPED, GRASSED, NATURAL, OTHER PERVIOUS AREAS = 0.30
2. ALL PIPING INTERCONNECTING DRAINAGE STRUCTURS TO BE 22" DIAMETER CORRUGATED HDPE.
3. VOLUME PER VERTICAL FOOT OF DRYWELL = 68.41 C.F. BASED UPON 10' DIAMETER DRYWELL (9'-4" INNER DIAMETER).

Drainage Area - A	Total Area = 4,065 SF			
	Contributing Area (SF)	Runoff C	Rainfall (FT)	Volume (CF)
REQUIRED STORAGE VOLUME CALCULATION				
• Pervious Area	0 SF	x 0.30	x 2/12 FT =	0.0 CF
• Impervious Area	4,065 SF	x 1.00	x 2/12 FT =	677.5 CF
REQUIRED STORAGE VOLUME				677.5 CF
PROVIDED STORAGE VOLUME			(3 VF OF 10' DIAMETER RINGS) X 4 X 68.41 CF/VF =	820.9 CF

Drainage Area - B	Total Area = 5,997 SF			
	Contributing Area (SF)	Runoff C	Rainfall (FT)	Volume (CF)
REQUIRED STORAGE VOLUME CALCULATION				
• Pervious Area	0 SF	x 0.30	x 2/12 FT =	0.0 CF
• Impervious Area	5,997 SF	x 1.00	x 2/12 FT =	999.5 CF
REQUIRED STORAGE VOLUME				999.5 CF
PROVIDED STORAGE VOLUME			(3 VF OF 10' DIAMETER RINGS) X 5 X 68.41 CF/VF =	1,026.2 CF

Drainage Area - C	Total Area = 5,135 SF			
	Contributing Area (SF)	Runoff C	Rainfall (FT)	Volume (CF)
REQUIRED STORAGE VOLUME CALCULATION				
• Pervious Area	0 SF	x 0.30	x 2/12 FT =	0.0 CF
• Impervious Area	5,135 SF	x 1.00	x 2/12 FT =	855.8 CF
REQUIRED STORAGE VOLUME				855.8 CF
PROVIDED STORAGE VOLUME			(3 VF OF 10' DIAMETER RINGS) X 5 X 68.41 CF/VF =	1,026.2 CF

Legend

Exist.	Prop.	Description	Exist.	Prop.	Description
		CONCRETE CURB			ELECTRIC MANHOLE
		DEPRESSED CONCRETE CURB			SANITARY MANHOLE
		SAWCUT			HYDRANT
		BUILDING			WATER VALVE
		SIGN			GAS VALVE
		DOUBLE SIGN			MANHOLE
		CONCRETE		CO	DRAINAGE CLEANOUT, 4' DIAMETER
		BRICK MOWSTRIP			DRAINAGE STRUCTURE WITH RECTANGULAR OR ROUND INLET
		FULL DEPTH ASPHALT PAVEMENT RECONSTRUCTION			UTILITY POLE
		SURFACE WATER FLOW LINES			DRAINAGE STRUCTURE WITH ROUND SOLID COVER
		PIPE FLOW			
10	10	1-FOOT CONTOUR LINE			DRAINAGE PIPE
		HALF-FOOT CONTOUR LINE			TREE OR SHRUB
10.50	TC11.00 BC10.50	SPOT GRADE			

NOTES

1. THIS PLAN WAS PREPARED UTILIZING A TOPOGRAPHIC SURVEY ENTITLED "SURVEY OF PARKING AREA – VILLAGE OF SOUTHAMPTON" PREPARED BY VHB DATED 5/1/2017 AND SUPPLEMENTED WITH AVAILABLE RECORD PLANS, SURVEYS AND FIELD OBSERVATIONS.
2. SLOPE OF PROPOSED PIPE SHOULD BE 0.5% IN THE DIRECTION INDICATED ON THE PLAN.
3. MINIMUM COVER ON PROPOSED PIPE IS 12 INCHES.
4. CONTRACTOR WILL BE PROVIDED A COPY OF THE ELECTRONIC CAD FILE TO AID IN LAYING OUT THE PROPOSED WORK.

vhb.com
vhb
Engineering, Surveying & Landscape Architecture, PC
100 Motor Parkway
Suite 135
Hauppauge, NY 11788
631.787.3400

O'Connell Drive Parking Lot Improvements

Agawam Park
Village of Southampton, New York

No.	Revision	Date	Appvd.
1	Revise Drainage Layout	11/6/17	RMW

Designed by CL
Checked by RMW
Issued for
Date June 30, 2017

Not Approved for Construction

Drawing Title
Preliminary Layout & Grading Plan

Drawing Number
LG-1

Sheet 1 of 1

Project Number
25914.00

Saved Monday, November 06, 2017 2:28:25 PM CLIBERTI Plotted Monday, November 06, 2017 2:28:44 PM Liberti, Christopher

Conceptual Drainage Improvements

Jobs Lane between O'Connell Drive Parking Lot Access and Main Street / South Main Street

Village of Southampton, New York

December 1, 2017

Vhb

Legend

- TRIBUTARY DRAINAGE AREA
- EXISTING DRAINAGE PIPE/CULVERT
- PROPOSED 12" DIAMETER SMOOTH INTERIOR CORRUGATED HDPE PIPE
- PROPOSED CATCH BASIN WITH INLET GRATE
- PROPOSED 10' DIAMETER LEACHING BASIN WITH SOLID MANHOLE COVER

Drainage Design Criteria

STORAGE VOLUME BASED ON A 2-INCH RAINFALL

1. RUNOFF COEFFICIENTS FOR:
   PAVEMENT, ROOF, CONCRETE, OTHER IMPERVIOUS AREAS = 1.00
   LANDSCAPED, GRASSED, NATURAL, OTHER PERVIOUS AREAS = 0.30
2. ALL PIPING INTERCONNECTING DRAINAGE STRUCTURES TO BE 12" DIAMETER CORRUGATED HDPE PIPE.
3. VOLUME PER VERTICAL FOOT OF LEACHING BASIN = 68.41 C.F. BASED UPON 10' DIAMETER LEACHING BASIN (9'-4" INNER DIAMETER).
4. EFFECTIVE DEPTHS OF PROPOSED LEACHING STRUCTURES ARE SUBJECT TO BEING MODIFIED BASED ON DEPTH OF GROUNDWATER.
5. IT IS ASSUMED THAT EXISTING SUBGRADE IS CAPABLE OF LEACHING RUNOFF INTO THE WATER TABLE. THIS IS TO BE CONFIRMED BASED ON SOIL BORING RESULTS.
6. FINAL LOCATIONS OF EXISTING DRAINAGE, SEPTIC, AND UTILITY FACILITIES IS REQUIRED PRIOR TO FINAL LAYOUT OF PROPOSED DRAINAGE IMPROVEMENTS.
7. THE TRIBUTARY AREAS SHOWN INCLUDE LIMITS UP TO THE BACK OF SIDEWALK. OTHER TRIBUTARY AREAS SUCH AS PRIVATE AND PUBLIC PARKING AREAS AND BUILDING ROOFTOPS WERE NOT CONSIDERED.
8. THE TRIBUTARY DRAINAGE AREAS SHOWN WERE CHOSEN BASED UPON DISCUSSIONS WITH THE VILLAGE DPW. ADDITIONAL AREAS THAT MAY BE CONTRIBUTING TO THESE AREAS ARE BEING DEALT WITH BY OTHER EXISTING SYSTEMS AND/OR FUTURE POTENTIAL PLANNED DEVELOPMENT PROJECTS.

Drainage Calculation Summary

Drainage Areas A & B	Total Area = 6,370.0 SF + 5,364.4 SF = 11,734.4 SF			
	Contributing Area (SF)	Runoff C	Rainfall (FT)	Volume (CF)
REQUIRED STORAGE VOLUME CALCULATION				
• Pervious Area	0 SF	x 0.30	x 2/12 FT	= 0.0 CF
• Impervious Area	11,734.4 SF	x 1.00	x 2/12 FT	= 1,955.7 CF
REQUIRED STORAGE VOLUME				1,955.7 CF
PROVIDED STORAGE VOLUME	4 VF (OF 10' DIAMETER RINGS) X 8 LEACHING BASINS X 68.41 CF/VF = 2,189.1 CF			

Drainage Area C	Total Area = 6,005.1 SF			
	Contributing Area (SF)	Runoff C	Rainfall (FT)	Volume (CF)
REQUIRED STORAGE VOLUME CALCULATION				
• Pervious Area	0 SF	x 0.30	x 2/12 FT	= 0.0 CF
• Impervious Area	6,005.1 SF	x 1.00	x 2/12 FT	= 1,000.9 CF
REQUIRED STORAGE VOLUME				1,000.9 CF
PROVIDED STORAGE VOLUME	6 VF (OF 10' DIAMETER RINGS) X 3 LEACHING BASINS X 68.41 CF/VF = 1,231.4 CF			

Drainage Area D	Total Area = 24,408.3 SF			
	Contributing Area (SF)	Runoff C	Rainfall (FT)	Volume (CF)
REQUIRED STORAGE VOLUME CALCULATION				
• Pervious Area	0 SF	x 0.30	x 2/12 FT	= 0.0 CF
• Impervious Area	24,408.3 SF	x 1.00	x 2/12 FT	= 4,068.1 CF
REQUIRED STORAGE VOLUME				4,068.1 CF
PROVIDED STORAGE VOLUME	8 VF (OF 10' DIAMETER RINGS) X 8 LEACHING BASINS X 68.41 CF/VF = 4,378.2 CF			

0 15 30 60 Feet

\\nyi\projects\26307.00 Jobs Lane Drainage\cad\ts\planmisc\26307_Drainage_Concept.dwg

Conceptual Drainage Improvements

Meeting House Lane in the Vicinity of Oak Street

Village of Southampton, New York

February 8, 2018

Walnut Street

Main Street

Oak Street

Pine Street

Meeting House Lane

REMOVE EXISTING DRAINAGE STRUCTURE AND PIPE. INSTALL CATCH BASIN ALONG MEETING HOUSE LANE CURB LINE. CONNECT TO NEW DRAINAGE STRUCTURE ON SOUTH SIDE OF MEETING HOUSE LANE WITH A NEW 12" DIAMETER PIPE

REMOVE EXISTING DRAINAGE STRUCTURE AND PIPE. INSTALL CATCH BASIN ALONG MEETING HOUSE LANE CURB LINE. CONNECT TO NEW DRAINAGE STRUCTURE ON SOUTH SIDE OF MEETING HOUSE LANE WITH A NEW 12" DIAMETER PIPE

Drainage Area A = 43,982.8 SF

NEW 4' Ø MANHOLE INSTALLED IN LINE WITH EXISTING DRAINAGE PIPE/CULVERT

APPROXIMATE LOCATION OF EXISTING DRAINAGE PIPE/CULVERT TO REMAIN

REMOVE EXISTING DRAINAGE STRUCTURE. INSTALL CATCH BASIN ALONG MEETING HOUSE LANE CURB LINE AND CONNECT TO NEW MANHOLE WITH 12" DIAMETER PIPE

10' (TYP.)

INSTALL (2) CATCH BASINS ALONG MEETING HOUSE LANE ONE ON EITHER SIDE OF DRIVEWAY AND CONNECT TO PROPOSED LEACHING BASIN WITH 12" DIAMETER PIPE

INSTALL (2) 10'Ø LEACHING BASINS AT 8' DEPTH AND CONNECT TO EACH OTHER WITH 12" DIAMETER PIPE

Drainage Area B = 2,191.6 SF

Meeting House Lane Parking Lot

Southampton Village Volunteer Ambulance

Drainage Design Criteria

STORAGE VOLUME BASED ON A 2-INCH RAINFALL

1. RUNOFF COEFFICIENTS FOR:
   PAVEMENT, ROOF, CONCRETE, OTHER IMPERVIOUS AREAS = 1.00
   LANDSCAPED, GRASSED, NATURAL, OTHER PERVIOUS AREAS = 0.30
2. ALL PIPING INTERCONNECTING DRAINAGE STRUCTURES TO BE 12" DIAMETER CORRUGATED HDPE PIPE.
3. VOLUME PER VERTICAL FOOT OF LEACHING BASIN = 68.41 C.F. BASED UPON 10' DIAMETER LEACHING BASIN (9'-4" INNER DIAMETER).
4. EFFECTIVE DEPTHS OF PROPOSED LEACHING STRUCTURES ARE SUBJECT TO BEING MODIFIED BASED ON DEPTH OF GROUNDWATER.
5. IT IS ASSUMED THAT EXISTING SUBGRADE IS CAPABLE OF LEACHING RUNOFF INTO THE WATER TABLE. THIS IS TO BE CONFIRMED BASED ON SOIL BORING & TESTING RESULTS.
6. DETERMINING LOCATIONS OF EXISTING DRAINAGE, SEPTIC, AND UTILITY FACILITIES IS REQUIRED PRIOR TO FINAL LAYOUT OF PROPOSED DRAINAGE IMPROVEMENTS.
7. THE TRIBUTARY AREAS SHOWN INCLUDE LIMITS UP TO THE BACK OF SIDEWALK. OTHER TRIBUTARY AREAS SUCH AS PRIVATE AND PUBLIC PARKING AREAS AND BUILDING ROOFTOPS WERE NOT CONSIDERED.
8. THE TRIBUTARY DRAINAGE AREAS SHOWN WERE CHOSEN BASED UPON DISCUSSIONS WITH THE VILLAGE DPW. ADDITIONAL STORMWATER RUNOFF THAT MAY BE CONTRIBUTING TO THESE AREAS ARE BEING DEALT WITH BY OTHER EXISTING SYSTEMS AND/OR FUTURE POTENTIAL PLANNED DEVELOPMENT PROJECTS.

Legend

- ASSUMED TRIBUTARY DRAINAGE AREA
- EXISTING DRAINAGE PIPE/CULVERT
- PROPOSED 12" DIAMETER SMOOTH INTERIOR CORRUGATED HDPE PIPE
- PROPOSED CATCH BASIN WITH CURB INLET AND RECTICULINE GRATE
- PROPOSED 10' DIAMETER LEACHING BASIN WITH SOLID MANHOLE COVER
- PROPOSED MANHOLE WITH SOLID COVER

Drainage Calculation Summary

Drainage Area A	Total Area = 43,982.8 SF			
	Contributing Area (SF)	Runoff C	Rainfall (FT)	Volume (CF)
STORAGE VOLUME CALCULATION				
• Pervious Area	0 SF	x 0.30	x 2/12 FT =	0.0 CF
• Impervious Area	43,982.8 SF	x 1.00	x 2/12 FT =	7,330.5 CF
REQUIRED STORAGE VOLUME				7,330.5 CF
PROVIDED STORAGE VOLUME	STORAGE IS NOT PROPOSED DRAINAGE. STRUCTURES ARE CONNECTED TO AN EXISTING DRAINAGE PIPE/CULVERT WITH AN OUTFALL TO AGAWAM LAKE			

Drainage Area B	Total Area = 2,191.6 SF			
	Contributing Area (SF)	Runoff C	Rainfall (FT)	Volume (CF)
STORAGE VOLUME CALCULATION				
• Pervious Area	0 SF	x 0.30	x 2/12 FT =	0.0 CF
• Impervious Area	2,191.6 SF	x 1.00	x 2/12 FT =	365.3 CF
REQUIRED STORAGE VOLUME				365.3 CF
PROVIDED STORAGE VOLUME	8 VF (OF 10' DIAMETER RINGS) X 2 LEACHING BASINS X 68.41 CF/VF = 1,094.6 CF ADDITIONAL VOLUME WILL ALSO ACCOMMODATE A PORTION OF MEETING HOUSE LANE RUN-OFF TO REDUCE VOLUME ENTERING EXISTING CULVERT WITH AN OUTFALL TO AGAWAM LAKE			

0 15 30 60 Feet

\\vhb\proj\LongIsland\26307.00 Jobs Lane Drainage\cad\ts\planmisc\26307_Drainage_Concept_2-2-2018.dwg

Rosemar
56 Pine Street East Moriches, NY 11940
Ph. 631 878-2323 - Fax. 631 878-2465

FROM:	**Matt Berretta**	**DATE:** 11/20/2017	**QUOTE NO:** 17-390
QUOTE TO:	**Village of Southampton**	**JOB LOCATION:**	**O'Connell Drive Parking Lot**
DEPT.:	**Department of Public Works**	**ADDRESS:**	**Jobs La/O'Connell Drive**
CONTRACT :	**2017-2019 Requirements Contract**		
CONTACT:	**Gary Goleski**	**PHONE NO 631-283-4269**	**FAX NO.:** 631-283-4069

QTY	ITEM	U.O.M.		UNIT	TOTAL
890.00	2S	CY	Unclassified Excavation	$ 15.000	$13,350.00
450.00	4S	CY	Stabilized Soil Aggregate Subbase	$ 15.000	$6,750.00
1,820.00	51APA	NEC	Asphalt Concrete Price Adjustment	$ 1.000	$1,820.00
675.00	51FX	TONS	Asphalt Concrete	$ 75.000	$50,625.00
15.00	76SX	DAYS	Maint. & Protect. Of Traffic	$ 500.000	$7,500.00
200.00	205	LF	Sawcutting Exist Pavement & Sidewalk	$ 3.000	$600.00
550.00	500-24	LF	Smooth inter. Corrugated Poly. Pipe 24" D	$ 44.000	$24,200.00
14.00	505S-10X4	EA	Leaching Basin 10'D 4' Depth	$ 1,960.000	$27,440.00
1.00	506CB-4X4X5	EA	Catchbasin 4'0"X4'0"X5'0" High	$ 1,690.000	$1,690.00
1.00	506MH4	EA	Manhole 4'0" D x 5'0" High	$ 1,500.000	$1,500.00
3.00	508	EA	Connections to Existing Facilities	$ 600.000	$1,800.00
10.00	509	SF	Masonry Pipe plug	$ 25.000	$250.00
14.00	510C	EA	24"D Manhole Cast. HD Frame Cover	$ 515.000	$7,210.00
2.00	511CB-CFG	EA	Catchbasin HD Curb Inlet Frame & Grate	$ 960.000	$1,920.00
1.00	Add'l Item	LS	Remove Catch Basin, Remove Pipe, Flowable Fill, Test Holes, etc	$ 19,840.000	$19,840.00
			Asphalt Curb		$0.00
			TOTAL PRICE		$166,495.00

Rosemar
Construction, Inc.
56 Pine Street, East Moriches, NY 11940
Tel:(631)878-2323 •FAX:(631)878-2465

PROPOSAL

This proposal when signed by the contractor (or owner), and accepted by Rosemar Construction, Inc. shall be binding upon both parties.

SUBMITTED TO:	Village of Southampton	DATE:	February 2, 2018
BILLING ADDRESS:	102 Willow Street Southampton NY 11968	PHONE: FAX:	283-4269 283-4069

ANTICIPATED STARTING DATE:

PROPOSED CONTRACT GOOD UNTIL: 4/2/2018

WORK LOCATION: jobs Lane Drainage Work

DESCRIPTION OF WORK TO BE PERFORMED

SEE SHEET # 2

Unless stated above does not include any extras, shoulders, curbing, etc.

CONDITIONS

1. Billing measures of square yardage to be taken at completion of work.
2. Any alteration or deviations from the above specification involving extra cost will be executed only upon written orders and will become an extra charge over and above estimate.
3. If adverse conditions exist , we will not be required to do work without a written release from the contractor.
4. We will not be held responsible for the elevation of drains, manholes, or others.
5. We will not be held responsible for settlement of subgrade around basins or other areas after work is performed.
6. We will not be held responsible for curbs or concrete aprons while crossing.
7. Grade must be in balance and within plus or minus 1", soil must be stabilized and meet all requirements of municipal agencies involved.
8. Owner or contractors shall provide all permits necessary for our work.
9. If the job requires two courses, upon completion of grading and application of first course, payment due will be 70%.
10. Above price is based upon entire job being paved. If done in phases, extra cost will be incurred.

TERMS OF PAYMENT

Payment due on completion of work, or on the last day of the month if work is still in progress, for the work performed. Invoices outstanding more than thirty (30) days will carry a finance charge of 1% per month. No work performed if the balance remains unpaid for more than sixty (60) days. In the event litigation becomes necessary, the file will be turned over to an attorney and the account will be liable for all collection fees.

Please sign and return to our office as soon as possible. Thank You

I certify that I am authorized by the company entering this agreement and my signature is your authorization to complete the work as specified. The above price, specifications and conditions are in agreement and accepted.

Company Name

Approval By: Rosemar Const., Inc.

Signature Title Date

GUARANTEE OF PAYMENT

In consideration of $1.00 and other good and valuable consideration, the receipt of which is hereby acknowledged, (I) (we) hereby guarantee unto Rosemar Construction, Inc. the payment of any indebtedness of the owner (or contractor) now existing or which is incurred hereafter and in whatever form it may be evidenced. This is to be a continuing guaranteed until all payment of all indebtedness has been made. It is not to be limited in any manner. When and if this account is placed in the hands of an attorney for collection of any amounts paid and owing I (we) guarantee and agree to pay at attorney's fees of 25% of the amount due which is agreed to be reasonable for collections, in addition to the amount of the unpaid balance due.

X

Guarantor

X

Guarantor

Rosemar
Construction, Inc.
56 Pine Street, East Moriches, NY 11940
Tel:(631)878-2323 •FAX:(631)878-2465

SUBMITTED TO: Village of Southampton DATE: February 2, 2018

ATTENTION: Gary

DESCRIPTION

Item Number	Description	Quantity	Price per Unit	AMOUNT
	~~Railroad Drainage~~			
2S	Unclassified Excavation	750 cy @	$ 15.00	$11,250.00
4S	Stabilized Soil Aggregate Subbase	225 cy @	$ 15.00	$3,375.00
500-12	Smooth inter. Corrugated Poly. Pipe 12" D	340 lf @	$ 30.00	$10,200.00
505S-10X4	Leaching Basin 10'D 4' Depth	8 Ea @	$ 1,960.00	$15,680.00
506CB-4X4X5	Catchbasin 4'0"X4'0"X5'0" High	8 Ea @	$ 1,690.00	$13,520.00
505S-10x8	Leaching Basin 10'D 8' Depth	11 Ea @	$ 2,960.00	$32,560.00
51FX	Asphalt Concrete	1,475 tons @	$ 75.00	$110,625.00
51PRA	Cold Milling Shaping and Removal	8,200 Sy @	$ 5.00	$41,000.00
70S	Preperation of Asphalt Surfaces	8,200 Sy @	$ 0.20	$1,640.00
76SX	MPT	15 Days @	$ 500.00	$7,500.00
205	Sawcutting	1,300 Lf @	$ 3.00	$3,900.00
340	Adj. of Utility Boxes & meters	15 Ea @	$ 100.00	$1,500.00
508	Connections to Existing Facilities	7 Ea @	$ 600.00	$4,200.00
509	Masonry Pipe Plug	25 Ea @	$ 25.00	$625.00
511CB-CFG	Catchbasin HD Curb Inlet Frame & Grate	8 Ea @	$ 950.00	$7,600.00
510C	24" Diam Manhole Castings	19 Ea @	$ 515.00	$9,785.00
Non Contract Items - Remove CBs, Dig Test Holes. Conc Pavement Removal			$ 25,000.00	$25,000.00
			Total	$299,960.00

ADJUSTMENT:
Remove 3 catch basins

511 CB-CFG	$950 ea	$2,850
506CB-4x4x5	$1690 ea	$5,070
		($7,920)
Adjusted total		$292,040

P R O P O S A L

South Fork Asphalt
224 North Main St.
Southampton, NY 11968
(631) 283-0037

Sales Representative
Perry DeLalio III
phone:
general@southforkasphalt.com
fax: (631) 283-0717

SFA
PAVING • STONE • CONSTRUCTION

SOUTHAMPTON, VILLAGE OF
VILLAGE OF SOUTHAMPTON
SOUTHAMPTON, NY 11968

Estimate #	3878
Date	9/15/2017

Job Location: Meeting House Ln and Oak St, Southampton

Description	Qty	Price	Amount
Meeting House Lane and Oak Street Intersection			$0.00
Furnish and install 4' dia manhole (1 ea).			
Furnish and install 4' x 2'6" catch-basins (5 ea).			
Abandon (2) catch-basin and dry-well (1 ea).			
Connect new catch basin to the existing 36" dia pipe.			
Interconnect catch-basin and manholes using 12" ADS pipe (60 LF), 15" ADS pipe (30 LF), 30" ADS pipe (20 LF).			
Remove the existing pavement to a depth of 8" inches (75 sy).			
Furnish and place RCA blend to a depth of four inches (75 sy).			
Furnish and place NYSDOT type 3 binder asphalt to a 2 1/2 inch thickness (75 sy)			
Furnish and place NYSDOT type 6 asphalt to a compacted thickness of 1 1/2 inches (75 sy).			
Lump Sum			
Price:	1.00	$54,555.00	$54,555.00

As per plan dated: -

TERMS:
DEPOSIT REQUIRED: 1/3 DOWN WITH SIGNED CONTRACT.
1/3 PAYMENT DUE WHEN WORK BEGINS.
BALANCE DUE UPON COMPLETION OF WORK.
IF PAYING BY CREDIT CARD, PROGRESS PAYMENTS WILL BE CHARGED AUTOMATICALLY AS PER CONTRACT TERMS LISTED ABOVE.
PRICING EFFECTIVE FOR 30 DAYS FROM DATE OF PROPOSAL.
JOB WILL BE RE-MEASURED UPON COMPLETION.

Sub Total	$54,555.00
Total	$54,555.00

N O T E S :

CONDITIONS

1. Proposals containing per foot or yard price will be re-measured upon completion of work and billed accordingly.
2. Any alteration or deviation from the above specifications involving extra work or material will result in additional billing.
3. If adverse conditions exist, we will not be required to do work without a written release.
4. We will not be held responsible for the elevation of drains, manholes, curbs or the work of others.
5. We will not be held responsible for settlement of sub-grade in areas disturbed by others.
6. We will not be held responsible for curbs or concrete aprons while crossing.
7. Sub-grade must be in balance and within plus or minus 1”, soil must be stabilized and meet all requirements of municipal agencies involved.
8. Owner or his representative shall provide all permits necessary for our work and will arrange for all required inspections.
9. Above price is based upon entire job (grading and paving) being done concurrently. If done in phases, extra costs will be incurred.
10. We will not be held responsible for pooling of water if grade is less than 1%.
11. We will not be held responsible for any underground privately maintained utility systems unless location is noted prior to construction.

- -

TERMS OF PAYMENT

Payment balance due on completion of work, or on the last day of the month if work is still in progress, for the work performed. A FINANCE CHARGE OF 1 ½% PER MONTH (THE CORRESPONDING ANNUAL PERCENTAGE RATE IS 18%) will be charged on unpaid balances on accounts over 15 days old. It is mutually agreed that if this account is past due and sent to an attorney for collection there shall be an attorney’s fee of 25% of the amount due, in additional to the amount due, and the attorney’s fees are agreed to be reasonable.

-

For your convenience, we accept Visa and Mastercard. We can also accept electronic check, please inquire.

- -

I certify that I am authorized by the contractor (or owner) to execute this agreement on behalf of said contractor (or owner) and my signature is your authorization to proceed as specified. The above price, specifications, and conditions are hereby accepted. This contract shall not bind SFA until the contract is delivered to SFA by the contract/owner and until the contractor/owner's deposit clears SFA's bank account.

Estimate #: 3878

____

Print (contractor/homeowner)

____

Sign

P R O P O S A L

South Fork Asphalt
224 North Main St.
Southampton, NY 11968
(631) 283-0037

Sales Representative
Perry DeLalio III
phone:
general@southforkasphalt.com
fax: (631) 283-0717

SFA
PAVING • STONE • CONSTRUCTION

SOUTHAMPTON, VILLAGE OF
VILLAGE OF SOUTHAMPTON
SOUTHAMPTON, NY 11968

Estimate #	3877
Date	9/15/2017

Job Location: Ambulance Entrance Way, Southampton

Description	Qty	Price	Amount
Ambulance Entrance Way			$0.00
Furnish and install 10' x 8' dry-well. (2 each)			
Furnish and install 4' x 2.5' catch basins. (2 each)			
Connect existing dry-well and catch-basin using 15" dia ADS pipe. (60 LF)			
Furnish and place RCA blend to a depth of four inches. (200 sy)			
Furnish and place NYSDOT type 3 binder asphalt to a depth 2 1/2 inch thickness. (200 sy)			
Furnish and place NYSDOT type 6 asphalt to a compacted thickness of 1 1/2 inches. (200 sy)			
Lump Sum			
Price:	1.00	$34,836.32	$34,836.32

As per plan dated: -

TERMS:
DEPOSIT REQUIRED: 1/3 DOWN WITH SIGNED CONTRACT.
1/3 PAYMENT DUE WHEN WORK BEGINS.
BALANCE DUE UPON COMPLETION OF WORK.
IF PAYING BY CREDIT CARD, PROGRESS PAYMENTS WILL BE CHARGED AUTOMATICALLY AS PER CONTRACT TERMS LISTED ABOVE.
PRICING EFFECTIVE FOR 30 DAYS FROM DATE OF PROPOSAL.
JOB WILL BE RE-MEASURED UPON COMPLETION.

Sub Total	$34,836.32
Total	$34,836.32

N O T E S :

CONDITIONS

1. Proposals containing per foot or yard price will be re-measured upon completion of work and billed accordingly.
2. Any alteration or deviation from the above specifications involving extra work or material will result in additional billing.
3. If adverse conditions exist, we will not be required to do work without a written release.
4. We will not be held responsible for the elevation of drains, manholes, curbs or the work of others.
5. We will not be held responsible for settlement of sub-grade in areas disturbed by others.
6. We will not be held responsible for curbs or concrete aprons while crossing.
7. Sub-grade must be in balance and within plus or minus 1", soil must be stabilized and meet all requirements of municipal agencies involved.
8. Owner or his representative shall provide all permits necessary for our work and will arrange for all required inspections.
9. Above price is based upon entire job (grading and paving) being done concurrently. If done in phases, extra costs will be incurred.
10. We will not be held responsible for pooling of water if grade is less than 1%.
11. We will not be held responsible for any underground privately maintained utility systems unless location is noted prior to construction.

TERMS OF PAYMENT

Payment balance due on completion of work, or on the last day of the month if work is still in progress, for the work performed. A FINANCE CHARGE OF 1 ½% PER MONTH (THE CORRESPONDING ANNUAL PERCENTAGE RATE IS 18%) will be charged on unpaid balances on accounts over 15 days old. It is mutually agreed that if this account is past due and sent to an attorney for collection there shall be an attorney's fee of 25% of the amount due, in additional to the amount due, and the attorney's fees are agreed to be reasonable.

-

For your convenience, we accept Visa and Mastercard. We can also accept electronic check, please inquire.

I certify that I am authorized by the contractor (or owner) to execute this agreement on behalf of said contractor (or owner) and my signature is your authorization to proceed as specified. The above price, specifications, and conditions are hereby accepted. This contract shall not bind SFA until the contract is delivered to SFA by the contract/owner and until the contractor/owner's deposit clears SFA's bank account.

Estimate #: 3877

Print (contractor/homeowner)

Sign

URBAN RUNOFF BMP POLLUTANT LOAD REDUCTION WORKSHEET (BASED ON LAND USE RUNOFF EMC VALUE)

Please fill in the gray areas below: Note: Default values are taken from STEPL version 4.4

State	County	Weather Station
New York	Suffolk	_NY-Suffolk_Mean

Precipitation

Rain correction factors		
0.907	0.489	
Annual Rainfall (in)	**Rain Days**	**Avg. Rain/Event**
45.9	118.2	0.720

Soil Information

Hydrologic Soil Group	Initial Abstraction Factor
B	0.0

Enter urban landuse area

Urban Landuse	Contributing Area (ac)
Commercial	1.00
Industrial	0.00
Institutional	0.00
Transportation	2.50
Multi-Family	0.00
Single-Family	0.50
Urban-Cultivated	0.00
Vacant (developed)	0.00
Open Space	0.00
Total Area	**4.00**

Flow Volume Reduction Estimates:

Inputs:

DA: BMP drainage area (acre)
PI: Percent imperviousness within the drainage area, assuming 100% by default (%)
RD: Impervious area runoff depth to be captured (in)

Methodology:

BMP storage capacity = DA * PI * RD (acre-ft)
Runoff volume per event = average rainfall volume in STEPL (acre-ft)
Captured volume per event = minimum(BMP storage capacity, Runoff volume)
Required BMP surface area = BMP storage capacity / Typical design BMP storage depth
Required BMP units = BMP storage capacity / Typical design unit volume (e.g., rain barrel)

Assumptions:

- BMPs are well maintained and provides the design storage capacity throughout the year.
- BMP storage capacity is fully available for the next storm event.
- The infiltration BMPs captures only up to the storage capacity regardless of the underlying soil type (infiltration

Reference Curve Number by Land Use Type and HSG

Urban\SHG	A	B	C	D
Commercial	89	92	94	95
Industrial	81	88	91	93
Institutional	81	88	91	93
Transportation	98	98	98	98
Multi-Family	77	85	90	92
Single-Family	57	72	81	86
Urban-Cultivated	67	78	85	89
Vacant-Developed	77	85	90	92
Open Space	49	69	79	84

Urban pollutant concentration in runoff (mg/l)

Landuse	TN	TP	BOD	Sediment
Commercial	2.00	0.20	9.30	75.00
Industrial	2.50	0.40	9.00	120.00
Institutional	1.80	0.30	7.80	67.00
Transportation	3.00	0.50	9.30	150.00
Multi-Family	2.20	0.40	10.00	100.00
Single-Family	2.20	0.40	10.00	100.00
Urban-Cultivated	1.90	0.30	4.00	150.00
Vacant (developed)	1.50	0.15	4.00	70.00
Open Space	1.50	0.15	4.00	70.00

Note: Flow volume reduction BMPs are in blue cells

Default BMP efficiency numbers (Ref: STEPL 4.4)

BMP & Efficiency	N	P	BOD	Sediment	Design Storage Depth (ft)
No BMP	0	0	0	0	
Alum Treatment	0.6	0.9	0.6	0.95	
Bioretention facility	0.63	0.8	ND	ND	
Combined BMPs-Calculated	0	0	0	0	
Concrete Grid Pavement	0.9	0.9	ND	0.9	
Dry Detention	0.3	0.26	0.27	0.575	
Extended Wet Detention	0.55	0.685	0.72	0.86	
Filter Strip-Agricultural	0.5325	0.6125	ND	0.65	
Grass Swales	0.1	0.25	0.3	0.65	
Infiltration Basin	0.6	0.65	ND	0.75	3.00
Infiltration Devices	ND	0.83	0.83	0.94	3.00
Infiltration Trench	0.55	0.6	ND	0.75	3.00
LID*/Cistern	0	0	0	0	100.00
LID*/Cistern+Rain Barrel	0	0	0	0	160.00
LID*/Rain Barrel	0	0	0	0	60.00
LID/Bioretention	0.43	0.81	ND	ND	3.00
LID/Dry Well	0.5	0.5	0.7	0.9	3.00
LID/Filter/Buffer Strip	0.3	0.3	0.4	0.6	
LID/Infiltration Swale	0.5	0.65	ND	0.9	2.00
LID/Infiltration Trench	0.5	0.5	0.7	0.9	2.00
LID/Vegetated Swale	0.075	0.175	ND	0.475	
LID/Wet Swale	0.4	0.2	ND	0.8	
Oil/Grit Separator	0.05	0.05	ND	0.15	
Porous Pavement	0.85	0.65	ND	0.9	2.00
Sand Filter/Infiltration Basin	0.35	0.5	ND	0.8	3.00
Sand Filters	ND	0.375	0.4	0.825	
Settling Basin	ND	0.515	0.56	0.815	
Vegetated Filter Strips	0.4	0.4525	0.505	0.73	
Weekly Street Sweeping	ND	0.06	0.06	0.16	
Wet Pond	0.35	0.45	ND	0.6	
Wetland Detention	0.2	0.44	0.63	0.775	
WQ Inlet w/Sand Filter	0.35	ND	ND	0.8	
WQ Inlets	0.2	0.09	0.13	0.37	

Note: ND is no data

Select urban BMP and enter BMP drainage area information

Landuse	Selected Urban BMP	Effective BMP Drainage Area (ac)	Drainage Percent Impervious (%)	Runoff Capture Depth (in)
Commercial	No BMP	1.00	100	0.17
Industrial	No BMP	0.00	100	0.5
Institutional	No BMP	0.00	100	0.5
Transportation	LID/Dry Well	2.50	98	0.17
Multi-Family	No BMP	0.00	100	0.5
Single-Family	No BMP	0.50	100	0.17
Urban-Cultivated	No BMP	0.00	100	0.5
Vacant (developed)	No BMP	0.00	100	0.5
Open Space	No BMP	0.00	100	0.5

Enter combined BMP efficiencies (fraction 0 to 1)

Landuse	TN	TP	BOD	Sediment
Commercial	0.50	0.50	0.50	0.50
Industrial	0.50	0.50	0.50	0.50
Institutional	0.50	0.50	0.50	0.50
Transportation	0.50	0.50	0.50	0.50
Multi-Family	0.50	0.50	0.50	0.50
Single-Family	0.50	0.50	0.50	0.50
Urban-Cultivated	0.50	0.50	0.50	0.50
Vacant (developed)	0.50	0.50	0.50	0.50
Open Space	0.50	0.50	0.50	0.50

RESULTS

Annual pollutant load and flow volume reductions at landuse level

Landuse	TN (lb/yr)	TP (lb/yr)	BOD (lb/yr)	Sediment (lb/yr)	Flow Volume (ac-ft/yr)	TN Reduction (lb/yr)	TP Reduction (lb/yr)	BOD Reduction (lb/yr)	Sediment Reduction (lb/yr)	Flow Volume Reduction (ac-ft/yr)	Flow Volume Reduction BMP Surface Area (ac)	Units of Rain Barrel / Cistern
Commercial	9.59	0.96	44.60	359.69	1.76	0.00	0.00	0.00	0.00			
Industrial	0.00	0.00	0.00	0.00	0.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!			
Institutional	0.00	0.00	0.00	0.00	0.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!			
Transportation	57.64	9.61	178.68	2881.91	7.07	28.82	4.80	125.07	2593.72	1.67	0.01	
Multi-Family	0.00	0.00	0.00	0.00	0.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!			
Single-Family	1.95	0.35	8.86	88.62	0.33	0.00	0.00	0.00	0.00			
Urban-Cultivated	0.00	0.00	0.00	0.00	0.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!			
Vacant (developed)	0.00	0.00	0.00	0.00	0.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!			
Open Space	0.00	0.00	0.00	0.00	0.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!			

Overall annual pollutant load and runoff volume before and after BMPs

Pollutant	Pre-BMP	Reduction	After BMP	Percent Reduction
TN (lb/yr)	69.18	28.82	40.36	42%
TP (lb/yr)	10.92	4.80	6.12	44%
BOD (lb/yr)	232.14	125.07	107.07	54%
Sediment (lb/yr)	3,330.23	2,593.72	736.51	78%
Flow Volume (ac-ft/yr)	9.16	1.67	7.49	18%

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February 8, 2018

Ref: 26307.00

Mr. Gary J. Goleski
Superintendent of Public Works
Village of Southampton
23 Main Street
Southampton, NY 11968

Re: State Environmental Quality Review Act (SEQRA) Analysis
Grant Application for Proposed Drainage Improvements
Village of Southampton, Suffolk County

Dear Mr. Goleski:

Per our discussions, we understand that the Village has contracted with Mesiano Consulting to assist with the preparation of a Suffolk County Water Quality Protection and Restoration Program (WQPRP) grant application. As part of the grant application, the Village has asked VHB Engineering, Surveying and Landscape Architecture, P.C. (VHB) to assist Mesiano Consulting with technical aspects of the application. The grant application is understood to include funding for three locations within the Village: O'Connell Drive parking lot (west end), Jobs Lane between Main Street and O'Connell Drive parking lot, and Meeting House Lane at Oak Street. VHB has previously assisted the Village with conceptual design for the Jobs Lane drainage under this contract and preliminary design for the O'Connell Drive parking lot drainage under a separate contract. The purpose of this analysis is to assist the Village in classifying the below-listed proposed action pursuant to the implementing regulations of the State Environmental Quality Review Act (SEQRA) set forth in 6 NYCRR Part 617.

The proposed action specifically consists of a series of drainage improvements to an existing closed storm drainage system at three locations within the Village, including the O'Connell Drive parking lot (west end), Jobs Lane between Main Street and O'Connell Drive parking lot, and Meeting House Lane at Oak Street, for the purposes of improving water quality at the system's existing outfall at Agawam Lake. Areas impacted during construction are to be restored in kind upon installation of the proposed drainage improvements including but not limited to asphalt roadway pavement, concrete curb, concrete sidewalk, and turf areas.

Given the scope of the above-referenced action and pursuant to 6 NYCRR §617.5(c)(5) and (11), the above-described project would be appropriately classified as Type II as it consists of:

> *(5) Street openings and right-of-way openings for the purpose of repair or maintenance of existing utility facilities; and*
>
> *(11) extension of utility distribution facilities, including gas, electric, telephone, cable, water and sewer connections to render service in approved subdivisions or in connection with any action on this list.*

Engineers | Scientists | Planners | Designers

100 Motor Parkway
Suite 135
Hauppauge, New York 11788
P 631.787.3400
F 631.813.2545

Based on the above, it is our opinion that the proposed action should be classified as Type II. As such, no further environmental review would be required. If the proposed action were not classified as a Type II; however, there would still be no adverse environmental impact. In fact, it is anticipated that the proposed action would only have a beneficial significant environmental impact. If the Village concurs with this determination, in its capacity as lead agency, a resolution should be prepared indicating that the proposed action is classified as Type II, with the appropriate citations noted. Sample language is enclosed for consideration by Mesiano Consulting and the Village's review.

Should you wish to discuss this matter, please do not hesitate to contact the undersigned.

Sincerely,

VHB Engineering, Surveying and Landscape Architecture, P.C.

Ryan M. Winter
Senior Project Manager

RMW/ag
enc.

MINUTES
VILLAGE OF SOUTHAMPTON
BOARD OF TRUSTEES
Public Session I – March 8, 2018

Due notice having been given, the Public Meeting of the Board of Trustees was held at the Southampton Village Hall, 23 Main Street, Southampton, New York at 6:00 PM

Present were Mayor Irving, Trustees Yastrzemski and Hattrick; Village Administrator Stephen Funsch and Village Attorney, Wayne Bruyn. Trustees McGann and Allan were absent.

Mayor Irving opened the meeting by leading the Pledge of Allegiance.

EMPLOYEE OF THE MONTH

Mayor Irving acknowledged the March Employee of the Month, Mauricio Espinoza, Custodial Worker I/Maintenance Mechanic I in the Building/Maintenance Department, hired March 31, 2015. Mayor Irving read letters of recommendation from two of his co-workers commending him for his positive attitude and exemplary work and then thanked Mr. Espinoza for his efforts.

PUBLIC COMMENT - NONE

BOARD PRESENTATIONS - NONE

PUBLIC HEARINGS

1. MAXIMUM GROSS FLOOR AREA OF A DWELLING

Mayor Irving made a motion to open the Public Hearing; Trustee Yastrzemski seconded the motion and a unanimous vote followed.

Village Administrator read and submitted into the record a letter from Paul Travis, Planning Commission Chair. Village Attorney Wayne Bruyn then reviewed the proposed local law amendment, noting that on January 24, 2018 the Village had received a letter from Suffolk County Planning Commission stating that this is a matter for local jurisdiction.

Mayor Irving commented that over the past few years, the Village has made changes to its code with the pyramid law and height restrictions and that this code amendment is the final piece of the Village's efforts to address zoning changes.

Mr. Travis spoke and noted that the change to GFA is relatively small, but the Commission could continue to review alternatives. Glynis Berry of Studio A/B also spoke providing clarification on how the proposed amendment would affect smaller lot sizes.

A discussion followed with members of the community sharing their comments including: Edoardo Simioni, Mike Sanjabi, Bonnie Cannon, Judy Maysles, Fred Weinfurt, Martin Gilmartin, Jay Diesing, Robert Lohman, Paul Robinson, Jim McFarlane, Geoff Hull, Marc Chiffert, Regina Greeven and Laura DeVinney.

Following the discussion Mayor Irving stated that the hearing would be kept open and agreed that the Village has not yet seen the effects of the recent code changes.

Mayor Irving then made a motion to adjourn the hearing until the March 20th meeting. Trustee Yastrzemski seconded the motion and a unanimous vote followed.

2. LOCAL LAW – TAX CAP OVERRIDE

Mayor Irving made a motion to open the Public Hearing regarding Local Law authorizing a Property Tax Levy in excess of the limit established in General Municipal Law §3-c.; Trustee Yastrzemski seconded the motion and a unanimous vote followed.

Village Administrator Funsch explained that the cap tax override is a recommended practice by New York State and NYCOM and something the Village does every year, since the tax cap law began with its purpose to provide a safeguard and to allow the Board to exceed the tax cap if needed.
There was no discussion or comments and Mayor Irving made a motion to close the Public Hearing; Trustee Yastrzemski seconded the motion and a unanimous vote followed.

Mayor Irving then made a motion to authorize the Notice of Adoption of Local Law 2 of 2018 and suggested the following resolution:

RESOLVED, that the Board of Trustees enacted Local Law Authorizing A Property Tax Levy In Excess Of The Limit Established In General Municipal Law §3- as Local Law 2 of 2018.

Trustee Yastrzemski seconded the motion and a roll call vote followed:
Trustee Yastrzemski, aye; Trustee Hattrick, aye; and Mayor Irving, aye.

3. AMENDING RESIDENCY REQUIREMENTS FOR APPOINTED OFFICERS

Mayor Irving made a motion to open the Public Hearing; Trustee Yastrzemski seconded the motion and a unanimous vote followed.

Mayor Irving explained the purpose of amending the residency requirements for appointed boards as it has become more difficult to find people that are interested and able to serve on the various boards. This amendment would allow the Village to reach out to individuals within the school district should the need arise.

Bonnie Cannon, 54 Miller Road, addressed the Board stating that before the resolution was adopted the Village should look for members within the Village and do more recruitment. Trustee Yastrzemski stated that it has been difficult to find members and this amendment would give the ability to look at other individuals but would not require that the Board go outside of the Village. Trustee Hattrick commented that it would be good to take a little more time to consider this and Mayor Irving again noted that it was difficult to find people to sit on boards who don't have potential conflicts.

Mayor Irving then made a motion to adjourn the Public Hearing until the March 20, 2018 Board Meeting. Trustee Hattrick seconded the motion and a unanimous vote followed.

COMMUNICATIONS TO THE BOARD

Beach Clean Up – Saturday, August 25, 2018

Village Administrator Funsch read a letter from Southampton Town Councilwoman Christine Scalera requesting that the Village co-sponsor a Beach Clean-Up with the Town of Southampton at Coopers Beach on Saturday, August 25, 2018 from 4-5:30PM. Mayor Irving made a motion to authorize the use of Coopers Beach for the Clean-up; Trustee Hattrick seconded the motion and a unanimous vote followed.

RESOLUTIONS

RESOLVED, that the reading of the minutes for the Work Session of February 20, 2018 be dispensed with and that those minutes be accepted as filed by the Village Administrator and that the actions taken at that meeting be and hereby are ratified and approved.

On the motion of Mayor Irving and seconded by Trustee Hattrick the above resolution was unanimously approved.

RESOLVED, that the claims for the warrants dated March 8, 2018 totaling $1,051,310.64 (Warrant #16 - General Fund), $491.32 (Warrant #10 – Expense Trust), $23,972.50 (Warrant #10 – Capital Reserve Fund) and the Village payrolls for the period from February16, 2018 to March 1, 2018 be audited and approved.

On the motion of Mayor Irving and seconded by Trustee Yastrzemski the above resolution was unanimously approved.

RESOLVED, that the Board of Trustees hereby approves that, with respect to the Village general election to be held on Friday, June 15, 2018, the polling place shall be the Levitas Center (Cultural Center of Southampton), Pond Lane, Southampton, NY and that the polls shall be open from 9:00 AM until 9:00 PM.

On the motion of Trustee Hattrick and seconded by Mayor Irving the above resolution was unanimously approved.

RESOLVED, that the Board of Trustees hereby approves the attached schedule of budget transfer to eliminate overages for the period ending March 8, 2018.

On the motion of Trustee Yastrzemski and seconded by Trustee Hattrick the above resolution was unanimously approved.

WHEREAS, the Village of Southampton (hereinafter the "Village") is proposing a series of drainage improvements to an existing closed drainage system for the purposes of improving water quality at the system's existing outfall at Agawam Lake (hereinafter the "proposed action"); and

WHEREAS, the Village has retained VHB Engineering, Surveying and Landscape Architecture, P.C. to review the proposed action, the State Environmental Quality Review Act and its implementing regulations at 6 NYCRR Part 617, and to make a recommendation to the Village as to the proper classification of the proposed action; and

WHEREAS, the proposed action specifically includes a series of drainage improvements to an existing closed storm drainage system at three locations within the Village, including the O'Connell Drive parking lot (west end), Jobs Lane between Main Street and O'Connell Drive parking lot, and Meeting House Lane at Oak Street, for the purposes of improving water quality at the system's existing outfall at Agawam Lake; and

WHEREAS, pursuant to 6 NYCRR §617.5(c)(5) and (11) of the implementing regulations of the State Environmental Quality Review Act, "[s]treet openings and right-of-way openings for the purpose of repair or maintenance of existing utility facilities; and the "extension of utility distribution facilities, including gas, electric, telephone, cable, water and sewer connections to render service in approved subdivisions or in connection with any action on this list" are Type II actions;

THEREFORE, BE IT RESOLVED, that the Village, as lead agency, after review of the action proposed at the three locations within the village mentioned above, 6 NYCRR §617.5, and the opinion provided by VHB Engineering, Surveying and Landscape Architecture, P.C., hereby determines that the proposed action is a Type II Action pursuant to 6 NYCRR §617.5(c)(5) and (11) of the implementing regulations of the State Environmental Quality Review Act, and will, therefore, by definition, have no adverse impacts on the environment.

On the motion of Mayor Irving and seconded by Trustee Hattrick the above resolution was unanimously approved.

RESOLVED that the Board of Trustees hereby accepts the bid from Quogue Catering Company in the amount of $42,750 to operate the concession at Coopers Beach for the 2018 season.

On the motion of Trustee Hattrick and seconded by Trustee Yastrzemski the above resolution was unanimously approved.

RESOLVED, that the Board of Trustees hereby approves Christopher Olczak as a probationary member of Hook & Ladder Co. 1 effective March 8, 2018.

On the motion of Trustee Yastrzemski and seconded by Trustee Hattrick the above resolution was unanimously approved.

DISCUSSION ITEMS – NONE

COMMENTS FROM THE BOARD:

Trustee Yastrzemski – commented regarding 2 recent public safety issues and offered his thanks to all rescue, EMS and first responders who helped during the Nor 'easter and responded to the Lock-Out at the Southampton schools. He stated that he was proud of the Police Department and Chief Cummings and commented on how well they interacted with the community, showing that they are well-trained and very capable. He also thanked the community for their support.

Trustee Allan - absent

Trustee McGann – absent

Trustee Hattrick requested that Village Attorney Bruyn review some issues that had been raised regarding the ARB. Trustee Hattrick also acknowledged the passing of Warren Hamer a couple of months ago, stating that he was a great man who contributed much to the Village.

Mayor Irving thanked Trustee Yastrzemski for stepping forward regarding the Nor'easter and the Southampton Schools lockdown while he was away. The Mayor reiterated that when it comes to schools and children's safety there was no action too extreme. He then provided a review of upcoming programs at the cultural arts organizations. Mayor Irving also commented that Warren Hamer was a true gentleman and a special guy who provided a great service to the Village and would be missed.

2nd PUBLIC COMMENT:

Bonnie Cannon, 54 Miller Road addressed the Board regarding the proposed Park plan and wanted to be sure that the teens and pre-teens are considered in the planning and to consider installing basketball courts. Mayor Irving responded that he and Trustee McGann had met with staff from the Rogers Memorial Library and had discussed the needs and interests of the teens.

Ms. Cannon also remarked on the US Open and suggested that the Village combine with the Town to hold a job fair for possible job opportunities around the US Open. She also commented on the issue of the ARB and other boards, stating that individuals with complaints should address them to the Ethics Board and go through the process. Lastly, Ms. Cannon encouraged the Village to look at additional properties for affordable and next generation housing.

MOTION TO ADJOURN:

Mayor Irving made a motion to adjourn to Executive Session for the purpose of discussing personnel matters and legal matters. Trustee Yastrzemski seconded the motion and the Board approved the motion unanimously. The Board convened to Executive Session at 8:09PM.

The Board returned to Public Session at 8:40PM.

MOTION TO ADJOURN

Mayor Irving made a motion to adjourn the Public Meeting; Trustee Hattrick seconded the motion and a unanimous vote followed.
The meeting was adjourned at 8:41PM.

Stephen Funsch
Village Administrator 3/8/18

WHEREAS, the Suffolk County Water Quality Protection and Restoration Program (WQPRP) provides grant funding on a competitive basis for water quality projects defined in Article 12 Section 2(B) of the Suffolk County Charter; and

WHEREAS, Lake Agawam is included on the current (2016) NYS Section 303(d) List of Impaired/TMDL Waters; and

WHEREAS, the Village of Southampton has an interest in improving and protecting water quality in the various water bodies of the Village, including but not limited to Lake Agawam; and

WHEREAS, the Village of Southampton intends to submit a proposal to the Suffolk County WQPRP Review Committee, which has established a deadline of February 9, 2018 for proposals; and

WHEREAS, the proposed project will provide for design and development of drainage structures in the vicinity of Agawam Lake to capture stormwater; and

WHEREAS, the proposed project is supported by the Lake Agawam Comprehensive Management Plan; and

WHEREAS, the Suffolk County WQPRP program provides grant funding up to a $200,000 maximum in support of selected projects; and

NOW, THEREFORE, BE IT RESOLVED, that the Village Board of the Village of Southampton hereby states its support of the Agawam Lake Stormwater Remediation Phase V project; and be it further

RESOLVED that the Village will support the required minimum 50% matching funds toward the total project cost supported by the Suffolk County WQPRP, should the project receive funding approval from the County; and be it further

RESOLVED, the that Village Board authorizes the Mayor or his designee to sign any and all necessary documents pertaining to the project, including but not limited to an intermunicipal agreement, subject to review and approval of the Village Attorney, to participate in the above referenced program.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the seal of the Village of Southampton ths 9th day of February, 2018.

Eileen Musarra
Deputy Village Clerk
Incorporated Village of Southampton

Lake Agawam Conservation Association
PO Box 631
Southampton, NY 11968
www.lakeagawam.com

January 31, 2018

Theresa Ward, Deputy County Executive and Commissioner
Suffolk County Department of Economic Development and Planning
H. Lee. Denison Building
100 Veterans Highway
Hauppauge, NY 11788

Re: In support of Agawam Lake Stormwater Remediation Project

Dear Commissioner Ward:

On behalf of The Lake Agawam Conservation Association (LACA) we would like to express our strong support for the grant application submitted by the Village of Southampton for the Agawam Lake Stormwater Remediation project. If funded, this project will continue the installation of drainage structures that will increase stormwater capture in the Agawam Lake watershed.

LACA was formed by a group of lakeside residents as well as other concerned citizens and local officials. Our goal is the restoration of Lake Agawam, the jewel of Southampton Village. Our efforts to improve water quality in the lake have included support of the Lake Agawam Comprehensive Management Plan, development of public education materials and dissemination of information aimed at raising awareness around the issues that affect water quality.

The Village's proposed project will advance key goals of the Lake Agawam Comprehensive Management Plan by reducing the flow of untreated stormwater into the lake. We hope that the proposal receives every consideration from Suffolk County.

Sincerely yours,

David Bohnett
496 First Neck Lane
Southampton, NY

Chuck Scarborough
520 First Neck Lane
Southampton, NY

Mark Fichandler
127 Toylsome Lane
Southampton, NY

Meet VHB

Over 1,350 engineers, scientists, planners, and designers at VHB partner with clients from our 24 offices along the East Coast, including New York City, to improve mobility, enhance communities and economic vitality, and balance development and infrastructure needs with environmental stewardship. Premier industry publication *Engineering News-Record* ranks the firm among the Top 500 Design Firms nationwide, and VHB is a frequent recipient of project awards for planning, engineering, and environmental excellence.








Environmental

Services | CEQR/SEQRA/NEPA Documentation | Natural & Cultural Resources Assessment | Hazardous Materials Site Assessment | Environmental Compliance | Wetlands Delineation, Mitigation & Permitting | Water Resources Analysis | Climate Adaptation Planning | Air & Noise

Civil Engineering

Services | Site/Civil Engineering & Permitting | Due Diligence | Site Planning | Stormwater Design & Engineering | Utilities Design | Drainage Design | Low Impact Development | Green Infrastructure | Stream Restoration Design | Structures Engineering | Land Survey

Transportation

Services | Traffic Engineering, Analysis & Simulation | Transportation Planning | Roadway/ Highway Engineering | Pavement Management | Bikeway/Pedestrian Planning & Design | Transit/Rail Design & Engineering | Aviation | Travel Demand Modeling | Travel Survey Design

Planning & Design

Services | Site & Campus Master Plans | Municipal Comprehensive Plans | Entitlements & Permitting | Landscape Architecture | Urban Design & Planning | Land Use & Zoning Analysis | Economic Impact Analysis | Graphic Design | 3-D Visualization | Public & Stakeholder Outreach

Applied Technology

Services | GIS Mapping, Planning & Analysis | Database Design & Management | Mobile Application Development | Workflow/Process Automation | System Integration | IT Consulting

Agawam Lake (1701-0117) Impaired

Waterbody Location Information

Revised: 05/17/2016

Water Index No: (MW7.1b) AO-P815
Hydro Unit Code: Shinnecock Bay-Atlantic Ocean (0203020206)
Water Type/Size: Lake/Reservoir 64.0 Acres
Description: entire lake
Water Class: C
Drainage Basin: Atlantic-Long Island Sound
Reg/County: 1/Suffolk (52)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Pollutants/Sources)

Uses Evaluated	Severity	Confidence
Water Supply	N/A	-
Public Bathing	N/A	-
Recreation	Impaired	Known
Aquatic Life	Stressed	Suspected
Fish Consumption	Unassessed	-
Conditions Evaluated		
Habitat/Hydrology	Unassessed	
Aesthetics	Unassessed	

Type of Pollutant(s)

Known: HARMFUL ALGAL BLOOMS,
Suspected: Nutrients (phosphorus, nitrogen), LOW D.O./OXYGEN DEMAND
Unconfirmed: - - -

Source(s) of Pollutant(s)

Known: - - -
Suspected: URBAN/STORM RUNOFF, Onsite/Septic Systems
Unconfirmed: - - -

Management Information

Management Status: Verification of Sources Needed
Lead Agency/Office: DOW/Reg 1
IR/305(b) Code: Impaired Water Requiring a TMDL (IR Category 5)

Further Details

Overview

Agawam Lake is assessed as an impaired waterbody due to recreational uses that are known to be impaired by phosphorus and low dissolved oxygen. These conditions result in frequent and severe harmful algal blooms in the lake. No specific pollutant or sources have been identified, but land use suggests failing onsite wastewater treatment systems and urban non-point source runoff contribute to the impacts.

Use Assessment

Agawam Lake is a Class C waterbody, suitable for general recreation use and support of aquatic life, but not as a water supply or for public bathing.

Recreation uses are considered to be impaired due to elevated nutrients (phosphorus), excessive algae, poor water clarity and shoreline harmful algal blooms. Algae (chlorophyll-a) levels in the open water were well above the threshold of 10 µg/l associated with impaired recreational conditions during 2014, consistent with phosphorus levels that at all times exceed the DEC threshold of 20 µg/l. Aesthetic conditions of the lake are considered to be poor because of lake wide algal blooms. (DEC/DOW, BWAM/LMAS, December 2015)

Aquatic life is considered to be supported but stressed by shoreline toxic algae blooms and low dissolved oxygen. Periodic fish kills (including a large event in 1981 that was reported on national news) have been report in the past. There are no health advisories in place limiting the consumption of fish from this waterbody (beyond the general advice for all waters). There are no records of tissue analysis on fish collected from Lake Agawam. However, due to the presence of shoreline algae toxins, fish consumption use may be threatened, despite the lack of information about contaminants in fish flesh. (NYS DOH Health Advisories and DEC/DOW, BWAM/LMAS, December 2015)

Water Quality Information
Regular water quality sampling of Agawam Lake was conducted by researchers at SUNY Stony Brook from 2011 to 2015. Phosphorus levels in the lake frequently exceed the state guidance values of 20 µg/l, and chlorophyll a levels most always exceed the 10 µg/l threshold associated with elevated risk for algae blooms, unsafe water clarity, algae toxins, and poor aesthetic conditions. Water clarity was severely restricted because of cyanobacteria blooms. Water transparency measurements often failed to meet the minimum recommended criteria for swimming beaches and water clarity was determined to be severely restricted as a result of high algae levels. Harmful algae bloom samples collected over this period revealed algal toxin levels that frequently exceeded the World Health Organization (WHO) threshold for safe swimming; however, these toxin samples were limited to shoreline locations. (DEC/DOW, BWAM/LMAS, SUNY Stony Brook unpublished data, December 2015 WHO, 2009)

Source Assessment
Based on surrounding land use and other knowledge of the waterbody, the most likely source(s) of phosphorus/nutrients to the waterbody are urban/storm water runoff and/or failing onsite septic systems.

Management Actions
Agawam Lake is included on the Section 303(d) List for eventual development of a TMDL or other restoration strategy (see below).

The NYS Legislature authorized $5 million to DEC and the Long Island Regional Planning Council (LIRPC) for a Long Island nitrogen management and mitigation plan. Plan development – with active input from local stakeholders and public – is underway. Chief among the expectations for the plan is a focus on wastewater issues, including sewering of unsewered communities in Suffolk County and the evaluation and use of advanced alternative onsite wastewater treatment systems to reduce nitrogen loads from individual septic systems where sewering in not viable. (DEC/DOW, BRWM, November 2015)

This waterbody is also included within the South Shore Estuary Reserve (SSER). The SSER encompasses the tidal waters and watershed between the Nassau–Queens County line and the eastern boundary of Shinnecock Bay. The goals of the SSER Program outlined in the 2001 Comprehensive Management Plan (CMP) include improvement and maintenance of water quality, protection and restoration of living resources, expansion of public use and enjoyment, sustaining and of the estuary–related economy, and increasing education, outreach and stewardship. Program activities focus on point and nonpoint source pollution reduction, protection and restoration of water quality and coastal habitat, increasing shellfish harvesting, open space preservation and enhancing other public uses of the estuary. A vessel waste no discharge zone was established for the entire South Shore Estuary in 2009 to address impacts from boat pollution. (DEC/DOW, Region 1, March 2010)

Section 303(d) Listing
Agawam Lake is included on the current (2016) NYS Section 303(d) List of Impaired/TMDL Waters. The waterbody is included on Part 1 of the List as an impaired waterbody requiring TMDL development for phosphorus and related low dissolved oxygen. This waterbody was first listed on the 2008 List in Appendix B – Waters Not Meeting Dissolved Oxygen Standards. (DEC/DOW, BWAM/WQAS, January 2016)

Segment Description
This segment includes the total area of the Agawam Lake.

COMPREHENSIVE MANAGEMENT PLAN
for
LAKE AGAWAM

PREPARED FOR:

Village of Southampton
Village Board of Trustees
23 Main Street
Southampton, NY 11968

PREPARED BY:

Nelson, Pope & Voorhis, LLC
572 Walt Whitman Road
Melville, New York 11747
(631) 427-5665

June 2009

Comprehensive Management Plan for Lake Agawam

Village of Southampton
23 Main Street
Southampton, New York 11968

Village Board of Trustees

Mark Epley, Mayor
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Nancy C McGann, Trustee
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This document was authorized and funded by the Village Board of Trustees of the Village of Southampton, with funding assistance from the Lake Agawam Conservation Association.

June 2009

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1.0 INTRODUCTION

This document is a Comprehensive Management Plan for Lake Agawam, prepared at the request of the Village of Southampton Board of Trustees, by Nelson, Pope & Voorhis (NP&V), environmental and planning consultants to the Village of Southampton. This report provides a framework for improvements to Lake Agawam, developed through public input, review of literature and analysis of issues and opportunities for recommendations, in a framework that outlines actions, responsibilities, costs and schedule to ensure effective implementation.

1.1 Geographic Context

Lake Agawam is a 60 acre body of water located in the Village of Southampton, Suffolk County, New York. The lake is a focal point within the Village, lying centrally within the Village boundaries and extending from the west part of the Village downtown business district, south of Jobs Lane, to the Southampton Bathing Corporation along Gin Lane, south of which is the Atlantic Ocean. The north side of Lake Agawam is bounded by Agawam Park, and the water body is readily visible from Jobs Lane, Pond Lane, and Gin Lane, thus establishing its prominence as an important feature in the Village. A map depicting the lake and its context within the Village is provided as **Figure 1**, and a figure illustrating the lake and key geographic features is provided as **Figure 2**. *[All figures are contained in a separate section at the end of this report.]*

Figure 3 illustrates a 2004 aerial photograph of the surface watershed contributing area to Lake Agawam. The watershed area lies mostly within the Village of Southampton; however, the northern part of the watershed includes portions in the Town of Southampton, specifically the hamlets of North Sea and Tuckahoe.

1.2 Physical Characteristics

Like a number of other lakes in Southampton Village and along the south shore of Southampton Town, Lake Agawam was likely a basin created as a result of glacial meltwater traversing from the moraines and outwash plains to the north, south to the Atlantic Ocean. The lake was likely once connected to the ocean, but littoral drift along the south shore has created an east-west trending barrier beach which separates many similar water bodies from the ocean. Lake Agawam is now a freshwater body, and the only connection to the ocean is an outflow pipe used to relieve lake water levels by controlled release to the ocean through a manually operated valve.

1.3 Historic Context and Cultural Importance

Lake Agawam has played an important role in the history of the Village. The lake has historically been used mostly for recreation including sailing, boating, fishing and ice skating, and has been a source of enjoyment for Village residents since Village incorporation in 1894 and before.

Local resident accounts indicate the construction of new homes on the lake in 1882 (Memories of Southampton by Marion McKeever Thompson contained in Southampton Long Island 1640/1965, 325th Anniversary, 1965). Photographs generously provided by the Southampton Historical Museum and Research Center depict piers north of the Dune Church and the lake being used for small boat sailing. Celebrations and events, and boat landings along the lake were evident in the 1890's through the early 1900's. The lake was used by residents for row and sail boat transportation to go out at night and travel to the village or the beach. Other accounts recall Captain Pyrrhus Concer, who sailed an antique catboat ferry that carried people back and forth from the village to the beach (Treyor, unpublished manuscript, 1932). **Appendix A** of this report provides a photographic account of the importance of Lake Agawam and its historical context within the community; photographs were provided by the Southampton Historical Museum and Research Center located at 17 Meetinghouse Lane, Southampton. Agawam Park is and has been used for summer concerts and recreational enjoyment. Over time, the lake front has been developed with private residences with the exception of those noted stretches along Agawam Park, Pond Lane and Gin Lane. As a result, many Village residents now share their rear yards with the lake shore.

1.4 Identification of Issues of Concern

Water quality problems in Lake Agawam began in 1954, when fish kills provided evidence of depleted oxygen levels. There have been several notable fish kills in recent decades that have been a source of aesthetic and emotional impact, noted as follows:

- *July 20, 1954* - Many carp, white perch and bullheads killed in July by oxygen depletion (0xygen as low as 0.5 ppm at 7' depth)
- *June 1981* - Fish kill; 225,000 fish died.
- *June 15, 2000* - Hundreds of white perch found dead, and firefighters used 4 pumper trucks to aerate the lake.
- *Fall 2005* - Fish kill due to cyanobacteria bloom.

Fish kills are generally preceded by algae blooms which occur as phytoplankton feed on excess nutrients (typically nitrogen and phosphorous) caused by groundwater and/or stormwater influx. The biological decomposition which occurs after an algae bloom uses up oxygen in the water, resulting in hypoxic conditions which cause fish kills. Hypoxic conditions can also occur as a result of long periods of stagnation (lack of mixing) during warm weather, when the water does not readily retain oxygen. Algae blooms have been documented on Lake Agawam and have been a primary cause of oxygen depletion with resulting impacts to the lake. Current concerns which are addressed by this study include:

- Stormwater discharge
- Groundwater outflow
- Pet waste management
- Waterfowl populations
- Fertilization and runoff
- Shoreline and buffer management
- Sediment accumulation and resuspension

Recommendations are provided to address these and other issues to assist in implementing the plan for improvements to Lake Agawam.

1.5 Purpose of Study

The purpose of this study is to address water quality problems of Lake Agawam, in order to improve the environmental health of the lake, and restore its prominence as a recreational and cultural resource. The study will raise the awareness of the lake and problems which confront it, and will provide a basis for actions by various levels of government to implement measures to improve water quality and aesthetics. An important part of the study is to include public input and participation, in order to gain the full benefit of available local knowledge and information, and to provide a platform for consensus building. The Lake Agawam Conservation Association has played a vital role in the dissemination of information, and their interest, input and commitment to improving Lake Agawam is acknowledged and appreciated.

The Comprehensive Management Plan will assemble all available information to date, so that it will form a comprehensive baseline of data and information for use in tracking the implementation of recommendations and lake improvements. It is the purpose of this study to provide an action plan for the lake's future, by identifying projects, preliminary budgets, funding sources, responsibilities and a tentative schedule for improvements.

1.6 Jurisdictional Entities

There are several jurisdictional entities which will play key roles in implementing improvements to Lake Agawam. The Village Board of Trustees of the Village of Southampton has commissioned this study, which is funded by the Village Board in concert with the Lake Agawam Conservation Association. The Village Board is committed to implementing improvements for the health of the lake, and has played a vital role in increasing public education and in taking actions to remedy water quality concerns. To date, the Village Board has been engaged in a number of activities to improve Lake Agawam. These include:

- Prior funding of water quality studies by Southampton College
- Installation of bubblers to add oxygen to the water
- Installation of additional stormwater recharge facilities within the watershed
- Public information and outreach through televised Village Board meetings
- Mailing a brochure on buffers to owners of lakefront property and Village residents

The current Village Board has taken a keen interest in ensuring that a meaningful plan which results in actual improvements to the lake is implemented; this Comprehensive Management Plan for Lake Agawam is the result of that commitment. The Village of Southampton was incorporated from the Town of Southampton in 1894, giving the Village jurisdiction over land use within the corporate boundaries of the Village. The Village's primary role is to ensure that the areas surrounding the lake result in reduced influx of pollutants to the lake. This will occur through public education, direct actions and legislative initiatives for those aspects of Lake Agawam that can be addressed through the jurisdiction of the Village Board.

The Village of Southampton Zoning Board of Appeals (ZBA) has legislative powers to review and approve applications for development and land use within certain setbacks of Village defined wetlands. This authority is granted under Chapter 116 Article IIIA of the Village code, and establishes setbacks of 200 feet for sanitary systems, 150 feet for structures and 125 for landscape limitations. Regulated activity occurring within these setbacks requires a permit from the ZBA. The Board has taken initiatives to reduce fertilizer dependent landscaping and increase and maintain natural buffers adjacent to Lake Agawam and other lakes, ponds and wetlands in the Village, as well as ensuring that development retains and recharges stormwater and conforms to required setbacks to the greatest extent practicable. The ZBA will continue to play a vital role in ensuring that land use within the required setback areas is reasonably controlled through their current authority, and does not cause adverse impacts to Lake Agawam or other Village wetlands.

The Town of Southampton plays a key jurisdictional role with respect to Lake Agawam. The Board of Trustees of the Freeholders and Commonalty of the Town of Southampton, referred to as the Town Trustees, are the stewards of the lake itself. The Town Trustees gain this jurisdiction through the Dongan Patent of 1686, a King's grant through his General Governor Thomas Dongan, which granted the Board of Trustees access, rights and stewardship of common underwater land and marshland within the Town. The Dongan Patent also guarantees every Town Freeholder the right to access and use this land and its resources. The Town Trustees have engaged in lake improvement activities in the past, including: removal of 5,000 pounds of carp in 2004; and, installation of four (4) bubblers at the south end of the lake. The Town Trustees have been actively involved with public outreach associated with this study by addressing the Village Board during public information meetings, and have provided input during the course of it's preparation. The Town Trustees control the parking area for the Southampton Bathing Corporation at the south end of the lake, and are encouraged through this study to explore parking lot improvements to provide more effective public access, aesthetic and environmental qualities and stormwater runoff control.

The Town of Southampton has also prepared an overall Stormwater Management Program (SWMP) which includes the Village of Southampton in accordance with the New York State Department of Environmental Conservation (NYSDEC) Stormwater Phase II regulations. These regulations were established in 2003 (and updated in May 2008), and require that municipalities in proximity to certain water bodies obtain permit coverage under the program for stormwater discharges from Municipal Separate Storm Sewer Systems (MS4s). The Town and the Village as regulated MS4s prepared a SWMP which includes the development of public outreach programs on stormwater impacts, evaluation of best management practices for municipal operations (i.e., road salting, street sweeping, roadway drainage design, etc.), mapping of existing stormwater outfalls and drainage features, and establishing a program for review of construction sites for proper erosion controls and stormwater containment and local implementation of the construction stormwater permits. The SWMP also established a schedule for implementation of the first cycle of the program (March 2003 - March 2008) and required the preparation of annual reports on the implementation of the program to the NYSDEC.

Under the SWMP, the Town retained a stormwater manager that has sought grants and identified potential stormwater improvements in the Village of Southampton. Under the second cycle of the program (May 2008 – January 2013), the Town will be required to update the SWMP to meet the new General Permit (GP-0-08-002) requirements. Conformance to the SWMP will be required on an ongoing basis, and coordination with the Town of Southampton to ensure conformance to the multi-year improvement programs is critical.

Additionally under the NYSDEC Stormwater Phase II Program, General Permits are also required for stormwater discharges from construction activities which involve more than 1-acre of disturbance in areas which may contribute to a receiving water body. The General Permit (identified as SPDES GP-0-08-001), requires the preparation of a Stormwater Pollution Prevention Plan (SWPPP) designed to ensure proper erosion control and stormwater control measures are implemented during the construction period and that the post construction stormwater management system is properly designed and maintained. The SWPPP must be submitted for review by the local municipality prior to filing of a Notice of Intent for coverage under the General Permit prior to commencing the activity and a Notice of Termination when activities are complete with NYSDEC.

NYSDEC typically regulates activities within 100 feet of State designated freshwater wetlands under the statutory authority of Article 24 of the NYSECL and the enabling regulations of 6NYCRR Part 663. This jurisdiction applies to other lakes, ponds and wetlands in the Village; however, for Lake Agawam this authority does not exist and as of 1991, all permitting activities lie with the Village ZBA. **Appendix B** contains a letter from the NYSDEC indicating the freshwater wetland permit authority for Lake Agawam as delegated to the Village of Southampton pursuant to the enabling regulations of 6NYCRR Part 665.

The Suffolk County Department of Health Services (SCDHS) is an agency which regulates subdivision of land and density of land use under Article 6 of the Suffolk County Sanitary Code (SCSC) for the purpose of ensuring that properly designed and installed sanitary systems or sewage treatment are in place for land use projects, and to ensure that excess nitrogen loading does not occur from sanitary waste. SCDHS reviews and acts on subdivision applications and permits to construct sanitary systems. In addition, the SCDHS Board of Review considers sanitary transfer credit applications. This agency is important in ensuring groundwater and surface water protection from sanitary discharge.

2.0 LITERATURE SEARCH

There are a significant number of studies, reports and news items which are important for consideration in the development of the Comprehensive Management Plan for Lake Agawam. This section is intended to identify the programs, studies, reports and references that have been reviewed with respect to water quality, past management efforts and future recommended efforts. **Appendix C** includes a review of both news items and research studies, which are the product of a data mining effort to compile a comprehensive reference list of information related specifically to Lake Agawam. Resources and information were compiled by reviewing Village and office resource files for past studies which may have contained recommendations for Lake Agawam, as well as by meeting with Town of Southampton officials, NYSDEC, SUNY Southampton education/research professionals, and community representatives. The overall review and resulting information have been considered and utilized in development and evaluation of management recommendations. Applicable information from these studies, reports and references are briefly summarized below and identified in **Appendix C**.

The earliest known ecological study on Lake Agawam was a fish inventory performed by the NYS Conservation Department (presently known as NYSDEC) in July 1938, which identified the presence of largemouth bass, rock bass, white perch and carp in the lake **(NYSCD, 1938).** The inventory also noted that carp were overly abundant and the fish were being seined out in an attempt to reduce their population in the lake. A second fish inventory conducted by NYS Conservation Department in July 1954 noted the presence of brown bullhead (catfish) and banded killifish in addition to white perch and carp **(NYSCD, 1954)**. The inventory further reported a hypoxic event followed by a fish kill on July 20th, 1954, just a few days after the fish inventory was conducted. Fish population control measures (poisoning) were slated to be conducted by the Town of Southampton that same fall, but control measures were not performed due to a September hurricane event which flooded Lake Agawam. The 1970 fish inventory noted the common presence of pumpkinseed in addition to white perch, European carp, and an abundant brown bullhead population **(NYSCD, 1970).** The 1982 fish inventory had similar results, but with largemouth bass also being observed **(NYSDEC, 1982)**. A NYSDEC permit was issued in April 2003 to remove carp with the intention of balancing nuisance and recreational game fish (**NYSDEC, 2004**). In July 2003, a NYSDEC fish stocking permit was also issued to increase largemouth bass populations in the lake (**NYSDEC, 2003**). In 2007, the NYSDEC indicated that no fish are presently stocked in Lake Agawam, as it contains naturally reproducing populations of largemouth bass, bluegill, pumpkinseed, white perch, carp and brown bullhead (**NYSDEC, 2007**).

Fish kills within the lake were reported in multiple articles within the New York Times in 1981 and 2000 (**NY Times, 1981a, 1981b; Wright, 2000**). In 1984, a local newspaper reported a wetland improvement project in the southwest corner of the lake which involved the removal of extensive water lily vegetation. Efforts to improve the condition of Lake Agawam sparked up again in 2002 with a discussion on the general needs of the lake published in The Southampton Press (**Wright, 2002**). A proposal for gunderbooms and storm drain filters was put forth in 2002 with Hildreth's Department Store pledging their support.

The SCDHS conducted sediment monitoring within Lake Agawam to assess whether sediment traps installed by the Village had a significant impact on metal concentrations in bottom sediments of the lake (**SCDHS, 2003**). Baseline sediment samples from 2000 were compared with samples collected in 2003 and determined that metal levels were consistent with other freshwater sediments in Suffolk County and posed no threat to public health. No significant volatile organic compounds were detected in the samples. The report concluded that it was unclear whether the sediment traps had made a significant impact on metal concentrations, as it could take more than ten years before sediment contamination levels significantly changed. The SCDHS recommended that the traps be inspected and maintained regularly, but that no further sediment sampling be considered until at least 2008.

The health of Lake Agawam is a public concern and the distasteful green color of overly enriched and polluted Lake Agawam waters even became a topic of discussion on David Patrick Columbia's New York Social Diary (**2006**). In 2007, the installation of Solarbees for aeration of the lake was pushed for by local residents to combat algal problems, and the removal of carp was again considered (**Wright, 2007**). The Town of Southampton indicated their dedication of stormwater fund money to conduct outfall and infrastructure mapping as well as install new catch basins and leaching pools to protect three of the Village's ponds. Also in 2007, Professor Christopher Gobler expressed his concern regarding the bubblers which were installed within Lake Agawam, as their circulation of water could potentially cause more harmful conditions by promoting the growth of toxic cyanobacteria (**Hamptons.com, 2007**). In the Fall 2007 issue of The Village News, the Town's plan for stormwater retention in the Lake Agawam watershed was reported and NP&V was retained, with funding from the Village and the newly formed Lake Agawam Conservation Association, to prepare a comprehensive management plan for the lake.

No water quality monitoring had been known to occur in Lake Agawam until 2003, when Professor Christopher Gobler, Ph.D., of Southampton College (currently State University of New York, Southampton and Stony Brook) began conducting a preliminary assessment of water quality in the lake with weekly sampling conducted from April through August. Measured parameters included dissolved oxygen, temperature, salinity, chlorophyll *a*, nutrients, water clarity, coliform bacteria, cyanobacteria and bottom sediment sampling. Preliminary results indicated extremely high levels of nutrients and bacteria were entering the lake from storm drains (**Gobler, 2003**). The final report, released in May 2004, concluded the lake was a biologically stressed, hypereutrophic ecosystem which experienced high algal growth, varying levels of bacteria and low levels of oxygen (hypoxia) along the lake bottom in summer months.

Data from 2003 also indicated that harmful toxins produced by cyanobacteria were present in Lake Agawam, with the highest levels being observed from late July through October (**Gobler, 2004**). Cyanobacteria are a common family of blue green algae which are typically associated with over-enriched eutrophic and poorly flushed waters. There are several potentially toxic sub-species of these algae capable of producing harmful cyanotoxins, such as hepatoxins (e.g. microcystin) which target the liver. The abundance of these toxins in aquatic ecosystems has serious implications for wildlife and human health, as multitudes of sicknesses and even deaths have been associated with the consumption of contaminated water. Nutrient loading combined with warm temperatures is known to increase algal blooms in summer months, and is therefore also thought to increase the potential growth of harmful varieties of cyanobacteria in poorly

flushed waters (**Gobler, 2007**). A warning of harmful cyanobacteria algal blooms was posted at Lake Agawam by the Board of Trustees in August 2004 to inform the public of these hazards.

Additional sampling in 2004 was aimed at identifying the drivers of cyanobacterial growth (**Gobler et al., 2007**) and the dominance of microcystin-producing *Microcystis sp.* blooms during summer were linked to nutrient saturated conditions and suppression of mesozooplankton grazing. Bloom decline was associated with nutrient limitation, which reduced growth rates and toxin production by *Microcystis* and in turn may have permitted zooplankton to graze cells (**Gobler et al., 2007**). Part of a larger study among New York and the Lower Great Lakes Ecosystems finds that microcystin toxins are the most common cyanobacterial toxin encountered in the region, with nearly 60% of samples containing detectable levels of microcystins (**Boyer, 2007**).

A four year study of 20 lakes throughout Suffolk County was undertaken by Professor Gobler to assess the presence of toxic cyanobacteria blooms in recreational areas and the factors which are associated with promoting these blooms (**Gobler, 2007**). While the majority of the lakes studied had levels below the threshold considered to be a low recreational risk by the World Health Organization (WHO), Lake Agawam was identified as a lake which posed moderate-to-high risks to human health for recreation at various times during the study. The guidelines established for municipalities by the WHO for microcystin concentrations in natural water bodies are 1 μL^{-1} for drinking water supplies, 2 to 4 μL^{-1} for low recreational risk, and 20 μL^{-1} for moderate recreational risk. Water quality samples obtained from 2005 revealed an average annual microcystin concentration of 5.30 ±1.19 μL^{-1} in Lake Agawam, with concentrations ranging from 0.567 to 11.8 μL^{-1} over the summer months. High risk concentrations are indicated to be cyanobacteria mats which can form near the shore, and are to be avoided. A warning was posted at Lake Agawam in August 2004 to notify the public of precautions to take during harmful cyanobacteria algal bloom events to reduce the risk of illness.

Photo: Chris Gobler, MSRC

As toxic blue green algae blooms are associated with stagnant, eutrophic waters, the following two approaches should be tested as methods for reducing the occurrence and risk of toxic cyanobacteria blooms in afflicted lake systems (**Gobler, 2007**):

1. Install water circulators to push surface dwelling cyanobacteria to the bottom of the lake, potentially preventing bloom occurrence; and
2. Target the reduction of primary sources of nutrients into Lake Ronkonkoma in conjunction with monitoring to assess the relation of nutrient loads on algal blooms.

As part of an ongoing study (**Davis & Gobler, 2007**), additional water quality sampling was conducted weekly to biweekly from May through November 2007 in Lake Agawam by Professor Gobler's laboratory (**Harke et al., 2008**). In addition to sampling, an attempt was made to assess the relative sources and quantities of nutrients flowing into Lake Agawam using data collected from June through October 2007 (**Harke et al., 2008**). Nutrient sources for the lake were determined to be a large storm drain at the northwest corner of the lake, benthic fluxes of nutrients from bottom sediment, groundwater, atmospheric deposition and surface runoff from adjacent land uses. Among these sources, groundwater, stormwater and benthic sediments were found to be the greatest contributors of pollutants to the lake. Although groundwater appears to be a large contributor of nutrients to the lake, remediation of groundwater provides a challenge both from the standpoint of potential sewering and maintenance/upgrade of existing sanitary systems. Control of additional density increases within the watershed should be carefully monitored and limited where possible. Given the challenge of groundwater remediation, **Harke et al.** suggest that remediation tactics to reduce the nutrient loads may best be focused on sediment dredging and diversion of stormwater runoff.

3.0 INVENTORY OF WATERSHED/LAND USE CONDITIONS

The following section describes the current conditions of the Lake Agawam Watershed and land use within the watershed.

3.1 Watershed Area

The Lake Agawam surface watershed area encompasses approximately 1,145 acres within the Village of Southampton, as well as portions in the Town of Southampton, specifically the hamlets of North Sea and Tuckahoe (**Figure 1**). The northernmost point of the watershed is located just south of the intersection of Majors Path and Henry Avenue. The watershed is more particularly described by the following:

> Beginning at the intersection of Ox Pasture Road and First Neck Road, heading southwest approximately 150 feet, heading south along the west side of First Neck Road approximately 1,000 feet, before heading southeast approximately 800 feet to the east side of First Neck Road, before heading southwest approximately 300 feet, before heading southeast approximately 1,400 feet to Dune Road, before heading east approximately 880 feet, before heading south approximately 150 feet, before heading northeast approximately 700 feet to the east side of Atlantic Avenue, before heading north approximately 200 feet along the east side of Atlantic Avenue, before heading northeast approximately 850 feet along the beach line, before heading north approximately 720 feet south of Gin Lane, before heading northwest approximately 770 feet to the west side of South Main Street, before heading northeast approximately 690 feet to south of Foster Crossing, before heading northwest approximately 780 feet to north of Foster Crossing, before heading northeast approximately 3,100 feet to just south of Hampton Road, before heading northwest approximately 2,500 feet to Pulaski Road, before heading north approximately 630 feet to Powell Road, before heading northwest approximately 1,500 feet to County Road 39, before heading northwest approximately 1,000 feet to east of North Main Street, before heading west approximately 1,200 feet to west of North Main Street, before heading northwest approximately 1,200 feet, before heading northwest approximately 1,400 feet to just east of Majors Path, before heading southwest approximately 1,000 feet just south of Henry Road and east of County Road 38, before heading south approximately 1,800 feet to north of State Route 27, before heading southwest approximately 260 feet, before heading southeast approximately 400 feet, before heading south approximately 1,700 feet to Windward Way, before heading southeast approximately 1,300 feet to just north of White Street, before heading south approximately 2,100 feet to Montauk Highway between Breese Lane and Vahradian Lane, before heading southeast approximately 750 feet to west of First Neck Lane, before heading south approximately 750 feet, before heading southeast approximately 450 feet, before heading south approximately 700 feet to just north of Ox Pasture Road, then bearing southwest approximately 250 feet to the commencing position at the intersection of Ox Pasture Road and First Neck Road.

3.2 Topography

Topography within the watershed is illustrated in **Figure 4** with a Digital Elevation Model obtained from USGS. As illustrated, topography generally decreases from north to south. Within the northern portion of the watershed, areas of higher relief exist closer to the boundaries of the watershed while the center of the watershed has a lower relief. Topography within the remainder of the watershed shows the general downslope trend of the land surface toward the lake.

3.3 Soils

Soils within the watershed can be generally described as soils of the Bridgehampton-Haven association, which are deep, nearly level to strongly sloping, well drained to moderately well drained, moderately coarse textured and medium-textured soils found on moraines. Specific soil types within the watershed are illustrated in **Figure 5**. Bridgehampton soils (BgA, Bm) and Haven soils (HaA, HaB, He) are predominant within the watershed, and are characterized by the larger soil association described above.

Areas within the center of the watershed generally display the highest soil diversity. Riverhead soils (RdA, RdB) and Plymouth-Carver soils (PlB, PlC) are the predominant soils within the center of the watershed. Riverhead soils are generally deep, well-drained, moderately coarse textured soils. Plymouth-Carver soils are generally deep, excessively drained, coarse-textured soils. Other soils found within the watershed consist of Berryland mucky sand (Bd), Cut and Fill Land, gently sloping (CuB), Dune Land (Du), Fill Land, sandy (Fs), Urban Land (Ur), and Walpole sandy loam (Wd).

3.4 Subdrainage Areas

In total, fourteen subdrainage areas were identified within the Lake Agawam watershed, and are illustrated in **Figure 6**. The subdrainage areas were delineated using Digital Elevation Model data from USGS and the Spatial Analyst extension in ArcView. It should be noted that these areas are based upon topography only. Generally, the larger drainage areas are located within the northern portion of the watershed, while the smaller areas are located within the southern portion of the watershed.

3.5 Hurricane Hazard Areas

Information regarding areas within the watershed that would be affected by hurricanes was obtained from FEMA. Sea, Lake, and Overland Surges from Hurricanes (SLOSH) data, which determines which areas will be most impacted by varying categories of hurricanes, is illustrated in **Figure 7**.

Generally, areas within approximately 100 feet of the lake will be affected by Category 1 and greater hurricanes. Areas within approximately 200 feet of the lake will be affected by Category 2 hurricanes and greater. Areas which are affected by Category 3 hurricanes and greater vary in distance from the lake, and seem to be dependent upon topography. Areas which are affected by Category 5 hurricanes and greater also vary surrounding the lake, but extend as far north as just south of the intersection of White Street and Windmill Lane.

3.6 Groundwater

Groundwater elevation is illustrated in **Figure 8** and ranges from 0 to 3.8 feet above sea level (asl). Groundwater elevation generally increases from south to north. Depth to groundwater within the watershed is illustrated in **Figure 9.** The depth to groundwater ranges from 0 feet asl in the southern portion of the watershed to 36 feet asl in the northernmost portion of the watershed. Generally, depth to groundwater is less in the center of the watershed, while areas towards the boundaries of the watershed and in the northern portion have a greater depth to groundwater.

3.7 Land Use

Land use within the watershed area is comprised of eleven categories. The most prevalent land use within the watershed consists of Residential use, which encompasses approximately 45.42 percent of the watershed. Roadway use and Commercial use follow Residential use in terms of magnitude, which encompass 12.31 percent and 12.11 percent of the watershed, respectively. Agricultural, Community Service, Vacant uses and the lake each encompass approximately 7 percent of the watershed. Finally, Public Service, Recreation and Entertainment, Wild, Conservation and Public Parks, and Unknown uses each encompass less than 2 percent of the watershed. **Table 1** below details the acreages and percents of land use for each category.

TABLE 1
LAND USES WITHIN THE LAKE AGAWAM WATERSHED

Land Use Type	Area (Acres)	Percent
Agricultural	80.51	7.03
Commercial	138.67	12.11
Community Service	89.65	7.83
Lake	64.76	5.66
Public Service	23.75	2.07
Recreational & Entertainment	5.93	0.52
Residential	520.08	45.42
Road	140.96	12.31
Vacant	74.84	6.53
Wild, Forested, Conservation Lands & Public Parks	5.42	0.47
Unknown	0.60	0.05
Total	**1,145.16**	**100.00**

3.8 Zoning

Figure 12 illustrates zoning within the watershed. Fifteen zoning categories are represented within the watershed boundary, and consist of residential zoning, commercial zoning, and industrial zoning. The area within the watershed is dominated by residential zoning. Zoning surrounding the lake itself is entirely residential, with the majority of the zoning consisting of R-120. Generally, areas near the boundary of the watershed are residentially zoned. Commercial zoning primarily occurs within the interior of the watershed, and consists of OD – Office District, VB – Village Business District, and HB – Highway Business District. Two areas of industrial zoning occur within the watershed, which consist of LI – Light Industrial and LI40 – Light Industrial (40,000 sq. ft. lots). These areas are located within the northern portion of the watershed and both are surrounded by business and commercial zoning.

3.9 Publicly Owned Lands

Publicly owned lands within the watershed consist of both Town-owned and Village-owned lands, which are illustrated in **Figure 13**. Only a small portion of the land within the watershed is publicly owned. The Town owns two parcels used for recreation in the northern portion of the watershed, one vacant parcel along State Route 27A, one parcel used for institutional purposes near the eastern boundary of the watershed, on low density residential use adjacent to the northern end of the lake, and Lake Agawam itself. Village-owned lands include three commercial parcels to the north of the lake, several institutional parcels to the north of the lake, several vacant parcels north of the lake, and a park adjacent to the north end of the lake.

3.10 Stormwater Inventory

Stormwater infrastructure within the watershed was inventoried in May 2008 by Safi Sammi, a Village intern. NP&V coordinated the data sheets and gathering of information completed during the internship. The results of the inventory are depicted in **Figure 10**, which illustrates the locations of each structure as well as the structure type. The survey included observations on condition and maintenance needs associated with observed structures.

In total, 140 catch basins were identified within the watershed. Three areas in particular have large concentrations of catch basins. The first area occurs just north of the lake along State Route 27A. The second area occurs on North Main Street between Layton Avenue and the Long Island Railroad. The final concentration of catch basins occurs along North Sea Road between Miller Road and Valorie Road. It is expected that the first grouping of catch basins drains to the Lake, while the second and third grouping provide for direct recharge. In total, 36 catch basins are in need of maintenance or repair.

Two areas of significant flooding were identified during the stormwater inventory. The first area is located at the southern boundary of the watershed, while the second area is located at the intersection of Cameron Street and South Main Street. Two areas of overland flow were also identified within the watershed, both of which are located on the north side of Dune Road at the bulkhead at the southern end of the Lake.

4.0 Inventory of Lake Conditions

The following section describes both historical and current conditions of the lake.

4.1 Shoreline Vegetation Inventory

An inventory of the vegetation within the lake and within a 100 foot buffer, or riparian area, surrounding the lake was performed by NP&V in November of 2007. Five vegetation categories were identified within the lake and its riparian area, which are illustrated in **Figure 14**. Areas of lawn predominantly surround the lake, with the exception of the pavement which dominates the southernmost buffer of the lake. In total, 17.1 acres (67.2 percent) of lawn is located within the 100 foot riparian area surrounding the Lake. Common reed (*Phragmites australis)*, is an invasive plant which currently encompasses approximately 0.9 acres (3.4 percent) of the riparian area along the lake's edges. Comparatively, native vegetation catalogued along the shoreline made up approximately 1.4 percent of the buffer area and included native assemblages of wetland plants, such as sedges, rushes, willow and sweet pepperbush. Other vegetation totaled 12.3 percent of the riparian buffer and included wooded areas as well as areas of lower shoreline vegetation where native species were highly mixed with invasive species, such as porcelainberry. Additionally, a small area of denuded shoreline on the west side of the lake, where all vegetation had been physically removed, totaled approximately 0.1 acres (0.3 percent of the buffer area). Within the lake, aquatic water lily vegetation was only observed in two areas of the lake during the November inventory, along the western shoreline and along the southwestern corner of the lake.

TABLE 2
LAND COVER WITHIN 100 FEET OF LAKE AGAWAM

Land Cover Type	Area (Acres)	Percent
Lawn	17.1	67.2
Pavement	3.7	14.6
Other Vegetation	3.1	12.3
Phragmites	0.9	3.4
Native Vegetation	0.4	1.4
Buildings	0.2	0.8
Denuded	0.1	0.3
Total	**25.4**	**100.00**

4.2 Bathymetry and In-Lake Features

Bathymetry of the lake is depicted in **Figure 14** and was obtained from soundings performed by NP&V in November 2007. Depth within the lake ranges from 0 to 10 feet. Gradual sloping along the lake bottom is greatest near the shoreline and the bathymetry remains more constant near the center of the lake.

Fountains and bubblers which had both been installed within the lake were also inventoried by NP&V in November 2007 (**Figure 14**). GPS coordinates were obtained for locating the bubblers. Three fountains were identified within the northern portion of the lake, and are maintained by the Village for aeration of the lake, as well as for aesthetic purposes. Sixteen bubblers were located within the lake during the December survey. Six of the bubblers were grouped in the northern portion of the lake, three within the middle of the Lake, and seven in the southern end of the lake.

4.3 Inlets and Outlets

Stormwater inputs and outfalls within the lake are illustrated in **Figures 10** and **14**. Inlets generally result from direct flow into the lake from the surrounding watershed. Holes located in the bulkhead along the southern shoreline of the lake also contribute runoff directly to the lake. Four outfalls were identified by NP&V in November 2007 within the lake. Three of these are stormwater outfalls are located on the northern shoreline of the lake. The fourth pipe structure is an outlet located at the southeast corner of the lake and solely serves as an overflow conveyance that can be manually opened to discharge lake water to the Atlantic Ocean when water levels within the lake become too high. The main stormwater outfalls are considered a single storm drain at the northwest corner of the lake, which contains two outflow openings that both release water during rain fall events. This structure is a large pipe which extends up Windmill Lane to North Sea Road and collects runoff within the upper and lower reaches of the watershed, for discharge to the lake. The exact alignment and limit of this conveyance system, as well as connected catch basins is not clear at this time. Water quality sampling was conducted at these outflow pipes in 2007 by Professor Gobler's laboratory group (**Harke et. al., 2008**) and is further discussed in **Section 6.1**.

4.4 Waterfowl

Canada geese have been observed both in the lake and in the area surrounding the lake. Feces as a result of Canada geese are a known pollutant to freshwater systems, as the feces result in additional nitrogen inputs to the lake. Excess nutrients such as nitrogen within freshwater systems can cause harmful algal blooms (HAB's) which are a known problem in Lake Agawam (**Gobler 2007**).

5.0 PUBLIC PARTICIPATION

5.1 Public Input

The Southampton Village Board of Trustees requested a proposal from NP&V to prepare the Comprehensive Management Plan for Lake Agawam. NP&V, as environmental planning consultant to the Village, had been involved with the study of the lake through meetings with the Trustees and community members, and reports to the Board at public board meetings for several years prior to this study. During the course of discussions, owners of property in the Village interested in Lake Agawam formed the Lake Agawam Conservation Association (LACA) which includes interested stakeholders with lakefront property and members of the Southampton Bathing Corporation. On the date that the Village Board accepted the proposal for preparation of this plan (September 12, 2007), the Lake Agawam Conservation Association had been involved and was sufficiently organized and committed to the project to pledge monetary assistance for the study. The study commenced and the LACA has been involved since that time.

The LACA held a meeting in New York City on November 15, 2007, at which Mayor Mark Epley presented the resident group with information and an update on the study. The objectives and status of the study were discussed.

A presentation on the progress of the study to date was provided to the Board of Trustees at a public meeting on April 10, 2008. A PowerPoint Presentation was given by Charles J. Voorhis, CEP, AICP of NP&V, at which time, progress to date and preliminary recommendations were shared with the public. Included in the presentation was the following information:

- a summary of the Lake Agawam watershed;
- mapping including sub-drainage areas, depth to groundwater, hurricane inundation zones, aerial photography and land use;
- the results of an inventory of lake conditions (shoreline conditions, lake bathymetry, installed bubbler systems, inventoried lake vegetation, etc.); and
- Preliminary recommendations for the watershed area, the riparian buffer areas, and lake management recommendations for the water body itself.

The presentation was augmented with information provided by Dr. Chris Gobler, Ph.D., professor at the State University of New York (SUNY), Marine Science Research Center (MSRC) (Stony Brook and Southampton Campuses), who has been involved with graduate studies in the study of water quality in Lake Agawam since 2003. Dr. Gobler was in the process of completing an updated report on recent water quality and pollution source findings for the lake and provided a supplemental PowerPoint Presentation of their findings to date. Fred Havemeyer, Trustee of the Town of Southampton, attended and spoke at the meeting to provide input from the perspective of the Town Trustees. The presentation was followed by a question and answer period, and the video-recorded event was later televised on Channel 18 for further public information.

On May 2, 2008, Dr. Gobler and the MSRC hosted a Marine Science Symposium at the Southampton College Campus of SUNY at which he presented a summary of findings from the Lake Agawam water quality research. Representatives of NP&V were in attendance at this symposium.

The Lake Agawam Conservation Association held a member meeting on July 12, 2008, to update the membership on the status of the study and to gain further input to provide to the Village Board of Trustees and the consultant prior to finalization of the report. This input was incorporated to ensure participation of interested stakeholders.

The Village Board held a public meeting on July 10, 2008, at which NP&V presented the Draft Comprehensive Management for Lake Agawam for further public input and discussion. Input received during questions and answers at the meeting were further incorporated into the final report, as necessary. Similar to the April meeting, this event was televised for public information purposes.

5.2 Public Outreach

As a result of meetings conducted between NP&V and the Lake Agawam Conservation Association, a "Buffer Zone Kit" was prepared to educate land owners surrounding the lake. The kit includes a pamphlet created by NP&V, "An Owner's Guide to Lake Agawam," which contains basic information regarding the water quality of the lake, and what residents can do to improve the quality of the lake. Suggestions include native plantings within the 100 foot buffer zone surrounding the lake, reduction of lawn fertilization, and maintenance of septic systems. In addition to the pamphlet, a sign to delineate a "No Mow Zone" area on individual properties was designed by the LACA and is also included so that landscapers would not mow within the buffer zone. 'An Owner's Guide to Lake Agawam' and 'Buffer Zone' signs, which were distributed to homeowners around the lake by Lake Agawam Conservation Association in June 2008. Information and status updates regarding the lake will continue to be provided to residents surrounding the lake.

6.0 ANALYSIS OF CONDITIONS

Two main issues were identified regarding the conditions of the lake. Problems regarding both surface water quality and groundwater quality have been identified within Lake Agawam and its watershed, and are further summarized below.

6.1 Surface Water Quality

Surface water quality has been studied extensively by Christopher J. Gobler, Ph.D. since 2003. His studies resulted in the identification of harmful cyanobacteria within the lake. Cyanobacteria are a common family of blue green algae which are typically associated with over-enriched, eutrophic and poorly flushed waters. There are several potentially toxic sub-species of these algae capable of producing harmful cyanotoxins, such as hepatoxins (e.g. microcystin) which target the liver, as well as neurotoxins (e.g. anatoxin-a) which target the neurological system. The abundance of these toxins in aquatic ecosystems has serious implications for wildlife and human health, as multitudes of sicknesses and even deaths have been associated with the consumption of contaminated water. Nutrient loading combined with warm temperatures is known to increase algal blooms in summer months, and is therefore also thought to increase the potential growth of harmful varieties of cyanobacteria in poorly flushed waters (**Gobler, 2007**). Dr. Gobler's water quality findings illustrate Lake Agawam exhibits levels of chlorophyll and nutrients (nitrogen and phosphorus) that deem it a hypereutrophic water body by EPA guidelines.

Sampling of Lake Agawam in 2004 was aimed at identifying the drivers of cyanobacterial growth (**Gobler et al., 2007**) and the dominance of microcystin-producing *Microcystis sp.* blooms during summer were linked to nutrient saturated conditions and suppression of mesozooplankton grazing. Bloom decline was associated with nutrient limitation, which reduced growth rates and toxin production by *Microcystis* and in turn may have permitted zooplankton to graze algal cells (**Gobler et al., 2007**).

A four year study of 20 lakes throughout Suffolk County was undertaken by Professor Gobler to assess the presence of toxic cyanobacteria blooms in recreational areas and the factors which are associated with promoting these blooms (**Gobler, 2007**). While the majority of the lakes studies had levels below the threshold considered to be a low recreational risk by the World Health Organization (WHO), Lake Agawam was identified as a lake which posed moderate-to-high risks to human health for recreation at various times during the study. The guidelines established for municipalities by the WHO for microcystin concentrations in natural water bodies are 1 μL^{-1} for drinking water supplies, 2 to 4 μL^{-1} for low recreational risk, and 20 μL^{-1} for moderate recreational risk. Water quality samples obtained from 2005 revealed an average annual microcystin concentration of 5.30 $\pm$1.19 μL^{-1} in Lake Agawam, with concentrations ranging from 0.567 to 11.8 μL^{-1} over the summer months. High risk concentrations are indicated to be cyanobacteria mats which can form near the shore, and are to be avoided. A warning was posted at Lake Agawam in August 2004 to notify the public of precautions to take during harmful cyanobacteria algal bloom events to reduce the risk of illness.

As part of an ongoing study (**Davis & Gobler, 2007**), additional water quality sampling was conducted weekly to biweekly from May through November 2007 in Lake Agawam by Professor Gobler's laboratory (**Harke et al., 2008**). In addition to sampling, an attempt was made to assess the relative sources and quantities of nutrients flowing into Lake Agawam using data collected from June through October 2007 (**Harke et al., 2008**). Nutrient sources for the lake were determined to be a large storm drain at the northwest corner of the lake, benthic fluxes of nutrients from bottom sediment, groundwater, atmospheric deposition and surface runoff from adjacent land uses. Among these sources, groundwater, stormwater and benthic sediments were found to be the greatest contributors of pollutants to the lake.

Lake Agawam is not currently listed as a priority waterbody on the Final New York State 2006 Section 303(d) List of Impaired Waters Requiring a TMDL/Other Strategy[1]. The 303(d) List identifies those waters that do not support appropriate uses and that may require development of a Total Maximum Daily Load (TMDL) or other restoration strategy to attain quality standards. At this time, development of the 2008 Section 303(d) List is in progress and the NYSDEC has indicated they will be conducting a reassessment of water quality conditions at Lake Agawam during the summer of 2008; until the Final 2008 list is approved by the USEPA, the 2006 Section 303(d) List is considered to be the most current List of Impaired/TMDL Waters.

The analysis that supports the 303(d) List is provided in a NYSDEC report entitled the Waterbody Inventory/Priority Waterbodies List (PWL) Report. The most recent NYSDEC Waterbody Inventory/Priority Waterbodies List Report for the Long Island region was published in April of 2002 and includes inventory and assessments for each waterbody in the area.

A March 2001 waterbody assessment prepared for Lake Agawam lists the lake as having minor impacts. The assessment identifies dissolved oxygen/oxygen demand and nutrients as the pollutants impacting lake water quality and which are suspected of stressing aquatic life support (see **Appendix D**). Urban runoff is listed as the suspected source of pollutants.

6.2 Groundwater Quality

As previously noted, groundwater quality is one of the greatest contributors of pollutants to the lake (**Harke et al. 2008**). Water quality data from two USGS monitoring wells (S-8836 and S-48441) within the watershed was consulted in order to gather information regarding groundwater quality. It should be noted that data from these wells is currently very limited. Even though well S-52652 is located in close proximity to the lake (approximately 440 feet to the north of the lake), only water level data was recorded from this well. Well S-8836 has 5 water quality samples which were collected in the 1970s. Results of analysis from these samples found low chlorides (no saltwater intrusion) and small but detectable nitrates (even for lab procedures in the 1970's which could not detect low concentrations). Nitrate values were found at concentrations in the range of 5.4–14 mg/L, where 10 mg/L is the drinking water standard, and pH values were found to be 5.3 to 6.1.

[1] Section 303(d) refers to Section 303(d) of the Federal Clean Water Act which requires states to periodically assess and report on the quality of waters in their state.

Well S-48441 has 24 water quality samples which were collected between 1973 and 1998. Results from analysis of these samples indicates medium to low chlorides, which tended to decrease with time. Sulfate results mirror the same trend as the chlorides. It should be noted that sulfate is not an EPA listed contaminant, but is a secondary contaminant (http://www.epa.gov/safewater/contaminants/unregulated/sulfate.html). The EPA considers the Maximum Contaminant Level (MCL) for sulfates to be 250 mg/L and the highest measured value was 87.5 mg/L from the 24 water quality samples. Samples analyzed from 1981-1998 were analyzed for Volatile Organic Carbon's (VOC's) which were not found. The highest nitrate value recorded from these samples was 32 mg/l (filtered), and was found on August 28, 1974. Samples measured after 1976 averaged much lower concentrations than the values measured earlier. All values recorded during 1977 and later were collected and analyzed by SCDHS; values from prior to 1977 were collected and analyzed by USGS. As previously stated, the drinking water standard for nitrate is 10 mg/L. Typical pH values recorded ranged from 5.6 to 7.0, with a mode of 6.1. It is interesting to note that the sample analyzed in 1973 found 53 pCi/L (picoCuries per liter), which is greatly above the 5 pCi/L MCL listed in the EPA's drinking water contaminant list (http://www.epa.gov/safewater/contaminants/index.html).

7.0 RECOMMENDATIONS

The following section provides recommendations for improving water quality within the lake and within the watershed in consideration of the extensive body of information gathered for this report. Recommendations are divided into sections including: Shoreline Improvements which address primarily Riparian (buffer) areas; Stormwater Improvements which address primarily watershed area improvements; Lake Aeration and Water Quality Improvements which primarily address lake management; and Water Quality Monitoring and research. A major emphasis of this study is education of residents, stakeholders and visitors that enjoy the lake and have a deep desire to improve the aesthetic and ecological characteristics of Lake Agawam. Recommendations are further examined in **Section 8.0**, which provides an action plan identifying responsible entities, project timing (short term and long term), potential funding and preliminary costs to implement the recommendations of this report.

7.1 Shoreline Improvements

Riparian (Buffer) Area Recommendations

- Control waterfowl populations through management practices.

    1. Discourage lawns fronting lake shore areas.
    2. Discourage feeding of waterfowl populations.

- Encourage homeowners to remove fertilizer dependent vegetation and establish native planting areas.

    1. Naturalized meadow, woodland and shrub planting areas intercept and filter stormwater and reduce fertilizer/nutrient input.
    2. Village laws encourage natural plantings within 125 feet of wetlands through ZBA issued wetland permits.
    3. Place shade trees near shore that will provide soil stability, biological uptake and shading of surface water to maintain lower water temperatures allowing higher dissolved oxygen levels.

- Remove invasive vegetation in favor of natural habitat areas under controlled re-vegetation restoration programs.

- Examine municipally owned lakefront areas for improvement opportunities (control direct stormwater overflow from paved surfaces in close proximity to the lake; establish lake front walking trails in areas where public access can be provided; provide public education and interpretive signage in appropriate lakefront areas).

    1. Consider installation of a drainage swale and subsurface detention along Pond Lane in connection with pedestrian walks, landscape improvements and sitting areas for lake enjoyment.
    2. Consider potential for invasive species removal, stormwater control and lake front walking trails for Gin Lane area at south and southeast part of the lake.

3. Work cooperatively with the Town Trustees to improve the Gin Lane and Bathing Corporation parking area by reducing pavement, installing a "rain garden" along the shoreline, installing a low sill bulkhead along the southern shoreline (to retain parking capacity), subsurface drainage improvement, pedestrian circulation/traffic calming and providing aesthetic improvements through landscaping (see **Figure 14** for example).

- Provide educational opportunities in form of pamphlets, newsletters, web site information and other media tools through the Village of Southampton and the Lake Agawam Conservation Association (see **Appendix E**).

- Examine potential for removal of existing hardened shorelines; discourage expansion of new hardened shoreline structures.

7.2 Stormwater and Watershed Improvements

Watershed Area Recommendations

- Intercept and recharge stormwater runoff in higher elevations of the watershed.

1. Install more street catch basins such as is being done on Hill Street.
2. Examine Village/Town owned land opportunities for recharge facilities such as Windmill Lane.
3. Coordinate with Town (Walter Bundy) on Grants and stormwater Phase II implementation.
4. Consider maximum stormwater retention and on-site recharge for any site plans and subdivisions in the watershed area; ensure compliance with SPDES GP 0-08-001.
5. Review Village parking areas for potential subsurface stormwater detention installation in connection with parking lot improvement plans.

- Continue to maintain catch basins and leaching pools on a regular basis by removing accumulated sediment.

- Continue to maintain roads on a regular basis through street sweeping to reduce potential for sediments to accumulate and/or enter the lake.

- Explore potential for sewering in areas of the watershed with commercial downtown development and shallow depth to groundwater.

- Encourage homeowners to regularly inspect and maintain sanitary systems in high groundwater areas and elsewhere in the watershed.

- Encourage and enforce when appropriate, upgrade of malfunctioning sanitary systems.

- Ensure appropriate land use density within the Village and the watershed area for Lake Agawam, through coordination with SCDHS on the implementation of Article 6 of the SCSC; sanitary credit transfers to the Lake Agawam watershed area should be reviewed and limited based on nitrogen load.

- Encourage and facilitate "pick up after your pet" practices

    1. Educational pamphlets, Village newsletter and public information media.
    2. Install dispensers in Village parks and key areas for convenience.

7.3 Lake Aeration and Water Quality Improvements

Lake Management Recommendations

- Provide equipment to improve dissolved oxygen levels in the lake.

    1. Maintain and install forced air bubblers to further the coverage already achieved by this cooperative Town/Village effort.
    2. Consider discontinuing fountains in favor of bubblers, particularly during algae blooms.

- Improve fish populations in the lake favoring native fish assemblages.

    1. Stock bass, perch and bluegill fish assemblages, if necessary. [*Naturally reproducing populations of largemouth bass, bluegill, pumpkinseed, white perch, carp and brown bullhead currently exist in lake (**NYSDEC, 2007**)].*
    2. Remove or reduce carp populations in the lake, as necessary, ensuring that harvested fish are managed in a manner that considers public health and safety.

- Maintain, but don't expand areas of aquatic vegetation on the west side of the lake; such vegetation provides fish habitat, food source and shading.

- Examine wetland biological treatment options for north end of lake near stormwater outfall

- Examine potential for removal of organically enriched surface sediments from the lake bottom in order to reduce the release of nutrients into the water column.

7.4 Water Quality Monitoring and Research

- Continue water quality monitoring to determine effectiveness of implementation of management recommendations and track trends in water quality.

- Continue monitoring for cyanotoxins levels and associated ecological-based studies (e.g. chemical, physical and biological factors) to further elucidate the factors which promote the presence of these toxins.

- Implement an adaptive management approach for Lake Agawam as the understanding of cyanotoxins is expanded, and strive to improve water quality while minimizing health risks to humans and animals.

8.0 ACTION PLAN FOR LAKE IMPROVEMENTS

The following implementation matrix (**Table 3**) is designed to provide a framework for improvements to Lake Agawam through implementation of an effective Comprehensive Management Plan. This strategy essentially consists of a schedule of specific activities, capital projects and policy or legislative actions that need to be enacted and implemented in order to ensure adequate management of the watershed in accordance with the recommendations set forth in **Section 7.0**.

Lake Agawam lies within multiple governmental jurisdictions, and each agency is responsible for a different type of activity that affects the watershed or directly affects the water body. This Management Plan is designed to facilitate inter-governmental coordination and cooperation among these agencies so as to ensure that all actions work to the benefit of the watershed. The purpose of this section is to identify the sphere of jurisdiction exercised by each relevant agency, as well as to identify the specific actions that each agency can take to help implement the recommendations set forth in **Section 7.0**.

The matrix is divided into the same four sub-sections as the recommendations. *Section 8.1* of the action plan matrix identifies Shoreline Improvements which should be implemented by the parties responsible for the lands surrounding the shoreline. These parties consist of Town, Village, SCDHS and surrounding residents. Educational materials have already been provided to residents regarding appropriate plantings within the buffer zone. As the Town is responsible for the roadway along the southern shoreline of Lake Agawam, it will be up to the Town to improve the parking area and implement the recommended low sill bulkhead. This Plan provides concepts and recommendations to assist the Town in this important endeavor. Permits from the Town Trustees and the Village Zoning Board of Appeals will be required for the installation of the shoreline modifications on the south side of the lake.

Section 8.2 of the matrix identifies an action plan for Stormwater and Watershed Improvements. Stormwater improvements are already underway, with production of 'An Owner's Guide to Lake Agawam' and 'Buffer Zone' signs, which were distributed to homeowners around the lake by Lake Agawam Conservation Association in June 2008. The Village of Southampton is also applying for a Transportation Enhancement Program Grant with the goal of improving stormwater infrastructure at two key locations within the Lake Agawam watershed (Windmill Lane and the Lake Agawam parking lot).

Section 8.3 focuses on Lake Aeration and Water Quality Improvements, encompassing sediment, vegetation and fish management strategies for improved water quality and aquatic habitat, including reducing the occurrence of harmful algal blooms. A warning sign for harmful cyanobacteria algal blooms was posted at Lake Agawam by the Board of Trustees in August 2004. This sign should remain for as long as problem persists.

Section 8.4 outlines water quality monitoring and research strategies which should be aggressively pursued until such a time when the water quality of the lake has been shown to be restored to pristine levels. After such a time, monitoring of the lake should be maintained to ensure high water quality. Monitoring and research should be continued by Dr. Chris Gobler and

associated lab members at SUNY Southampton, who have been studying the lake system for several years. Grants to continue this monitoring and research through Village, Town, State, and Federal funding should be strongly considered.

TABLE 3
LAKE AGAWAM ACTION PLAN MATRIX

No.	Recommendation	Type of Action	Responsible Entity	Short-Long Term/ Tentative Schedule	Funding Sources	Possible Vendors	Public Budget/ Product
8.1	**Shoreline Improvements**						
Riparian (Buffer) Area Recommendations							
1.	Control waterfowl populations through management practices.						
1a.	- Discourage lawns fronting lake shore areas.	Education; Individual Implementation	Village; Residents	Short Term/ Immediate & Ongoing	1, 3, 4, 5, 6, 8 & 9	Village; Consultant; Printer	$10,000 per yr*/ Literature-Web
1b.	- Discourage feeding of waterfowl populations.	Education; Individual Implementation	Village; Residents	Short Term/ Immediate & Ongoing	1, 3, 4, 5, 6, 8 & 9	Village; Consultant; Printer	$10,000 per yr*/ Literature-Web
2.	Encourage homeowners to remove fertilizer dependent vegetation and establish native planting areas.	Education; Private Implementation	Village; Residents	Short Term/ Immediate & Ongoing	1, 3, 4, 5, 6, 8 & 9	Village; Consultant; Printer	$10,000 per yr*/ Literature-Web
2a.	- Naturalized meadow, woodland and shrub planting areas intercept and filter stormwater and reduce fertilizer/nutrient input.	Education; Permit; Private Implementation	Village ZBA; Residents	Short Term/ Immediate & Ongoing	1, 3, 4, 5, 6, 8 & 9	Landscape Contractors	Private Funds/ Buffer Plantings
2b.	- Village laws encourage natural plantings within 125 feet of wetlands through ZBA-issued wetland permits.	Education; Permit; Private Implementation	Village ZBA; Residents	Short Term/ Immediate & Ongoing	1, 3, 4, 5, 6, 8 & 9	Landscape Contractors	Private Funds/ Buffer Plantings
2c.	- Place shade trees near shore that will provide soil stability, biological uptake and shading of surface water to maintain lower water temperatures and allow higher dissolved oxygen levels.	Education; Permit (if necessary); Private Implementation	Village ZBA; Residents	Short Term/ Immediate & Ongoing	1, 3, 4, 5, 6, 8 & 9	Landscape Contractors	Private Funds/ Tree Plantings
3.	Remove invasive vegetation in favor of natural habitat areas under controlled re-vegetation restoration programs.	Education; Permit; Private Implementation	Village ZBA; Residents	Short Term/ Immediate & Ongoing	1, 3, 4, 5, 6, 8 & 9	Landscape Contractors	Private Funds/ Tree Plantings
4.	Examine municipally owned lakefront areas for improvement opportunities (control direct stormwater overflow from paved surfaces in close proximity to the lake; establish lake front walking trails in areas where public access can be provided; provide public education and interpretive signage in appropriate lakefront areas).	Direct Government Action	Village of Southampton	Long Term 5-10 years	1, 3, 4, 5, 6, 8 & 9	Village; Consultant; Highway Department; Contractors	Dependent Upon Specific Project
4a.	- Consider installation of a drainage swale and subsurface detention along Pond Lane in connection with pedestrian walks, landscape improvements and sitting areas for lake enjoyment.	Direct Government Action	Village of Southampton	Long Term/ 5-10 years	1, 3, 4, 5, 6, 8 & 9	Village; Consultant; Highway Department; Contractors	$500,000/ Stormwater Management and Aesthetics
4b.	- Consider potential for invasive species removal, stormwater control and lake front walking trails for Gin Lane area at south and southeast part of the lake.	Direct Government Action	Village of Southampton	Long Term/ 5-10 years	1, 3, 4, 5, 6, 8 & 9	Village; Consultant; Highway Department; Contractors	$350,000/ Biological Productivity and Aesthetics/Views

No.	Recommendation	Type of Action	Responsible Entity	Short-Long Term/ Tentative Schedule	Funding Sources	Possible Vendors	Public Budget/ Product
4c.	- Work cooperatively with the Town Trustees to improve the Gin Lane and Bathing Corporation parking area by reducing pavement, installing a "rain garden" along the shoreline, installing a low sill bulkhead along the southern shoreline (to retain parking capacity), installing subsurface drainage improvements, pedestrian circulation/traffic calming and providing aesthetic improvements through landscaping (see **Figure 14** for example).	Direct Government Action	Town Trustees Town of Southampton	Intermediate Term	Capital Budget And/or Grants 1, 3, 4, 5, 6, 8 & 9	Town; Consultant; Highway Department; Contractors	$650,000/ Stormwater; Pedestrian/Traffic Improvements; Aesthetics; Shoreline Stabilization
5.	Provide educational opportunities in form of pamphlets, newsletters, web site information and other media tools through the Village of Southampton and the Lake Agawam Conservation Association (see **Appendix E**).	Education	Village; Town; Non-Profit LACA	Short Term/ Immediate & Ongoing	Non-Profit Donations 1, 3, 4, 5, 6, 8 & 9	Village; Consultant; Printer	$10,000 per yr*/ Literature-Web Information
6.	Examine potential for removal of existing hardened shorelines; discourage expansion of new hardened shoreline structures.	Direct Government; Education; Permit; Private Implementation	Village Education/Permit; Town Beach Club	Short & Intermediate Term; Immediate & Ongoing	1, 3, 4, 5, 6, 8 & 9	Construction Contractors	Dependent Upon Specific Project
8.2 Stormwater and Watershed Improvements							
<u>Watershed Area Recommendations</u>							
7.	Intercept and recharge stormwater runoff in higher elevations of the watershed.	Direct Government Action	Village Trustees; Town of Southampton	Short, Intermediate & Long Term	2, 3, 4, 6, 7, 8 & 9	Drainage Contractors	Dependent Upon Specific Project
7a.	- Install more street catch basins along Hill Street, and other streets where feasible.	Direct Government Action	Village Trustees	Completed	Capital Budget 2, 3, 4, 6, 7, 8 & 9	Drainage Contractor	$160,000/ Drainage Retention
7b.	- Examine Village/Town owned land opportunities for recharge facilities such as Windmill Lane and Nugent Street; the west side of Windmill Lane; and north of Bowden Square.	Government Action	Village Trustees; Town of Southampton	Intermediate Term; Grant Pending	2, 3, 4, 6, 7, 8 & 9	Drainage Contractor	$1,900,000/ Drainage Retention
7c.	- Coordinate with Town (Walter Bundy) on Grants and stormwater Phase II implementation.	Government Action	Village Trustees; Town of Southampton	Short Term; Immediate & Ongoing	2, 3, 4, 6, 7, 8 & 9	Village Personnel & Consultants	Dependent Upon Specific Project
7d.	- Consider maximum stormwater retention and on-site recharge for any site plans and subdivisions in the watershed area; ensure compliance with SPDES GP 0-08-001.	Legislative Review	Village Planning Board & ZBA	Short Term; Immediate & Ongoing	2, 3, 4, 6, 7, 8 & 9	Village Personnel & Consultants	Private Expenditure/ Drainage Retention
7e.	- Review Village parking areas for potential subsurface stormwater detention installation in connection with parking lot improvement plans.	Government Action	Village Trustees	Intermediate Term/ 3-5 years	2, 3, 4, 6, 7, 8 & 9	Drainage Contractors	$1,000,000/ Drainage Retention
8.	Maintain catch basins and leaching pools on a regular basis by removing accumulated sediment.	Maintenance	Village Highway Department	Short Term; Immediate & Ongoing	Annual Budget 2, 3, 4, 6, 7, 8 & 9	Highway Department Personnel	$10,000 per yr; Approx. Prorated/ Sediment Control
9.	Maintain roads on a regular basis through street sweeping to reduce potential for sediments to accumulate and/or enter the lake.	Maintenance	Village Highway Department	Short Term; Immediate & Ongoing	Annual Budget 2, 3, 4, 6, 7, 8 & 9	Highway Department Personnel	$10,000 per yr; Approx. Prorated/ Sediment Control

No.	Recommendation	Type of Action	Responsible Entity	Short-Long Term/ Tentative Schedule	Funding Sources	Possible Vendors	Public Budget/ Product
10.	Explore potential for sewering in areas of the watershed with commercial downtown development and shallow depth to groundwater.	Government Action	Village Trustees	Intermediate Term/ 3-5 years	2, 3, 4, 6, 7, 8 & 9	Village Consultant; Consultants	$75,000/ Sewage Treatment Feasibility Study
11.	Encourage homeowners to regularly inspect and maintain sanitary systems in high groundwater areas and elsewhere in the watershed.	Education	Village; Town; Non-Profit LACA	Short Term/ Immediate & Ongoing	Non-Profit Donations 2, 3, 4, 6, 7, 8 & 9	Village; Consultant; Printer	Private Funds/ Improved Sanitary System Function
12.	Encourage, and enforce when appropriate, upgrade of malfunctioning sanitary systems.	Education & Enforcement	Village; Town; Non-Profit LACA	Short Term/ Immediate & Ongoing	Non-Profit Donations 2, 3, 4, 6, 7, 8 & 9	Village; Consultant; Printer	Private Funds/ Improved Sanitary System Function
13.	Ensure appropriate land use density within the Village and the watershed area for Lake Agawam through coordination with SCDHS on the implementation of Article 6 of the SCSC; sanitary credit transfers to the Lake Agawam watershed area should be reviewed and limited based on nitrogen load.	Legislative	SCDHS & Village Trustees; Planning Board; ZBA	Short Term/ 1-3 years	Annual Budget 2, 3, 4, 6, 7, 8 & 9	Village Boards and Consultants	$2,000 per yr/ Improved Coordination & Policy
14.	Encourage and facilitate “pick up after your pet” practices	Education & Government Action	Village Trustees & Town Trustees	Short Term/ 1-3 years	Annual Budget 2, 3, 4, 6, 7, 8 & 9	Village; Consultant; Printer	Dependent Upon Specific Project
14a.	- Educational pamphlets, Village newsletter and public information media.	Education & Government Action	Village Trustees	Short Term/ 1-3 years	Annual Budget 2, 3, 4, 6, 7, 8 & 9	Village; Consultant; Printer	$10,000 per yr*/ Literature-Web
14b.	- Install dispensers in Village parks and key areas for convenience.	Education & Government Action	Village Trustees & Town Trustees	Short Term/ 1-3 years	Annual Budget 2, 3, 4, 6, 7, 8 & 9	ProPet.org; Poopaway.com; Curbappealsigns.com	$5,000 per yr/ Dispensers ($500/station)
8.3 Lake Aeration and Water Quality Improvements							
<u>Lake Management Recommendations</u>							
15.	Provide water circulation equipment to improve dissolved oxygen levels in the lake.	Direct Government Action	Village Trustees & Town Trustees	Short & Intermediate Term; Immediate & Ongoing	Capital Budgets 3, 4, 6, 7 & 8	Water Circulator Contractor	Dependent Upon Specific Project
15a.	- Maintain and install forced air bubblers to improve dissolved oxygen levels and further the coverage already achieved by this cooperative Town/Village effort.	Direct Government Action	Village Trustees & Town Trustees	Short & Intermediate Term; Immediate & Ongoing	Capital Budgets 3, 4, 6, 7 & 8	Aquascape Designs, or similar	$8,500/six units + install & yearly operating cost
15b.	- Consider discontinuing fountains in favor of bubblers, particularly during algae blooms.	Government Action Management Option	Village Trustees	Short Term/ 1-3 years	3, 4, 6, 7 & 8	N/A	No Cost/ Discontinuance of Practice
16.	Improve fish populations in the lake favoring native fish assemblages.	Direct Government Action	Village Trustees	Intermediate & Long Term	Capital Budget 3, 4, 6, 7 & 8	Village; Consultant	Dependent Upon Specific Project
16a.	- Stock bass, perch and bluegill fish assemblages, if necessary.	Direct Government Action; DEC Fish Stocking Permit	VillageTrustees	Intermediate & Long Term	Capital Budget 3, 4, 6, 7 & 8	Obtain list of NYS-certified hatcheries from NYSDEC	$5,000-12,000/yr Fish Stocking
16b.	- Remove or reduce carp populations in the lake, if necessary, ensuring that harvested fish are managed in a manner that considers public health and safety.	Direct Government Action; DEC Fish Control Permit	Village Trustees	Intermediate & Long Term	Capital Budget 3, 4, 6, 7 & 8	Commercial Fishermen/ SUNY MSRC Fish Bio-Assay	$5,000/yr Carp Removal

No.	Recommendation	Type of Action	Responsible Entity	Short-Long Term/ Tentative Schedule	Funding Sources	Possible Vendors	Public Budget/ Product
17.	Maintain, but do not expand areas of aquatic vegetation on the west side of the lake; such vegetation provides fish habitat, food source and shading.	Government Action Management Option	Town Trustees	Short Term/ Immediate	3, 4, 6, 7 & 8	N/A	N/A
18.	Examine wetland biological treatment options for north end of lake near stormwater outfall	Direct Government Action	Town Trustees	Long Term/ 5-10 years	3, 4, 6, 7 & 8	Consultant Design; Contractor Install	$300,000/ Wetland Treatment Area
19.	Evaluate potential for removal of organically enriched surface sediments from the lake bottom in order to reduce the release of nutrients into the water column.	Direct Government Action	Town Trustees	Long Term/ 5-10 years	3, 4, 6, 7 & 8	Consultant Design & Permits; Contractor Dredge & Disposal	$500,000/ Sediment Removal; Beneficial Reuse
8.4	Water Quality Monitoring and Research						
20.	Continue water quality and cyanobacteria monitoring to determine effectiveness of implemented management recommendations and to track trends in water quality.	Government Sponsored Research	Village Trustees & Town Trustees	Short Term/ Immediate & Ongoing	SUNY MSRC; 3, 4 & 8	SUNY MSRC	$17,500 per yr/ Monitoring Data & Reports
21.	Continue associated ecological-based studies and research (e.g. chemical, physical and biological factors) to further elucidate the factors which promote the presence of cyanotoxins.	Government Sponsored Research	Village Trustees & Town Trustees	Short Term/ Immediate & Ongoing	SUNY MSRC; 3, 4 & 8	SUNY MSRC	$17,500 per yr/ Monitoring Data & Reports
22.	Implement an adaptive management approach for Lake Agawam as the understanding of cyanotoxins is expanded, and strive to improve water quality while minimizing health risks to humans and animals.	Cooperative Effort	Town, Village, Research Institutions, LACA and Citizens	Long Term/ 5-10 years	3, 4 & 8	Consultant Assistance; SUNY MSRC	$75,000/ Lake Agawam Comprehensive Plan Update

Notes:

* $5,000 per yr is combined educational budget for educational materials using consultant assistance for pamphlet design, printing and distribution, part of Village newsletters and web site maintenance.

All budget estimates are in current 2008 dollars, and do not account for inflation or increased costs which may occur over time.

Definition of Terms/Schedule: Short Term – 1-3 years Intermediate Term – 3-5 years Long Term – 5-10 years

Definition of Abbreviations: N/A - Not Applicable yr – Year SUNY MSRC – State University of New York Marine Sciences Research Center

List of potential funding sources to offset cost of implementing Agawam CMP and associated number abbreviation: Note that funding availability varies according to annual budget cycles and legislative action.

(1) NYS Office of Parks, Recreation and Historic Preservation Parks Development Grants under the EPA and LWCF- http://www.nysparks.com/grants/

(2) NYS Dept. of Transportation- Transportation Enhancements Program (TEP)- https://www.nysdot.gov/portal/page/portal/programs/tep

(3) NYS Dept. of State- Local Waterfront Revitalization Program (LWRP)- http://www.nyswaterfronts.com/request.html

(4) NYS Department of Environmental Conservation- Water Quality Improvement Program- http://www.dec.ny.gov/pubs/4774.html

(5) NYS Department of Environmental Conservation- Terrestrial Invasive Species Eradication Grant Program- http://www.dec.ny.gov/animals/33358.html

(6) NYS Environmental Facilities Corporation, *et al*.-NYS Water & Sewer Infrastructure Co-funding Initiative- http://www.nycofunding.org/DotNetNuke/

Note: NYS EFC provides financing and technical assistance. Funding sources vary and historically major sources have been the US Environmental Protection Agency's Drinking Water State Revolving Fund (DWSRF) and Clean Water Revolving Fund (CWSRF)

(7) NYS Energy Research and Development Authority (NYSERDA)- Municipal Water and Wastewater Treatment Plan Programs (various)- http://www.nyserda.org/Programs/Environment/muniwaterwwt.asp

(8) NYS Department of State- Shared Municipal Services Incentive Program- For programs that achieve cost savings through shared services involving two or more municipalities- http://www.dos.state.ny.us/lgss/smsi/stateassistance.html

(9) Suffolk County- Suffolk County Water Quality Protection and Restoration Program

Potential funding sources information provided by Jennifer Mesiano, Village Grants Coordinator.

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Article Details

New Cyanobacteria Bloom Found in Lake Agawam in Southampton

Categories: Health Services | Author: gkelly-mcgovern | Posted: 5/11/2018 | Views: 616

Cyanobacteria bloom still present at Lake Ronkonkoma

Sampling performed by SUNY Stony Brook has confirmed the presence of a new cyanobacteria bloom, more commonly known as blue–green algae, at Agawam Lake in Southampton. In addition, the cyanobacteria bloom announced on May 9 is still present at Lake Ronkonkoma. Due to these findings, health officials ask residents not to use or swim or wade in these waters and to keep their pets and children away from the area.

Though blue-green algae are naturally present in lakes and streams in low numbers, they can become abundant, forming blooms in shades of green, blue-green, yellow, brown or red. They may produce floating scums on the surface of the water or may cause the water to take on paint-like appearance. Contact with waters that appear scummy or discolored should be avoided. If contact does occur, rinse off with clean water immediately. Seek medical attention if any of the following symptoms occur after contact: nausea, vomiting or diarrhea; skin, eye or throat irritation; or allergic reactions or breathing difficulties.

To report a suspected blue-green algae bloom that is in a body of water that does not contain a Suffolk County permitted bathing beach, contact the Division of Water at New York State DEC: 518-402-8179 between 8:00 a.m. – 4:00 p.m. or anytime via email at habsinfo@dec.ny.gov

To report a suspected blue-green algae bloom at a body of water that does contain a Suffolk County permitted bathing beach, contact the Suffolk County Department of Health Services' Office of Ecology at 631-852-5760 between 8:30 a.m. – 4:30 p.m. or by email at any time at scdhsweb@suffolkcountyny.gov

For a comprehensive list of affected waterbodies in New York State, visit the DEC's Harmful Algal Bloom Notification Page at http://www.dec.ny.gov/chemical/83310.html

For more information about blue-green algae, visit the Suffolk County website: http://www.suffolkcountyny.gov/Departments/HealthServices/EnvironmentalQuality/Ecology/MarineWaterQualityMonitoring/HarmfulAlgalBlooms/Cyanobacteria.aspx

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Harmful Algal Blooms (HABs) Notifications Page

2018 HABs Notifications

There may be other waterbodies with blooms that have not been reported to the DEC.

The map below displays the location of current freshwater HABs in New York State. Each location is labeled with a number that corresponds to the table located below the maps. The information is updated weekly. This page was last updated on 7/6/18.

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To receive weekly notifications about when this page is updated, sign up to receive MakingWaves.

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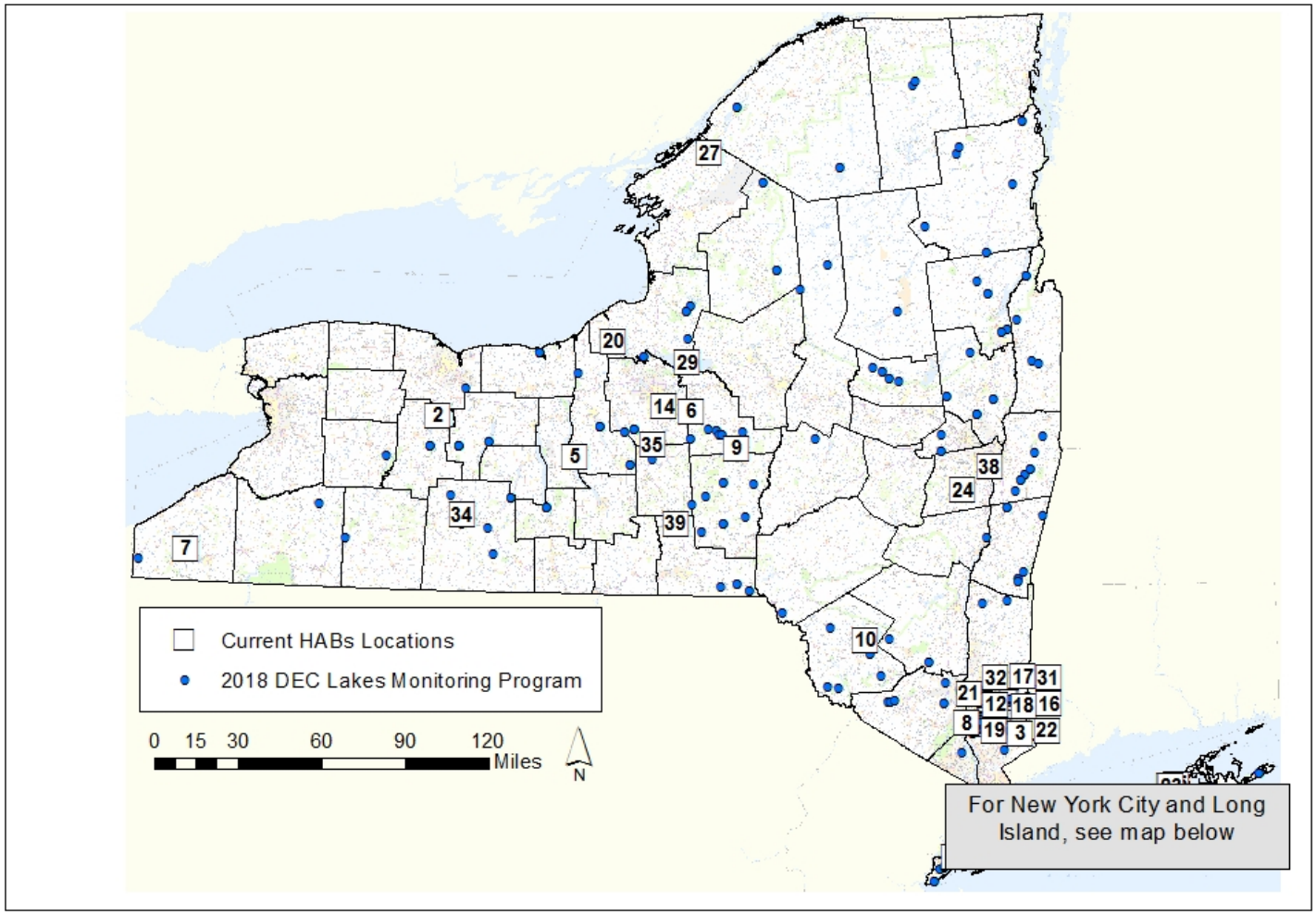
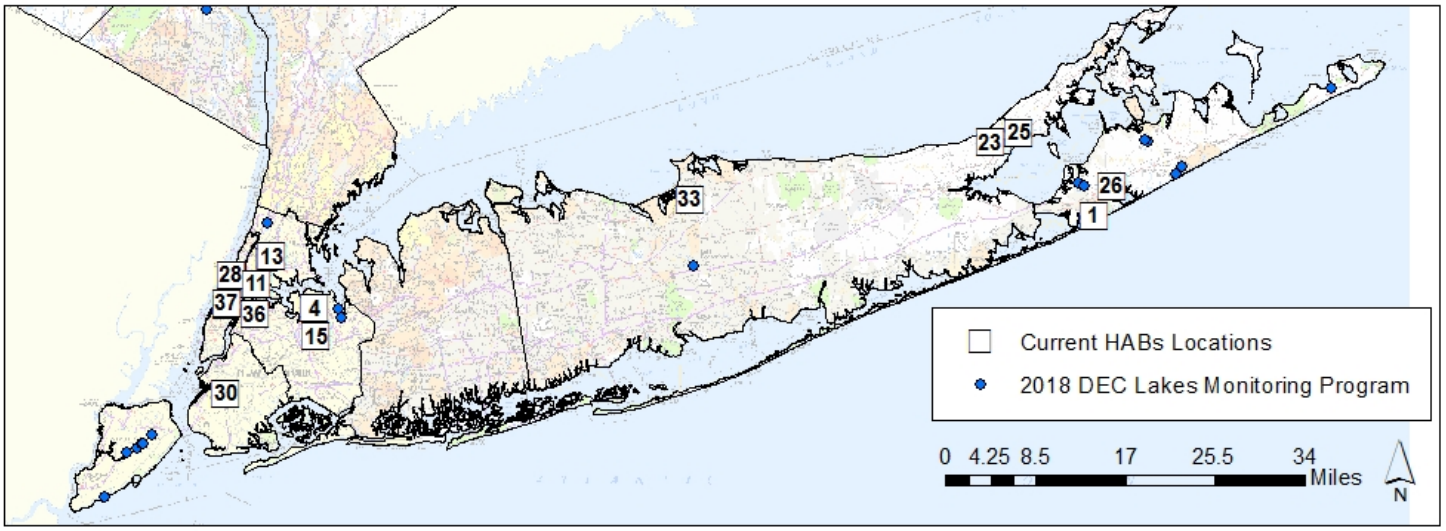
Important information

- Not listed on this page:
  - Lake Champlain blooms. For more information about HABs on Lake Champlain, visit the Lake Champlain Committee monitoring page and the Vermont Department of Health's blue-green algae notification page (above two links leave DEC website).
  - Marine algal blooms, such as red tide and brown tides. Blooms may be currently occurring in marine water.
  - Other non-harmful algal blooms.
- See Important things to Know About HABs for tips on what to do when blooms are encountered.
- Regulated swimming beaches are monitored regularly and evaluated for the presence of HABs. For information about regulated swimming beaches in your area, contact your local health department (link leaves DEC website).
- DEC encourages the public to view the HABs Archive page to be aware of lakes that were listed on the notification web page in previous years or have been recently removed from the current notification map.





Waterbodies with HABs Notifications

Map Number	Waterbody Name	County	Bloom Status	Extent of Bloom	Status Date	Type of Report	Change in Status
1	Agawam Lake	Suffolk	Confirmed with High Toxins	Widespread/Lakewide	7/3/18	Lab sample	Updated Listing
2	Avon Marsh Dam Pond	Livingston	Confirmed	Large Localized	6/20/18	Lab sample	No Change
3	Barger Pond	Putnam	Suspicious	Not Reported	7/3/18	Visual Report	New
4	Bowne Pond	Queens	Confirmed	Not Reported	6/18/18	Lab sample	No Change
5	Cayuga Lake*	Multiple	Suspicious	Large Localized	7/3/18	Visual Report	New
6	Cazenovia Lake*	Madison	Suspicious	Not Reported	7/5/18	Visual Report	New
7	Chautauqua Lake*	Chautauqua	Confirmed	Large Localized	7/1/18	Lab sample	Updated Listing
8	Cortlandt Lake	Putnam, Westchester	Suspicious	Not Reported	7/2/18	Visual Report	New
9	Craine Lake	Madison	Suspicious	Small Localized	6/10/18	Visual Report	Updated Listing
10	Evens Lake	Sullivan	Confirmed	Widespread/Lakewide	6/27/18	Lab sample	No Change
11	Harlem Meer	New York	Confirmed with High Toxins	Small Localized	7/2/18	Lab sample	New
12	Indian Lake	Putnam	Confirmed	Small Localized	6/23/18	Lab sample	No Change
13	Indian Pond	Bronx	Confirmed	Large Localized	6/26/18	Lab sample	No Change
14	Jamesville Reservoir	Onondaga	Confirmed	Not Reported	6/22/18	Lab sample	No Change
15	Kissena Lake	Queens	Confirmed	Not Reported	6/18/18	Lab sample	No Change
16	Lake Carmel	Putnam	Suspicious	Widespread/Lakewide	6/29/18	Visual Report	No Change
17	Lake Casse	Putnam	Suspicious	Widespread/Lakewide	6/29/18	Visual Report	No Change
18	Lake Mahopac	Putnam	Suspicious	Widespread/Lakewide	6/29/18	Visual Report	No Change
19	Lake Mohegan	Westchester	Confirmed	Not Reported	6/20/18	Lab sample	No Change
20	Lake Neatahwanta	Oswego	Confirmed	Not Reported	7/3/18	Lab sample	Updated Listing
21	Lake Peekskill	Putnam	Suspicious	Not Reported	6/30/18	Visual Report	New
22	Lake Waccabuc	Westchester	Confirmed	Open Water	6/24/18	Lab sample	No Change
23	Laurel Lake	Suffolk	Confirmed	Not Reported	6/27/18	Lab sample	No Change
24	Lawson Lake	Albany	Confirmed	Small Localized	7/2/18	Lab sample	New
25	Maratooka Lake	Suffolk	Confirmed	Small Localized	7/2/18	Lab sample	New
26	Mill Pond (Watermill)	Suffolk	Confirmed	Widespread/Lakewide	7/3/18	Lab sample	Updated Listing
27	Millsite Lake	Jefferson	Suspicious	Not Reported	7/3/18	Visual Report	New
28	Morningside Pond	New York	Confirmed	Large Localized	7/2/18	Lab sample	No Change
29	Oneida Lake*	Multiple	Suspicious	Not Reported	7/1/18	Visual Report	Updated Listing
30	Prospect Park Lake	Kings	Confirmed with High Toxins	Widespread/Lakewide	6/26/18	Lab sample	No Change
31	Putnam Lake	Putnam	Suspicious	Widespread/Lakewide	6/29/18	Visual Report	No Change
32	Roaring Brook Lake	Putnam	Confirmed	Small Localized	6/30/18	Lab sample	Updated Listing
33	Roth Pond	Suffolk	Confirmed	Widespread/Lakewide	7/5/18	Lab sample	Updated Listing
34	Smith Pond	Stueben	Confirmed	Open Water	6/26/18	Lab sample	No Change
35	Song Lake	Cortland	Confirmed	Small Localized	6/17/18	Lab sample	No Change

Map Number	Waterbody Name	County	Bloom Status	Extent of Bloom	Status Date	Type of Report	Change in Status
36	The Lake in Central Park	New York	Confirmed with High Toxins	Widespread/Lakewide	7/2/18	Lab sample	Updated Listing
37	Turtle Pond	New York	Confirmed with High Toxins	Small Localized	7/2/18	Lab sample	Updated Listing
38	Washington Park Pond	Albany	Confirmed	Small Localized	6/26/18	Lab sample	No Change
39	Whitney Point Reservoir	Broome	Suspicious	Widespread/Lakewide	6/28/18	Visual Report	No Change

*Blooms in large lakes or rivers may be limited to specific shorelines or confined bays. Portions of any of these waterbodies may be clear and fully support recreational uses.

This table reflected the status of harmful algal blooms as reported to DEC; public beach closure and drinking water information is available from your local health department (link leaves DEC website).

The 2018 DEC Lake Monitoring Program includes the Lake Classification and Inventory Survey (LCI), the Citizens Statewide Lake Assessment Program (CSLAP) and several individual lake sampling programs. The map above shows locations sampled within the previous three weeks. For specific information about the current sampling results for lakes sampled through the 2018 DEC Lake Monitoring Program (PDF, 146 KB), contact the Division of Water at 518-402-8179.

Bloom Status

DEC HABs Program staff use visual observations, digital photographs and laboratory sampling results to determine whether a bloom consists of cyanobacteria (also known as blue-green algae) or another type of algae. A waterbody with a bloom may have one of three statuses: Suspicious, Confirmed or Confirmed with High Toxins Bloom.

- **Suspicious Bloom**: DEC staff determine that conditions fit the description of a cyanobacteria bloom (HAB), based on visual observations and/or digital photographs. It is not known if there are harmful toxins or other compounds in the water. The bloom may be present in all or part of the waterbody. Laboratory analysis has not been done to determine if this is a HAB. Cyanobacteria are irritants to some people even if toxins are not present so all contact with the bloom should be avoided. Blooms may be present in all or part of the waterbody.
- **Confirmed Bloom**: Water sampling results have confirmed the presence of a cyanobacteria HAB which may produce toxins or other harmful compounds.
- **Confirmed with High Toxins Bloom**: Water sampling results have confirmed that there are toxins present in enough quantities to potentially cause health effects when people and animals come in contact with the water through swimming or drinking.

Extent of Bloom

The extent of the bloom is a rough estimate of the size of the bloom within the waterbody and is recorded by monitoring program staff or from public reports.

- **Small Localized**: Bloom affects a small area of the waterbody, limited from one to several neighboring properties.
- **Large Localized**: Bloom affects many properties within an entire cove, along a large segment of the shoreline, or in a specific region of the waterbody.
- **Widespread/Lakewide**: Bloom affects the entire waterbody, a large portion of the lake, or most to all of the shoreline.
- **Open Water**: Sample was collected near the center of the lake and may indicate that the bloom is widespread and conditions may be worse along shorelines or within recreational areas. Special precautions should be taken in situations when a Confirmed with High Toxins Bloom is reported with an Open Water extent because toxins are likely to be even higher in shoreline areas.

Important Things to Know sbout HABs

- **If you see it - avoid it and report it**!
- People, pets and livestock should **avoid contact** with water that is discolored or has algae scums on the surface. Colors can include shades of green, blue-green, yellow, brown or red. If contact does occur, rinse thoroughly with clean water to remove algae.
- **Never drink untreated surface water**, whether or not algae blooms are present. Untreated surface water may contain other bacteria, parasites or viruses, as well as cyanotoxins that could cause illness if consumed.
- People not on public water supplies **should not drink surface water during an algal bloom**, even if it is treated, because in-home treatments such as boiling, disinfecting water with chlorine or ultraviolet (UV), and water filtration units do not protect people from HABs toxins.
- Stop using water and **seek medical attention** immediately if symptoms such as vomiting, nausea, diarrhea, skin, eye or throat irritation, allergic reactions or breathing difficulties occur after drinking or having contact with blooms or untreated surface water.
- Please **report any health symptoms** to your physician and NYS Department of Health at mailto:harmfulalgae@health.ny.gov or your local health department (link leaves DEC website).
- For answers to other **frequently asked questions** go to the DEC HABs FAQ page.
- If you suspect that you have seen a HAB or you, your family, or pet has been in contact with a bloom, please **report the bloom** to the DEC. Fill out and submit a Suspicious Algal Bloom Report Form (PDF, 764 KB). Email the completed form and, if possible, attach digital photos (close-up and landscape to show extent and location) of the suspected bloom to HABsInfo@dec.ny.gov.

For more information you contact your regional DEC office or:

DEC HABs Program Coordinator
Rebecca Gorney Ph.D., Division of Water
Phone: (518) 402-8179

Lake Agawam
Existing Conditions

June 2018:

An aerial shot of Lake Agawam shows the blue-green algae bloom in full force. COURTESY TIM CORWIN

Photo credits as listed in 27east.com

May 2017:

Suffolk County Health Department officials issued a warning on Wednesday that blue-green algae was found in Lake Agawam in Southampton Village. BY GREG WEHNER

Suffolk County Health Department officials issued a warning on Wednesday that blue-green algae was found in Lake Agawam in Southampton Village. BY GREG WEHNER

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