



Implementation Plan

For

Pathogen Impaired Waters

in

Part IX.C

of the

SPDES GENERAL PERMIT

FOR STORMWATER DISCHARGES

from

Municipal Separate Storm Sewer Systems (MS4s)

Permit No. GP-0-15-003

May 2016

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Executive Summary

DEC administers a State Pollutant Discharge Elimination System (SPDES) general permit for Municipal Separate Storm Sewer Systems (MS4). Part IX.C of the MS4 General Permit contains enhanced minimum control measures to address pathogen impairments associated with the following Total Maximum Daily Loads (TMDLs):

- *Pathogen Total Maximum Daily Loads for Shellfish Waters in Oyster Bay Harbor and Mill Neck Creek, September 2003*
- *Peconic Bay Pathogens TMDL, September 2006*
- *Shellfish Pathogen TMDLs for 27 303(d) listed Waters, September 2007*

In December 2013, DEC finalized the Retrofit Program Plan Guidance Document for Pathogen Impaired Waters on Long Island (2013 Guidance Document). In accordance with the 2013 Guidance Document, MS4 Operators, located within the watersheds of the pathogen impaired waterbodies¹ and listed in Part IX.C of the MS4 General Permit, submitted storm sewershed mapping and land use data. DEC developed this draft Implementation Plan and supporting documentation to explain the methodology used to model the predicted individual MS4 pathogen load contribution(s) to the 70 pathogen impaired waters listed in Part IX.C; identify the appropriate pollutant load reductions required of MS4s above the TMDL allowable pollutant load; and identify further actions necessary to achieve the applicable pollutant load reductions through the MS4 General Permit renewal.

DEC used an Excel-based spreadsheet model to analyze the information submitted by the MS4 Operators. Based on that analysis, 35 MS4 Operators do not need to take further action with respect to the TMDL because they have a predicted pathogen load below the TMDL allowable pollutant load or have certified they do not discharge to the listed water bodies while 10 MS4 Operators have a predicted pathogen load above the TMDL allowable pollutant load indicating further action is needed to meet the particular TMDL.

As a condition of the current MS4 General Permit, all MS4 Operators that have a predicted pathogen load above the TMDL allowable pollutant load are subject to a compliance schedule and must submit semi-annual progress reports to DEC demonstrating progress through on-going source control programs.

Upon finalization of this draft Implementation Plan, the proposed requirements specified within this document will be made enforceable by inclusion or reference in the final MS4 General Permit renewal. DEC anticipates releasing a draft MS4 General Permit on or before November 1, 2016.

¹ MS4s discharging to the water bodies addressed by the Oyster Bay/Mill Neck Creek TMDL (OBH2 & OBH3) were addressed prior to the 2013 Guidance but the outcome is presented in this document

The MS4 Operators with a predicted pathogen load above the TMDL allowable load will be required to begin the retrofit program as described in the 2013 Guidance Document. As per the 2013 Guidance, MS4 Operators committed to a schedule to commence a retrofit program once they received written notification from DEC of their reduction requirements. Finalization of the MS4 General Permit with inclusion or reference to the final Implementation Plan will represent DEC written notification of the MS4 reduction requirements triggering the commencement of retrofit programs. In the alternative, MS4 Operators may defer their retrofit program by implementing other programs to identify other sources, demonstrate the MS4 is not the cause of the use impairment or demonstrate water quality standards are met. Deferral of the retrofit program does not extend the time for MS4 Operators to comply with the final compliance deadline if subsequent data show that retrofits are necessary to achieve the reduction requirement.

1.0 Background

Section 402 of the CWA, as well as ECL §§17-0701, 17-0803, 17-0808, 70-0117, all provide the authority for the MS4 General Permit. The MS4 General Permit requires MS4 Operators to develop, implement and enforce a stormwater management program (SWMP) to reduce the discharge of pollutants from their separate storm sewer systems to the maximum extent practicable (MEP) in order to protect water quality and to satisfy the appropriate water quality requirements of the Environmental Conservation Law (ECL) and Clean Water Act (CWA). The SWMP is comprised of six minimum control measures intended to reduce the discharge of pollutants to the MEP – public education and outreach; public involvement/participation; illicit discharge detection and elimination; construction site stormwater runoff control; post-construction stormwater management; and good housekeeping. The SWMP also includes additional control measures for impaired waterbodies to satisfy the appropriate water quality requirements.

Sections 301, 303 and 304 of the CWA, require states to identify all waterbodies that do not meet applicable water quality standards and therefore are considered impaired and placed on the 303(d) list of impaired waters. The CWA requires states to establish TMDLs, approved by the United States Environmental Protection Agency (USEPA), for these impaired waterbodies which, when implemented, will achieve water quality standards.

The TMDL process establishes the maximum amount of a single pollutant (i.e. pathogen load) that a waterbody can receive and still meet water quality standards. The TMDL process also determines the amount that each of the sources of that pollutant can discharge into the impaired waterbody and the associated reductions needed to meet water quality standards. Once a TMDL is completed and approved by EPA, SPDES permits must include conditions necessary to achieve the TMDL specified reductions.²

The 2002, 2004 and 2006 New York State CWA Section 303(d) list of impaired waterbodies identified pathogens as the pollutant of concern for numerous waterbodies

² NYCRR 750-1.11

in Long Island. As a result, the following TMDL studies were completed and approved by the USEPA:

- *Pathogen Total Maximum Daily Loads for Shellfish Waters in Oyster Bay Harbor and Mill Neck Creek, September 2003*
- *Peconic Bay Pathogens TMDL, September 2006*
- *Shellfish Pathogen TMDLs for 27 303(d) listed Waters, September 2007*

These TMDLs established the maximum allowable load that could be discharged from the MS4 to meet water quality standards and set the pollutant load reduction (expressed both as a percent reduction and # billion Fecal Coliform/year) necessary to meet the maximum allowable load³. Part IX.C of the MS4 General Permit includes the watershed-specific requirements necessary to meet the pollutant load reduction specified by the approved TMDLs. Table IX.C in the MS4 General Permit lists the TMDL pollutant load reduction expressed as a percent reduction (i.e. Pollutant Load Reduction or PLR). The PLR Deadlines listed in Table IX.C are the deadlines by which the MS4 portion of the TMDL pollutant load reduction must be met.

There are 45 MS4 Operators, located within the watersheds of the 70 pathogen impaired waterbodies listed in Part IX.C of the MS4 General Permit. In advance of the deadlines specified in Table IX.C, MS4 Operators expressed concerns. Chief among those MS4 Operator concerns was that the TMDLs and permit conditions developed from them, wrongly assumed either that the source of the impairment was solely MS4s or dramatically overestimated the MS4 contribution. In response to these concerns, DEC developed the 2013 Guidance Document.⁴

In accordance with the 2013 Guidance Document, the 45 MS4 Operators submitted mapping and land use data to DEC. DEC developed this draft Implementation Plan and supporting documentation to explain the methodology used to model the predicted individual MS4 pathogen load contribution(s) to the listed waters; identify the appropriate pollutant load reductions required of MS4s above the TMDL allowable pollutant load; and identify further actions to achieve the applicable pollutant load reductions.

Appendix A of this document provides a summary of the land use data received from those MS4 Operators. Appendix B of this document (Table IX.C of the MS4 General Permit) contains the pollutant load reductions necessary to implement the approved TMDLs, expressed as percentage pollutant load reductions for the specified

³ The “allowable load” is meant to reflect the contribution of the MS4s to the impairment, either listed as a wasteload allocation or a load allocation depending on the particular TMDL. See Appendix J for more details on the TMDL allowable load that formed the basis of the permit conditions

⁴ The 2013 Guidance applied to MS4s discharging to waterbodies addressed in the 27 Shellfish TMDL and the Peconic Pathogen TMDL because retrofit plans had already been submitted by MS4 Operators that discharge to the Oyster Bay Harbor system,

waterbodies. Appendix C of this document contains maps that illustrate the contributing watersheds used by the applicable TMDL and the extent of MS4 sewersheds for each of the Part IX.C waterbodies based on information provided by the MS4 Operators. Data layers used to develop the maps in Appendix C of this document are available upon request.

2.0 MS4 General Permit Requirements for Implementing Pathogen TMDLs

Part IX.C of the MS4 General Permit contains interim requirements for the development of Watershed Improvement Strategies (WIS) and retrofit plans, ultimately achieving the PLR by the specified deadline in the general permit. Additionally, Part IX.C of the MS4 General Permit requires specific actions (i.e. pathogen specific Best Management Practices (BMPs)), which are part of the WIS, to reduce pathogen loads from the MS4. Examples include:

- An on-going public education and outreach program that identifies the potential sources of pathogens in stormwater runoff and describes steps that contributors can take to reduce the discharge of pathogens;
- Mapping of the entire MS4 conveyance system discharging to the listed waterbodies with approved TMDLs to assist in identification of potential sources of pathogens;
- Inspection program for on-site wastewater systems to reduce the contribution of pathogens from failed septic systems to the MS4;
- Outfall inspection programs to identify illicit discharges and correct them; and
- Enhanced pollution prevention/good-housekeeping programs to reduce pathogen discharges associated with pet waste and goose populations on municipal properties.

Development of these pollutant source control programs was to be completed by the dates contained within Part IX.C of the general permit (i.e. WIS deadline). The WIS deadlines have passed and MS4 operators are now required under the MS4 General Permit to be implementing these pollutant source control programs. The MS4 General Permit prescribes an adaptive management approach for these programs that involves on-going evaluation and adjustment of practices that address the most easily identifiable and controllable sources so that on-going reductions in pollutant load are maximized. The implementation of the pollutant source control programs are actions that will achieve progress toward the PLR deadline. Pursuant to 6 NYCRR 750-1.14, the MS4 General Permit currently requires MS4 Operators discharging to waters listed in Table IX.C to submit semi-annual progress reports so that DEC may track the progress of the MS4 Operators in implementation of the source control programs.

Table IX.C also specifies retrofit plan submission deadlines which are the deadlines by which the retrofit program component of the WIS must have been submitted to the Department for review and approval. In accordance with the 2013 Guidance Document, MS4 Operators submitted sewershed-specific information to allow DEC to better quantify the MS4 predicted pathogen load. As part of their submission, MS4 Operators committed to schedules for commencement and implementation of retrofit programs that would become effective after DEC completed analysis of the information and notified them of their load reduction requirements. The finalization of the MS4 renewal permit with inclusion or reference of the final Implementation Plan will represent DEC's notification of MS4 load reduction requirements.

3.0 Development of MS4 Pathogen Load - Methodology

The approved TMDLs that formed the basis of the MS4 General Permit conditions made certain assumptions as to the percentage of stormwater load attributed to MS4s. Since the time of the TMDL development, significant progress has been made by MS4 Operators in understanding the extent and location of their systems. This new information suggests that the TMDL assumptions may have overestimated the true MS4 contribution to the impairment.

The Watershed Treatment Model (WTM), developed by the Center for Watershed Protection (CWP), was used in the development of the TMDLs to estimate the total MS4 pathogen load for each waterbody studied. The WTM is an Excel-based spreadsheet model that calculates runoff volumes and annual pollutant loads and accounts for the benefits of various stormwater management practices and programs. The WTM uses the Simple Method (Schueler, 1987) to estimate the stormwater pathogen loads from various land uses using subwatershed drainage area and impervious cover, stormwater runoff pollutant concentrations and annual precipitation as follows:

$$L = 1.03 \cdot 10^{-3} \cdot R \cdot C \cdot A$$

Where:

L= Annual Load (Billion colonies)

R= Annual Runoff (inches)

C= Pollutant Concentration (#/100/ml)^{5,6}

A= Area (acres)⁷

$1.03 \cdot 10^{-3}$ = Conversion factor

⁵ Peconic Pathogen TMDL and 27 Shellfish TMDL used the WTM model default of 20,000 MPN/100 ml for runoff from impervious surfaces. This represents a median urban runoff value derived from NURP data (Pitt, 1998) of 20,000 MPN/100.

⁶ Oyster Bay/Mill Neck Creek TMDL (Table 6-3) specified end-of-pipe Total Coliform Concentrations used in the WTM.

⁷ MS4 Operator provided area (Appendix A) (Appendix E for Oyster Bay Harbor)

$$R = P * P_j * R_v$$

Where:

R=Annual runoff (inches)

P = annual rainfall (inches)⁸

P_j = Fraction of annual rainfall events that produce runoff (0.9)

R_v = Site Cover Runoff coefficient (Hirschmann et al; 2008)

Table 1 - Watershed Treatment Model Default Values for Impervious fraction (Ia)

Land Use	Impervious Cover (%)
Agriculture	2
Open Urban Land	9
Low density residential	11
Medium density residential	21
High Density Residential	33
Multi Family	44
Institutional	34
Commercial	72
Roadway	80
Industrial	53

(Cappiella & Brown, 2000)

WTM predicts the total pollutant load by calculating and combining the pollutant load for each land use category within a subwatershed. DEC inputted the area provided by the MS4 Operator for each urban land use category^{9,10,11} within their MS4 sewershed into WTM and used the assumed values of the respective TMDL for annual rainfall (P), runoff coefficient (R_v) and pollutant concentration (C) to calculate the individual MS4 predicted pathogen load to the listed waterbody.

In the pathogen TMDLs addressed by the 2013 Guidance, the MS4 pathogen load is a combination of the urban land use contribution plus a pet waste contribution. With the exception of Oyster Bay, the approved TMDLs estimated the pet waste contribution using assumptions based on a national estimate of the average number of dogs per household and pathogen load per dog. The approved TMDLs acknowledged that these calculations do not necessarily reflect the actual pollutant load associated with pet waste to the water body. They do, however, provide an estimate of the potential risk to

⁸ Annual rainfall assumed to be 45.95", 48.88" for the 27 Shellfishing TMDL and 60.24" for Peconic Pathogen TMDL

⁹ The TMDL studies defined "urban land" to be a combination of residential land, commercial land, industrial and roadways

¹⁰ NYSDOT and Nassau County provided the sewershed information as a percentage of impervious cover which was directly input into the model.

¹¹ DEC used the National Land Cover Database to determine the land cover in the contributing drainage area to Oyster Bay Harbor 3.

the water body associated with the pet population in the surrounding watershed where efforts to curb the amount of abandoned waste would be beneficial.

Due to the migratory and transient nature of pollutant load associated with pet waste and difficulties in estimating and crediting reductions with retrofits, DEC believes it is appropriate to address the pet waste contribution using source control programs required under the minimum control measures of the MS4 General Permit that target areas with high probability of abandoned pet waste. DEC believes that a targeted pet waste program will effectively address the pet waste contribution in its entirety and is consistent with the approved TMDLs. For the purposes of determining the appropriateness or need for further reductions through retrofits or other programs, DEC only considered the urban land use contribution.

For waterbodies with discharges from multiple MS4 Operators, the individual MS4 predicted pathogen loads were combined to determine the total MS4 predicted pathogen loads to the listed waterbody. This combined value (i.e. Total MS4 predicted pathogen load) was compared to the *TMDL allowable load for MS4s that formed the basis of the pollutant load reduction specified in the MS4 General Permit¹²* to determine if control measures beyond a pet waste program are needed (See Section 4.3.1 & 4.3.2).

4.0. Outcome of DEC's evaluation of MS4 Operator Information & Next Steps

4.1 Waterbodies Meeting Water Quality Standards

The MS4 General Permit provides that where ambient monitoring demonstrates consistent compliance with water quality standards, MS4 Operators with load reduction goals may request that the Department suspend the additional WIS requirements to install stormwater retrofits. Appendix K identifies water bodies where ambient monitoring demonstrates consistent compliance with water quality standards. MS4 Operators discharging to these waters are not subject to semi-annual reporting requirements.

4.2 Waterbodies with no known MS4 Discharges

Through the 2013 Guidance Document, MS4 Operators identified in Appendix D of this draft Implementation Plan provided DEC with written certification that they do not own or operate a storm sewer system that discharges either directly or indirectly to the impaired section of the waterbody. The individual MS4 predicted pathogen load for these operators was thus considered to be zero when determining the total MS4 predicted pathogen load to a specified waterbody.

¹²See Appendix J for more details on the TMDL allowable load that formed the basis of the permit conditions

Upon finalization of the MS4 General Permit renewal with inclusion or reference of the final Implementation Plan, these MS4 Operators will not be subject to the requirements of Part IX.C or the semi-annual reporting requirements contained in Part V.D of GP-0-15-003. In accordance with Part IV.D of the MS4 General Permit, and 6 NYCRR 750-2.1(f) if these operators become aware at any time that they failed to submit any relevant facts or submitted incorrect information, they must promptly submit such facts and information or be subject to possible enforcement, including penalties and fines.

4.3 Waterbodies with MS4 Discharges

For waterbodies with MS4 outfalls discharging directly or indirectly to the impaired segment, DEC received information from MS4 Operators as to the extent and land use within MS4 sewersheds contributing to the MS4 outfalls. Drainage areas contributing to recharge basins designed to capture and infiltrate the 100 year, 24 hour event were not considered as part of the MS4 sewershed contributing pathogen load to the surface water embayment. Appendix C of this document contains maps that illustrates the extent of MS4 sewersheds for each of the Part IX.C waterbodies, based on information provided by the MS4 Operators.

The results of DEC's analysis following methodology described in Section 3.0 are provided in Appendices E and F of this document.

4.3.1 Waterbodies for which the Total MS4 Predicted Pathogen Load is below TMDL Allowable Load for MS4s.

MS4 Operators identified in Appendix E of this draft Implementation Plan submitted information indicating that the Total MS4 predicted pathogen load to the respective waterbody is less than the *TMDL allowable load that formed the basis of the Pollutant Load Reduction specified in Table IX.C of the MS4 General Permit*¹³. In order to stay below the allowable MS4 load for the waterbody, MS4 Operators discharging to these waterbodies will be required to continue to operate their MS4 to ensure that the MS4 pathogen load continues to stay below the TMDL allowable load.

Unless information becomes available to indicate otherwise, these MS4 Operators are meeting the allowable MS4 load to these waterbodies, are not subject to a compliance schedule, and thus will not have to submit semi-annual progress reports. However, they will continue to report on the effectiveness of the source control programs with their annual reports.

¹³ See Appendix J for more details on the TMDL allowable load that formed the basis of the permit conditions

4.3.2 Waterbodies for which the Total MS4 Predicted Pathogen Load is above TMDL Allowable Load for MS4s:

MS4 Operators identified in Appendix F of this draft Implementation Plan submitted information indicating that the Total MS4 predicted pathogen load to the respective waterbody is greater than the *TMDL allowable load that formed the basis for the Pollutant Load Reduction specified in Table IX.C of the MS4 General Permit*¹³. This indicates that additional actions are required to meet the individual MS4 load reductions specified in Appendix F.

Retrofit Program

In accordance with the 2013 Guidance Document, MS4 Operators committed to proposed schedules for commencement and implementation of retrofit programs that would become effective upon DEC's notification of their individual load reduction requirements. The finalization of the MS4 General Permit renewal with inclusion or reference of the final Implementation Plan will represent DEC's notification to MS4 Operators of their individual load reduction requirements. Timeframes to begin their retrofit program will be based on the effective date of the MS4 General Permit renewal (See Appendix G for proposed retrofit schedule with due dates based on the effective date of permit renewal). MS4 Operators with individual load reduction requirements identified in the final Implementation Plan will be subject to a compliance schedule until their individual MS4 load reduction requirement is met and thus will be required to submit semi-annual reports.

Since the MS4 pollutant load resulting from DEC's analysis and listed in Appendix F of this document does not reflect reductions that are currently being achieved through existing Stormwater Management Practices (SMPs), DEC proposes to apply reduction credits using the following criteria:

If a practice is sized to infiltrate the 1-year storm or greater, the calculated pathogen load from the contributing drainage area will be applied as a reduction credit towards the individual MS4 load reduction requirement. In order to continue to receive reduction credits, each SMP must be regularly inspected (every 5 years) and maintained such that it continues to function as designed to effectively reduce the runoff from the 1-year storm or greater.

In order to account for and obtain reduction credits associated with existing SMPs, DEC has developed the Pathogen Reduction Credit Workbook (<http://www.dec.ny.gov/chemical/41392.html>) that will

calculate¹⁴ and compare the reduction credits expressed as an annual pollutant load reduction to the individual MS4 load reduction requirement.

To obtain reduction credits for existing SMPs, DEC proposes that MS4 Operators submit, on or before the deadline for commencement of their retrofit program specified in the MS4 General Permit renewal, an electronic copy of the their Storm Sewer System Map completed in accordance Part IX.C.3.b of the MS4 General Permit showing the location and contributing drainage area of existing SMPs that meet the reduction credit criteria along with the completed Pathogen Reduction Credit Worksheet. If the total reduction achieved with existing SMPs meets or exceeds the individual MS4 load reduction requirement specified in the final Implementation Plan, the MS4 Operator would be meeting their individual MS4 load reduction requirements and additional retrofits would not be required; they will not be subject to a compliance schedule; and, thus would not have to submit semi-annual reports. These MS4 Operators would report on inspection and maintenance activities needed to continue their reduction credits with their annual reports.

MS4 Operators who cannot meet or exceed the individual MS4 load reduction requirement with existing SMPs would be required to commence their retrofit program by the deadline specified in the MS4 General Permit renewal to achieve any remaining pollutant reduction not addressed by existing SMPs and meet their individual MS4 load reduction requirement by the final deadline specified in the MS4 General Permit. DEC has developed the Proposed Retrofit Worksheet (within the Pathogen Reduction Workbook) that will calculate¹⁴ and compare the projected reduction credits for future retrofit projects¹⁵ to the individual MS4 load reduction requirement. This worksheet allows the MS4 Operator to prioritize and select potential retrofits based on the projected pollutant reduction potential so that the individual MS4 load reduction requirement is met by the final deadline specified in the MS4 General Permit renewal. Progress in the identification, selection, design and completion of retrofits to meet the MS4 load reduction deadline would be reported with the semi-annual reports according to the proposed schedule contained in Appendix G.

Ambient Monitoring To Confirm Water Quality

For waters where current water quality data is not available, MS4 Operators may defer commencement of their retrofit program by submitting to DEC, on or before the deadline for commencement of their retrofit program specified in the MS4 General Permit renewal, an

¹⁴ Reduction credits are calculated using the TMDL assumptions described in Section 3.0 of this document.

¹⁵ Retrofit projects can include new SMPs designed to meet the reduction credit criteria or upgrades to existing SMPs that currently do not meet the reduction credit criteria.

approvable Quality Assurance Project Plan (QAPP)¹⁶ describing their proposed monitoring program designed to demonstrate consistent compliance with water quality standards. This monitoring program would be used for determining the appropriateness or need for further reductions through retrofits or other programs.¹⁷ It would not be used for decisions as to the suitability of the area for harvesting shellfish. Once approved, MS4 Operators would report the monitoring data for samples collected during the reporting period with the semi-annual reports. Retrofit plans would not be required while the monitoring program is being implemented provided the data shows water quality standards are met. If, at the conclusion of the study, the data collected confirms water quality standards are consistently met, the MS4 Operator may request relief from Part IX.C requirements. Otherwise, these MS4 Operators would need to commence their retrofit program or a source identification program. Progress with implementation of the monitoring program would be reported with the semi-annual reports according to the proposed schedule contained in Appendix H.

Source Identification Plan with Monitoring

Where there is a strong indication that there are other significant sources of pathogens, MS4 Operators may defer¹⁷ commencement of their retrofit program by submitting to DEC, on or before the deadline for commencement of their retrofit program specified in the final MS4 General Permit renewal, an approvable engineering report describing the suspected source and outlining their proposed source identification program or strategy. In order to be considered approvable, the report must include a QAPP¹⁸ designed to confirm the suspected source and proposed schedule for implementation with a final completion date of 2 years after commencement of the study. Retrofit plans would not be required of these MS4 Operators during the study period. Based on the results presented by the MS4 Operator at the conclusion of the study period, DEC will determine if retrofits are appropriate and will notify the MS4 Operator of the remaining reduction requirements and deadlines for commencing a retrofit program, if appropriate. Progress with implementation of the source identification plan would be reported with the semi-annual reports according to the proposed schedule contained in Appendix I.

¹⁶ DEC will develop a model QAPP outlining the level of monitoring necessary to make this demonstration that will be used as the basis for approval.

¹⁷ Deferral of the retrofit program does not extend the time for MS4 Operators to comply with the final compliance deadline if subsequent data show that retrofits are necessary to achieve the reduction requirement.

¹⁸ DEC will develop a model QAPP that will be used as the basis for approval.

5.0 Regional Stormwater Entities

For waterbodies where there are multiple MS4 Operators contributing to the pollutant load, these MS4 Operators may wish to develop a Regional Stormwater Entity (RSE) to enable resource sharing as well as enhanced funding opportunities amongst participating MS4 Operators. An RSE creates flexibility to perform coordinated monitoring and site retrofits in locations that achieve a better cost-to-pathogen reduction ratio on a watershed basis. For MS4 Operators working in an RSE, the assigned load for the RSE will be the sum of the individual loads assigned to the participating MS4 Operators.

Each participating MS4 Operator in the RSE would be deemed in compliance if the aggregate RSE assigned load reduction requirement is met. If the aggregate RSE assigned load is not met, each participating MS4 would be deemed in non-compliance until the RSE assigned reduction requirement or the individual MS4 reduction requirement is attained.

The RSE may submit the engineering report or proposed monitoring plan on behalf of the participating MS4 Operators provided that each individual MS4 Operator include a certification that they are participating in the RSE.

6.0 Potential Funding Sources

One of the primary sources of funding for TMDL implementation is Section 319 of the Clean Water Act. Watershed restoration activities, such as TMDL implementation, are eligible for this funding. In addition, retrofit planning for TMDL implementation is an eligible activity under the current request for applications (RFA) in Round 13 of the Water Quality Improvement Program (WQIP). Information about this grant program is available on the DEC web site at: <http://www.dec.ny.gov/pubs/4774.html>. The application period for this grant program closes at 4:00 PM on Friday, July 29, 2016. MS4 Operators that will need to begin retrofit planning are encouraged to take advantage of this opportunity for funding.

Other funding sources include, but are not limited to:

- GIGP
- U.S. Department of Agriculture (USDA) Conservation Reserve Enhancement Program (CREP)
- USDA Conservation Reserve Program (CRP)
- USDA Environmental Quality Incentives Program (EQIP)
- USDA Wetland Reserve Program (WRP)
- USDA Wildlife Habitat Incentive Program (WHIP)
- U.S. Fish and Wildlife Service Conservation Grants
- U.S. Fish and Wildlife Service Private Stewardship Program
- Oceans and Great Lakes line of the Environmental Protection Fund set aside for the purpose of ambient monitoring and source identification.

Acronyms

2013 Guidance Document	Retrofit Program Plan Guidance Document for Pathogen Impaired Waters on Long Island (NYSDEC, December 2013)
BMP	Best Management Practices
CREP	Conservation Reserve Enhancement Program
CRP	Conservation Reserve Program
CWP	Center for Watershed Protection
ECL	Environmental Conservation Law
EQIP	Environmental Quality Incentives Program
GIGP	Green Innovative Grants Program
GP-0-15-003	Current SPDES Permit ID number for MS4 General Permit
Ia	Impervious Fraction
MEP	Maximum Extent Practicable
MS4	Municipal Separate Storm Sewer System
P	Precipitation
PLR	Pollutant Load Reduction
QAPP	Quality Assurance Project Plan
RSE	Regional Stormwater Entity
Rv	Runoff volume
SPDES	State Pollutant Discharge Elimination System
SWMP	Stormwater Management Program
TMDL	Total Maximum Daily Load
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
WIS	Watershed Improvement Strategy
WLA	Waste Load Allocation
WQIP	Water Quality Improvement Project
WTM	Watershed Treatment Model

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