

MS4 General Permit
Town of Woodbury 2019 Annual Report
Existing MS4 Permittee
Permit Number GSM 000007
January 1, 2019 – December 31, 2019

This report documents the Town of Woodbury’s efforts to comply with the conditions of the MS4 General Permit to the maximum extent practicable (MEP) from January 1, 2019 to December 31, 2019.

Part I: Summary of Minimum Control Measure Activities

1. Public Education and Outreach (Section 6 (a)(1) / page 19)

1.1 BMP Summary

BMP	Status	Activities in current reporting period	Measurable goal	Department Responsible	Due	Date completed or projected completion date	Additional details
1-1 Implement public education and outreach	Ongoing	Continue to maintain the Town Stormwater Management website which provides educational information and links to various websites (EPA, CT DEEP, UCONN NEMO, PRWC) related to water quality and stormwater management topics	Create Town website to include educational materials	Land Use	Ongoing	December 2017	woodburyct.org/stormwatermanagement
1-2 Address education/outreach for pollutants of concern*	Ongoing	Online educational materials focused on bacteria (pet waste management, impervious cover, impacts of illicit discharges, waterfowl and manure	Updated Town website to include educational materials related to pollutants of concern in Woodbury	Land Use	Ongoing	December 2017	woodburyct.org/stormwatermanagement http://nemo.uconn.edu/ms4/index.htm http://clear.uconn.edu

1-3 Implement public education and outreach	Ongoing	Utilize existing educational materials to continue public education and outreach. Materials are available in the Land Use office, Town Clerks Office and the Library	Distribute educational materials and make them available to the public in municipal offices	Land Use	Ongoing	January 2017	Examples of educational materials include EPA's After the Storm: A Citizen's Guide to Understanding Stormwater, Do Not Feed Waterfowl, SepticSmart, Aquatic Hikers, Watershed Newsletter
1-4 Implement public education and outreach	Ongoing	River Smart Resource Kits, provided to the Town by Pomperaug River Watershed Coalition (PRWC) are available in the Land Use Office and at Public Works. These kits have been given to residents of the community including applicants for projects near waterbodies and watercourses. The River Smart Resource Kit includes the following brochures and handouts on how to protect water resources	Distribute educational materials and make the available in municipal offices	PRWC Land Use	Ongoing	January 2017	https://www.riversmartct.org/learn
1-5 Implement public education and outreach	Ongoing	The Town and PRWC will continue targeted outreach to K-12 students, agricultural, developers, homeowners and businesses on specific aspects of stormwater management	Public Outreach Activities	PRWC Land Use	Ongoing	Various events throughout 2019	
1-6 Implement public education and outreach	Ongoing	The Town continues to work with the Northwest Conservation District to promote the use of Low Impact Development in the town	Creation of an LID manual	Land Use	Ongoing	2020	http://nwcd.org/wpsite/low-impact-development-lid/
1-7 Implement public education and outreach	Ongoing	A link is included on the Town website dedicated to the PRWC and their goal of maintaining the health watershed and sharing that with the community.	Update as needed	Land Use	Ongoing	January 2017	www.pomperaug.org

1.2 Describe any Public Education and Outreach activities planned for the next year, if applicable.

PRWC will share its environmental message and outreach materials at the Woodbury Earth Day Festival and at Woodbury Trunk or Treat at Hollow Park.

The Town will continue to partner with local groups, to provide vests for annual litter clean-up events. The public is encouraged to help remove litter and debris, which is then picked up and disposed of by the Public Works Department.

The Woodbury Conservation Commission will hold a Spring and Fall Town-Wide Clean Up Day.

The Town will continue to update our online education materials and educational brochures.

1.3 Details of activities implemented to educate the community on stormwater (see attached spreadsheet)

Program Element/Activity	Audience (and number of people reached)	Topic(s) covered	Pollutant of Concern addressed (if applicable)	Responsible dept. or partner org.
Watershed Based Plan – Project Update	Woodbury Land Use Commissions, Public (35)	Watershed planning, Impaired waters, Bacteria, Land Use, Impact of Impervious cover	Bacteria (Woodbury)	Pomperaug River Watershed Coalition
Bluegrass Sunday – Watershed Overview	Watershed Residents (100)	Watershed Overview		Pomperaug River Watershed Coalition
Environmental Focus Group	Woodbury Residents, Town Staff & Commission Members (12)	Watershed Protection		Woodbury Planning Commission, Land Use, Pomperaug River Watershed Coalition
Riparian Buffers	Woodbury Town Staff & Commission Members (8)	Riparian Buffers		Pomperaug River Watershed Coalition
Woodbury Chamber of Commerce Chamber After Dark Mtg at New Morning Market, Woodbury	Chamber of Commerce members (25)	Watersheds & Aquifers		Pomperaug River Watershed Coalition
The Incredible Journey: Adventures of a Water Drop	Watershed Residents (7)	Water Quality		Pomperaug River Watershed Coalition
Drinking Water and Private Well Forum	Watershed Residents (30)	Water Quality		Pomperaug River Watershed Coalition
Woodbury Earth Day	General Populous (7,000)	Watershed Protection and Environmental Stewardship		Pomperaug River Watershed Coalition
Rain Barrel Workshops (3)	Watershed Residents (32)	Environmental Stewardship		Pomperaug River Watershed Coalition
Protection of Watershed Lands	Watershed Residents (20)	Watershed Protection, Environmental Stewardship		Pomperaug River Watershed Coalition

River, Stream and Aquifer Vulnerabilities	Town Commission Members and Staff (20)	Watershed Protection	Woodbury Land Use Office
Macroinvertebrate Sampling & Water Quality	Naugatuck River Brigade & Pomperaug Youth Conservation Corps Staff (25)	Water Quality	Pomperaug River Watershed Coalition
Food Webs; Community Planning & Non-point Source Pollution: Metamorphosis Field Trip with ASAP! (After School Arts Program)	Third, fourth, fifth, and sixth grade students from Children's Community School (Waterbury) (65)	Water Quality, Environmental Stewardship	Pomperaug River Watershed Coalition
Bluegrass Sunday – Watershed Overview	Watershed Residents (100)	Watershed Protection	Pomperaug River Watershed Coalition
Long Island Sound in a Jar	Woodbury Middle School – 7 th Grade Students (80)	Water Quality, Watershed Protection	Pomperaug River Watershed Coalition
Annual Macroinvertebrate Survey	Volunteers (6)	Water Quality	Pomperaug River Watershed Coalition
Riparian Buffer Planting Project	Project Partners from Town of Woodbury, PRWC, and Trout Unlimited (6)	Water Quality, Watershed Protection	Pomperaug River Watershed Coalition, Town of Woodbury, Trout Unlimited
Watershed Based Plan Implementation Projects Planning Meetings	PRWC Staff, Project Partners including private landowners, and municipal representatives of Woodbury, Southbury, and Bethlehem	Water Quality, Watershed Protection	Pomperaug River Watershed Coalition
Stormwater Management Committee Meeting	Committee Members (4)	Watershed Protection, Water Quality and Environmental Stewardship	Pomperaug River Watershed Coalition
Joint PRWC Board and Advisory Council	PRWC Board and Advisory Council Members (25)	Watershed Protection, Water Quality and Environmental Stewardship	Pomperaug River Watershed Coalition
Spring Clean-up day	Woodbury Residents (~20)	Water quality, environmental stewardship	Woodbury Conservation Commission
Fall Clean-up day	Woodbury Residents (~20)	Water Quality, environmental stewardship	Woodbury Conservation Commission,
Stormwater Management Plan and MS4 Training Session	Municipal Officials (20)	Stormwater Management, MS4 Program	Woodbury Land Use Office
Stormdrain Marker Installations	Watershed Residents	Watershed Protection, Water Quality and Environmental Stewardship	Pomperaug River Watershed Coalition, Youth Conservation Corps

2. Public Involvement/Participation (Section 6(a)(2) / page 21)

2.1 BMP Summary

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
2-1 Comply with public notice requirements for the Stormwater Management Plan	Complete	Complete Stormwater Management Plan	Make final Stormwater Management Plan available electronically on the Town website and paper copies available in Town Hall	Land Use	April 3, 2017	July 2017	
2-2 Comply with public notice requirements for Annual Reports	Complete (update annually)	The 2019 Annual Report has been publicly noticed and posted on the website as per current DEEP requirements.	Make draft Annual Report available electronically on the Town website and paper copies available in Town Hall. Publish notice of availability on website or local newspaper.	Land Use	Feb 15, 2020	February 15, 2020 (plan posted) April 1, 2020 (submit to DEEP)	www.woodburyct.org
2-3 Establish Stormwater Committee	Complete	An Ad-hoc Stormwater Management Committee was appointed by the Board of Selectmen and consists of Town Employees and a member of PRWC.	Provide forum to coordinate SWMP implementation across depts. and commissions. Meet as required.	Land Use Public Works	-	January 2018	
2-5 Continue to work with local organizations and groups	Ongoing	Continue to work with local organizations (PRWC, etc.) to identify public involvement opportunities and assist with plan implementation.	Ensure local coordination related to public involvement opportunities	Stormwater Management Committee	Ongoing	Ongoing	

2.2 Describe any Public Involvement/Participation activities planned for the next year, if applicable.

Hold stormwater committee meetings as necessary to review SMP/General Permit implementation progress.

PRWC will continue the installation of storm drain markers as part of their public participation program if funding is available.

Woodbury will continue to collaborate with area organizations such as the PRWC and the Northwest Conservation District to provide additional public involvement opportunities

2.3 Public Involvement/Participation reporting metrics

Metrics	Implemented	Date	Posted
Availability of the Stormwater Management Plan announced to public	Yes	July 2017	Woodburyct.org/ stormwatermanagement
Availability of Annual Report announced to public	Yes	January 29, 2020	Woodburyct.org/ Landuse/Townplanner and Woodburyct.org/ stormwatermanagement

3. Illicit Discharge Detection and Elimination (Section 6(a)(3) and Appendix B / page 22)

3.1 BMP Summary

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
3-1 Develop written IDDE program	Complete	Town staff has drafted the written IDDE program using the CT IDDE program template	Develop written plan of IDDE program	Land Use	Jul 1, 2018	July 1, 2018.	
3-2 Develop list and maps of all MS4 stormwater outfalls in priority areas	Complete	Consultant developed a list and map of all MS4 stormwater outfalls in priority areas	Update GIS storm system mapping to include required Elements; Develop a list of stormwater outfalls in priority areas.	Land Use, Consultant	Jul 1, 2019	December 2019	
3-3 Implement citizen reporting program	Complete	The Town has a citizen reporting system. An email address and phone number have been added to the Town website for submitting a report. The reports will be investigated and included in the annual report	Establish a citizen reporting hotline and advertise it on the Town website and in municipal offices.	Land Use Public Works	Jul 1, 2017	December 2017	
3-4 Establish legal authority to prohibit illicit discharges	Complete	The town has drafted and adopted the necessary legal authority to eliminate illicit discharges.	Adopted Illicit Discharge Ordinance	Land Use	Jul 1, 2018	Ordinance adopted May 21, 2018	

3-5 Develop record keeping system for IDDE tracking	Complete	An IDDE Tracking Form has been created to record illicit discharge abatement activities.	Develop IDDE record keeping system	Land Use	Jul 1, 2017	January 2018	
3-6 Address IDDE in areas with pollutants of concern	Ongoing	Areas of concern have been identified by Public Works and are being monitored. These are also identified in the Watershed Based Plan as areas of concern needing further assessment.	Identify areas with high potential for septic system failure.	Public Works	Not specified	June 2019	
3-7 Conduct SSO Inventory	N/A	N/A	The Town does not contain a municipal sanitary sewer system and this permit requirement does not apply.	N/A	N/A	N/A	
3-8 Assess and prepare a priority ranking of catchments	Complete	Consultant completed the Assessment and Priority Ranking of Catchments	Classified each catchment within priority areas as an excluded, problem, high priority, or low priority catchment.	Land Use, Consultant Public Works	July 2019	July 2019	
3-9 Conduct outfall and interconnection screening and sampling	Complete	Consultant completed the outfall screening	Conduct dry weather screening and sampling (where flowing) of every MS4 outfall and interconnection (except for excluded and problem catchments)	Consultant	June 2019	June 2019	
3-10 Conduct catchment investigations and remove illicit discharges	Not Started	A consultant will be working toward completing this task.	Evaluate catchments for System Vulnerability Factors and begin catchment investigations Where System Vulnerability Factors are present, conduct manhole inspections. Isolate and verify sources. Remove identified illicit discharges and conduct confirmatory outfall screening.	Consultant Public Works	-	-	

3.2 Describe any IDDE activities planned for the next year, if applicable.

The written program will be posted to the Stormwater Management webpage and a link is listed in the Annual Report; the Town will update the written IDDE program as needed throughout the permit term.

Maintain master IDDE tracking spreadsheet and ensure all employees involved in IDDE program understand the logging process

3.3 List of citizen reports of suspected illicit discharges received during this reporting period.

Date of Report	Location / suspected source	Response taken
None		

3.4 Provide a record of illicit discharges occurring during the reporting period and SSOs occurring July 2012 through end of reporting period using the following table.

Location (Lat long/ street crossing /address and receiving water)	Date and duration of occurrence	Discharge to MS4 or surface water	Estimated volume discharged	Known or suspected cause / Responsible party	Corrective measures planned and completed (include dates)	Sampling data (if applicable)
None						

3.5 Briefly describe the method used to track illicit discharge reports, responses to those reports, and who was responsible for tracking this information.

Citizens that wish to report illicit discharges can call the Land Use office or Public Works or send an email to stormwater@woodburyct.org The Land Use Office reviews the report, records the information on an IDDE Hotline Tracking Form and contacts the IDDE inspector. The Public Works Department IDDE Inspector investigates and responds to the complaint and provides follow-up information and resolution to the Land Use office.

3.6 Provide a summary of actions taken to address septic failures using the table below.

Location and nature of structure with failing septic systems	Actions taken to respond to and address the failures	Impacted waterbody or watershed, if known
N/A (There are no known septic failures at this time)		

3.7 IDDE reporting metrics

Metrics	
Estimated or actual number of MS4 outfalls	187 town wide, 72 in priority area
Estimated or actual number of interconnections	187 town wide, 72 in priority area
Outfall mapping complete	100%
Interconnection mapping complete	100%
System-wide mapping complete (detailed MS4 infrastructure)	100%
Outfall assessment and priority ranking	100%
Dry weather screening of all High and Low priority outfalls complete	100%
Catchment investigations complete	0%
Estimated percentage of MS4 catchment area investigated	0%

3.8 Briefly describe the IDDE training for employees involved in carrying out IDDE tasks including what type of training is provided and how often is it given (minimum once per year).

The Town of Woodbury will expand on its existing training program which currently addresses stormwater management and water quality issues (conducted annually).

Tighe & Bond conducted a Stormwater Management Plan and MS4 Training Session with Town staff involved in carrying out various IDDE tasks on January 24, 2020.

The following Stormwater Best Management Practices education materials have been made available to applicable staff: Salt, Sand and Deicer Storage & Snow Disposal; Good Housekeeping & Spill Prevention; Illicit Connections & Illegal Discharge Reporting; and Spill Clean Up. Appropriate staff were also provided with a PowerPoint on recognizing and reporting illicit discharges.

4. Construction Site Runoff Control (Section 6(a)(4) / page 25)

4.1 BMP Summary

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
4-1 Implement, upgrade, and enforce land use regulations or other legal authority to meet requirements of MS4 general permit	Ongoing	All proposed development projects have been reviewed for compliance with regulations noted	Review and update, as necessary, existing land use regulations and implementation policies for compliance with MS4 permit requirements.	Land Use	Jul 1, 2019	Continued implementation	Proposed developments are reviewed for conformance with the 2002 Guidelines for Soil Erosion and Sedimentation Control, as amended, the CT Stormwater Water Quality Manual through the Town's Subdivision, Zoning and Wetland Regulations.
4-2 Develop/Implement plan for interdepartmental coordination in plan review and approval	Ongoing	Coordinate the functions of all departments and boards involved in the review, permitting, or approval of land disturbance projects.	Continue to implement interdepartmental coordination procedures as described in Section 5.2 of the Town's Stormwater Management Plan.	Land Use	Jul 1, 2017	Jul 1, 2017	
4-3 Review site plans for stormwater quality concerns	Ongoing	Continue to conduct site plan reviews that incorporate consideration of stormwater controls or management practices to prevent or minimize impacts to water quality on sites with soil disturbance of one acre or more.	Complete site plan reviews for all projects subject to specific land use regulations.	Land Use	Jul 1, 2017	Jul 1, 2017	
4-4 Conduct site inspections	Ongoing	Continue to conduct site inspections to assess the adequacy of the installation, maintenance, operation, and repair of construction and post-construction control measures and take	Conduct inspections and enforcement to assess and ensure the adequacy of the installation, maintenance, operation, and repair of construction and post construction control measures.	Land Use	Jul 1, 2017	Ongoing	

		enforcement action when necessary					
4-5 Implement procedure to allow public comment on site development	Ongoing	The Land Use office continues to allow the public to comment on proposed and ongoing land disturbance and development activities	Post notice of Woodbury's email address for stormwater related comments on the Town website	Land Use	Jul 1, 2017	Jul 1, 2017	
4-6 Implement procedure to notify developers about DEEP construction stormwater permit	Ongoing	The Land Use office continues to notify developers and contractors of their potential obligation to obtain approval under DEEP's Construction General Permit.	Continue to inform developers/contractors of their potential obligation to register under the DEEP construction general permit and to provide a copy of the Storm Water Pollution Control Plan to Woodbury upon request	Land Use	Jul 1, 2017	Jul 1, 2017	
4-7 Require erosion and sedimentation controls throughout construction	Ongoing	Meet local land use regulations	Compliance with approved plans	Land Use	-	Ongoing	

4.2 Describe any Construction Site Runoff Control activities planned for the next year, if applicable.

Zoning regulations are in the process of being updated
 Continue to review site plans and inspect construction activity associated with development
 Continued enforcement of land use regulations to meet requirements of the MS4 general permit
 Continued site inspections

5. Post-construction Stormwater Management (Section 6(a)(5) / page 27)

5.1 BMP Summary

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
5-1 Establish and/or update legal authority and guidelines regarding	In progress	Zoning regulations are being updated and will continue to incorporate LID use. The Northwest Conservation District	Review and update, as necessary, existing land use regulations and implementation policies for compliance with the	Zoning Commission Planning Commission	Jul 1, 2021	Anticipate completing by the deadline of	

LID and runoff reduction in site development planning		is developing a Low Impact Development Manual that will be incorporated into various land use regulations	General Permit post construction stormwater management requirements	Land Use		July 1, 2021	
5-2 Enforce LID/runoff reduction requirements for development and redevelopment projects	Ongoing	Began reviewing regulations, conduct plan reviews to ensure compliance LID techniques are encouraged in commercial and industrial zones	Review and update, as necessary, current regulations to identify, reduce, or eliminate existing regulatory barriers to implementation of LID and runoff reduction practices. Complete plan reviews and ensure compliance for all projects subject to the legal authority	Land Use	Ongoing beginning July 1, 2019	Ongoing	Current regulations require that Special Permit applications in certain districts include a narrative outlining the LID techniques which have been incorporated into the site plan. Reference shall be made to the 2002 CT Stormwater Quality Manual
5-3 Identify retention and detention ponds in priority areas	Ongoing	A list of all retention and detention ponds has been created	List of all retention and detention ponds in priority areas	Public Works	Jul 1, 2019	July 1, 2019	
5-4 Implement long-term maintenance plan for stormwater basins and treatment structures	Ongoing	The Town currently maintains structures as required. Annual inspections are conducted to determine extent of maintenance work that will be required	Develop a long-term maintenance plan for retention/detention basins and stormwater treatment structures. Implement maintenance plan including annual inspection of retention / detention basins and stormwater treatment structures and removal of accumulated sediment and pollutants.	Public Works	Ongoing beginning July 1, 2019	Ongoing	
5-5 DCIA mapping	Complete	Consultant has completed the DCIA analysis for the Town	Calculate the Directly Connected Impervious Area (DCIA) of outfall catchment areas using guidance provided by DEEP and UConn CLEAR. Revise DCIA estimate as development, redevelopment, or retrofit projects effectively add or remove DCIA.	Consultant Public Works Land Use	July 1, 2019	January 2019	

5-6 Address post-construction issues in areas with pollutants of concern	In progress	The Town currently addresses erosion and sedimentation problems and will focus on areas with pollutants of concern	Address erosion and sediment problems noted during inspections	Land Use Public Works	Not specified	Ongoing	
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5.2 Describe any Post-Construction Stormwater Management activities planned for the next year, if applicable.

5-1. Continued review of legal authority and/ or other updates to the current regulations and policies to meet or exceed those LID and runoff reduction practices required under this permit and in accordance with the CT Stormwater Quality Manual, Woodbury land use regulations, guidance or construction project requirements.
 5-3. Begin field inspections of all municipality owned retention and detention ponds within the priority areas and throughout the entire town.
 5-4. Continued inspections to address construction issues in areas with pollutants of concern.

5.3 Post-Construction Stormwater Management reporting metrics

Metrics	
Baseline (2012) Directly Connected Impervious Area (DCIA)	Acres - 192
DCIA disconnected (redevelopment plus retrofits)	0.006 acres / acres total – 0.006
Retrofits completed	# - TBD
DCIA disconnected	0.006 / % total since 2012 - TBD
Estimated cost of retrofits	\$ - TBD
Detention or retention ponds identified	23 town owned or maintained

5.4 Briefly describe the method to be used to determine baseline DCIA.

The DCIA was calculated following the guidance provided by DEEP and UConn CLEAR

6. Pollution Prevention/Good Housekeeping (Section 6(a)(6) / page 31)

6.1 BMP Summary

BMP	Status	Activities in current reporting period	Measurable goal	Department / Person Responsible	Due	Date completed or projected completion date	Additional details
6-1 Develop/implement formal employee training program	Ongoing	Identified additional training materials for municipal staff related to spill response and illicit discharge identification and reporting	Implement training program for Town employees, building on the Town's current program	Public Works Land Use	Jul 1, 2017	July 1, 2017	
6-2 Implement MS4 property and operations maintenance	Ongoing	The Town maintains pet waste baggies and disposal receptacles Increased educational efforts	Maintain properties and facilities in accordance with the General Permit requirements	Parks and Recreation Public Works	Jul 1, 2018	July 1, 2018	
6-3 Implement coordination with interconnected MS4s	Ongoing	Review mapping to identify interjurisdictional stormwater discharges/connections	Coordinate with neighboring municipalities, institutions, and DOT regarding stormwater management program activities associated with the adjacent MS4s	Public Works	Not specified		
6-4 Develop/implement program to control other sources of pollutants to the MS4	Ongoing	Continue to control through IDDE program, water quality monitoring, the Town's Ordinance, and targeted education and outreach to commercial, industrial, municipal, institutional facilities owners/operators	Control through IDDE program, water quality monitoring, the Town's Ordinance, and targeted education and outreach to commercial, industrial, municipal, institutional facilities owners/operators	Public Works Land Use	Not specified		
6-5 Evaluate additional measures for discharges to impaired waters*	Ongoing	Signage is in place at Town parks regarding the need to pick up pet waste. Bags are also provided for use by pet owners at these locations. Town staff will continue discussions regarding other possible measures for impaired waters and bacteria.	Implement the measures and procedures described in Section 7.2 including those measures to address stormwater pollutants of concern	Public Works Land Use Parks & Rec	Not specified		

6-6 Track projects that disconnect DCIA	Ongoing	The Town has begun to review files to track DCIA. The Town will track the total acreage of DCIA that is disconnected as a result of redevelopment or retrofit projects within the town.	Annually track total acreage of DCIA that is disconnected as a result of redevelopment or retrofits	Public Works Land Use	Jul 1, 2017	Jul, 1 2017	
6-7 Implement infrastructure repair/rehab program	Not Started	None. The Town will begin to develop a plan to identify MS4 structures to repair, rehabilitate or upgrade to reduce or eliminate the discharge of pollutants into water bodies.	Repair, rehabilitate, or retrofit MS4 infrastructure (e.g., conveyances, structures, outfalls) as needed in a timely manner.	Public Works	Jul 1, 2021	Anticipate completing by the deadline of July 1, 2021	
6-8 Develop/implement plan to identify/prioritize retrofit projects	Not Started	None. The Town of Woodbury will be developing a retrofit plan.	Develop retrofit plan and list of priority sites	Public Works	Jul 1, 2020	Anticipate completing by the deadline of July 1, 2020	
6-9 Implement retrofit projects to disconnect 2% of DCIA	Not Started	No progress to date.	Disconnect 1% per year of Woodbury's DCIA from the MS4	Public Works	Jul 1, 2022	Anticipate completing by the deadline of July 1, 2022	
6-10 Develop/implement street sweeping program	Complete	The Town currently sweeps all streets a minimum of one time per year, beginning in the spring, to remove winter road sand and other debris. This year 180 linear miles of paved roads were swept. Approximately 800 to 1,000 tons of material was removed from town streets during this process.	Continue to inspect and sweep all municipally-owned or –operated streets and parking lots annually in spring following the cessation of winter maintenance activities (i.e., sanding, deicing). Evaluate runoff reduction measures such as permeable pavement or other measures to promote sheet flow of stormwater for all new and redeveloped municipal parking lots	Public Works	Jul 1, 2017	Jul 1, 2017	
6-11 Develop/implement catch basin cleaning program	Ongoing	The Town of Woodbury continued a catch basin cleaning program utilizing a vacuum type truck to better clean catch basins.	A. Inspect and clean catch basins a. 100% within Priority Areas b. 100% of MS4 B. optimize catch basin cleaning	Public Works	Jul 1, 2020	Anticipate completing by the deadline of July 1, 2020	

		Approximately 152 catch basins were cleaned in 2019.	based on inspection findings, such that no catch basin is more than 50% full			
6-12 Develop/implement snow management practices	Complete	Woodbury continues to implement standard operating practices for the use, handling, storage, application, and disposal of deicing products such as salt and sand to minimize exposure to stormwater; and continues to implement standard operating procedures regarding snow and ice control to minimize the discharge of sand, anti-icing or de-icing chemicals and other pollutants.	Implement practices for deicing material management and snow and ice control	Public Works	Jul 1, 2018	February 2018

6.2 Describe any Pollution Prevention/Good Housekeeping activities planned for the next year, if applicable.

In conjunction with other communities within the NVCOG, the Town of Woodbury will participate in three household hazardous waste collection days in Woodbury and neighboring communities. The program has been successful in removing household hazardous materials from the town’s waste stream for many years. The Town will sweep all streets a minimum of one time per year, beginning in the spring, to remove winter road sand and other debris. Spot sweeping occurs as needed.

The Town will continue its catch basin cleaning program.

The Conservation Commission conducts two roadside clean-ups annually.

6.3 Pollution Prevention/ Good Housekeeping reporting metrics

Metrics	
Employee training provided for key staff	Y (1/24/2020)
Street sweeping	Y (annually)
Curb miles swept	180 miles
Volume (or mass) of material collected	800-1,000 tons
Catch basin cleaning	
Total catch basins in priority areas	509
Total catch basins in MS4	1,677
Catch basins inspected	431

Catch basins cleaned	152
Volume (or mass) of material removed from all catch basins	50 tons
Volume removed from catch basins to impaired waters (if known)	0 tons
Snow management	
Type(s) of deicing material used	Sodium chloride/sand
Total amount of each deicing material applied	1,100 tons of sodium chloride, 3,300 tons of sand
Type(s) of deicing equipment used	Multi-purpose side dump spreader
Lane-miles treated	194 miles
Snow disposal location	N/A
Staff training provided on application methods & equipment	Y (April 2018)
Municipal turf management program actions (for permittee properties in basins with N/P impairments)	N/A
Reduction in application of fertilizers (since start of permit)	N/A
Reduction in turf area (since start of permit)	N/A
Lands with high potential to contribute bacteria (dog parks, parks with open water, & sites with failing septic systems)	Y (Agricultural)
Cost of mitigation actions/retrofits	N/A

6.4 Catch basin cleaning program

Briefly describe the method used to optimize your catch basin inspection and cleaning schedule.
The Town of Woodbury seeks bids for catch basin cleaning annually. Each year different areas are cleaned and inspected with a rotation to complete all basins within budget restraints.

6.5 Retrofit program

Briefly describe the Retrofit Program identification and prioritization process, the projects selected for implementation, the rationale for the selection of those projects and the total DCIA to be disconnected upon completion of each project. [Section to be completed for the 2019 Annual Report.]
N/A

Describe plans for continuing the Retrofit program and how to achieve a goal of 1% DCIA disconnection in future years. [Section to be completed for the 2019 Annual Report.]

There are some sites identified in the Watershed Based Plan. This will be further refined as the DCIA mapping is completed and reviewed.

Describe plans for continuing the Retrofit program beyond this permit term with the goal to disconnect 1% DCIA annually over the next 5 years. [Section to be completed for the 2019 Annual Report.]

N/A

DRAFT

Part II: Impaired waters investigation and monitoring [This section required beginning with 2019 Annual Report]

1. Impaired waters investigation and monitoring program

1.1 Indicate which stormwater pollutant(s) of concern occur(s) in your municipality or institution. This data is available on the MS4 map viewer: <http://s.uconn.edu/ctms4map>.

Nitrogen/ Phosphorus Bacteria Mercury Other Pollutant of Concern

1.2 Describe program status.

Discuss 1) the status of monitoring work completed, 2) a summary of the results and any notable findings, and 3) any changes to the Stormwater Management Plan based on monitoring results.

Dry weather screening and impaired waters outfall sampling has been completed

2. Screening data for outfalls to impaired waterbodies (Section 6(i)(1) / page 41)

2.1 Screening data collected under 2017 permit

Complete the table below for any outfalls screened during the reporting period. Each Annual Report will add on to the previous year’s screening data showing a cumulative list of outfall screening data.

Outfall ID	Sample date	Parameter (Nitrogen, Phosphorus, Bacteria, or Other pollutant of concern)	Results (Ecoli)	Results (total coliform)	Name of Laboratory (if used)	Follow-up required?
WR-02	4/26/2019	Bacteria	79.8	2419.6	Phoenix	No
WR-03	4/26/2019	Bacteria	33.2	2419.6	Phoenix	No
WR-05	4/26/2019	Bacteria	90.6	2419.6	Phoenix	No
WR-06	4/26/2019	Bacteria	<1	1553.1	Phoenix	No
WR-09	4/26/2019	Bacteria	648.8	2419.6	Phoenix	Yes
WR-10	4/26/2019	Bacteria	517.2	2419.6	Phoenix	Yes
WR-11	4/26/2019	Bacteria	241.5	2419.6	Phoenix	No

2.2 Credit for screening data collected under 2004 permit

If any outfalls to impaired waters were sampled under the 2004 MS4 permit, that data can count towards the monitoring requirements under the modified 2017 MS4 permit. Complete the table below to record sampling data for any outfalls to impaired waters under the 2004 MS4 permit.

Outfall	Sample date	Parameter (Nitrogen, Phosphorus, Bacteria, or Other pollutant of concern)	Results	Name of Laboratory (if used)	Follow-up required?
N/A					

3. Follow-up investigations (Section 6(i)(1)(D) / page 43)

Provide the following information for outfalls exceeding the pollutant threshold.

Outfall	Status of drainage area investigation	Control measure implementation to address impairment
N/A		

4. Prioritized outfall monitoring (Section 6(i)(1)(D) / page 43)

Once outfall screening has been completed for at least 50% of outfalls to impaired waters, identify 6 of the highest contributors of any pollutants of concern. Begin monitoring these outfalls on an annual basis by July 1, 2020.

Outfall	Sample Date	Parameter(s)	Results	Name of Laboratory (if used)
N/A				

DRAFT

Part III: Additional IDDE Program Data [This section required beginning with 2019 Annual Report]

1. Assessment and Priority Ranking of Catchments data (Appendix B (A)(7)(c) / page 5)

Provide a list of all catchments with ranking results (DEEP basins may be used instead of manual catchment delineations).

1. Catchment ID (DEEP Basin ID)	2. Category	3. Rank
See attached		

2. Outfall and Interconnection Screening and Sampling data (Appendix B (A)(7)(d) / page 7)

2.1 Dry weather screening and sampling data from outfalls and interconnections

Provide sample data for outfalls where flow is observed. Only include Pollutant of concern data for outfalls that discharge into stormwater impaired waterbodies.

Outfall / Interconnection ID	Screening / sample date	Ammonia	Chlorine	Conductivity	Salinity	E. coli or enterococcus	Surfactants	Water Temp	Pollutant of concern	If required, follow-up actions taken
GH-11	1/17/2019	<0.05	0	155.29	0.07	52	<0.05	4.67	N/A	N/A
HE-02	1/17/2019	<0.05	0.1	308.36	0.15	<10	<0.05	8.98	N/A	N/A
HE-14	1/18/2019	<0.05	0.02	23	0.02	<10	<0.05	1.64	N/A	N/A
HE-19	1/18/2019	<0.05	0.01	64	0.05	<10	<0.05	1.74	N/A	N/A
HE-23	1/18/2019	0.07	0.07	19	0.02	120	<0.05	2.07	N/A	N/A
HE-24	1/17/2019	0.07	0.05	194	0.15	<10	<0.05	4.09	N/A	N/A
HE-26	1/17/2019	<0.05	0.06	599	0.45	1840	0.07	5.68	N/A	N/A
HE-27	1/17/2019	<0.05	0.2	1117	0.92	1100	<0.05	1.98	N/A	N/A

HR-37	1/17/2019	<0.05	0.88	587	0.46	450	<0.05	2.57	N/A	N/A
PR-12	1/17/2019	<0.05	0	274.34	0.13	10	<0.05	8.79	N/A	N/A
PR-18	1/17/2019	<0.05	0	135.89	0.06	10	<0.05	8.9	N/A	N/A
TH-04	1/17/2019	<0.05	0	214.29	0.1	<10	<0.05	6.6	N/A	N/A
TH-06	1/17/2019	<0.05	0.1	75.88	0.03	20	<0.05	4.43	N/A	N/A
TP-10	1/17/2019	<0.05	0.1	463.4	0.24	<10	<0.05	9.1	N/A	N/A
TP-11	1/17/2019	<0.05	0.1	293.9	0.14	<10	<0.05	3.6	N/A	N/A
TP-12	1/17/2019	<0.05	0.1	194	0.09	41	<0.05	0.6	N/A	N/A
TP-13	1/17/2019	<0.05	0.1	553	0.26	<10	<0.05	1.5	N/A	N/A
TP-18	1/17/2019	<0.05	0	624.94	0.3	41	<0.05	9.9	N/A	N/A
TP-24	1/17/2019	<0.05	0.1	133	0.06	302	<0.05	2.3	N/A	N/A
WB-01	1/17/2019	<0.05	0.1	189	0.05	<10	<0.05	3.6	N/A	N/A
WB-03	1/17/2019	<0.05	0.1	236.4	0.11	10	<0.05	3.2	N/A	N/A
WR-02	1/29/2019	0.11	0	334.67	0.18	0	0	16.9	Bacteria	N/A
WR-03	1/29/2019	0.12	0	100.23	0.05	10	0	15.8	Bacteria	N/A

2.2 Wet weather sample and inspection data

Provide sample data for outfalls and key junction manholes of any catchment area with at least one System Vulnerability Factor.

Outfall / Interconnection ID	Sample date	Ammonia	Chlorine	Conductivity	Salinity	E. coli or Enterococcus	Surfactants	Water Temp	Pollutant of concern
N/A									

3. Catchment Investigation data (Appendix B (A)(7)(e) / page 9)

3.1 System Vulnerability Factor Summary

For those catchments being investigated for illicit discharges (i.e. categorized as high priority, low priority, or problem) document the presence or absence of System Vulnerability Factors (SVF). If present, report which SVF's were identified. An example is provided below.

Outfall ID	Receiving Water	System Vulnerability Factors
TBD		

Where SVFs are:

1. History of SSOs, including, but not limited to, those resulting from wet weather, high water table, or fat/oil/grease blockages.
2. Sewer pump/lift stations, siphons, or known sanitary sewer restrictions where power/equipment failures or blockages could readily result in SSOs.
3. Inadequate sanitary sewer level of service (LOS) resulting in regular surcharging, customer back-ups, or frequent customer complaints.
4. Common or twin-invert manholes serving storm and sanitary sewer alignments.
5. Common trench construction serving both storm and sanitary sewer alignments.
6. Crossings of storm and sanitary sewer alignments.
7. Sanitary sewer alignments known or suspected to have been constructed with an underdrain system;
8. Sanitary sewer infrastructure defects such as leaking service laterals, cracked, broken, or offset sanitary infrastructure, directly piped connections between storm drain and sanitary sewer infrastructure, or other vulnerability factors identified through Inflow/Infiltration Analyses, Sanitary Sewer Evaluation Surveys, or other infrastructure investigations.
9. Areas formerly served by combined sewer systems.
10. Any sanitary sewer and storm drain infrastructure greater than 40 years old in medium and densely developed areas.
11. Widespread code-required septic system upgrades required at property transfers (indicative of inadequate soils, water table separation, or other physical constraints of the area rather than poor owner maintenance).
12. History of multiple local health department or sanitarian actions addressing widespread septic system failures (indicative of inadequate soils, water table separation, or other physical constraints of the area rather than poor owner maintenance).

3.2 Key junction manhole dry weather screening and sampling data

Key Junction Manhole ID	Screening / Sample date	Visual/ olfactory evidence of illicit discharge	Ammonia	Chlorine	Surfactants
N/A					

3.3 Wet weather investigation outfall sampling data

Outfall ID	Sample date	Ammonia	Chlorine	Surfactants
N/A				

3.4 Data for each illicit discharge source confirmed through the catchment investigation procedure

Discharge location	Source location	Discharge description	Method of discovery	Date of discovery	Date of elimination	Mitigation or enforcement action	Estimated volume of flow removed
N/A							

Part IV: Certification

"I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that a false statement made in this document or its attachments may be punishable as a criminal offense, in accordance with Section 22a-6 of the Connecticut General Statutes, pursuant to Section 53a-157b of the Connecticut General Statutes, and in accordance with any other applicable statute."

Chief Elected Official or Principal Executive Officer	Document Prepared by
Print name:	Print name:
Signature / Date:	Signature / Date:

Outreach Log 2019 (Calendar Year)

SUMMARY

Total Number of Outreach Programs & Water Resource Planning Meetings:

(does not include mass media hits)

Number of Program & Meeting Attendees:

(not including mass media)

Additional Number Reached through Mass Media Outreach:

(newsletter, brochures, other publications, website, radio appearances, and community Earth Day event, stormdrain markers)

Date	Topic / Program Title	Venue	Audience	# of Attendees	# of Programs
January 9, 2019	Watershed Management Plan Update at Woodbury Annual Joint Meeting of Land Use Boards	Woodbury Senior Center	Planning Commission, Conservation Commission, Zoning Commission, Historic District Commission, Zoning Board of Appeals, and Inland Wetlands Agency Representatives, and Woodbury Residents	35	1
February 10, 2019	Bluegrass Sunday – Watershed Overview	Woodbury Brewing Company	Watershed Residents	100	1
March 14, 2019	Watershed Protection considerations for Woodbury Plan of Conservation & Development	Woodbury POCD Environment Focus Group Woodbury Emergency Services Bldg	Woodbury Town Staff & Commission Members	12	1
March 21, 2019	Riparian Buffers	Woodbury Parks & Recreation	Woodbury Town Staff & Commission Members	8	1
March 29, 2019	Woodbury Earth Day, Woodbury POCD, Watersheds & Aquifers	Woodbury Chamber of Commerce Chamber After Dark Mtg at New Morning Market, Woodbury	Chamber of Commerce members	25	1
April 5, 2019	Stream Temperature Monitoring: Tools for Data Storage, Analysis, and Sharing Findings	Connecticut Volunteer Water Quality Monitoring Conference, Three Rivers Community College, Norwich	DEEP Staff, Volunteer Water Quality Monitors, Watershed Organizations, and College Students	18	1
April 10, 2019	The Incredible Journey: Adventures of a Water Drop	New Morning Market, Woodbury	Watershed Residents	7	1
Date	Topic / Program Title	Venue	Audience	# of Attendees	# of Programs
April 10, 2019	Drinking Water and Private Well Forum	New Morning Market, Woodbury	Watershed Residents	30	1

April 13, 2019	Pomperaug Watershed Orientation / Watershed Tour	Watershed	PRWC Board of Directors & Staff	10	1
May 4, 2019	Project Rain Barrel Workshops	Woodbury Earth Day Hollow Park, Woodbury	Watershed Residents	12	3
June 1, 2019	River Ramblers: Geology and Hydrology	Connecticut Trails Day Three Rivers Park, Woodbury	Watershed Residents	15	1
June 28, 2019	Protection of Watershed Lands	Trail Dedication Trolley Bed Preserve, Woodbury	Woodbury Residents	20	1
July 11, 2019	Project Rain Barrel Workshop	Earth Tones Native Plant Nursery & Landscaping, Woodbury	Watershed Residents	12	1
July 12, 2019	Project Rain Barrel Workshop	New Morning Market Woodbury	Watershed Residents	8	1
July 17, 2019	River, Stream, & Aquifer Vulnerabilities	Woodbury Community Resilience Workshop, Woodbury Emergency Services Building, Woodbury	Town Commission Members & Staff	20	1
July 20, 2019	Project Rain Barrel Workshop	Flanders Nature Center & Land Trust, Woodbury	Watershed Residents	36	1
August 1, 2019	Macroinvertebrate Sampling & Water Quality	Strong Meadow Preserve, Woodbury	Naugatuck River Brigade & Pomperaug Youth Conservation Corps Staff	25	1
Date	Topic / Program Title	Venue	Audience	# of Attendees	# of Programs
October 16 & 17, 2019	Food Webs; Community Planning & Non- point Source Pollution: Metamorphosis Field Trip with ASAP! (After School Arts Program)	Trolley Bed Preserve, Woodbury	Third, fourth, fifth, and sixth grade students from Children's Community School (Waterbury)	65	3
October 20, 2019	Bluegrass Sunday – Watershed Overview	Woodbury Brewing Company	Watershed Residents	100	1
October 24, 2019	Long Island Sound in a Jar Make a Splash Day:	Make a Splash Day Woodbury Middle School, Woodbury	7 th grade students	80	4
November 8, 2019	Annual Macroinvertebrate Survey	PRWC Office, Woodbury & In-Stream Sample Locations	Watershed Residents / Program Volunteers	6	1
December 11, 2019	Riparian Buffer Planting Project	Project Planning Mtg PRWC Office, Woodbury CT	Project Partners from Town of Woodbury, PRWC, and Trout Unlimited	6	1
Various Dates	Watershed Based Plan Implementation Projects Planning Meetings	Various	PRWC Staff, Project Partners including private landowners, and municipal representatives of Woodbury, Southbury, and Bethlehem		
Various Dates	Woodbury Stormwater Management Committee Mtgs / Sustainable CT Meetings	Town of Woodbury			

Outreach through Mass Media

Date	Activity	Audience	# Reached
May 4, 2019	Woodbury Earth Day (hosted by PRWC)	Watershed Residents & Beyond	4,800 event attendees
Ongoing	PRWC Website (www.pomperaug.org)	Watershed Residents and beyond	3,486 unique users between 1/1/18 and 12/31/18 <i>(up by 680 in 2017)</i>
Biannual	PRWC Newsletter*	Watershed Residents and beyond	~ <u>1900</u> each issue
Ongoing	PRWC Facebook Page	Watershed Residents and beyond	931 Page Likes as of 12/31/18 <i>(up by 73 since 12/31/17)</i> MAX Daily Total Reach: <u>2,113</u> unique users AVG Daily Total Reach (7/15-12/30/18): <u>167</u> unique users daily
Ongoing	PRWC Instagram Page	Watershed Residents and beyond	260 Followers as of 12/31/18
Ongoing	RiverSmartCT Facebook Page	Watershed Residents and Beyond	432 fans as of 12/31/18 <i>(up by 7 since 12/31/17)</i>
Ongoing	RiverSmartCT Pinterest Page	Watershed Residents and Beyond	104 monthly followers <i>(up by 70)</i>
Ongoing	BeRiverSmart on Instagram	Watershed Residents and Beyond	117 followers <i>(up by 62)</i>
Ongoing	Stormdrain Markers	Watershed Residents	30,000
Ongoing	Informational Brochures, Newsletters, etc. at Public Libraries, Town Hall Offices, and locally owned grocery stores	Watershed Residents and beyond	Unknown
Ongoing	Town of Woodbury Stormwater Management Page	Watershed Residents and beyond	Unknown

** *May be overlap in persons reached.*

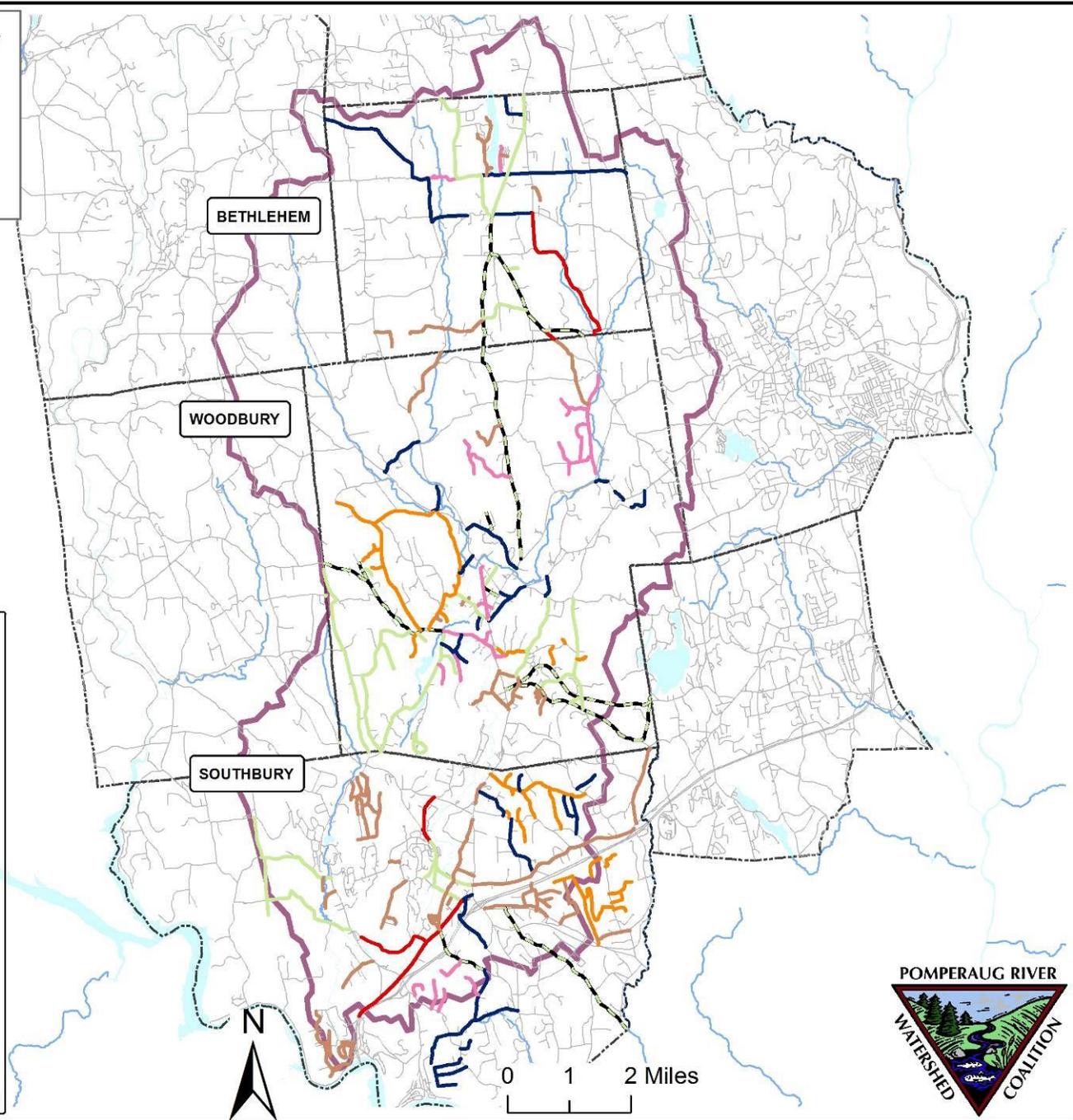
- Regular Press Releases and Letters to the Editor in Voices; Waterbury Republican American;

Stormdrain Marker Installations Pomperaug River Watershed Area



Legend

- Stream/River
 - Watershed Roads
 - Town Boundary
 - Pomperaug Watershed
- Stormdrain Markers Installed**
- 2014
 - 2015
 - 2016
 - 2017
 - 2019
 - Partially Completed
 - Markers to be Installed (Pending)



STORMDRAIN MARKER PROJECT



Approximately 2720 Storm Drain Markers have been installed throughout the Pomperaug River Watershed towns since 2014.



Reminders

Drain Marker Inventory Depleted in 2017

Drain Marker Inventory Replenished in 2019

*** = Replacement Stormdrain Markers Added*

Town (Approx. Marker Count)	Year	List of Roads / Locations		
Woodbury (~797 Markers)	2019 (192)	Grassy Hill Rd Woodlake Entrance Bacon Pond Rd Bear Run Trolley Bed Rd Linden Rd Old Sherman Hill Rd** Whittlesey Rd (<i>partial</i>)	Upper Grassy Hill Rd Tuttle Rd Park Rd River Bend Dr Saxony Ln Meadowbrook Ln Sherman Hill Rd (<i>partial</i>) Church Street	Transylvania Rd Sage Rd Judson Ave Owl Ridge Rd Cam Ave Arrowhead Way (<i>partial</i>) Good Hill Rd (<i>partial</i>) Flanders Rd (<i>partial</i>)
	2017	White Deer Rocks Rd. Sage Rd Terrell Rd Joshua Hill Rd Crane Rd Barbara Ln Park Rd Rail Tree Hill Rd	Hollow Rd** Streamside Ave Westside Rd Fairgrounds Rd Westwood Rd Stone Pit Rd Hoop Pole Hill Rd	Fieldstone Rd Essex Ln Inwood Ln Good Hill Rd Meadowbrook Ln Old Grassy Hill Rd Grassy Hill Rd
	2016	Old Sherman Hill Rd		

	2015	<p>Alder Ct Bacon Pond Rd Barn Hill Rd Barnhill Rd Beechwood Ct Cedar Spring Ln Church St Clubhouse Dr Deer Hill Ct Edgehill Ct Fox Run Great Hollow Rd Grey Fox Trl Hesseky Meadow Rd</p>	<p>Hilltop Dr Hollow Rd Ironwood Ln Juniper Ct Lower Commons Maple Hill Ln Meadow Crest Dr N Gate Rd No Meadows Old Town Farm Rd Orenerg Ave Plumb Brook Rd Racoon Ridge</p>	<p>S Meadows School St Shagbark Ln Silver Brook Ln Summit Ct Sycamore Ave Tamarack Ln Timber Ln Transylvania Rd Upper Cmns Washington Ave Woodlake Rd Woods Way</p>
	2014	<p>Coach Light Dr Gate Post Ln Hillview Ln Hyland Ave Meadow Ave Middle Quarter Rd</p>	<p>Old Fair Grounds Rd Old Sherman Hill Rd Orchard Ave Orchard Ln Orton Ln</p>	<p>Pomperaug Rd River View Ln S Pomperaug Ave Sherman Heights Rd Weekepeemee Rd</p>





2019 List of Youth Conservation Corps (YCC) Crew Achievements

PRWC gainfully employed six YCC staff (1 crew leader, and 5 crew members) for a six-week field season. Over the course of their season, the Crew was able to achieve the following quantitative outputs:

Completed 24 projects at 17 different work sites:

- Installed 470 storm drain markers along 36 different roads in Woodbury, Bethlehem, and Southbury, CT.
- Removed one truckload full of trash and large debris from the Pomperaug River at Flood Bridge Road and another truckload at the Audubon Bent of the River (BOTR) in Southbury, CT.
- Walked trails and removed four contractor bags of trash at Janie Pierce Park and one contractor bag of trash at Flood Bridge Road in Southbury, CT.
- Collected 26 stream samples for bacteria and nitrate analysis from 13 different monitoring sites along the Nonnewaug, Weekepeemee, and Pomperaug Rivers in Bethlehem, Woodbury, and Southbury, CT. Simultaneously conducted spot checks on stream temperature data loggers at 10 monitoring sites.
- Hosted four Rain Barrel Workshops during which 25 participants constructed a total of 71 rain barrels to take home and install at their downspout to capture runoff from their roof. Each rain barrel can capture upwards of 1,300 gallons of runoff a year. The crew also painted one rain barrel to be auctioned off at the PRWC's annual benefit in September.
- Clipped and cleared vegetation overgrowing 3.7 miles of trail at Janie Pierce Park and Phillips-Lovdal Farm Preserve in Southbury, CT.
- Removed about 415 feet of invasive plants from Strong Meadow Preserve in Woodbury, CT and Cedarland Park, Phillips-Lovdal Farm Preserve, and the Audubon BOTR in Southbury, CT.
- Facilitated two education activities (Fashion a Fish and The Pucker Effect) for two groups of summer camp kids at the Audubon BOTR in Southbury, CT.
- Edged and weeded the Rain Garden at the Community House Park in Southbury, CT; 5 gallons of weeds were removed.
- Created and blazed a new 1.6 mile loop trail at the River Road Preserve in Roxbury, CT.
- Removed a kayak full of trash and large debris from the Shepaug River in Roxbury, CT.
- Removed tons of trash and large debris from the Naugatuck River behind Roller Magic in Waterbury, CT.
- Surveyed macroinvertebrates in the Nonnewaug River and East Meadow Brook at Strong Meadow Preserve in Woodbury, CT.
- Performed buffer maintenance at Cedarland Park in Southbury, CT. Removed 2.25 tons of Watercress from the stream channel and cleared 1 ton of mgwort which are composting onsite. Also removed weeds overgrowing the stone stairs that provide access to the Pomperaug River.
- Assembled 10 Water Conservation Education Kits for Connecticut Water and Maine Water Companies.
- Assembled and mailed 35 RiverSmart Pledge Thank You Packets.

The Pomperaug YCC Crew Member positions were funded by generous grant support from:



M E M O R A N D U M

TO: Town of Woodbury

FROM: Nelson Tull, EIT, Julianne Busa, PhD, Erik Mas, PE

DATE: July 17, 2019

RE: Town of Woodbury MS4 Compliance
Assessment and Priority Ranking of Catchments

Introduction

Each regulated community, pursuant to the 2016 Connecticut Municipal Separate Storm Sewer System General Permit (2016 MS4 Permit or MS4 Permit), is required to assess and priority rank outfalls and catchments within their Priority Area. This requirement is part of the written illicit discharge detection and elimination (IDDE) program described in Section 7 of Appendix B in the permit. The priority ranking (Appendix B, Section A.7.c.i-iii) reflects the potential of a particular outfall or catchment to have illicit discharges or Sanitary Sewer Overflows (SSOs).

Catchment rankings must reflect screening factors that indicate illicit discharge and SSO potential and the related public health significance. Each catchment must be classified into one of four categories, listed in Table 1. The permit further prescribes eight mandatory and two recommended screening factors and allows the consideration of other local conditions, as applicable. The Town of Woodbury contracted with Fuss and O'Neill to assess and rank catchments using CT DEEP local basin delineations as the geographic basis for the analysis.

Table 1: Catchment priority categories defined by the 2016 MS4 Permit

Catchment Priority Category	Description
Problem	Catchments with known or suspected contributions of illicit discharges based on existing information shall be designated as Problem Catchments. This shall include any catchments where previous screening indicates likely sewer input.
High	Catchments that have not been classified as Problem Catchments and that are: <ul style="list-style-type: none"> • discharging to an area of concern to public health due to proximity of public beaches, recreational areas, drinking water supplies or shellfish beds; or • categorized by the permittee as high priority based on outfall/interconnection screening; or • categorized by the permittee as high priority based on the screening factors detailed in Table 2 or other available information.
Low	Catchments not listed as Problem or High priority and categorized by the permittee as Low priority based on the screening factors detailed in Table 2 or other available information.
Excluded	Catchments with no potential for illicit discharges may be excluded from the IDDE program. This category is limited to roadway drainage in undeveloped areas with no dwellings and no sanitary sewers; drainage for athletic fields, parks or undeveloped green space and associated parking without services; cross-country drainage alignments (that neither cross nor are in proximity to sanitary sewer alignments) through undeveloped land.

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Catchment Ranking and Prioritization

Due to the time-consuming process of delineating catchments associated with individual outfalls, CT DEEP allows the use of the smallest watershed unit mapped by CT DEEP as a surrogate for individual outfall catchment areas (refer to guidance provided by the UConn Center for Land Use Education and Research on the Connecticut MS4 Guide website). These watershed units are referred to as “local basins” and are provided as a downloadable GIS layer by CT DEEP. The local basins were clipped to the geographic extent of the Town and therefore only include areas of each basin within this extent. The terms “local basin” and “catchment” can be considered interchangeable for the purposes of this assessment.

For purposes of the IDDE program, the Town should focus only on those catchments located within the “Priority Area” (defined by the MS4 Permit to include Urbanized Area within the Town, areas that discharge directly to impaired waters, and local basins with directly connected impervious area (DCIA) greater than 11% (although Woodbury does not have any of the latter)). All local basins overlapping with the Town of Woodbury Priority Area were screened using the factors detailed in Table 2. Fuss and O’Neill developed a ranking matrix where scores were assigned to reflect catchment-specific information. Assigned scores were summed and normalized by the maximum possible score (27), resulting in a 0 to 10 scale, where a score of zero indicates the lowest relative likelihood of the presence of illicit discharge. Classification into the four catchment priority categories (Problem, High, Low, and Excluded) was performed manually and reflects the assigned scores as well as consideration of public health concerns (Attachment A). Individual scoring was completed for each of the screening factors listed in Table 2.

Table 2: Outfall catchment screening factors required for consideration by the 2016 MS4 Permit

Screening Factor	Description	Scoring Method	Data Source
Past Discharge Complaints and Reports	Any information regarding the potential for an illicit connection based on previous inspection, reports, or complaints.	Screened, No flow: 0 Unscreened: 1 Flow, no illicit discharge evidence: 2 Flow, illicit discharge evidence: 3	Town of Woodbury (outfall screening data collected by Fuss & O’Neill 2019)
Poor Dry Weather Receiving Water Quality	Water quality limited waterbodies that receive a discharge from the MS4 or waters with approved TMDLs applicable to the permittee, where illicit discharges have the potential to contain the pollutant identified as the cause of the water quality impairment.	Receiving Water Quality Good or unassessed: 0 Category 4c: 1 Category 5: 2 Category 4a: 3	CT DEEP 2016 Integrated Water Quality Report

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Screening Factor	Description	Scoring Method	Data Source
Land Use / Generating Site Density	Generating sites are those places, including institutional, municipal, commercial, or industrial sites, with a potential to generate pollutants that could contribute to illicit discharges.	Low: 1 Medium: 2 High: 3	MRLC NLCD (2011), Aerial imagery, Google Maps and Streetview
Development Age and Septic Age	Industrial areas greater than 40 years old and areas where the sanitary sewer system is more than 40 years old will probably have a high illicit discharge potential. Developments 20 years or younger will probably have a low illicit discharge potential.	Development Age: 1990s-present: 1 1970-1990: 2 Pre-1970: 3 Septic Age: < 20 years: 0 20 to 40 years: 1 > 40 years: 3	Town of Woodbury GIS: Parcel Annotation
Sewer Conversion	Contributing catchment areas that were once serviced by septic systems, but have been converted to sewer connections may have a high illicit discharge potential.	Past Sewer Conversion No sewers: 0 Sewers, infrastructure post 1970: 0 Basin partially sewered, infrastructure pre-1970: 2 Sewers, infrastructure pre-1970: 3	CT MAGIC GIS
Historic Combined Sewer Systems	Contributing areas that were once serviced by a combined sewer system, but have been separated may have a high illicit discharge potential.	Past CSO separation: No: 0 Yes: 3	
Culverted Stream	Any river or stream that is culverted for distances greater than a simple roadway crossing may have a high illicit discharge potential.	Stream Crossings Road crossings only: 0 Limited Potential: 1 High Potential: 3	CT DEEP Hydrography
Public Health Area	Outfall discharges to waterbodies containing a public bathing area, drinking water source, or recreational shellfishing area.	Public Health Area Yes: Automatically given highest score (10.0)	CT DPH Mapping

Past discharge complaints and reports:

Certain outfalls in the Town had been inspected previously for dry-weather flow. Those that have been inspected and were found to have no flow were given a score of 0, while those that were flowing received a score of 2 if there was no evidence of illicit discharges. Unscreened outfalls were given a score of 1. No outfalls in the Town were found to have evidence of illicit discharges, so no catchments received a score of 3 for this category.

Poor dry weather receiving water quality:

Catchments were ranked by water quality of the receiving waterbody using the 303d listing status from the State of CT 2016 Integrated Water Quality Report. Receiving waterbodies with a current TMDL (category 4a) were given highest priority (score of 3). Impaired waterbodies in need of a TMDL (category 5) were assigned a score of 2. Waterbodies with non-pollutant impairments (category 4c) were assigned a score of 1. Waterbodies that were unassessed or fully supporting their designated use were given lowest priority (score of 0). The only impaired waterbody in the Town is the Weekepeemee River, which is part of the Statewide Bacteria TMDL. Catchments contributing to this waterbody were given a score of 3, while all other catchments were given scores of 0.

Density of generating sites:

The National Land Cover Database (Homer, et al., 2015) was used to determine the percent area of each local basin that is either developed or undeveloped. For evaluation purposes, land cover codes 21, 22, 23, and 24 were considered “Developed” while all other land cover codes were considered “Undeveloped.” Table 3 lists each land cover code present in the Town of Woodbury and its corresponding classification. Basins with undeveloped land cover area accounting for more than 50% of the basin were considered to have a “low” density of generating sites and were given a score of 1. All basins in the Town are less than 50% developed, so it was determined to be unnecessary to screen for generating sites.

Table 3: Land cover and development classifications for the Town of Woodbury

NLCD Land Cover Code	Classification
11: Open Water	Undeveloped
21: Developed Open Space	Developed
22: Developed Low Intensity	Developed
23: Developed Medium Intensity	Developed
24: Developed High Intensity	Developed
31: Barren Land (rock, sand, clay)	Undeveloped
41: Deciduous Forest	Undeveloped
42: Evergreen Forest	Undeveloped
43: Mixed Forest:	Undeveloped
52: Shrub/Scrub	Undeveloped
71: Grassland/Herbaceous	Undeveloped
81: Pasture/Hay	Undeveloped

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NLCD Land Cover Code	Classification
82: Cultivated Crops	Undeveloped
90: Woody Wetlands	Undeveloped
95: Emergent Herbaceous Wetlands	Undeveloped

Age of surrounding development and infrastructure:

The Town of Woodbury's parcel GIS layer was used to estimate the age of development and infrastructure within each local basin. The local basins were classified into three categories based on the age of the majority of the structures in the basin; pre-1970 (score of 3), 1970-1990 (score of 2) and 1990 to present (score of 1).

Sewer conversion:

The Town of Woodbury does not have a sanitary sewer system. All properties in the Town were assumed to have septic systems.

Historic combined sewer systems:

The Town does not have any areas that were previously part of a combined sewer system. Scoring was considered to be zero for all local basins.

Density of aging septic systems:

The age of septic systems was determined by the dominant age of surrounding development and infrastructure. If the age of infrastructure was pre-1970, it was assumed that septic systems could be more than 40 years old and the basin was given a score of 3. If the age of infrastructure was mixed or 1970 to 1990, the majority of septic systems could be assumed to be between 20 and 40 years old and the basin was assigned a score of 1. If the age of infrastructure was post-1990, the majority of septic systems were assumed to be less than 20 years old and the basin was given a score of 0.

Culverted streams:

The CT DEEP hydrography layer was examined along with aerial imagery of the Town to determine if any streams are culverted for distances greater than a simple roadway crossing. If only standard road crossings were observed, the basin was given a score of 0. If any streams in the basin were observed to be buried or culverted for more than the distance of an average road crossing, the basin was given a score of 1 for a relatively short distance and a 3 if the buried distance was relatively long. Only one instance of a buried stream was found, where a stream runs under Sherman Hill Road and continues under an adjacent parking lot before daylighting. This was determined to be a relatively short distance (400-450 feet).

Public health area:

If the local basin discharges to a drinking water supply, recreational shellfishing area, or beach or water used for contact recreation, the basin was automatically listed as High Priority and given the maximum

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possible score of 10. If the local basin does not discharge to any of the above areas, the score was not affected.

Results

Of the Town's 326 mapped outfalls, 227 are located within local basins that overlap with the Town's Priority Area. Of these 227 outfalls, 27 are associated with High Priority catchments and 200 are associated with Low Priority catchments (Attachment A), based on the priority ranking of the local basin associated with each outfall. The analysis did not identify any "Problem" or "Excluded" catchments.

Receiving water quality, age of development and infrastructure, and public health consideration are the primary determining factors for Woodbury's High Priority catchments and outfalls. Outfalls in the three local basins in Woodbury that drain to the Weekepeemee River are near the top of the priority ranking because this river is the only impaired waterbody in the Town, as part of the statewide bacteria TMDL. These basins received the maximum score of 3 for both the receiving water quality category and illicit connection TMDL category. Based on Town parcel data, most areas of Woodbury have infrastructure built in the years between 1970 and 1990, although many parcels did not have infrastructure age information. Most of the basins where the majority of infrastructure was built prior to 1970 were at the top of the priority ranking, as the septic age category was also related to this infrastructure age data, and basins with older infrastructure are considered to have a higher potential for illicit discharges. Public health consideration can be regarded as the most important factor used in this analysis. Per the CT MS4 General Permit, basins containing an area of public health concern (e.g., drinking water supply area) were automatically placed at the top of the ranking and categorized as High Priority.

Outfalls had been previously screened by Fuss & O'Neill on behalf of the Town, although no evidence of illicit discharges was found. No basin in the Town is greater than 50% developed (all basins are less than 33% developed), therefore no analysis of generating site density was performed. Based on CT DEEP streams GIS data and aerial imagery, only one location within the basins with Priority Area showed evidence of a stream that is buried longer than a typical road crossing. The stream is buried under one road and an adjacent commercial property, so outfalls in this basin were given the designation of "limited potential" (score of 1). Woodbury has no existing or historic sanitary or combined sewer systems. There were also no records of past discharge complaints or reports.

Woodbury should proceed with implementation of its IDDE program, with a focus on those outfalls that are ranked as High Priority. The MS4 Permit requires that Woodbury update this assessment and priority ranking annually based on the results of dry weather screening, catchment investigations, and other new relevant information. Woodbury should also provide a listing of catchments and the results of the ranking for each catchment in each annual report.

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Attachment A

Outfall and Catchment Inventory and Ranking

