TOWN OF SOUTHAMPTON

Department of Land Management
Environment Division
116 HAMPTON ROAD
SOUTHAMPTON, NY 11968

Phone: (631) 287-5710
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JAY SCHNEIDERMAN
TOWN SUPERVISOR

JANICE SCHERER
TOWN PLANNING AND
DEVELOPMENT ADMINISTRATOR

MARTIN SHEA
CHIEF ENVIRONMENTAL ANALYST

May 13, 2021

Water Quality Improvement Advisory Committee
of the Community Preservation Fund (CPF) Program
Community Preservation Fund Office
24 West Montauk Highway
Hampton Bays, NY 11946

Re: Water Quality Improvement Project Plan Application
Sebonac Creek Inlet/Great Peconic Bay Oyster Reef
Great Peconic Bay, Tuckahoe
SCTM Nos.: 900-1-1-1 & 14, 900-109-1-12, and 900-154-3-3 & 4

Dear Committee Members,

Enclosed please find the Water Quality Improvement Project Plan (WQIPP) application for the Sebonac Creek Inlet/Great Peconic Oyster Reef, along with the required supplemental documents. The goal of the proposed project is to improve water quality by establishing an eastern oyster (*Crassostrea virginica)* reef in Great Peconic Bay, just outside of the Sebonac Creek inlet. Presently, there are no naturally occurring oyster beds in the area. Establishment of the reef will allow for bio-retention of excess nitrogen by increasing filter feeding activity. The reef will also provide a suitable substrate for colonization by macro-algae, which will further uptake nitrogen in the water column, and increase light attenuation and water clarity by trapping suspended sediments.

The project will also serve as a pilot project for “nature-based” solutions for shoreline stabilization, consistent with the New York State Department of Environmental Conservation’s “Living Shorelines” initiative, and will further the Peconic Estuary Partnership’s goal of restoring habitat by establishing a spawner sanctuary. As the proposal will result in storm risk reduction, the Department of Homeland Security’s Federal Emergency Management Agency has tentatively agreed to reimburse the Town for approximately 59% of the project cost.

Should you have any questions regarding the submission, please feel free to contact our office at (631) 287-5710. Thank you for your consideration.

Sincerely,

Martin E. Shea
Chief Environmental Analyst

MES:ctm
Encl: WQIPP Application
Project Narrative
Site Photos
Location Map
EPA STEPL
EAF Pt. 1

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Town of Southampton Sebonac Inlet/Great Peconic Bay Oyster Reef Project Narrative

(Prepared by the Town of Southampton Environment Division
May 6, 2021)

Background

The Town of Southampton Environment Division is working together with the Board of Trustees of the Freeholders and Commonalty of the Town of Southampton, Cornell Cooperative Extension Services of Suffolk County (CCE), the Peconic Estuary Partnership (PEP), the Southampton Bay Constables, and the Department of Homeland Security's Federal Emergency Management Agency (FEMA), to undertake clean water actions aimed at restoring and improving water quality and aquatic habitats, consistent with the goals and objectives of the Town's 2016 Coastal Resources and Water Protection Plan. The proposed Sebonac Inlet/Great Peconic Bay Oyster Reef project is the product of this collaboration and would direct resources to high priority water bodies, in a manner that would foster healthy waters, biodiversity, continued recreational water uses and sound environmental stewardship, as well as help to ensure that federal and state water quality standards are being met.

The centerpiece of the proposed water quality project, for which Community Preservation Fund Water Quality funding is being sought, would be Sebonac Creek Inlet, the Great Peconic Bay and their environs, which have been designated as a Critical Environment Area and as an Estuary of National Significance by the US Environmental Protection Agency (USEPA). The Sebonac Creek Inlet provides critical tidal flushing for Sebonac Creek and Bullhead Bay, where the last eelgrass *(Zostera marina)* meadow, in the westerly portion of the Peconic Estuary, remains.

Figure 1: Project Location within Great Peconic Bay with Fetch Lengths

The regional watershed includes medium to high density residentially developed parcels, a few large estates, and two (2) golf courses, as well as an extensive network of freshwater wetlands, tidal marshes, and forested open space. Upland development has diminished these wetland values and benefits, by increasing nitrogen and contaminant inputs, resulting in classification of

Sebonac Creek and Bullhead Bay, by the New York State Department of Environmental Conservation (NYSDEC), as pathogen impaired waterbodies.

During Superstorm Sandy, the northerly terminus of Sebonac Inlet Road, which runs parallel to the inlet, sustained significant damage due to heavy wave action associated with the long fetch from both the northeasterly and northwesterly directions (See Figure 1). In that regard, the project would have the added benefits of reducing future storm damage and improving coastal resiliency, by countering severe tidal surges and wave attack in this region.

Proposal

The Town of Southampton's Environment Division is seeking funding to design, permit and construct a pilot oyster reef project, in state waters in the Great Peconic Bay. Preliminary designs for the oyster reef call for installing two (2) rows of reef balls, on the northeast and southwest sides of Sebonac Inlet. Approximately 275 linear feet of reef balls would be installed on the northeast side of the inlet, while approximately 125 linear feet of reef balls to be installed to the southwest (See Figure 2). Each 4 ft. wide x 2.9 ft. deep, molded concrete reef ball will be filled with shells and submerged in tanks with eastern oyster (*Crassostrea virginica*) spat (See Figure 3). Once the pediveliger spat has settled onto the reef balls, a marine contractor will use a barge to transport the reef balls from CCE's hatchery facility for placement underwater at the site using a crane (Figure 4). Upon completion of the construction, CCE will complete a baseline inspection of the reef, inclusive of video and still photo-documentation, as well as set benchmarks for future evaluation and monitoring for a period of five years. The Bay Constables, in coordination with the Board of Trustees of the Freeholders and Commonalty of the Town of Southampton, will install the necessary reflective navigational buoys to prevent interference or damage from boat traffic.

Figure 2: Example of Reef Balls

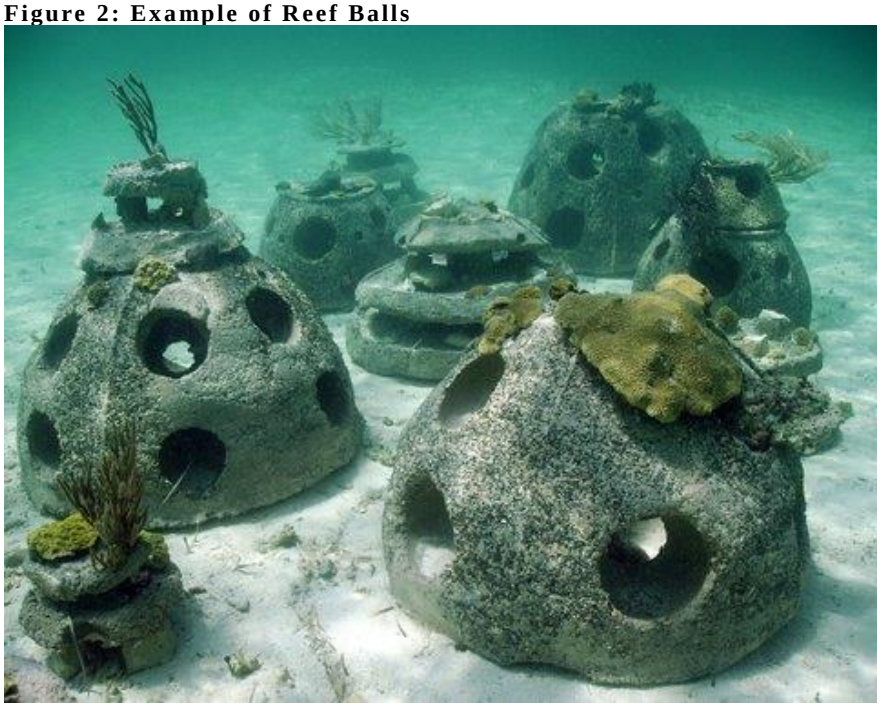

Figure 3: Preliminary Site Plan

The reef will be designated as a “marine sanctuary/no-take zone”, thereby allowing the oysters to mature and sustain their populations and habitats over time. The reef will enhance biodiversity by attracting fish and other marine species, and may foster establishment of a protected eelgrass bed/meadow, on the leeward side of the reef, as well as provide for future water-based recreational activities, such as eco-diving and snorkeling.

Figure 4: Example of Reef Ball Installation

An adult eastern oyster feeds on phytoplankton, by filtering up to 50 gallons of water daily. Phytoplankton growth, and any associated harmful algal bloom (HABs), is fueled by excess nitrogen in the water column. Increasing the density of oysters in an area, by constructing a reef, will improve water quality through filter feeding. Macroalgae colonization and attachment will further uptake excess nitrogen in the water column. Water clarity and light attenuation will be further improved, by the trapping of

suspended sediments and enablement of eelgrass bed/meadow establishment on the leeward side of the reef. Once built, the reef will be designated a marine sanctuary/no-take zone, to better estuarine biodiversity and ensure its long term protection.

The Federal Emergency Management Agency (FEMA) and the Department of Homeland Security (DHS) has advocated for reef construction at this location, as a means of shoreline stabilization for the end of Sebonac Inlet Road and prevention of repetitive storm damage within an area which was heavily impacted by Hurricane Sandy. It is hoped that the project will serve as a model and pilot project for developing "nature-based" solutions for future water quality improvement and shoreline stabilization projects, consistent with the Peconic Estuary Partnership's goal of restoring habitat by providing living shorelines. The proposal has been designed to "*maximize the capabilities of natural protective features by avoiding alteration or interference with shorelines in a natural condition; enhancing existing natural protective features; restoring impaired natural protective features; and managing activities to minimize interference with, limit damage to, or reverse damage which has diminished the protective capacities of the natural shoreline",* as outlined in Policy 4.2 of the Town of Southampton Coastal Resources and Water Protection Plan*,* which was adopted as part of the Town's Comprehensive Plan in 2016*.*

As the project is anticipated to provide the duel benefit of water quality improvement and shoreline stabilization, FEMA/DHS has tentatively agreed to reimburse the Town for up to 59% of the project cost.

CP-13107 (rev. 4/2021)

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COMMUNITY PRESERVATION FUND (CPF)
WATER QUALITY IMPROVEMENT PROGRAM
CHECKLIST/APPLICATION INSTRUCTIONS

The CPF Water Quality Improvement Project Plan (WQIPP) Fund follows the objectives in the adopted Water Quality Improvement Project Plan (see http://www.southamptontownny.gov/WQIPP)

To apply for funding, an application must be COMPLETED and submitted along with detailed narratives and supporting information as described below. Parcel acquisitions will be considered on an ongoing basis, independent of this application process.

Note: Electronic application submission required and 4 - full printed sets of application, site plan and narrative. Upload application at www.southamptontownny.gov/WQIPPSUBMISSION
A Public Hearing and Town Board Resolution will be required for all projects pursuant to Chapter 140 of the Town Code.

WATER QUALITY IMPROVEMENT PROJECT MEANS:

[1] DEFINITIONS:

1. **Wastewater Treatment Improvement Project** means the planning, design, construction, acquisition, enlargement, extension, or alteration of a wastewater treatment facility, including alternative systems to a sewage treatment plant or traditional septic system, to treat, neutralize, stabilize, eliminate or partially eliminate sewage or reduce pollutants in treatment facility effluent, including permanent or pilot demonstration wastewater treatment projects, or equipment or furnishings thereof. Stormwater collecting systems shall also be included within the definition of a wastewater improvement project.

2. **Nonpoint Source Abatement and Control Program Projects** developed pursuant to section eleven-b of the soil and water conservation districts law, title 14 of article 17 of the environmental conservation law, section 1455b of the federal coastal zone management act, or article forty-two of the executive law;

3. **Aquatic Habitat Restoration Project** means the planning, design, construction, management, maintenance, reconstruction, revitalization, or rejuvenation activities intended to improve waters of the state of ecological significance or any part thereof, including, but not limited to ponds, bogs, wetlands, bays, sounds, streams, rivers, or lakes and shorelines thereof, to support a spawning, nursery, wintering, migratory, nesting, breeding, feeding, or foraging environment for fish and wildlife and other biota.

4. **Pollution Prevention Project** means the planning, design, construction, improvement, maintenance or acquisition of facilities, production processes, equipment or buildings owned or operated by municipalities for the reduction, avoidance, or elimination of the use of toxic or hazardous substances or the generation of such substances or pollutants so as to reduce risks to public health or the environment, including changes in production processes or raw materials; such projects shall not include incineration, transfer from one medium of release or discharge to another medium, off-site or out-of-production recycling, end-of-pipe treatment or pollution control.

5. **The Operation of the Peconic Bay National Estuary Program**, as designated by the United States Environmental Protection Agency. Such projects shall have as their purpose the improvement of existing water quality to meet existing specific water quality standards. Projects which have as a purpose to permit or accommodate new growth shall not be included within this definition

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COMMUNITY PRESERVATION FUND (CPF)

WATER QUALITY IMPROVEMENT PROGRAM

PROPOSAL SUMMARY

Project Applicant: Town of Southampton Environment Division, Board of Trustees, Cornell Cooperative Extension
Project Title: Sebonac Creek Inlet/Great Peconic Bay Oyster Reef
Project Manager Name: Martin E. Shea, Chief Environmental Analyst

Name	Martin E. Shea
Title	Chief Environmental Analyst
Organization	Town of Southampton- Environment Division
Address	116 Hampton Road, Southampton, NY 11968
Phone	631-287-5710
Email	MShea@southamptontownny.gov

Property owner (if different from Project manager organization):

Name	New York State
Affiliation	
Organization	
Address	163 W. 125th Street, #215, New York, NY 10027
Phone	
Email	

Project Address: Great Peconic Bay and Sebonac Creek Inlet, Tuckahoe SCTM #(S) 900-1-1-1 & 14, 900-109-1-12, 900-154-3-3 & 4

Type of Project (Check all that apply):
☐ Reduction ☐ Remediation ☑ Restoration

Project Summary: (Provide a brief narrative description of proposed WQIPP project)

The application seeks funding to design, permit, and construct a pilot oyster reef project, located on the northeast and southwest sides of Sebonac Creek Inlet, in Great Peconic Bay. An adult eastern oyster (Crassostrea virginica) feeds on phytoplankton, by filtering up to 50 gallons of water daily. Phytoplankton growth, and any associated harmful algal bloom (HABs), is fueled by excess nitrogen in the water column. Increasing the density of oysters in an area, by constructing an oyster reef, will improve water quality through increased filter feeding behaviors. Moreover, the reef will be colonized by attached algae, which will further uptake excess nitrogen in the water column. The reef structure will improve water clarity and light attenuation by trapping suspended sediments. Once constructed, the reef will be designated a marine sanctuary/no-take zone, which will enhance biodiversity by attracting fish and other marine species, and may allow for the future establishment of a protected eelgrass bed/meadow, on the leeward side of the reef. The project will also provide shoreline stabilization for the end of Sebonac Inlet Road, thereby preventing repetitive storm damage within an area which was impacted by Hurricane Sandy. The reef may also provide for future recreational activities, such as eco-diving and snorkeling.

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If additional information is needed to describe the project; a project narrative can accompany the application. Please limit the narrative to approximately 3 pages of project description, provide a summary of water quality benefits/objectives of approximately 2 pages and provide a cost estimate of approximately 2 to 4 pages with supporting estimates. Any additional materials should be focused specifically on the proposed project with references to other studies that are pertinent

1. PROJECT TYPE (check all that apply)

Must meet at least one of the definitions of "Water Quality Improvement Project" per State Law Chapter 551 cited above. Check all that apply.

- ☐ Wastewater Treatment Improvement Project
- ☐ Non-point source abatement and control
- ☑ Aquatic habitat restoration
- ☐ Pollution prevention
- ☐ Operation of Peconic Bay National Estuary Program (Grant Match)

Note: Monitoring costs are only potentially eligible for CPF funding within Aquatic habitat restoration projects.

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

Priority areas are defined in the Water Quality Improvement Project Plan (WQIPP).

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

*If Outside High and Medium priority areas, explain how the project is relevant to WQIPP goals.

The proposed project is located in Great Peconic Bay, which is part of the larger Peconic Estuary Complex. Although the project is listed as "outside the High or Medium Priority Areas", the priority areas were established to protect surface waters, such as Great Peconic Bay. As eastern oysters can remove nitrogen from approximately 50 gallons of water per day, through filter feeding, establishment of an oyster reef will reduce excess nitrogen in Great Peconic Bay. Installation of an oyster reef, within the Great Peconic Bay will further the Peconic Estuary Partnerships' (PEP) goal of restoring habitat, by providing an oyster spawner sanctuary, and possibly allowing for the establishment of an eelgrass meadow on the leeward side of the reef.

3. PROJECT DESCRIPTION

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

The proposed project is located in Great Peconic Bay, just outside of Sebonac Creek and Bullhead Bay inlet. The project area is part of the Peconic Estuary Critical Environmental Area, and has been designated as one of the "Last Great Places in the Western Hemisphere" by the Nature Conservancy. The watershed includes medium to high density residentially developed parcels, a few large estates, and two (2) golf courses, as well as an extensive network of freshwater wetlands, tidal marshes, and forested open spaces. However, the upland development has diminished these wetland values and benefits and has increased nitrogen inputs into the watershed.

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

Eastern oysters can filter excess nitrogen from approximately 50 gallons of water per day through filter feeding. Construction of an oyster reef, and associated spawner sanctuary designation, will help to reduce excess nitrogen in Great Peconic Bay. The reef will have the added benefit of providing shoreline protection for the Sebonac Inlet Road end, and may allow for the potential future establishment of an eelgrass bed on the leeward side of the reef. The proposal will also serve as a pilot project for developing "nature-based" solutions for future shoreline stabilization projects.

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

The proposal seeks funding to design, permit and construct an oyster reef. The project will not exceed more than 0.5 acres on the northeasterly and southwesterly sides of Sebonac Creek inlet. The reef will be constructed of molded concrete "reef balls" upon which pediveliger oyster larvae have been allowed to settle. The reef balls will then be delivered by barge and set with a crane into the hard substrate. The oyster larvae will continue to grow to maturity. The reef will also provide habitat for free floating larvae, when they reach the pediveliger stage; thereby increasing genetic diversity. The reef will also be colonized by attached algae, which will further remove nitrogen within from the waters of Great Peconic Bay. The constructed reef will enhance biodiversity by attracting fish and other marine species, and may allow for future establishment of eelgrass beds/meadows, on the leeward side. The completed project is also anticipated to serve as a pilot project for development of future "nature-based" shoreline stabilization projects.

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

Eastern oysters can filter excess nitrogen from approximately 50 gallons of water per day through filter feeding of phytoplankton. Increasing the density of oysters within Great Peconic Bay, through construction of an oyster reef, will help to reduce excess nitrogen inputs generated from existing upland development, in accordance with Page 87 of the Town's Water Quality Improvement Project Plan (WQIPP). The proposal will also have the added benefit of protecting existing road infrastructure, and has the potential to allow for the establishment of eelgrass beds in the protected leeward side of the proposed reef. The proposal will also further the PEP's goals of habitat restoration and living shoreline solutions for infrastructure protection.

3e. Review the following statements and indicate whether they are applicable to your project. For all "Yes" responses, please indicate how your project addresses the requirements indicated.

YES	N/A	
☐	☑	**If stormwater system or drainage is proposed:** The project must indicate compliance with the New York State Stormwater Design Manual (2015 and as updated).
☐	☑	**If project is related to farmland:** Describe any Agricultural Stewardship Plan or other long term strategy for Nitrogen abatement.
☑	☐	**If the project is for habitat restoration:** The narrative must address 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:** 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.

4. WATER QUALITY BENEFIT

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

Eastern oysters can filter excess nitrogen from approximately 50 gallons of water per day, through filter feeding of phytoplankton. The construction of an oyster reef, increases the density of feeding oysters, which will help to reduce excess nitrogen inputs generated by the existing upland development.

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

Changes to water quality will take place through direct filtration resulting from the increased number of eastern oysters at the inlet of Sebonac Creek, as well as increased sedimentation due to wave damping associated with the reef field. In the first instance, this project will result in reduced algae and fine particulate levels in the immediate area through the regular feeding of the oysters and other attached growth colonizing the surface of the reef structures. In addition to this, attached algae, also growing on the surface of the reefs, will absorb nitrogen and other nutrients resulting in reduced overall concentrations in the immediate vicinity of the reef field. With regard to sedimentation, water clarity will be improved through settlement of both inorganic and organic particulates within, upon and amongst the reef structures. Despite the fact these changes will take place it will be difficult to collect specific data on this effect, given that the reefs will be deployed in the open waters of Great Peconic Bay where flushing and regular water exchange will drown out any measureable changes in WQ parameters except at the most microscopic level. For this reason, we expect to report on the number of surviving oysters and provide qualitative estimates of the filtering effect they will have in this area.

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

Pediveliger oyster larvae, will be allowed to settle on molded concrete "reef balls". Once the larvae settle, the reef balls will be installed and the oysters will be allowed to mature, which will take one to three (1-3) years. Upon maturation, the mature oysters will spawn, with the resulting pediveliger oyster larvae re-settling on the reef and/or dispersing to populate other areas. It is anticipated that the reef will be self-sustaining, after the initial three (3) years, for more than ten (10) years. However, the project includes a contingency plan for one (1) post storm monitoring inspection.

5. COST FACTORS

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

Cost estimates are based upon construction of similar projects at the Shinnecock Nation Reservation and in Moriches Bay in the Town of Brookhaven. The attached cost estimate was provided by Cornell Cooperative Extension (CCE), which constructed the two (2) aforementioned projects.

5b. Describe any matching funds to be provided.

Up to 59% of the funding for the project may be reimbursable by the Federal Emergency Management Agency (FEMA), pursuant to preliminary discussions with FEMA and Homeland Security. The Environment Division is seeking to obtain funding from the Community Preservation Fund to provide for upfront costs of the entire project, with FEMA/Homeland Security reimbursing CPF for up to 59% of the total project cost.

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

Pursuant to preliminary discussions with FEMA/Homeland Security, FEMA may reimburse the Town for up to 59% of the project. However, the Town must provide a minimum 41% match. The Environment Division is seeking to obtain funding from the Community Preservation Fund to provide for upfront costs of the entire project, with FEMA/reimbursing CPF for up to 59% of the total project cost.

6. MANAGEMENT, EXPERIENCE, ABILITY

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

The Environment Division, which is overseen by the Chief Environmental Analyst, will contract with Cornell Cooperative Extension (CCE) for the planning, design, permitting, construction, and monitoring of the proposed oyster reef. CCE has overseen the construction of at least two(2) recent oyster reef projects at the Shinnecock Nation and in Center Moriches. Furthermore, CCE has an extensive aquaculture program which provides oyster, clam and scallop seeds/spat for numerous entities, inclusive of the Board of Trustees for the Freeholders and Commonalty of the Town of Southampton (Trustees), which reduces the overall project costs, as nearly the entire project will be completed "in-house".

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

The project is being advanced by FEMA and the Department of Homeland Security and, therefore, has their preliminary support. The project is also backed by the Board of Trustees, CCE, and PEP.

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

The project will require permits from the New York State Department of Environmental Conservation (NYSDEC), as well as from the Army Corps. of Engineers. It is anticipated that the project will obtain the required permits within one (1) year of execution of a professional services contract.

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7. MAINTENANCE, MONITORING, EVALUATION

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

Immediately following installation, divers will visit the site and record baseline conditions including underwater videos of the entire installation as well as fixed point reference still photos to serve as points of comparison as monitoring continues, as the reef structures mature and oysters grow. Given that the newly set larval oysters will be too small to effectively count at the time of initial installation, a count of oyster density will be made at the end of the first growing season to compare with predicted stocking densities within setting tanks. We expect to conduct five (5) years of post-construction monitoring with three (3) annual visits (spring, summer, and fall) with a dive team to make observations and record reef colonization, reef structure stability and overall sedimentation and erosion. If oyster losses are found to be considerable or reef structures are found to be unstable, plans will be made to adaptively manage the project such that both situations can be corrected. It should be possible to remotely set oyster larvae on deployed reef structures and specific plans will have to be made to stabilize structures through modification of anchoring method or addition of other suitable stabilizing means. The monitoring and maintenance plan includes a contingency for a one (1) time post storm evaluation.

The project also calls for installation of navigational buoys, to prevent collision and damage to the reef, as well as designation of the area as a "no-take/spawner sanctuary zone".

8. DURATION OF PROJECT

8a. Provide a projected project timeline.

Planning, design, and permitting are anticipated to be completed within one (1) year of execution of a professional services contract. Construction will then occur in late spring/early summer, to coincide with the settling of wild pediveliger oysters. Monitoring of the project, which is included in the project cost, will be completed three (3) times annually for five (5) years. The project includes a contingency plan to conduct a one (1) time post storm assessment.

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

Project planning, design, and permitting are anticipated to be completed within one (1) year of execution of a professional services contract. Construction will occur during the late spring/early summer to coincide with the settling of wild pediveliger oysters. Monitoring will occur three (3) times annually for five (5) years. A detailed budget is attached.

9. ATTESTATION

Allocation of CPF funds will not be for the purpose of accommodating new growth, as this is prohibited by State law.

☑ Check box to certify that funds will not be directed for projects for the purpose of accommodating new growth.

Signature: _____ Date 05/13/2021

10. REQUIRED ATTACHMENTS Confirm that the following required documents are attached to this application:

- ☑ Photos of existing conditions
- ☑ Location Map
- ☑ State Environmental Quality Review Act (SEQRA) Long or Short Environmental Assessment Form (EAF) https://www.dec.ny.gov/permits/6191.html
- ☑ Completed EPA Spreadsheet Tool for Evaluating Pollutant Load (STEPL) https://www.epa.gov/nps/spreadsheet-tool-estimating-pollutant-loads-stepl or similar standardized methodology (describe)
- ☑ Project budget (see attached template)
- ☐ Ownership commitment is provided via letter of intent (LOI) for non-municipal owners or municipal resolution for municipal owners

11. OTHER ATTACHMENTS

List other attachments provided, including cost estimates, bids, plans, documentation of matching funds, and other as appropriate to demonstrate project readiness, quality, feasibility, and cost effectiveness

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BUDGET PROPOSAL

PLANNING/ENGINEERING/DESIGN	Town CPF Request	Matching Funds Committed	Matching Funds Pending	Estimated Total Project Costs
Task 1- CCE- Preliminary Design and Project Management	$-22,000.00	$-	$-	$-22,000.00
Task 2- Structure Engineering (subcontracted by CCE)	$-	$-	$-21,000.00	$-21,000.00
Task 3-	$-	$-	$-	$-0.00
Task 4-	$-	$-	$-	$-0.00
Task 5-	$-	$-	$-	$-0.00
Task 6-	$-	$-	$-	$-0.00
	$-	$-	$-	$-0.00
Planning/Engineering/Design Cost Total	$-22,000.00	$-0.00	$-21,000.00	$-43,000.00

Contractual Services				
	$-	$-	$-	$-0.00
	$-	$-	$-	$-0.00
	$-	$-	$-	$-0.00
	$-	$-	$-	$-0.00
	$-	$-	$-	$-0.00
	$-	$-	$-	$-0.00
	$-	$-	$-	$-0.00
Contractual Services Cost Total	$-0.00	$-0.00	$-0.00	$-0.00

Construction & Site Improvements				
Reef ball installation (completed by marine contractor subcontracted by CCE)	$-	$-	$-21,000.00	$-21,000.00
	$-	$-	$-	$-0.00
	$-	$-	$-	$-0.00
	$-	$-	$-	$-0.00
	$-	$-	$-	$-0.00
	$-	$-	$-	$-0.00
	$-	$-	$-	$-0.00
Construction & Site Improvements Cost Total	$-0.00	$-0.00	$-21,000.00	$-21,000.00

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/WQIPP

Equipment/Materials/Supplies	Town CPF Request	Matching Funds Committed	Matching Funds Pending	Estimated Total Project Costs
Purchase and delivery of reef balls to CCE (purchased through CCE)	$-	$-	$-68,000.00	$-68,000.00
CCE Aquaculture Hatchery Supplies	$-	$-	$-11,000.00	$-11,000.00
Field Supplies	$-1,100.00	$-	$-	$-1,100.00
	$-	$-	$-	$-0.00
	$-	$-	$-	$-0.00
	$-	$-	$-	$-0.00
	$-	$-	$-	$-0.00
				$ 0.00
				$ 0.00
				$ 0.00
				$ 0.00
				$ 0.00
				$ 0.00
				$ 0.00
				$ 0.00
Equipment/Materials/Supplies Total	$-1,100.00	$0.00	$-79,000.00	$-80,100.00

Additional Cost				
Monitoring- Provided by CCE through Contractual Services	$-22,000.00	$-	$-	$-22,000.00
Travel (Boat, Mileage, etc.)	$-7,000.00	$-	$-	$-7,000.00
CCE Hatchery Staff	$-21,950.00	$-	$-21,950.00	$-43,900.00
CCE Field Staff	$-22,000.00	$-	$-	$-22,000.00
	$-	$-	$-	$-0.00
	$-	$-	$-	$-0.00
	$-	$-	$-	$-0.00
Additional Cost Total	$-72,950.00	$-0.00	$-21,950.00	$-94,900.00

Planning/Engineering/Design Cost Total (from page 7)	$-22,000.00	$-0.00	$-21,000.00	$-43,000.00

Total Project Cost	$-239,000.00
Applicant matching funds committed	$-0.00
Applicant matching funds pending approval (e.g. grant request submitted pending determination)	$-142,950.00
Total CPF Funds Requested	$-96,050.00

Source of matching funds	Amount
Department of Homeland Security/FEMA	$ 142,950.00

CP-13107 (rev. 4/2021)

TOWN OF SOUTHAMPTON
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COMMUNITY PRESERVATION FUND (CPF)
WATER QUALITY IMPROVEMENT PROGRAM
LETTER OF INTENT

APPLICANT'S INFORMATION

Owner: New York State

Contact First and Last Name:

Contact Address: 163 W. 125th Street, #215, New York, NY 10027

Contact Phone:

Contact Email:

CONTRACT RECIPIANT INFORMATION

Name/Organization: Southampton Town Environment Division

Contact Person/Officer: Martin E. Shea, Chief Environmental Analyst

Contact Address: 116 Hampton Road, Southampton

Contact Phone: 631-287-5710

Contact Email: MShea@southamptontownny.gov

PROJECT INFORMATION

Project Title: Sebonac Creek Inlet/Great Peconic Bay Oyster Reef

Project Location: Great Peconic Bay near northerly terminus of Sebonac Inlet Road.

Project Description (1-3 sentences):

To design, permit and construct a pilot oyster reef project, located on the northeast and southwest sides of Sebonac Creek Inlet in Great Peconic Bay. The proposed reef will reduce nitrogen by increasing the number of adult filter feeding oysters in the area. The reef structure will provide a substrate for attached macroalgae, which will also uptake excess nitrogen in the water column. The reef is also anticipated to provide nature based shoreline stabilization for the benefit of protecting existing road infrastructure, which is consistent with the Peconic Estuary Partnership's goals of habitat restoration and living shoreline solutions for infrastructure protection.

ANTICIPATED PROJECT TIMELINE

Begin: June 2021

Complete: September 2022

Notes:

Design and permitting is anticipated to be completed within one (1) year of execution of a professional services contract with Cornell Cooperative Extension (CCE) of Suffolk County. Construction is anticipated to be completed within six (6) months of permit issuance.

TOWN OF SOUTHAMPTON

Department of Land Management
Environment Division
116 HAMPTON ROAD
SOUTHAMPTON, NY 11968

Phone: (631) 287-5710
Fax: (631) 287-5706

JAY SCHNEIDERMAN
TOWN SUPERVISOR

JANICE SCHERER
TOWN PLANNING AND
DEVELOPMENT ADMINISTRATOR

MARTIN SHEA
CHIEF ENVIRONMENTAL ANALYST

Town of Southampton Sebonac Inlet/Great Peconic Bay Oyster Reef
Site Photos

(Prepared by the Town of Southampton Environment Division on May 13, 2021)

Figure 1: Approximate location of the northeasterly portion of the proposed oyster reef.

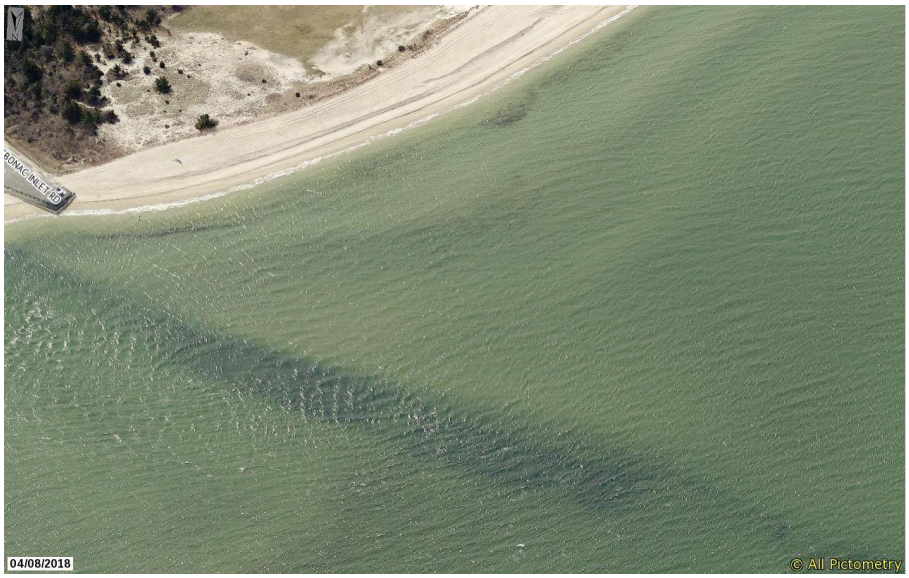


Figure 2: Approximate location of the southwesterly portion of the proposed oyster reef.

Figure 3: Great Peconic Bay at the confluence of Sebonac Creek Inlet, facing east-northeast, where the approximately 70% of the project will be located.

Full Environmental Assessment Form
Part 1 - Project and Setting

Instructions for Completing Part 1

Part 1 is to be completed by the applicant or project sponsor. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification.

Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information; indicate whether missing information does not exist, or is not reasonably available to the sponsor; and, when possible, generally describe work or studies which would be necessary to update or fully develop that information.

Applicants/sponsors must complete all items in Sections A & B. In Sections C, D & E, most items contain an initial question that must be answered either "Yes" or "No". If the answer to the initial question is "Yes", complete the sub-questions that follow. If the answer to the initial question is "No", proceed to the next question. Section F allows the project sponsor to identify and attach any additional information. Section G requires the name and signature of the applicant or project sponsor to verify that the information contained in Part 1is accurate and complete.

A. Project and Applicant/Sponsor Information.

Name of Action or Project: Sebonac Creek/Great Peconic Bay Oyster Reef		
Project Location (describe, and attach a general location map): Great Peconic Bay, Town of Southampton, Suffolk County, New York		
Brief Description of Proposed Action (include purpose or need): The Town of Southampton's Environment Division is seeking funding to design, permit and construct a pilot oyster reef project, in state waters in the Great Peconic Bay. Preliminary designs for the oyster reef call for installing two (2) rows of reef balls, approximately on the northeast and southwest sides of Sebonac Inlet. Approximately 275 linear feet of reef balls would be installed on the northeast side of the inlet, while approximately 125 linear feet of reef balls to be installed to the southwest . Each 4 ft. wide x 2.9 ft. deep, molded concrete reef ball will be filled with shells and submerged in tanks with eastern oyster (Crassostrea virginica) spat . Once the pediveliger spat has settled onto the reef balls, a marine contractor will use a barge to transport the reef balls from CCE's hatchery facility for placement underwater at the site using a crane. Upon completion of the construction, CCE will complete a baseline inspection of the reef, inclusive of video and still photo-documentation, as well as set benchmarks for future evaluation and monitoring for a period of five years. The Bay Constables, in coordination with the Board of Trustees of the Freeholders and Commonalty of the Town of Southampton, will install the necessary reflective navigational buoys to prevent interference or damage from boat traffic.		
Name of Applicant/Sponsor: Town of Southampton- Environment Division	Telephone: 631-287-5710 E-Mail: MShea@southamptontownny.gov	
Address: 116 Hampton Road		
City/PO: Southampton	State: NY	Zip Code: 11968
Project Contact (if not same as sponsor; give name and title/role):	Telephone: E-Mail:	
Address:		
City/PO:	State:	Zip Code:
Property Owner (if not same as sponsor): State of New York	Telephone: E-Mail:	
Address: 163 W. 125th Street, #215,		
City/PO: New York	State: NY	Zip Code: 10027

B. Government Approvals

B. Government Approvals, Funding, or Sponsorship. ("Funding" includes grants, loans, tax relief, and any other forms of financial assistance.)

Government Entity	If Yes: Identify Agency and Approval(s) Required	Application Date (Actual or projected)
a. City Counsel, Town Board, or Village Board of Trustees ☐Yes☐No		
b. City, Town or Village Planning Board or Commission ☐Yes☐No		
c. City, Town or Village Zoning Board of Appeals ☐Yes☐No		
d. Other local agencies ☐Yes☐No		
e. County agencies ☐Yes☐No		
f. Regional agencies ☐Yes☐No		
g. State agencies ☑Yes☐No	Article 25 Tidal Wetlands Permit	Winter 2021-Spring 2022
h. Federal agencies ☑Yes☐No	US Army Corps of Engineers- Rivers and Harbors Act	Winter 2021-Spring 2022

i. Coastal Resources.

i. Is the project site within a Coastal Area, or the waterfront area of a Designated Inland Waterway? ☑Yes☐No

ii. Is the project site located in a community with an approved Local Waterfront Revitalization Program? ☐Yes☑No

iii. Is the project site within a Coastal Erosion Hazard Area? ☐Yes☑No

C. Planning and Zoning

C.1. Planning and zoning actions.

Will administrative or legislative adoption, or amendment of a plan, local law, ordinance, rule or regulation be the only approval(s) which must be granted to enable the proposed action to proceed? ☐Yes☑No

- **If Yes,** complete sections C, F and G.
- **If No,** proceed to question C.2 and complete all remaining sections and questions in Part 1

C.2. Adopted land use plans.

a. Do any municipally- adopted (city, town, village or county) comprehensive land use plan(s) include the site where the proposed action would be located? ☑Yes☐No

If Yes, does the comprehensive plan include specific recommendations for the site where the proposed action would be located? ☑Yes☐No

b. Is the site of the proposed action within any local or regional special planning district (for example: Greenway; Brownfield Opportunity Area (BOA); designated State or Federal heritage area; watershed management plan; or other?) ☑Yes☐No

If Yes, identify the plan(s):

Peconic Estuary Comprehensive Conservation Management Plan and Community Preservation Water Quality Improvement Project Plan

c. Is the proposed action located wholly or partially within an area listed in an adopted municipal open space plan, or an adopted municipal farmland protection plan? ☑Yes☐No

If Yes, identify the plan(s):

Town of Southampton Community Preservation Plan and Town of Southampton Community Preservation Water Quality Improvement Project Plan

C.3. Zoning

a. Is the site of the proposed action located in a municipality with an adopted zoning law or ordinance. ☑ Yes ☐ No
If Yes, what is the zoning classification(s) including any applicable overlay district?
N/A- Project is proposed in state waters, which are not classified under zoning but are recognized as open space.

b. Is the use permitted or allowed by a special or conditional use permit? ☑ Yes ☐ No

c. Is a zoning change requested as part of the proposed action? ☐ Yes ☑ No
If Yes,
i. What is the proposed new zoning for the site? _____

C.4. Existing community services.

a. In what school district is the project site located? Tuckahoe

b. What police or other public protection forces serve the project site?
Southampton Police Department

c. Which fire protection and emergency medical services serve the project site?
Southampton Fire Department

d. What parks serve the project site?
Tuckahoe Woods, Emma Rose Elliston Park

D. Project Details

D.1. Proposed and Potential Development

a. What is the general nature of the proposed action (e.g., residential, industrial, commercial, recreational; if mixed, include all components)? Habitat restoration

b. a. Total acreage of the site of the proposed action? >0.5 acres
b. Total acreage to be physically disturbed? >0.5 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 0 acres

c. Is the proposed action an expansion of an existing project or use? ☐ Yes ☑ No
i. If Yes, what is the approximate percentage of the proposed expansion and identify the units (e.g., acres, miles, housing units, square feet)? % _____ Units: _____

d. Is the proposed action a subdivision, or does it include a subdivision? ☐ Yes ☑ No
If Yes,
i. Purpose or type of subdivision? (e.g., residential, industrial, commercial; if mixed, specify types)
ii. Is a cluster/conservation layout proposed? ☐ Yes ☐ No
iii. Number of lots proposed? _____
iv. Minimum and maximum proposed lot sizes? Minimum _____ Maximum _____

e. Will the proposed action be constructed in multiple phases? ☐ Yes ☑ No
i. If No, anticipated period of construction: 1 months
ii. If Yes:
- Total number of phases anticipated _____
- Anticipated commencement date of phase 1 (including demolition) _____ month _____ year
- Anticipated completion date of final phase _____ month _____ year
- Generally describe connections or relationships among phases, including any contingencies where progress of one phase may determine timing or duration of future phases: _____

f. Does the project include new residential uses? ☐Yes ☑No

If Yes, show numbers of units proposed.

	One Family	Two Family	Three Family	Multiple Family (four or more)
Initial Phase				
At completion of all phases				

g. Does the proposed action include new non-residential construction (including expansions)? ☑Yes ☐No

If Yes,

i. Total number of structures 2

ii. Dimensions (in feet) of largest proposed structure: 3 ft. height; 8 ft. width; and 275 ft. length

iii. Approximate extent of building space to be heated or cooled: 0 square feet

h. Does the proposed action include construction or other activities that will result in the impoundment of any liquids, such as creation of a water supply, reservoir, pond, lake, waste lagoon or other storage? ☐Yes ☑No

If Yes,

i. Purpose of the impoundment:

ii. If a water impoundment, the principal source of the water: ☐ Ground water ☐ Surface water streams ☐ Other specify:

iii. If other than water, identify the type of impounded/contained liquids and their source.

iv. Approximate size of the proposed impoundment. Volume: _____ million gallons; surface area: _____ acres

v. Dimensions of the proposed dam or impounding structure: _____ height; _____ length

vi. Construction method/materials for the proposed dam or impounding structure (e.g., earth fill, rock, wood, concrete):

D.2. Project Operations

a. Does the proposed action include any excavation, mining, or dredging, during construction, operations, or both? (Not including general site preparation, grading or installation of utilities or foundations where all excavated materials will remain onsite) ☐Yes ☑No

If Yes:

i. What is the purpose of the excavation or dredging?

ii. How much material (including rock, earth, sediments, etc.) is proposed to be removed from the site?

- Volume (specify tons or cubic yards):
- Over what duration of time?

iii. Describe nature and characteristics of materials to be excavated or dredged, and plans to use, manage or dispose of them.

iv. Will there be onsite dewatering or processing of excavated materials? ☐Yes ☐No

If yes, describe.

v. What is the total area to be dredged or excavated? _____ acres

vi. What is the maximum area to be worked at any one time? _____ acres

vii. What would be the maximum depth of excavation or dredging? _____ feet

viii. Will the excavation require blasting? ☐Yes ☐No

ix. Summarize site reclamation goals and plan:

b. Would the proposed action cause or result in alteration of, increase or decrease in size of, or encroachment into any existing wetland, waterbody, shoreline, beach or adjacent area? ☑Yes ☐No

If Yes:

i. Identify the wetland or waterbody which would be affected (by name, water index number, wetland map number or geographic description): Great Peconic Bay

ii. Describe how the proposed action would affect that waterbody or wetland, e.g. excavation, fill, placement of structures, or alteration of channels, banks and shorelines. Indicate extent of activities, alterations and additions in square feet or acres:
"Filling" of open tidal waters by construction an oyster reef, by installing two (2) row of 4 ft. wide reef balls, for a total of 400 linear feet (125 feet in the southwest side of Sebonac Creek Inlet and 275 feet on the the northeast side of the inlet), not to exceed 0.5 acres.

iii. Will the proposed action cause or result in disturbance to bottom sediments? ☑ Yes ☐ No
If Yes, describe: Temporary disturbance during installation of reef balls

iv. Will the proposed action cause or result in the destruction or removal of aquatic vegetation? ☐ Yes ☑ No
If Yes:

- acres of aquatic vegetation proposed to be removed: _____
- expected acreage of aquatic vegetation remaining after project completion: _____
- purpose of proposed removal (e.g. beach clearing, invasive species control, boat access): _____
- proposed method of plant removal: _____
- if chemical/herbicide treatment will be used, specify product(s): _____

v. Describe any proposed reclamation/mitigation following disturbance: _____

c. Will the proposed action use, or create a new demand for water? ☐ Yes ☑ No
If Yes:

i. Total anticipated water usage/demand per day: _____ gallons/day

ii. Will the proposed action obtain water from an existing public water supply? ☐ Yes ☐ No
If Yes:

- Name of district or service area: _____
- Does the existing public water supply have capacity to serve the proposal? ☐ Yes ☐ No
- Is the project site in the existing district? ☐ Yes ☐ No
- Is expansion of the district needed? ☐ Yes ☐ No
- Do existing lines serve the project site? ☐ Yes ☐ No

iii. Will line extension within an existing district be necessary to supply the project? ☐ Yes ☐ No
If Yes:

- Describe extensions or capacity expansions proposed to serve this project: _____
- Source(s) of supply for the district: _____

iv. Is a new water supply district or service area proposed to be formed to serve the project site? ☐ Yes ☐ No
If, Yes:

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- Proposed source(s) of supply for new district: _____

v. If a public water supply will not be used, describe plans to provide water supply for the project: _____

vi. If water supply will be from wells (public or private), what is the maximum pumping capacity: _____ gallons/minute.

d. Will the proposed action generate liquid wastes? ☐ Yes ☑ No
If Yes:

i. Total anticipated liquid waste generation per day: _____ gallons/day

ii. Nature of liquid wastes to be generated (e.g., sanitary wastewater, industrial; if combination, describe all components and approximate volumes or proportions of each): _____

iii. Will the proposed action use any existing public wastewater treatment facilities? ☐ Yes ☐ No
If Yes:

- Name of wastewater treatment plant to be used: _____
- Name of district: _____
- Does the existing wastewater treatment plant have capacity to serve the project? ☐ Yes ☐ No
- Is the project site in the existing district? ☐ Yes ☐ No
- Is expansion of the district needed? ☐ Yes ☐ No

- Do existing sewer lines serve the project site? ☐Yes☐No
- Will a line extension within an existing district be necessary to serve the project? ☐Yes☐No

If Yes:

- Describe extensions or capacity expansions proposed to serve this project: _____

_____

_____

iv. Will a new wastewater (sewage) treatment district be formed to serve the project site? ☐Yes☐No

If Yes:

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- What is the receiving water for the wastewater discharge? _____

v. If public facilities will not be used, describe plans to provide wastewater treatment for the project, including specifying proposed receiving water (name and classification if surface discharge or describe subsurface disposal plans):

_____

_____

vi. Describe any plans or designs to capture, recycle or reuse liquid waste: _____

_____

_____

e. Will the proposed action disturb more than one acre and create stormwater runoff, either from new point sources (i.e. ditches, pipes, swales, curbs, gutters or other concentrated flows of stormwater) or non-point source (i.e. sheet flow) during construction or post construction? ☐Yes☑No

If Yes:

i. How much impervious surface will the project create in relation to total size of project parcel?

_____ Square feet or _____ acres (impervious surface)

_____ Square feet or _____ acres (parcel size)

ii. Describe types of new point sources. _____

_____

iii. Where will the stormwater runoff be directed (i.e. on-site stormwater management facility/structures, adjacent properties, groundwater, on-site surface water or off-site surface waters)?

_____

_____

- If to surface waters, identify receiving water bodies or wetlands: _____

_____

_____

- Will stormwater runoff flow to adjacent properties? ☐Yes☐No

iv. Does the proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? ☐Yes☐No

f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion, waste incineration, or other processes or operations? ☑Yes☐No

If Yes, identify:

i. Mobile sources during project operations (e.g., heavy equipment, fleet or delivery vehicles)

Barge Transport and Crane installation- not to exceed 1 week

ii. Stationary sources during construction (e.g., power generation, structural heating, batch plant, crushers)

_____

iii. Stationary sources during operations (e.g., process emissions, large boilers, electric generation)

_____

g. Will any air emission sources named in D.2.f (above), require a NY State Air Registration, Air Facility Permit, or Federal Clean Air Act Title IV or Title V Permit? ☐Yes☑No

If Yes:

i. Is the project site located in an Air quality non-attainment area? (Area routinely or periodically fails to meet ambient air quality standards for all or some parts of the year) ☐Yes☐No

ii. In addition to emissions as calculated in the application, the project will generate:

- _____Tons/year (short tons) of Carbon Dioxide (CO_2)
- _____Tons/year (short tons) of Nitrous Oxide (N_2O)
- _____Tons/year (short tons) of Perfluorocarbons (PFCs)
- _____Tons/year (short tons) of Sulfur Hexafluoride (SF_6)
- _____Tons/year (short tons) of Carbon Dioxide equivalent of Hydroflourocarbons (HFCs)
- _____Tons/year (short tons) of Hazardous Air Pollutants (HAPs)

h. Will the proposed action generate or emit methane (including, but not limited to, sewage treatment plants, landfills, composting facilities)? ☐Yes ☑No

If Yes:

i. Estimate methane generation in tons/year (metric): _____

ii. Describe any methane capture, control or elimination measures included in project design (e.g., combustion to generate heat or electricity, flaring): _____

i. Will the proposed action result in the release of air pollutants from open-air operations or processes, such as quarry or landfill operations? ☐Yes ☑No

If Yes: Describe operations and nature of emissions (e.g., diesel exhaust, rock particulates/dust):

j. Will the proposed action result in a substantial increase in traffic above present levels or generate substantial new demand for transportation facilities or services? ☐Yes ☑No

If Yes:

i. When is the peak traffic expected (Check all that apply): ☐ Morning ☐ Evening ☐Weekend ☐ Randomly between hours of _____ to _____.

ii. For commercial activities only, projected number of truck trips/day and type (e.g., semi trailers and dump trucks): _____

iii. Parking spaces: Existing _____ Proposed _____ Net increase/decrease _____

iv. Does the proposed action include any shared use parking? ☐Yes ☐No

v. If the proposed action includes any modification of existing roads, creation of new roads or change in existing access, describe:

vi. Are public/private transportation service(s) or facilities available within ½ mile of the proposed site? ☐Yes ☐No

vii Will the proposed action include access to public transportation or accommodations for use of hybrid, electric or other alternative fueled vehicles? ☐Yes ☐No

viii. Will the proposed action include plans for pedestrian or bicycle accommodations for connections to existing pedestrian or bicycle routes? ☐Yes ☐No

k. Will the proposed action (for commercial or industrial projects only) generate new or additional demand for energy? ☐Yes ☑No

If Yes:

i. Estimate annual electricity demand during operation of the proposed action: _____

ii. Anticipated sources/suppliers of electricity for the project (e.g., on-site combustion, on-site renewable, via grid/local utility, or other):

iii. Will the proposed action require a new, or an upgrade, to an existing substation? ☐Yes ☐No

l. Hours of operation. Answer all items which apply.

i. During Construction:

- Monday - Friday: 8am-5 pm
- Saturday: _____
- Sunday: _____
- Holidays: _____

ii. During Operations:

- Monday - Friday: _____
- Saturday: _____
- Sunday: _____
- Holidays: _____

m. Will the proposed action produce noise that will exceed existing ambient noise levels during construction, operation, or both? ☑ Yes ☐ No

If yes:

i. Provide details including sources, time of day and duration:

Barge and Crane operation during construction between 8 am and 5 pm. Not to exceed one (1) week.

ii. Will the proposed action remove existing natural barriers that could act as a noise barrier or screen? ☐ Yes ☑ No

Describe: _____

n. Will the proposed action have outdoor lighting? ☐ Yes ☑ No

If yes:

i. Describe source(s), location(s), height of fixture(s), direction/aim, and proximity to nearest occupied structures:

ii. Will proposed action remove existing natural barriers that could act as a light barrier or screen? ☐ Yes ☐ No

Describe: _____

o. Does the proposed action have the potential to produce odors for more than one hour per day? ☐ Yes ☑ No

If Yes, describe possible sources, potential frequency and duration of odor emissions, and proximity to nearest occupied structures: _____

p. Will the proposed action include any bulk storage of petroleum (combined capacity of over 1,100 gallons) or chemical products 185 gallons in above ground storage or any amount in underground storage? ☐ Yes ☑ No

If Yes:

i. Product(s) to be stored _____

ii. Volume(s) _____ per unit time _____ (e.g., month, year)

iii. Generally, describe the proposed storage facilities: _____

q. Will the proposed action (commercial, industrial and recreational projects only) use pesticides (i.e., herbicides, insecticides) during construction or operation? ☐ Yes ☑ No

If Yes:

i. Describe proposed treatment(s):

ii. Will the proposed action use Integrated Pest Management Practices? ☐ Yes ☐ No

r. Will the proposed action (commercial or industrial projects only) involve or require the management or disposal of solid waste (excluding hazardous materials)? ☐ Yes ☑ No

If Yes:

i. Describe any solid waste(s) to be generated during construction or operation of the facility:

- Construction: _____ tons per _____ (unit of time)
- Operation : _____ tons per _____ (unit of time)

ii. Describe any proposals for on-site minimization, recycling or reuse of materials to avoid disposal as solid waste:

- Construction: _____
- Operation: _____

iii. Proposed disposal methods/facilities for solid waste generated on-site:

- Construction: _____
- Operation: _____

s. Does the proposed action include construction or modification of a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Type of management or handling of waste proposed for the site (e.g., recycling or transfer station, composting, landfill, or other disposal activities): _____

ii. Anticipated rate of disposal/processing:

- _____ Tons/month, if transfer or other non-combustion/thermal treatment, or
- _____ Tons/hour, if combustion or thermal treatment

iii. If landfill, anticipated site life: _____ years

t. Will the proposed action at the site involve the commercial generation, treatment, storage, or disposal of hazardous waste? ☐ Yes ☑ No

If Yes:

i. Name(s) of all hazardous wastes or constituents to be generated, handled or managed at facility: _____

ii. Generally describe processes or activities involving hazardous wastes or constituents: _____

iii. Specify amount to be handled or generated _____ tons/month

iv. Describe any proposals for on-site minimization, recycling or reuse of hazardous constituents: _____

v. Will any hazardous wastes be disposed at an existing offsite hazardous waste facility? ☐ Yes ☐ No

If Yes: provide name and location of facility: _____

If No: describe proposed management of any hazardous wastes which will not be sent to a hazardous waste facility:

E. Site and Setting of Proposed Action

E.1. Land uses on and surrounding the project site

a. Existing land uses.

i. Check all uses that occur on, adjoining and near the project site.

☐ Urban ☐ Industrial ☐ Commercial ☑ Residential (suburban) ☐ Rural (non-farm)
☑ Forest ☐ Agriculture ☑ Aquatic ☑ Other (specify): Private Recretion (Golf Course)/Preserved Open Space

ii. If mix of uses, generally describe:

b. Land uses and covertypes on the project site.

Land use or Covertype	Current Acreage	Acreage After Project Completion	Change (Acres +/-)
• Roads, buildings, and other paved or impervious surfaces	0	0	0
• Forested	0	0	0
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)	0	0	0
• Agricultural (includes active orchards, field, greenhouse etc.)	0	0	0
• Surface water features (lakes, ponds, streams, rivers, etc.)	0	0	0
• Wetlands (freshwater or tidal)	0	0	0
• Non-vegetated (bare rock, earth or fill)	0	0	0
• Other Describe: _____	0	0	0

c. Is the project site presently used by members of the community for public recreation? ☑ Yes ☐ No
i. If Yes: explain: Active and passive recreation of surface of waters.

d. Are there any facilities serving children, the elderly, people with disabilities (e.g., schools, hospitals, licensed day care centers, or group homes) within 1500 feet of the project site? ☐ Yes ☑ No
If Yes,
i. Identify Facilities:

e. Does the project site contain an existing dam? ☐ Yes ☑ No
If Yes:
i. Dimensions of the dam and impoundment:
- Dam height: _____ feet
- Dam length: _____ feet
- Surface area: _____ acres
- Volume impounded: _____ gallons OR acre-feet

ii. Dam's existing hazard classification: _____
iii. Provide date and summarize results of last inspection:

f. Has the project site ever been used as a municipal, commercial or industrial solid waste management facility, or does the project site adjoin property which is now, or was at one time, used as a solid waste management facility? ☐ Yes ☑ No
If Yes:
i. Has the facility been formally closed? ☐ Yes ☐ No
- If yes, cite sources/documentation: _____

ii. Describe the location of the project site relative to the boundaries of the solid waste management facility:

iii. Describe any development constraints due to the prior solid waste activities: _____

g. Have hazardous wastes been generated, treated and/or disposed of at the site, or does the project site adjoin property which is now or was at one time used to commercially treat, store and/or dispose of hazardous waste? ☐ Yes ☑ No
If Yes:
i. Describe waste(s) handled and waste management activities, including approximate time when activities occurred:

h. Potential contamination history. Has there been a reported spill at the proposed project site, or have any remedial actions been conducted at or adjacent to the proposed site? ☐ Yes ☑ No
If Yes:
i. Is any portion of the site listed on the NYSDEC Spills Incidents database or Environmental Site Remediation database? Check all that apply: ☐ Yes ☐ No
☐ Yes – Spills Incidents database Provide DEC ID number(s): _____
☐ Yes – Environmental Site Remediation database Provide DEC ID number(s): _____
☐ Neither database

ii. If site has been subject of RCRA corrective activities, describe control measures: _____

iii. Is the project within 2000 feet of any site in the NYSDEC Environmental Site Remediation database? ☐ Yes ☐ No
If yes, provide DEC ID number(s): _____

iv. If yes to (i), (ii) or (iii) above, describe current status of site(s):

v. Is the project site subject to an institutional control limiting property uses? ☐Yes☐No

- If yes, DEC site ID number: _____
- Describe the type of institutional control (e.g., deed restriction or easement): _____
- Describe any use limitations: _____
- Describe any engineering controls: _____
- Will the project affect the institutional or engineering controls in place? ☐Yes☐No
- Explain: _____

E.2. Natural Resources On or Near Project Site

a. What is the average depth to bedrock on the project site? 10-20 feet

b. Are there bedrock outcroppings on the project site? ☐Yes☑No
If Yes, what proportion of the site is comprised of bedrock outcroppings? _____%

c. Predominant soil type(s) present on project site: sand and cobble 100 %
_____ _____%
_____ _____%

d. What is the average depth to the water table on the project site? Average: 0 feet

e. Drainage status of project site soils: ☐ Well Drained: _____% of site
☐ Moderately Well Drained: _____% of site
☑ Poorly Drained 100 % of site

f. Approximate proportion of proposed action site with slopes: ☑ 0-10%: 100 % of site
☐ 10-15%: _____% of site
☐ 15% or greater: _____% of site

g. Are there any unique geologic features on the project site? ☐Yes☑No
If Yes, describe: _____

h. Surface water features.

i. Does any portion of the project site contain wetlands or other waterbodies (including streams, rivers, ponds or lakes)? ☑Yes☐No

ii. Do any wetlands or other waterbodies adjoin the project site? ☑Yes☐No

If Yes to either *i* or *ii*, continue. If No, skip to E.2.i.

iii. Are any of the wetlands or waterbodies within or adjoining the project site regulated by any federal, state or local agency? ☑Yes☐No

iv. For each identified regulated wetland and waterbody on the project site, provide the following information:

- Streams: Name _____ Classification _____
- Lakes or Ponds: Name Great Peconic Bay Classification _____
- Wetlands: Name _____ Approximate Size _____
- Wetland No. (if regulated by DEC) _____

v. Are any of the above water bodies listed in the most recent compilation of NYS water quality-impaired waterbodies? ☑Yes☐No

If yes, name of impaired water body/bodies and basis for listing as impaired: _____
Great Peconic Bay- Pathogen impaird

i. Is the project site in a designated Floodway? ☑Yes☐No

j. Is the project site in the 100-year Floodplain? ☑Yes☐No

k. Is the project site in the 500-year Floodplain? ☑Yes☐No

l. Is the project site located over, or immediately adjoining, a primary, principal or sole source aquifer? ☑Yes☐No
If Yes:

i. Name of aquifer: Lloyd, Magothy

m. Identify the predominant wildlife species that occupy or use the project site:
osprey | eastern oyster | menhaden
stripped bass

n. Does the project site contain a designated significant natural community? ☐Yes ☑No
If Yes:
i. Describe the habitat/community (composition, function, and basis for designation):
ii. Source(s) of description or evaluation:
iii. Extent of community/habitat:
- Currently: _____ acres
- Following completion of project as proposed: _____ acres
- Gain or loss (indicate + or -): _____ acres

o. Does project site contain any species of plant or animal that is listed by the federal government or NYS as endangered or threatened, or does it contain any areas identified as habitat for an endangered or threatened species? ☐ Yes ☑No
If Yes:
i. Species and listing (endangered or threatened):

p. Does the project site contain any species of plant or animal that is listed by NYS as rare, or as a species of special concern? ☐Yes ☑No
If Yes:
i. Species and listing:

q. Is the project site or adjoining area currently used for hunting, trapping, fishing or shell fishing? ☑Yes ☐No
If yes, give a brief description of how the proposed action may affect that use:
The oyster reef will be designated as a "no-take/marine sanctuary". FIshing and shellfishing will be allowed immediately outside of the project area.

E.3. Designated Public Resources On or Near Project Site

a. Is the project site, or any portion of it, located in a designated agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304? ☐Yes ☑No
If Yes, provide county plus district name/number:

b. Are agricultural lands consisting of highly productive soils present? ☐Yes ☑No
i. If Yes: acreage(s) on project site?
ii. Source(s) of soil rating(s):

c. Does the project site contain all or part of, or is it substantially contiguous to, a registered National Natural Landmark? ☐Yes ☑No
If Yes:
i. Nature of the natural landmark: ☐ Biological Community ☐ Geological Feature
ii. Provide brief description of landmark, including values behind designation and approximate size/extent:

d. Is the project site located in or does it adjoin a state listed Critical Environmental Area? ☑Yes ☐No
If Yes:
i. CEA name: Peconic Estuary
ii. Basis for designation: Benefit to human health and protect drinking water
iii. Designating agency and date: Suffolk County- October 14, 1988

e. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on the National or State Register of Historic Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places? ☐ Yes ☑ No

If Yes:

i. Nature of historic/archaeological resource: ☐ Archaeological Site ☐ Historic Building or District

ii. Name: _____

iii. Brief description of attributes on which listing is based:

_____

f. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory? ☐ Yes ☑ No

g. Have additional archaeological or historic site(s) or resources been identified on the project site? ☐ Yes ☑ No

If Yes:

i. Describe possible resource(s): _____

ii. Basis for identification: _____

h. Is the project site within fives miles of any officially designated and publicly accessible federal, state, or local scenic or aesthetic resource? ☐ Yes ☑ No

If Yes:

i. Identify resource: _____

ii. Nature of, or basis for, designation (e.g., established highway overlook, state or local park, state historic trail or scenic byway, etc.): _____

iii. Distance between project and resource: _____ miles.

i. Is the project site located within a designated river corridor under the Wild, Scenic and Recreational Rivers Program 6 NYCRR 666? ☐ Yes ☑ No

If Yes:

i. Identify the name of the river and its designation: _____

ii. Is the activity consistent with development restrictions contained in 6NYCRR Part 666? ☐ Yes ☐ No

F. Additional Information

Attach any additional information which may be needed to clarify your project.

If you have identified any adverse impacts which could be associated with your proposal, please describe those impacts plus any measures which you propose to avoid or minimize them.

G. Verification

I certify that the information provided is true to the best of my knowledge.

Applicant/Sponsor Name Martin E. Shea, Chief Environmental Analyst Date 5/10/2021

Signature _____ Title Chief Environmental Analyst

PRINT FORM

STEPL Input Sheet: Values in RED are required input. Change worksheets by clicking on tabs at the bottom. You entered 10 subwatershed(s).

This sheet is composed of eight input tables. The first four tables require users to change initial values. The next four tables (initially hidden) contain default values users may choose to change.

Step 1: Select the state and county where your watersheds are located. Select a nearby weather station. This will automatically specify values for rainfall parameters in Table 1 and USLE parameters in Table 4.

Step 2: (a) Enter land use areas in acres in Table 1; (b) enter total number of agricultural animals by type and number of months per year that manure is applied to croplands in Table 2; (c) enter values for septic system parameters in Table 3; and (d) if desired, modify USLE parameters associated with the selected county in Table 4.

Step 3: You may stop here and proceed to the BMPs sheet. If you have more detailed information on your watersheds, you may proceed with optional input tables.

Step 4: (a) Specify the representative Soil Hydrologic Group (SHG) and soil nutrient concentrations in Table 5; (b) modify the curve number table by landuse and SHG in Table 6; (c) modify the nutrient concentrations (mg/L) in runoff in Table 7; and (d) specify the detailed land use distribution in the urban area in Table 8.

Step 5: Select BMPs in BMPs sheet. **Step 6**: View the estimates of loads and load reductions in Total Load and Graphs sheets.

Export input/output data: Export Data ☐ **Treat all the subwatersheds as parts of a single watershed** ☐ **Groundwater load calculation**

State	County	Weather Station	
New York	Suffolk	BRIDGEHAMPTON	**Calculate Manure Application Months:** Manure Application

1. Input watershed land use area (ac) and precipitation (in)

									Rain correction factors	0.910	0.504	
Watershed	Urban	Cropland	Pastureland	Forest	User Defined	Feedlots	Feedlot Percent Paved	Total	Annual Rainfall		Rain Days	Avg. Rain/Event
W1	1100.3	6.21	0	0	324.09	0	0-24%	1430.6	47		116	0.727
W2	0	0	0	0	0	0	0-24%	0	47		116	0.727
W3	0	0	0	0	0	0	0-24%	0	47		116	0.727
W4	0	0	0	0	0	0	0-24%	0	47		116	0.727
W5	0	0	0	0	0	0	0-24%	0	47		116	0.727
W6	0	0	0	0	0	0	0-24%	0	47		116	0.727
W7	0	0	0	0	0	0	0-24%	0	47		116	0.727
W8	0	0	0	0	0	0	0-24%	0	47		116	0.727
W9	0	0	0	0	0	0	0-24%	0	47		116	0.727
W10	0	0	0	0	0	0	0-24%	0	47		116	0.727

2. Input agricultural animals

Watershed	Beef Cattle	Dairy Cattle	Swine (Hog)	Sheep	Horse	Chicken	Turkey	Duck	# of months manure applied on Cropland	# of months manure applied on Pastureland
W1	0	0	0	0	0	0	0	0	0	0
W2	0	0	0	0	0	0	0	0	0	0
W3	0	0	0	0	0	0	0	0	0	0
W4	0	0	0	0	0	0	0	0	0	0
W5	0	0	0	0	0	0	0	0	0	0
W6	0	0	0	0	0	0	0	0	0	0
W7	0	0	0	0	0	0	0	0	0	0
W8	0	0	0	0	0	0	0	0	0	0
W9	0	0	0	0	0	0	0	0	0	0
W10	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0		

3. Input septic system and illegal direct wastewater discharge data

Watershed	No. of Septic Systems	Population per Septic System	Septic Failure Rate, %	Wastewater Direct Discharge, # of People	Direct Discharge Reduction, %
W1	696	2.43	2	0	0
W2	0	2.43	2	0	0
W3	0	2.43	2	0	0
W4	0	2.43	2	0	0
W5	0	2.43	2	0	0
W6	0	2.43	2	0	0
W7	0	2.43	2	0	0
W8	0	2.43	2	0	0
W9	0	2.43	2	0	0
W10	0	2.43	2	0	0

Optional Data Input:

5. Select average soil hydrologic group (SHG), SHG A = highest infiltration and SHG D = lowest infiltration

Watershed	SHG A	SHG B	SHG C	SHG D	SHG Selected	Soil N conc.%	Soil P conc.%	Soil BOD conc.%	Soil E. coli conc. (#/100mg)
W1	○	◉	○	○	B	0.080	0.031	0.160	0.000
W2	○	◉	○	○	B	0.080	0.031	0.160	0.000
W3	○	◉	○	○	B	0.080	0.031	0.160	0.000
W4	○	◉	○	○	B	0.080	0.031	0.160	0.000
W5	○	◉	○	○	B	0.080	0.031	0.160	0.000
W6	○	◉	○	○	B	0.080	0.031	0.160	0.000
W7	○	◉	○	○	B	0.080	0.031	0.160	0.000
W8	○	◉	○	○	B	0.080	0.031	0.160	0.000
W9	○	◉	○	○	B	0.080	0.031	0.160	0.000
W10	○	◉	○	○	B	0.080	0.031	0.160	0.000

6. Reference runoff curve number (may be modified)

SHG	A	B	C	D
Urban	83	89	92	93
Cropland	67	78	85	89
Pastureland	49	69	79	84
Forest	39	60	73	79
User Defined	50	70	80	85

6a. Detailed urban reference runoff curve number (may be modified)

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

7. Nutrient concentration in runoff (mg/l) and E. coli (MPN/100ml)

Land use	N	P	BOD	E. coli
1. L-Cropland	**1.9**	**0.3**	**4**	0
1a. w/ manure	8.1	2	12.3	0
2. M-Cropland	**2.9**	**0.4**	**6.1**	0
2a. w/ manure	12.2	3	18.5	0
3. H-Cropland	**4.4**	**0.5**	**9.2**	0
3a. w/ manure	18.3	4	24.6	0
4. Pastureland (see Table 10 for default values with manure)				
5. Forest	**0.2**	**0.1**	**0.5**	0
6. User Defin	**0**	**0**	**0**	0

7a. Nutrient concentration in shallow groundwater (mg/l) and E. coli (MPN/100ml)(may be modified)

Landuse	N	P	BOD	E. coli
Urban	1.5	0.063	0	0
Cropland	1.44	0.063	0	0
Pastureland	1.44	0.063	0	0
Forest	0.11	0.009	0	0
Feedlot	6	0.07	0	0
User-Defined	0	0	0	0

8. Input or modify urban land use distribution

Watershed	Urban Area (ac.)	Commercial %	Industrial %	Institutional %	Transportation %	Multi-Family %	Single-Family %	Urban-Cultivated %	Vacant (developed)	Open Space %	Total % Area
W1	1100.3	1.66	0.34	0.49	1.34	0	55.66	0	17.6	22.87	99.96
W2	0	15	10	10	10	10	30	5	5	5	100
W3	0	15	10	10	10	10	30	5	5	5	100
W4	0	15	10	10	10	10	30	5	5	5	100
W5	0	15	10	10	10	10	30	5	5	5	100
W6	0	15	10	10	10	10	30	5	5	5	100
W7	0	15	10	10	10	10	30	5	5	5	100
W8	0	15	10	10	10	10	30	5	5	5	100
W9	0	15	10	10	10	10	30	5	5	5	100
W10	0	15	10	10	10	10	30	5	5	5	100

9. Input irrigation area (ac) and irrigation amount (in)

Watershed	Total Cropland (ac)	Cropland: Acres Irrigated	Water Depth (in) per Irrigation - Before BMP	Water Depth (in) per Irrigation - After BMP	Irrigation Frequency (#/Year)
W1	6.21	6.21	0	0	0
W2	0	0	0	0	0
W3	0	0	0	0	0
W4	0	0	0	0	0
W5	0	0	0	0	0
W6	0	0	0	0	0
W7	0	0	0	0	0
W8	0	0	0	0	0
W9	0	0	0	0	0
W10	0	0	0	0	0

10. Pastureland Nutrient concentration in runoff (mg/l) and E. coli (MPN/100ml)

Land use	N	P	BOD	E. coli
1. L-Pasturela	**4**	**0.3**	**13**	0
1a. w/ manure	4	0.3	13	0
2. M-Pasturel	**4**	**0.3**	**13**	0
2a. w/ manure	4	0.3	13	0
3. H-Pasturel	**4**	**0.3**	**13**	0
3a. w/ manure	4	0.3	13	0

Input Ends Here.

Best Management Practice Select an appropriate BMP except "Combined BMPs-Calculated" for each subwatershed in each land use table using the pull-down list-box if interactions between BMPs are not considered. Select "Combined BMPs-Calculated" if multiple BMPs and their interactions in the subwatersheds are considered; use BMP calculator (under STEPL menu) to obtain the combined BMP efficiencies and enter them in Table 7.

Urban BMP Tool | Gully and Streambank Erosion | Calculate Combined BMP Efficiency | Run Solver | Target Load Reduction (lb/yr): 0.00 | Select a Pollutant: N | Total Load Reduction (lb/yr): 0.00

1. BMPs and efficiencies for different pollutants on CROPLAND, ND=No Data

Watershed	Cropland							CONSTRAINT	
	N	P	BOD	Sediment	E. coli	BMPs	% Area BMP Applied	Min Area (%)	Max Area (%)
W1	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W2	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W3	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W4	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W5	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W6	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W7	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W8	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W9	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W10	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0

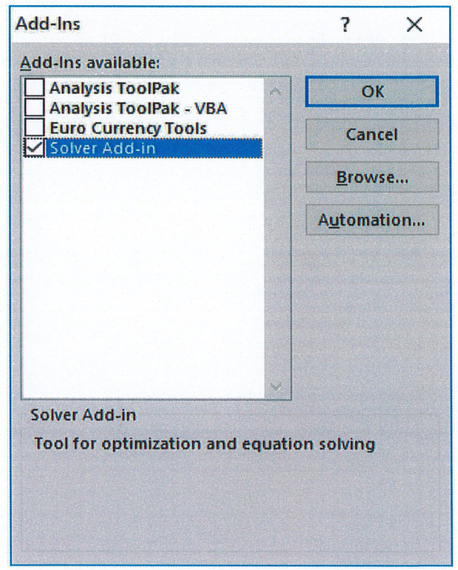
2. BMPs and efficiencies for different pollutants on PASTURELAND, ND=No Data

Watershed	Pastureland							CONSTRAINT	
	N	P	BOD	Sediment	E. coli	BMPs	% Area BMP Applied	Min Area (%)	Max Area (%)
W1	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W2	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W3	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W4	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W5	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W6	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W7	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W8	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W9	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W10	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0

3. BMPs and efficiencies for different pollutants on FOREST, ND=No Data

Watershed	Forest							CONSTRAINT	
	N	P	BOD	Sediment	E. coli	BMPs	% Area BMP Applied	Min Area (%)	Max Area (%)
W1	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W2	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W3	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W4	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W5	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W6	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W7	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W8	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W9	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W10	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0

Note: To Run Solver you need to activate the Excel Solver Add-in (only once). Follow these steps to activate the solver.
1. Click on File menu -> Excel Options -> Add-ins -> Select Excel Add-ins from the pull down list under Manage option -> Go...
2. Check the box for Solver Add-in



4. BMPs and efficiencies for different pollutants on USER DEFINED land use, ND=No Data

Watershed	User Defined							CONSTRAINT	
	N	P	BOD	Sediment	E. coli		% Area BMP Applied	Min Area (%)	Max Area (%)
W1	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W2	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W3	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W4	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W5	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W6	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W7	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W8	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W9	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W10	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0

5. BMPs and efficiencies for different pollutants on FEEDLOTS, ND=No Data

Watershed	Feedlots							CONSTRAINT	
	N	P	BOD	Sediment	E. coli		%Area BMP Applied	Min Area (%)	Max Area (%)
W1	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W2	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W3	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W4	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W5	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W6	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W7	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W8	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W9	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0
W10	0.00	0.00	0.00	0.00	0.00	0 No BMP	0.00	0	0

6. BMPs and efficiencies for different pollutants on URBAN

To change/set BMP/LID for urban land uses, click the 'Urban BMP Tool' button on the top-left of this sheet.

7. Combined watershed BMP efficiencies from the BMP calculator

Watershed	Watershed Combined BMP Efficiencies					
	N	P	BOD	Sediment	E. coli	BMPs
W1-Crop	0.00	0.00	0.00	0.00	0.00	Combined BMPs
W2-Crop	0.00	0.00	0.00	0.00	0.00	Combined BMPs
W3-Crop	0.00	0.00	0.00	0.00	0.00	Combined BMPs
W4-Crop	0.00	0.00	0.00	0.00	0.00	Combined BMPs
W5-Crop	0.00	0.00	0.00	0.00	0.00	Combined BMPs
W6-Crop	0.00	0.00	0.00	0.00	0.00	Combined BMPs
W7-Crop	0.00	0.00	0.00	0.00	0.00	Combined BMPs
W8-Crop	0.00	0.00	0.00	0.00	0.00	Combined BMPs
W9-Crop	0.00	0.00	0.00	0.00	0.00	Combined BMPs
W10-Crop	0.00	0.00	0.00	0.00	0.00	Combined BMPs
W1-Pasture	0.00	0.00	0.00	0.00	0.00	Combined BMPs
W2-Pasture	0.00	0.00	0.00	0.00	0.00	Combined BMPs
W3-Pasture	0.00	0.00	0.00	0.00	0.00	Combined BMPs
W4-Pasture	0.00	0.00	0.00	0.00	0.00	Combined BMPs
W5-Pasture	0.00	0.00	0.00	0.00	0.00	Combined BMPs
W6-Pasture	0.00	0.00	0.00	0.00	0.00	Combined BMPs
W7-Pasture	0.00	0.00	0.00	0.00	0.00	Combined BMPs
W8-Pasture	0.00	0.00	0.00	0.00	0.00	Combined BMPs
W9-Pasture	0.00	0.00	0.00	0.00	0.00	Combined BMPs
W10-Pasture	0.00	0.00	0.00	0.00	0.00	Combined BMPs
W1-Forest	0.00	0.00	0.00	0.00	0.00	Combined BMPs
W2-Forest	0.00	0.00	0.00	0.00	0.00	Combined BMPs
W3-Forest	0.00	0.00	0.00	0.00	0.00	Combined BMPs
W4-Forest	0.00	0.00	0.00	0.00	0.00	Combined BMPs
W5-Forest	0.00	0.00	0.00	0.00	0.00	Combined BMPs
W6-Forest	0.00	0.00	0.00	0.00	0.00	Combined BMPs
W7-Forest	0.00	0.00	0.00	0.00	0.00	Combined BMPs
W8-Forest	0.00	0.00	0.00	0.00	0.00	Combined BMPs
W9-Forest	0.00	0.00	0.00	0.00	0.00	Combined BMPs
W10-Forest	0.00	0.00	0.00	0.00	0.00	Combined BMPs
W1-User	0.00	0.00	0.00	0.00	0.00	Combined BMPs
W2-User	0.00	0.00	0.00	0.00	0.00	Combined BMPs
W3-User	0.00	0.00	0.00	0.00	0.00	Combined BMPs
W4-User	0.00	0.00	0.00	0.00	0.00	Combined BMPs
W5-User	0.00	0.00	0.00	0.00	0.00	Combined BMPs
W6-User	0.00	0.00	0.00	0.00	0.00	Combined BMPs
W7-User	0.00	0.00	0.00	0.00	0.00	Combined BMPs
W8-User	0.00	0.00	0.00	0.00	0.00	Combined BMPs
W9-User	0.00	0.00	0.00	0.00	0.00	Combined BMPs
W10-User	0.00	0.00	0.00	0.00	0.00	Combined BMPs

Urban Runoff BMP and Pollutant Load Reduction

Urban BMP Tool | Close

1. Urban pollutant concentration in runoff (mg/l) and E. coli (MPN/100ml)

Landuse	Commercia	Industrial	Institutiona	Transporta	Multi-Fami	Single-Fam	Urban-Cult	Vacant (de	Open Space
TN	2	2.5	1.8	3	2.2	2.2	1.9	1.5	1.5
TP	0.2	0.4	0.3	0.5	0.4	0.4	0.3	0.15	0.15
BOD	9.3	9	7.8	9.3	10	10	4	4	4
TSS	75	120	67	150	100	100	150	70	70
E. coli	0	0	0	0	0	0	0	0	0

2. Urban landuse distribution

Landuse	Commercia	Industrial	Institutiona	Transporta	Multi-Fami	Single-Fam	Urban-Cult	Vacant (de	Open Space
W1	18.26498	3.74102	5.39147	14.74402	0	612.427	0	193.6528	251.6386
W2	0	0	0	0	0	0	0	0	0
W3	0	0	0	0	0	0	0	0	0
W4	0	0	0	0	0	0	0	0	0
W5	0	0	0	0	0	0	0	0	0
W6	0	0	0	0	0	0	0	0	0
W7	0	0	0	0	0	0	0	0	0
W8	0	0	0	0	0	0	0	0	0
W9	0	0	0	0	0	0	0	0	0
W10	0	0	0	0	0	0	0	0	0

2a. Effective BMP application area (ac)

Landuse	Commercia	Industrial	Institutiona	Transporta	Multi-Fami	Single-Fam	Urban-Cult	Vacant (de	Open Space
W1	0	0	0	0	0	0	0	0	0
W2	0	0	0	0	0	0	0	0	0
W3	0	0	0	0	0	0	0	0	0
W4	0	0	0	0	0	0	0	0	0
W5	0	0	0	0	0	0	0	0	0
W6	0	0	0	0	0	0	0	0	0
W7	0	0	0	0	0	0	0	0	0
W8	0	0	0	0	0	0	0	0	0
W9	0	0	0	0	0	0	0	0	0
W10	0	0	0	0	0	0	0	0	0

3. Selected urban BMPs

Landuse	Commercia	Industrial	Institutiona	Transporta	Multi-Fami	Single-Fam	Urban-Cult	Vacant (de	Open Space
W1	Bioretention	Bioretention	Bioretention	Bioretention	Bioretention	Bioretention	Bioretention	Bioretention	Bioretention facility
W2	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP
W3	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP
W4	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP
W5	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP
W6	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP
W7	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP
W8	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP
W9	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP
W10	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP	0 No BMP

3a. Percentage of BMP effective area (%)

Landuse	Commercia	Industrial	Institutiona	Transporta	Multi-Fami	Single-Fam	Urban-Cult	Vacant (de	Open Space
W1	0	0	0	0	0	0	0	0	0
W2	0	0	0	0	0	0	0	0	0
W3	0	0	0	0	0	0	0	0	0
W4	0	0	0	0	0	0	0	0	0
W5	0	0	0	0	0	0	0	0	0
W6	0	0	0	0	0	0	0	0	0
W7	0	0	0	0	0	0	0	0	0
W8	0	0	0	0	0	0	0	0	0
W9	0	0	0	0	0	0	0	0	0
W10	0	0	0	0	0	0	0	0	0

3.1. Urban runoff (ac-ft)

Landuse	Commercia	Industrial	Institutiona	Transporta	Multi-Fami	Single-Fam	Urban-Cult	Vacant (de	Open Space
W1	29.38822	4.596794	6.624791	40.67808	0	340.8375	0	199.6512	123.8443
W2	0	0	0	0	0	0	0	0	0
W3	0	0	0	0	0	0	0	0	0
W4	0	0	0	0	0	0	0	0	0
W5	0	0	0	0	0	0	0	0	0
W6	0	0	0	0	0	0	0	0	0
W7	0	0	0	0	0	0	0	0	0
W8	0	0	0	0	0	0	0	0	0
W9	0	0	0	0	0	0	0	0	0
W10	0	0	0	0	0	0	0	0	0

4. Pollutant loads from urban (lb/year) and E. coli (MPN/year)

Watershed	Pre-BMP Load					Load Reduction					After BMP Load				
	N	P	BOD	TSS	E. coli	N	P	BOD	TSS	E. coli	N	P	BOD	TSS	E. coli
W1	3911.271	583.9873	14802.04	179433	0	0	0	0	0	0	3911.271	583.9873	14802.04	179433	0
W2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
W3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
W4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
W5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
W6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
W7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
W8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
W9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
W10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

5. Captured Flow Volume (gallon/year)

Landuse	Commercia	Industrial	Institutiona	Transporta	Multi-Famil	Single-Fam	Urban-Cult	Vacant (de	Open Space
W1	0	0	0	0	0	0	0	0	0
W2	0	0	0	0	0	0	0	0	0
W3	0	0	0	0	0	0	0	0	0
W4	0	0	0	0	0	0	0	0	0
W5	0	0	0	0	0	0	0	0	0
W6	0	0	0	0	0	0	0	0	0
W7	0	0	0	0	0	0	0	0	0
W8	0	0	0	0	0	0	0	0	0
W9	0	0	0	0	0	0	0	0	0
W10	0	0	0	0	0	0	0	0	0

6. BMP Surface Area (acre) or Number of Units (e.g., Rain Barrel)

Landuse	Commercia	Industrial	Institutiona	Transporta	Multi-Famil	Single-Fam	Urban-Cult	Vacant (de	Open Space
W1	0	0	0	0	0	0	0	0	0
W2	0	0	0	0	0	0	0	0	0
W3	0	0	0	0	0	0	0	0	0
W4	0	0	0	0	0	0	0	0	0
W5	0	0	0	0	0	0	0	0	0
W6	0	0	0	0	0	0	0	0	0
W7	0	0	0	0	0	0	0	0	0
W8	0	0	0	0	0	0	0	0	0
W9	0	0	0	0	0	0	0	0	0
W10	0	0	0	0	0	0	0	0	0

Total Load This is the summary of annual nutrient and sediment load for each subwatershed. This sheet is initially protected.

1. Total load by subwatershed(s)

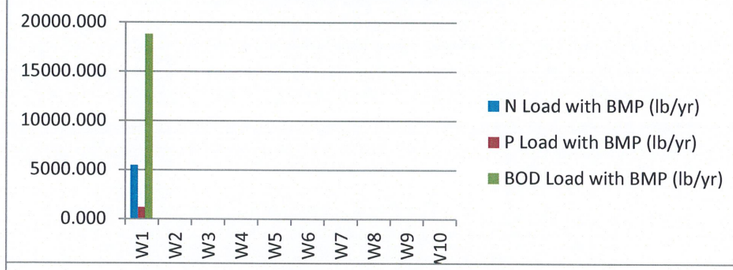
Watershed	N Load (no BMP)	P Load (no BMP)	BOD Load (no BMP)	Sediment Load (no BMP)	E. coli Load (no BMP)	N Reduction	P Reduction	BOD Reduction	Sediment Reduction	E. coli Reduction	N Load (with BMP)	P Load (with BMP)	BOD (with BMP)	Sediment Load (with BMP)	E. coli Load (with BMP)	%N Reduction	%P Reduction	%BOD Reduction	%Sed Reduction	%E. coli Reduction
	lb/year	lb/year	lb/year	t/year	Billion MPN/ye	lb/year	lb/year	lb/year	t/year	Billion MPN/ye	lb/year	lb/year	lb/year	t/year	Billion MPN/ye	%	%	%	%	%
W1	5475.7	1183.9	18835.0	436.1	0.0	0.0	0.0	0.0	0.0	0.0	5475.7	1183.9	18835.0	436.1	0.0	0.0	0.0	0.0	0.0	0.0
W2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	5475.7	1183.9	18835.0	436.1	0.0	0.0	0.0	0.0	0.0	0.0	5475.7	1183.9	18835.0	436.1	0.0	0.0	0.0	0.0	0.0	0.0

2. Total load by land uses (with BMP)

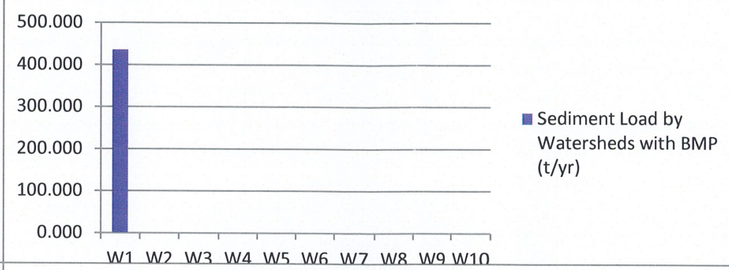
Sources	N Load (lb/yr)	P Load (lb/yr)	BOD Load (lb/yr)	Sediment Load (t/yr)	E. coli Load (Billion MPN/yr)
Urban	3911.27	583.99	14802.04	89.72	0.00
Cropland	44.06	11.69	90.56	6.51	0.00
Pastureland	0.00	0.00	0.00	0.00	0.00
Forest	0.00	0.00	0.00	0.00	0.00
Feedlots	0.00	0.00	0.00	0.00	0.00
User Defined	1087.67	418.75	2175.35	339.90	0.00
Septic	432.75	169.49	1767.05	0.00	0.00
Gully	0.00	0.00	0.00	0.00	0.00
Streambank	0.00	0.00	0.00	0.00	0.00
Groundwater	0.00	0.00	0.00	0.00	0.00
Total	5475.75	1183.92	18835.00	436.13	0.00

Graphs This sheet is protected. To copy specific objects, remove the protection by clicking Review -> Protect -> Unprotect sheet.

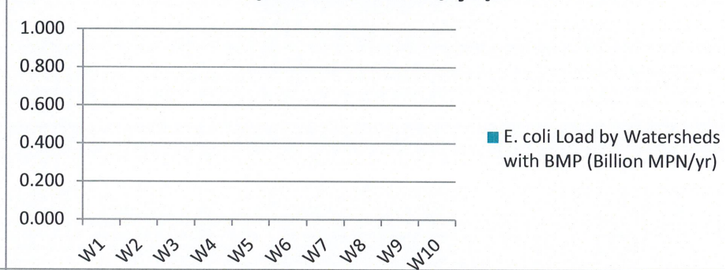
N, P, and BOD Load by Watersheds with BMP (lb/yr)



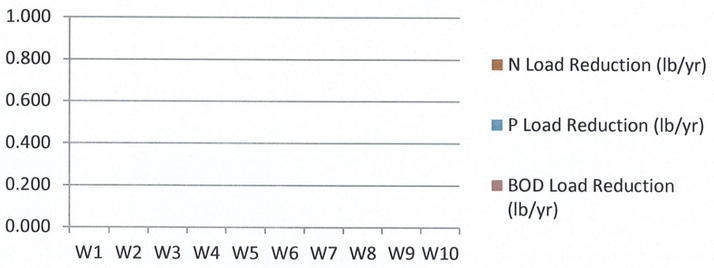
Sediment Load by Watersheds with BMP (t/yr)



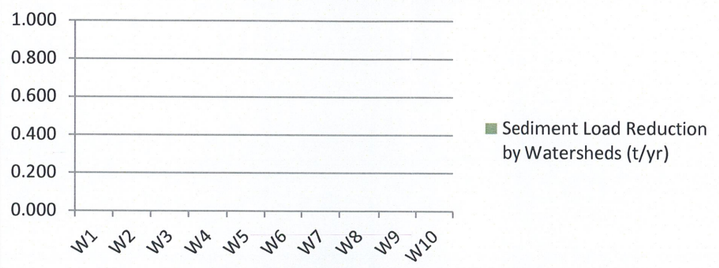
E. coli Load by Watersheds with BMP (Billion MPN/yr)



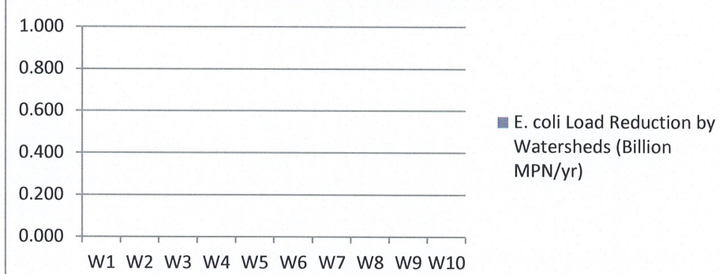
N, P, and BOD Load Reduction by Watersheds (lb/yr)



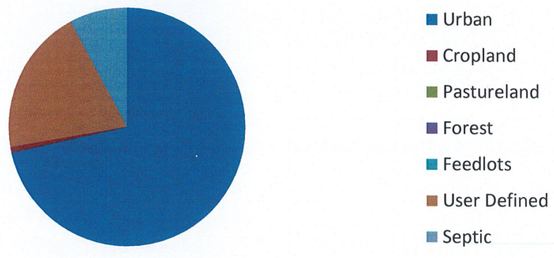
Sediment Load Reduction by Watersheds (t/yr)



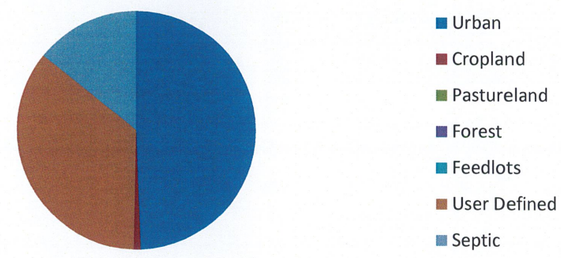
E. coli Load Reduction by Watersheds (Billion MPN/yr)



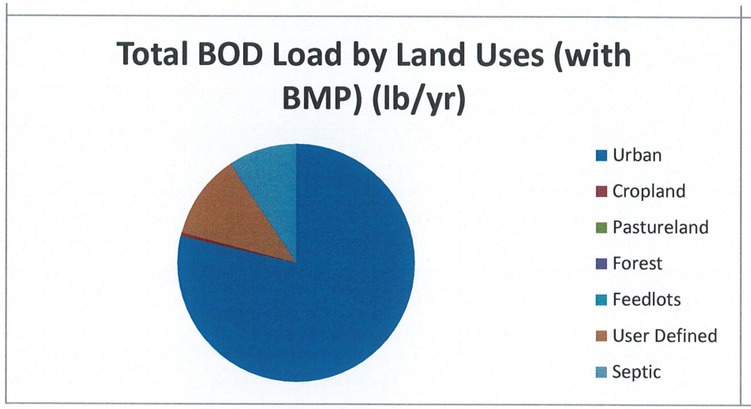
Total N Load by Land Uses (with BMP) (lb/yr)

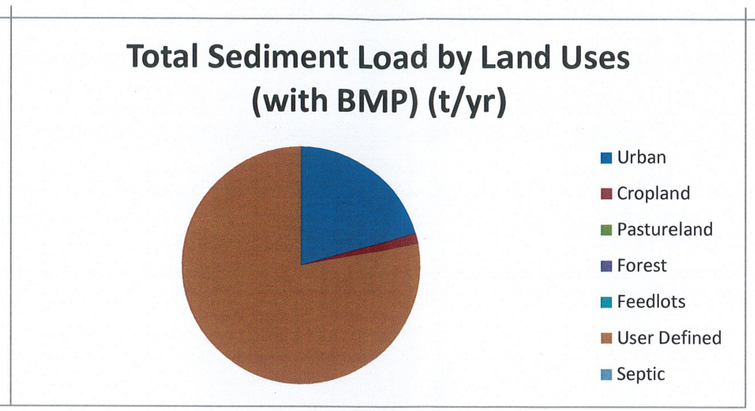


Total P Load by Land Uses (with BMP) (lb/yr)



E. coli Load by Land Uses (with BMP) (Billion MPN/yr)


Total BOD Load by Land Uses (with BMP) (lb/yr)
Urban
Cropland
Pastureland
Forest
Feedlots
User Defined
Septic


Total Sediment Load by Land Uses (with BMP) (t/yr)
Urban
Cropland
Pastureland
Forest
Feedlots
User Defined
Septic